

PORT *of* SAN DIEGO

Draft Environmental Impact Report

San Diego Bay and Imperial Beach Oceanfront Fireworks Display Events Project



Volume I of II

PREPARED FOR:

San Diego Unified Port District
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March 2017

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DRAFT ENVIRONMENTAL IMPACT REPORT SAN DIEGO BAY AND IMPERIAL BEACH OCEANFRONT FIREWORKS DISPLAY EVENTS PROJECT

VOLUME I OF II

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Acronyms and Abbreviations

µg/L	micrograms per liter
µg/m ³	micrograms per cubic meter
µPa	microPascals
AB	Assembly Bill
ACC	Advanced Clean Cars
ADT	average daily traffic
AEP	Association of Environmental Professionals
ALS	Advanced Life Support
ALUC	Airport Land Use Commission
AQIA	Air Quality Impact Analysis
AR4	IPCC Fourth Assessment Report
ARB	California Air Resources Board
BAAQMD	Bay Area Air Quality Management District
BACT	best available control technology
BAU	business as usual
BMP	best management practice
BTU	British thermal unit
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEnviroScreen	California Communities Environmental Health Screening Tool
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CCA	California Coastal Act
CCC	California Coastal Commission
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CH ₄	methane
CHE	cargo-handling equipment
CMP	Congestion Management Program
CNEL	community noise equivalent level
CO	carbon monoxide
CO ₂	carbon dioxide

CO ₂ e	carbon dioxide equivalent
COMM	Ocean, Commercial, and Sport Fishing
Cr+6	hexavalent chromium
CSLC	California State Lands Commission
CTR	California Toxics Rule
Cu	copper
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibel
dba	A-weighted decibel
DHS	U.S. Department of Homeland Security
District	San Diego Unified Port District
DOT	Department of Transportation
DPM	diesel particulate matter
EIR	environmental impact report
EO	Executive Order
EOC	Emergency Operations Center
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
EST	Estuarine Habitat beneficial use
FAA	Federal Aviation Administration
FBMPP	Fireworks Best Management Practices Plan
FEMA	Federal Emergency Management Agency
General Permit	General NPDES Permit for Residual Firework Pollutant Waste Discharges to Waters of the United States in the San Diego Region from the Public Display of Fireworks
GHG	greenhouse gas
Guidelines	Guidelines for the Exclusion of Temporary Events from Coastal Commission Permit Requirements
GWP	global warming potential
HA	hydrologic area
HC	hydrocarbons
HFCs	hydrofluorocarbons
HI	hazard index
HMD	San Diego County Department of Environmental Health's Hazardous Materials Division
HPD	San Diego Harbor Police Department
HRA	Health Risk Assessment
HREA	Health Risk and Exposure Assessment
HU	hydrologic unit
Hz	Hertz
I-	Interstate

ILV	intersection lane volume
INRMP	Integrated Natural Resources Management Plan
IPCC	Intergovernmental Panel on Climate Change
IRWMP	Integrated Regional Water Management Plan
ITE	Institute of Transportation Engineers
JRMP	Jurisdictional Runoff Management Plan
kWh	kilowatt hour
LCFS	Low Carbon Fuel Standard
L_{dn}	day-night sound level
L_{eq}	equivalent sound level
L_{max}	maximum sound level
L_{min}	minimum sound level
LOS	level of service
LT	long term
m/s	meter per second
MAR	marine habitat
MBNMS	Monterey Bay National Marine Sanctuary
MBTA	Migratory Bird Treaty Act
MEI	maximum exposed individual
mg/L	milligrams per liter
MHHW	mean higher high water
MHPA	Multi-Habitat Planning Area
MICR	maximum incremental cancer risk
MLLW	mean lower-low water
MMPA	Marine Mammal Protection Act
mph	miles per hour
MS4	municipal separate storm sewer system
MSCP	Multiple Species Conservation Program
MSL	mean sea level
MTCO _{2e}	metric tons of carbon dioxide equivalent
MTS	Metropolitan Transit System
MWh	megawatt hour
N ₂ O	nitrous oxide
NAAQS	national ambient air quality standards
NAB Coronado	Naval Amphibious Base Coronado
NAS	Naval Air Station
NASSCO	General Dynamics National Steel and Shipbuilding Company
NFIP	National Flood Insurance Program
NFPA	National Fire Protection Association
NMFS	National Marine Fisheries Service
NO	nitric oxide
NO ₂	nitrogen dioxide

NOAA	National Oceanic and Atmospheric Administration
NOP	Notice of Preparation
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRC	National Research Council
NRMP	Natural Resources Management Plan
NSR	New Source Review
NTR	National Toxics Rule
NWR	National Wildlife Refuge
O ₃	ozone
OBOD	open burning and open detonation
OEHHA	Office of Environmental Health Hazard Assessment
OGV	ocean-going vessel
OPA	Oil Pollution Act
OSPR Act	California Oil Spill Prevention and Response Act of 1990
PAH	polycyclic aromatic hydrocarbon
Pb	lead
PCB	polychlorinated biphenyl
PeMS	Performance Measurement System
PFCs	perfluorinated carbons
PM	particulate matter
PM ₁₀	particulate matter less than or equal to 10 microns in diameter
PM _{2.5}	particulate matter less than or equal to 2.5 microns in diameter
PMP	Port Master Plan
Port Act	San Diego Unified Port District Act
Porter Cologne Act	Porter-Cologne Water Quality Control Act of 1969
ppb	parts per billion
ppm	parts per million
ppt	parts per trillion
proposed ordinance	San Diego Unified Port District Code section
proposed project	San Diego Bay and Imperial Beach Oceanfront Fireworks Display Events Project
RAQS	Regional Air Quality Strategy
RCRA	Resource Conservation and Recovery Act
REC-1	Contact Water Recreation
Regional Plan	San Diego Forward: Regional Plan
REL	Reference Exposure Level
Reporting Rule	Greenhouse Gas Reporting Rule
ROG	reactive organic gas
RPS	Renewables Portfolio Standard
RTP	Regional Transportation Plan
RV	recreational vehicle

RWQCB	Regional Water Quality Control Board
SANDAG	San Diego Association of Governments
SANTEC	San Diego Traffic Engineers' Council
SB	Senate Bill
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SCH	State Clearinghouse and Planning Unit
SCS	sustainable communities strategy
SCS	Sustainable Communities Strategy
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SDFD	City of San Diego Fire-Rescue Department
SDG&E	San Diego Gas and Electric
SDIA	San Diego International Airport
SDPD	San Diego Police Department
SDRWQCB	San Diego Regional Water Quality Control Board
SF ₆	sulfur hexafluoride
SHELL	Shellfish Harvesting
SIP	State Implementation Policy
SLR	sea-level rise
SLT	screening-level threshold
SO ₂	sulfur dioxide
SO _x	sulfur oxides
SR	State Route
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TMDL	total maximum daily load
U.S.S. Midway Museum	U.S.S. Midway Aircraft Carrier Museum
USACE	U.S. Army Corps of Engineers
USC	United States Code
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
VMT	vehicle miles traveled
VOC	volatile organic compound
VSR	vessel speed reduction
WMA	Watershed Management Area
WoS	waters of the state
WoUS	waters of the United States
WQIP	Water Quality Improvement Plan

ES.1 Introduction

This chapter provides a summary of the Draft Environmental Impact Report (EIR) prepared for the San Diego Bay and Imperial Beach Oceanfront Fireworks Display Events Project (proposed project), prepared in compliance with the California Environmental Quality Act (CEQA). The San Diego Unified Port District (District) is the CEQA Lead Agency for the EIR and, as such, has the primary responsibility for evaluating the environmental effects of the proposed project and considering whether to approve or disapprove the proposed project in light of these effects.

As required by CEQA, this Draft EIR does the following: (1) describes the proposed project, including its location, objectives, and features; (2) describes the existing conditions at the project site and nearby environs; (3) analyzes the direct, indirect, and cumulative adverse physical changes that would occur in the existing conditions should the proposed project be implemented; (4) identifies feasible means of avoiding or substantially lessening the significant adverse effects; (5) provides a determination of significance for each impact after mitigation is incorporated; and (6) evaluates a reasonable range of feasible alternatives to the proposed project that would meet the basic project objectives and reduce a project-related significant impact.

This Executive Summary covers the following topics: (1) Project Description; (2) Areas of Controversy/Issues Raised by Agencies and the Public; and (3) Issues to Be Resolved, including significant environmental effects and the consideration of alternatives to the proposed project.

ES.2 Project Description

ES.2.1 Project Overview

The proposed project consists of (1) an ordinance establishing a District Code section (proposed ordinance) to govern existing and proposed new fireworks display events that occur within San Diego Bay and the Imperial Beach Oceanfront that require a discretionary action by the District or that are operated by the District's tenants, and (2) four proposed new fireworks display events, which would be located adjacent to the National City and Chula Vista Bayfronts and are anticipated to require a future discretionary action by the District. Discretionary actions for fireworks display events that may require District approval include, but are not limited to, the following:

- Sponsorship agreement
- Special event permit
- Lease and lease amendment
- Tideland Use and Occupancy Permit
- Right of Entry Permit
- Coastal Act Categorical Determination of Exclusion
- Coastal Development Permit

Fireworks display events that require a discretionary action by the District or are operated by the District's tenants have been occurring on the Fourth of July and at other times throughout the year for more than a decade. The most prominent existing fireworks display events are the annual Fourth of July Big Bay Boom in San Diego Bay and the Fourth of July Imperial Beach Fireworks Show. Furthermore, the Fireworks Show Over Glorietta Bay is an existing display whose fireworks organizers may seek to obtain funding from the District in the future, which would require a discretionary action by the District. Existing fireworks display events that occur at other times throughout the year include those associated with the San Diego Symphony's Summer Pops concert series (multiple small displays) and the Our Lady of Rosary Church annual procession, along with the U.S.S. Midway Aircraft Carrier Museum (U.S.S. Midway Museum) (multiple small displays) and General Dynamics National Steel and Shipbuilding Company (NASSCO) displays. The four proposed new fireworks display events, which would be located adjacent to the National City and Chula Vista Bayfronts, are anticipated to require a future discretionary action by the District, as discussed further below.

ES.2.2 Fireworks Display Event Locations

Existing Fireworks Display Events

Existing fireworks display events currently occur at several locations within San Diego Bay, a natural harbor and deep-water port in southern San Diego County, and the Imperial Beach Oceanfront. San Diego Bay is an active maritime environment that provides passage and berthing for numerous types of boats and vessels, including small recreational boats that moor at dock marinas and open anchorage marinas within the Bay, mid-sized vessels such as private yachts and harbor cruise boats, and large vessels that consist of naval ships, cruise ships, cargo ships, and shipping barges. Fireworks display events within San Diego Bay take place off Shelter Island, Harbor Island, Centre City Embarcadero (which includes North Embarcadero, Central Embarcadero, and South Embarcadero), and the NASSCO ship repair facility. In addition, fireworks display events take place along the Coronado Bayfront within Glorietta Bay (an inlet of San Diego Bay adjacent to Coronado Island) and the Imperial Beach Oceanfront. A list of existing fireworks display events that occur in and around San Diego Bay and the Pacific Ocean near Imperial Beach annually and a summary of the activity associated with them are provided in Tables 2-1 and 2-2, respectively, of Chapter 2, *Environmental Setting*.

Proposed New Fireworks Display Events

There are currently no fireworks display events along the National City or Chula Vista Bayfronts. Along the National City Bayfront, it is anticipated that future fireworks display events would take place from a barge within view of Pepper Park because Pepper Park is the closest publicly accessible gathering space near the National City Bayfront. Pepper Park is located along Tidelands Avenue in National City. The site is adjacent to the Sweetwater Channel, north of the Sweetwater Marsh Unit of the San Diego Bay National Wildlife Refuge, which includes Paradise Creek to the east and D Street Fill to the south, south of the National City Marine Terminal, east of San Diego Bay, and west of Pier 32 Marina. Interstate 5 (I-5) runs northeasterly approximately 0.4 mile from the park site boundary. Pepper Park site access is provided via Tidelands Avenue, which turns into Goesno Place as it approaches the park. One fireworks display event, likely a Fourth of July event, may occur along the National City Bayfront and is anticipated to involve the placement of a single, temporary barge in the vicinity of Pepper Park.

Along the Chula Vista Bayfront, it is anticipated that fireworks display events would take place from a barge within view of both the Chula Vista Bayside Park and the Chula Vista Bayfront Park. Bayside Park is a waterfront park accessed by Bayside Parkway. It is bounded to the north by a boatworks facility, to the south by a man-made inlet that contains marinas, to the east by a recreational vehicle (RV) park, and to the west by San Diego Bay. Bayfront Park is on the south side of the man-made inlet and is bounded to the south and west by San Diego Bay and to the east by the marinas of the man-made inlet as well as vacant land. The park is accessed by Marina Way. I-5 is approximately 0.5 mile to the east of the Chula Vista Bayfront. A total of three fireworks display events (including one on the Fourth of July) along the Chula Vista Bayfront area are allowed under the Chula Vista Bayfront Master Plan Settlement Agreement and Natural Resources Management Plan and are anticipated to involve the placement of a single, temporary barge in the Bay in the vicinity of the two parks.

Proposed new fireworks display events are described below in more detail in Section ES.2.5, *Project Operations*.

ES.2.3 Project Objectives

The District has identified the following objectives for the proposed project.

1. To develop a District ordinance that establishes policies, performance standards, and other requirements that would be applied to fireworks display events that occur in and around San Diego Bay and the Pacific Ocean near Imperial Beach and require a discretionary action by the District or are operated by the District's tenants;
2. To allow for the continued occurrence of traditional fireworks display events¹ in and around San Diego Bay and the Pacific Ocean near Imperial Beach that require a discretionary action by the District or are operated by the District's tenants, including on the Fourth of July, providing a popular and region-wide way to celebrate and express civic pride;
3. To allow for the continued occurrence of existing and future occurrence of proposed new traditional fireworks display events in and around San Diego Bay and the Pacific Ocean near Imperial Beach that require a discretionary action by the District or are operated by the District's tenants in a manner that considers the health, safety, and welfare of people, property, and the environment; and
4. To continue to enhance the visitor-serving experience of viewing fireworks display events from various vantage points around District tidelands by providing safe, high-quality fireworks display events using existing and new fireworks technologies as they become available.

¹ A traditional fireworks display event involves the use of display fireworks that are defined by the U.S. Bureau of Alcohol, Tobacco, Firearms and Explosives as large fireworks used in fireworks display shows, generally under the supervision of a trained pyrotechnician. These fireworks are designed primarily to produce visible or audible effects by combustion, deflagration, or detonation. They include, but are not limited to, salutes containing more than 2 grains (130 milligrams) of flash powder, aerial shells containing more than 40 grams of pyrotechnic compositions (including any break charge and visible/audible effect composition but exclusive of lift charge), and other display pieces that exceed the limits of explosive materials for classification as "consumer fireworks." They also include fused set pieces containing components that together exceed 50 milligrams of flash powder. Display fireworks are classified as fireworks UN0333, UN0334, or UN0335 by the U.S. Department of Transportation (U.S. ATF 2016).

ES.2.4 Proposed Ordinance

As stated above, the proposed project consists of an ordinance to govern existing and proposed new fireworks display events that occur within San Diego Bay and the Imperial Beach Oceanfront that require a discretionary action by the District or that are operated by the District's tenants. The proposed ordinance addresses the following:

- Permit procedures and requirements for the conduct of fireworks displays
- Compliance with applicable federal, state, and local laws and regulations governing fireworks, including, but not limited to:
 - Code of Federal Regulations
 - Clean Water Act
 - California Health and Safety Code
 - California Code of Regulations
 - CEQA
 - California Coastal Act
- Compliance with applicable federal, state, and local plans and permits governing fireworks, including, but not limited to:
 - San Diego Regional Water Quality Control Board's (SDRWQCB's) General Permit for Public Display of Fireworks (Order No. R9-2011-0022)
 - District's Climate Action Plan
 - District's Stormwater Management and Discharge Control Code
 - Integrated Natural Resources Management Plan
 - Chula Vista Bayfront Master Plan Natural Resources Management Plan
- Consistency with the features and characteristics of each individual fireworks display event analyzed in this Draft EIR, including, but not limited to:
 - Allowable launch site locations for individual displays
 - Total pounds of fireworks for individual displays
 - Allowable shell size(s) for individual displays
 - Frequency of individual displays
 - Duration of individual displays
- Compliance with the applicable mitigation measures identified in the Mitigation Monitoring and Reporting Program for the proposed project

ES.2.5 Project Operations

A number of fireworks display events occur year-round in and around San Diego Bay and the Pacific Ocean near Imperial Beach. A list of these fireworks display events is provided in Table 2-1 of

Chapter 2, *Environmental Setting*. These fireworks display events would be subject to the proposed ordinance.

In addition to the existing fireworks display events, the proposed ordinance would govern four proposed new fireworks display events, including three displays along the Chula Vista Bayfront as allowed under the Chula Vista Bayfront Master Plan Settlement Agreement and Natural Resources Management Plan, and one Fourth of July display along the National City Bayfront. The three proposed fireworks display events along the Chula Vista Bayfront include one Fourth of July display and two non-Fourth of July displays. It is anticipated that the District would consider annually whether or not to provide event sponsorship and/or issue a Special Event Permit, Right-of-Entry Permit, Tideland Use and Occupancy Permit, Coastal Development Permit, Coastal Act Categorical Determination of Exclusion, or other similar approval for these proposed new fireworks display events. These proposed new fireworks display events are anticipated to last approximately 3 to 10 minutes for non-Fourth of July displays and 15 to 20 minutes for Fourth of July displays, and the fireworks are anticipated to be launched from barges within San Diego Bay. These proposed new fireworks display events would also be governed by the proposed ordinance. The proposed new fireworks display events are identified in Table ES-1, below.

Table ES-1. Proposed New Fireworks Display Events Requiring a Future Discretionary Action by the District

Time of Year	Approximate Number of Fireworks Display Events	Location(s) of Fireworks Display Event	Approximate Duration of Each Fireworks Display Event	Approximate Shell Size
January–March	1	• Chula Vista ¹	3–10 minutes	2–8 inches
April–June	—	—	—	—
July–September	2	• Chula Vista ² • National City ²	15–20 minutes	3–8 inches
October–December	1	• Chula Vista ¹	3–10 minutes	2–8 inches
TOTAL³	4			

¹ Non-Fourth of July display (smaller display)
² Fourth of July display
³ Total includes three fireworks display events along the Chula Vista Bayfront, as allowed under the Chula Vista Bayfront Master Plan Settlement Agreement and Natural Resources Management Plan.

Table ES-2 summarizes the total pounds of fireworks estimated in this Draft EIR for each proposed new fireworks display event. Because no fireworks display events currently occur along the National City or Chula Vista Bayfronts, the total pounds of fireworks used to produce these displays is not yet known. However, for the purposes of this Draft EIR, the total pounds of fireworks for the National City and Chula Vista Bayfronts Fourth of July fireworks display events is anticipated to be 456 pounds for each display, which is similar to the Fourth of July Imperial Beach Fireworks Show (see Table ES-2). For the proposed new non-Fourth of July fireworks display events that would occur along the Chula Vista Bayfront, the total pounds of fireworks was estimated by scaling the duration of the Fourth of July Imperial Beach Fireworks Show (20-minute display) by the number of minutes for each proposed new fireworks display event (assumed to range between 3 and 10 minutes with an average duration of 5 minutes, similar to existing displays operated by the San Diego Symphony

during the Summer Pops concert series and U.S.S. Midway Museum), which equals an estimated 114 pounds for each display. Because the proposed ordinance would require consistency with the features and characteristics of each individual fireworks display event analyzed in this Draft EIR, including, but not limited to, the total pounds of fireworks and durations for individual displays, the values provided in Table ES-2 represent the maximum allowable pounds of fireworks and durations for the proposed new displays along the Chula Vista and National City Bayfronts assumed in this Draft EIR. Similarly, because the proposed ordinance would also govern the existing fireworks display events identified above, the values provided in Chapter 2, Table 2-2, also represent the maximum allowable pounds of fireworks for each existing fireworks display event assumed in this Draft EIR. If an existing fireworks display event identified in Chapter 2, Table 2-2, is proposed to be modified in the future, a new additional fireworks display event is proposed that was not analyzed in this Draft EIR, or any of the characteristics provided in Table ES-1 (e.g., magnitude and/or duration) of the four proposed new fireworks display events are proposed to be modified, the fireworks display event will be subject to additional environmental review, pursuant to State CEQA Guidelines Section 15168(c).

Table ES-2. Summary of Activity Associated with the Proposed Fireworks Display Events

Fireworks Display Event	Day of Event	Number of Events	Pounds of Fireworks per Event	Pounds of Fireworks Annually	Number of Barges Used per Event
Chula Vista Bayfront ¹	Fourth of July plus two other shows	3	456 ¹ 114 ²	684	1
National City Bayfront ¹	Fourth of July	1	456 ¹	456	1

Source: District 2016

¹ The total pounds of fireworks display events in the Chula Vista Bayfront and National City Bayfront areas on the Fourth of July is anticipated to be 456 pounds, similar to the Fourth of July Imperial Beach Fireworks Show.

² The total pounds of non-Fourth of July fireworks events estimated by scaling the Fourth of July Imperial Beach Fireworks Show (20-minute event) by the number of minutes for each fireworks display event (assumed to average 5 minutes), which equals an estimated 114 pounds each.

Both existing and proposed new fireworks display events involve coordination between several agencies, organizations, and businesses, as detailed below. The definitions below pertain to terminology used in the description of fireworks display events in the following paragraphs and throughout this Draft EIR.

- *Sponsor* generally refers to an individual, association, partnership, nonprofit organization, corporation, limited liability company, trustee, municipality, public agency, or other legal entity, or the agent or employee thereof, that contributes funds, services, or other similar goods to a *fireworks organizer* in support of a fireworks display event. The District has historically been a *sponsor* of several of the fireworks display events described below.
- *Fireworks organizer* generally refers to the individual, association, partnership, nonprofit organization, corporation, limited liability company, trustee, municipality, public agency, or other legal entity, or the agent or employee thereof, proposing to conduct a fireworks display event. The *fireworks organizer* is typically responsible for obtaining all required funding, entitlements, and approvals for a fireworks display event, as well as contracting with a *fireworks*

operator to produce the fireworks display event. Historically, the District has entered into agreements with *fireworks organizers* in order to sponsor several of the fireworks display events described below.

- *Fireworks operator* generally refers to a State of California–licensed pyrotechnic operator who, by examination, experience, and training, has demonstrated the required skill and ability in the use and discharge of fireworks as authorized by the license granted. A *fireworks operator* is typically responsible for supplying, setting up, and detonating the pyrotechnic devices associated with a fireworks display event. The *fireworks operator* is also typically under contract with the *fireworks organizer* to produce the fireworks display event. Historically, the District has not had a direct relationship with the *fireworks operator*.

All existing and proposed new fireworks display events that either require a discretionary action by the District or that are operated by the District's tenants would be subject to all applicable federal, state, and local laws and regulations governing fireworks as well as any additional requirements set forth in the proposed ordinance.

ES.3 Areas of Known Controversy/Issues Raised by Agencies and the Public

Section 15123 of the State CEQA Guidelines requires the summary of an EIR to include areas of controversy known to the Lead Agency, including issues raised by agencies and the public. The District circulated a Notice of Preparation (NOP) to solicit agency and public comments on the scope and content of the environmental analysis beginning on August 7, 2015, and ending on September 8, 2015. The NOP was mailed to public agencies, organizations, and other interested individuals to solicit their comments on the scope and content of the environmental analysis. The District also held a public scoping meeting on August 25, 2015, at the District's Administration Building at 3165 Pacific Highway, San Diego, CA, 92101. The Initial Study/Environmental Checklist and NOP are included as Appendix A.

Seven comment letters were received during the NOP public review period. The primary issues raised were related to air quality, greenhouse gas emissions, water quality, and biological resources. A summary of all comments received is included in Table 1-2 of Chapter 1, *Introduction*, and all NOP comment letters are included in Appendix B of this Draft EIR.

ES.4 Issues to be Resolved

ES.4.1 Summary of Project Impacts

This Draft EIR examines the potential environmental effects of the proposed project, including information related to existing conditions, analyses of the types and magnitude of individual and cumulative environmental impacts, and feasible mitigation measures that could reduce or avoid environmental impacts. In accordance with Appendix G of the State CEQA Guidelines, the potential environmental effects of the proposed project were analyzed for the following areas.

- Aesthetics and Visual Resources
- Hydrology and Water Quality

- Air Quality and Health Risk
- Biological Resources
- Greenhouse Gas Emissions, Climate Change, and Energy
- Hazards and Hazardous Materials
- Land Use and Planning
- Noise and Vibration
- Public Services and Facilities
- Transportation, Circulation, and Parking

Table ES-3, presented at the end of this chapter, provides a summary of the environmental impacts that could result from implementation of the proposed project and feasible mitigation measures that would reduce or avoid the impacts. For each impact, Table ES-3 identifies the significance of the impact before mitigation, applicable mitigation measures, and the level of significance of the impact after the implementation of the mitigation measures. “Effects Found Not to be Significant,” in accordance with Section 15128 of the State CEQA Guidelines, are discussed further in Chapter 6, *Additional Consequences of Project Implementation*.

ES.4.2 Summary of Project Alternatives

The following alternatives are analyzed in detail in Chapter 7 of this Draft EIR. The objective of the alternatives analysis is to consider a reasonable range of potentially feasible alternatives to foster informed decision-making and public participation. The alternatives to the proposed project are summarized below.

Alternative 1 – No Project Alternative

The No Project Alternative is required by CEQA to discuss and analyze potential impacts that would occur if the proposed project was not implemented. Under the No Project Alternative, the proposed ordinance would not be adopted and no performance standards to regulate the environmental effects of existing fireworks display events occurring in San Diego Bay or the Imperial Beach Oceanfront would be implemented. In addition, the four proposed new fireworks display events along the National City and Chula Vista Bayfronts would not occur. However, all existing fireworks display events that require a discretionary approval by the District or are operated by the District’s tenants and have obtained all necessary agency permits, such as the General Permit from SDRWQCB, would continue to occur, including but not limited to those listed in Table 5-2, *Cumulative Fireworks Display Events*, in Chapter 5, *Cumulative Impacts*.

Alternative 2 – Quiet Fireworks Display Events Alternative

The Quiet Fireworks Display Events Alternative would require the proposed new fireworks display events along the National City and Chula Vista Bayfronts to be quiet fireworks display events that would not exceed a noise limit of 120 dBA.² For this type of fireworks display event, the pyrotechnicians design a fireworks package that relies on the quieter types of fireworks. These fireworks display events would eliminate the use of “salute,” rocket, and mine fireworks altogether (*salute* fireworks, also known as maroon fireworks, are fireworks designed to make a very loud bang and an intense flash of light) and instead focus on rich color effects and tight visual choreography in order to garner similar entertainment value out of the display. Generally, fireworks used in quiet

² 120 dB maximum A-weighted impulse sound pressure level as measured at a horizontal distance of 15 meters from the testing point at a height of 1 meter above the ground, using a Type 1 sound measuring device with a free-field microphone.

fireworks display events would include fountains, wheels, cakes (such as crossettes, comets, spinners or turbillions, colored stars, fish or bees, and falling leaves), Chinese lanterns, and lanceworks (United Kingdom Fireworks Review 2016). It is important to note that the use of these fireworks would create a quieter, but not silent, fireworks display event. In addition, quiet fireworks display events would involve fireworks that are concentrated closer to the ground with fewer aerial shells being employed due to the loud noise that can occur during propulsion of an aerial shell. Therefore, while these displays would be in the same locations as those specified for the proposed project (as detailed in Chapter 3, *Project Description*), i.e., on barges, because quiet fireworks display events would rely on fireworks that cannot achieve the same heights or the same magnitude as traditional fireworks displays they would not be as prominently visible and the viewing area would be smaller than that which exists for the proposed project. The Quiet Fireworks Display Events Alternative is intended to avoid or substantially lessen the significant noise impacts of the proposed project on nearby sensitive receptors.

Alternative 3 – No Salute Fireworks Alternative

Salute fireworks, which are fireworks specifically designed to create a loud bang and intense flash of light, are the loudest type of firework. The primary purpose of salute shells is to announce the beginning and end of the display and produce a loud, percussive effect. From a distance, these shells sound similar to cannon fire when detonated (NMFS 2006). While the noise level of these fireworks varies by type, a typical linear (unweighted) peak noise level directly below a 3-inch salute exploding at its normal altitude is 140 decibels (dB) (Journal of Pyrotechnics, Inc. 2012). The No Salute Fireworks Alternative would have the same characteristics as all of the fireworks display events that compose the proposed project, including the same total pounds of fireworks per event (as outlined in Table 3-2 in Chapter 3, *Project Description*), but would prohibit the use of salute fireworks and limit the noise produced by all fireworks during fireworks display events to a maximum of 140 dB.³ Rockets, mines, and all firework types described under the Quiet Fireworks Display Events Alternative would be allowed as long as they do not exceed the 140 dB noise limit. The No Salute Fireworks Alternative is intended to avoid or substantially lessen the significant noise impacts of the proposed project on sensitive receptors.

Environmentally Superior Alternative

Pursuant to CEQA, the EIR is required to identify the environmentally superior alternative. Although the No Project Alternative reduces the greatest number of significant impacts, CEQA requires that when the environmentally superior alternative is the No Project Alternative, another alternative should be identified. Therefore, as indicated in Table 7-2 of Chapter 7, *Alternatives to the Proposed Project*, the Quiet Fireworks Display Event Alternative would be the environmentally superior alternative. Because it would involve the use of quieter fireworks, the Quiet Fireworks Display Event Alternative would reduce the amount of noise generated by the proposed new fireworks display events, and therefore would reduce significant and unavoidable noise impacts compared to the proposed project. Therefore, as documented throughout the alternatives section, impacts associated with other resources, such as light and glare, biological resources, and transportation, circulation,

³ 140 dB linear (unweighted) peak sound pressure level as measured directly under the shell burst occurring at its normal altitude, using a Type 1 sound measuring device with a free-field microphone at a height of 1 meter above the ground.

and parking, would also be reduced. However, the Quiet Fireworks Display Events Alternative would not meet the fundamental project objectives.

Table ES-3. Project Impacts and Mitigation Measures

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
4.1 Aesthetics and Visual Resources				
Project Impacts				
New Source of Substantial Light or Glare	<i>Proposed New Fireworks Display Events</i>			
	Implementation of the proposed new fireworks display events would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.	LS	No mitigation is required.	N/A
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.	LS	No mitigation is required.	N/A
Cumulative Impacts				
The contribution of the proposed new fireworks display events and the proposed ordinance to cumulative aesthetics and visual resources impacts would not be cumulatively considerable.				
4.2 Air Quality and Health Risk				
Project Impacts				
Conflict with an Air Quality Management Plan	<i>Proposed New Fireworks Display Events</i>			
	Implementation of the proposed new fireworks display events would not conflict with or obstruct implementation of an applicable air quality plan.	LS	No mitigation is required.	N/A
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not conflict with or obstruct	LS	No mitigation is required.	N/A

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
	implementation of an applicable air quality plan.			
Violate Air Quality Standard	<i>Proposed New Fireworks Display Events</i>			
	<p>Impact-AQ-1: Emissions in Excess of PM2.5 Thresholds During Combined National City Bayfront and Chula Vista Bayfront Fourth of July Fireworks Display Events. Project emissions generated when the new National City Bayfront and Chula Vista Bayfront Fourth of July fireworks display events occur at the same time, before mitigation, would exceed the daily San Diego County Significance Level Thresholds (SLTs) for particulate matter 2.5 microns or less in diameter (PM2.5). The contribution of project-related emissions is considered significant because the project emissions would exceed the daily threshold that has been set by the San Diego Air Pollution Control District (SDAPCD) to attain the PM2.5 National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS).</p>	PS	<p>MM-AQ-1: Limit the Size of Overlapping New Fireworks Display Events with Compliance with the Conditions of the Proposed Ordinance. The fireworks organizer and operator are required to comply with the following air quality-related conditions of the proposed ordinance.</p> <p>Section X.07 – Permits – Conditions of Approval</p> <p>(c) Size of Fireworks Display Events.</p> <ul style="list-style-type: none"> D. National City Fourth of July, not to exceed 400 pounds of fireworks E. Chula Vista Fourth of July, not to exceed 400 pounds of fireworks <p>MM-AQ-2: Implementation of Air Quality-Related Conditions of the Proposed Ordinance. The fireworks organizer and operator are required to comply with the following air quality-related conditions of the proposed ordinance.</p> <p>Section X.07 – Permits – Conditions of Approval</p> <p>(f) Best Management Practices (BMPs). Fireworks display events shall implement the following BMPs for fireworks display event preparation, discharge and clean-up:</p> <ul style="list-style-type: none"> 1. Fireworks display events on barges shall be set up at a loading facility in accordance with the requirements and under the supervision of the municipal fire department with jurisdiction over the event. Barges shall be inspected for leaks and other potential safety issues. Idling time for delivery trucks and loading equipment shall not exceed three (3) minutes and all such trucks and equipment 	LS

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			<p>shall be shut down when not in use.</p> <p>(d) Fireworks Chemical Composition and Packaging.</p> <p>1. Chemical Composition.</p> <p>B. All fireworks display events shall use alternative fireworks produced with pyrotechnic formulas which replace perchlorate with other oxidizers and propellants that burn cleaner, produce less smoke and reduce pollutant waste loading to surface waters, unless the Applicant establishes in writing and to the satisfaction of the Executive Director that such alternative fireworks are not commercially available.</p>	
<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>				
	The effects of the proposed ordinance on existing fireworks display events would not violate an air quality standard or contribute substantially to an existing or projected air quality violation.	LS	No mitigation is required.	N/A
<i>Proposed New Fireworks Display Events</i>				
Cumulatively Considerable Criteria Pollutant Contribution under an Ambient Air Quality Standard	Impact-AQ-2: Cumulative Emissions in Excess of PM2.5 Thresholds During Combined Fourth of July Fireworks Display Events. Project emissions during new Fourth of July fireworks display events, before mitigation, would exceed the threshold for PM2.5 and, when combined with other nearby past, present, and probable future projects, may result in a cumulatively considerable net increase of a criteria pollutant for	PS	Implement MM-AQ-1 and MM-AQ-2 .	LS

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
	which the region is in nonattainment under an applicable state ambient air quality standard. The contribution of project-related emissions is considered significant because the proposed project would exceed thresholds that have been set by SDAPCD to attain the CAAQS during Fourth of July fireworks display events.			
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not result in a cumulatively considerable net increase in a nonattainment pollutant.	LS	No mitigation is required.	N/A
Sensitive Receptors	<i>Proposed New Fireworks Display Events</i>			
	Implementation of the proposed new fireworks display events would not expose sensitive receptors to substantial pollutant concentrations.	LS	No mitigation is required.	N/A
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not expose sensitive receptors to substantial pollutant concentrations.	LS	No mitigation is required.	N/A
Objectionable Odors	<i>Proposed New Fireworks Display Events</i>			
	Implementation of the proposed new fireworks display events would not create objectionable odors affecting a substantial number of people.	LS	No mitigation is required.	N/A
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events	LS	No mitigation is required.	N/A

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
	would not create objectionable odors affecting a substantial number of people.			
Cumulative Impacts				
Criteria Pollutants	<i>Proposed New Fireworks Display Events</i>			
	Impact-C-AQ-1: Emissions in Excess of Cumulative PM2.5 Thresholds During Combined National City Bayfront and Chula Vista Bayfront Fourth of July Fireworks Display Events. Project emissions generated when the new National City Bayfront and Chula Vista Bayfront Fourth of July fireworks display events occur at the same time, before mitigation, would exceed the daily San Diego County SLTs for PM2.5. The contribution of project-related emissions is considered significant because the project emissions would exceed the daily threshold that has been set by SDAPCD to attain the PM2.5 NAAQS and CAAQS.	PS	Implement MM-AQ-1 and MM-AQ-2	LS
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not contribute to cumulative air quality and health risk impacts, and would be less than cumulatively considerable.	LS	No mitigation is required	N/A

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
4.3 Biological Resources				
Project Impacts				
Candidate, Sensitive, or Special-Status Species	<p><i>Proposed New Fireworks Display Events</i></p> <p>Impact-BIO-1: Potential Direct Impact on Marine Reptiles from Fireworks-Generated Trash and Debris. The introduction of fireworks-generated trash and debris could cause injury to green sea turtles because the turtles may mistakenly consume the waste, which could cause suffocation, starvation, or debilitation. Direct impacts on green sea turtles from fireworks-generated trash and debris that enter the water may be significant.</p> <p>Impact-BIO-2: Potential Indirect Impacts on Marine Reptiles from Increased Human and Boating Activity. The increase in boat traffic, particularly nighttime and out-of-channel traffic, would increase the potential for propeller strikes, which may cause injury to or death of green sea turtles. Increased boating activities could cause the animals to temporarily depart the project area before, during, and after the time of the proposed new fireworks display events to avoid higher vessel traffic. The increase in activity may also affect the turtles' foraging habits in that individuals may spend more time underwater, swim at greater speeds, and alter other life history traits leading to greater energy expenditure. The introduction of</p>	PS	<p>MM-BIO-1: Implementation of Biological Resources-Related Conditions of the Proposed Ordinance for Direct Impacts. The fireworks organizer and operator are required to comply with the following biological resources-related conditions of the proposed ordinance.</p> <p>Section X.07 – Permits – Conditions of Approval</p> <p>(d) Fireworks Chemical Composition and Packaging.</p> <p>2. Packaging.</p> <p>A. Prior to commencement of a fireworks display event, the fireworks operator shall remove and properly dispose of all packaging, wrapping and labels from all fireworks to be used in the event.</p> <p>B. Fireworks that include a plastic outer casing or non-biodegradable inner components that make up more than five (5) percent of the mass of the shell or device are prohibited.</p> <p>(f) Best Management Practices (BMPs). Fireworks display events shall implement the following BMPs for fireworks display event preparation, discharge and clean-up:</p> <p>1. Fireworks display events on barges shall be set up at a loading facility in accordance with the requirements and under the supervision of the municipal fire department with jurisdiction over the event. Barges shall be inspected for leaks and other potential safety issues. Idling time for delivery trucks and loading equipment shall not exceed three (3)</p>	LS

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
	<p>human-generated trash could also cause injury to turtles if they mistakenly consume the waste, causing suffocation, starvation, or debilitation. These potential indirect impacts on marine reptiles may be significant.</p> <p>Impact-BIO-3: Potential Direct Impact on Avian Species from Fireworks-Generated Trash and Debris. The introduction of fireworks-generated trash and debris could cause injury to avian species because the birds may mistakenly consume the waste, which could cause suffocation, starvation, or debilitation. Direct impacts on avian species from fireworks-generated trash and debris that enter the water may be significant.</p> <p>Impact-BIO-4: Potential Indirect Impacts on Special-Status Avian Species from Increased Human and Boating Activity. The proposed new fireworks display events have the potential to result in indirect impacts on special-status avian species, particularly California least tern and western snowy plover, as a result of increased foot traffic on sand dunes and beaches that can cause disturbance to nesting sites during and immediately after the proposed new fireworks display events. Additional indirect impacts potentially include increased trash associated with human use and noise associated with boating activity adjacent to nesting sites. The</p>		<p>minutes and all such trucks and equipment shall be shut down when not in use.</p> <ol style="list-style-type: none"> 2. Fireworks shall be brought to the barge and loaded in their California Department of Transportation (DOT)-approved shipping cartons. Fireworks shall be encased in paper to prevent spillage of loose compounds. All packaging material and debris, including fuses, wires, shipping cartons and other wrapping, shall be properly disposed of in trash receptacles as the fireworks display event is set up. Unless prohibited by the municipal fire marshal with jurisdiction over the fireworks display event, barges shall be equipped with a fire-retardant debris barrier that extends six feet (6') in height, with openings no larger than ¼ inch, around the perimeter of the fireworks launch area to contain debris. 3. Wires from the electric match placed in the Fireworks fuse shall be wrapped around nails that are installed on the racks to prevent wires from being pulled out and falling into the water. Wire cables connected to computer firing equipment modules shall also be properly secured to ensure they remain on the barge during the fireworks display event. 4. Once the fireworks are prepared for launch, all trash and debris shall be removed from the barge while it is at the loading facility and prior to the barge being moved into position. No loose material shall be allowed on the barges during the fireworks display event. 5. Following the fireworks display event and upon expiration of any safety period required 	

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
	<p>introduction of human-generated trash could also cause injury to special-status birds because the birds may mistakenly consume the waste, which could cause suffocation, starvation, or debilitation. While many nesting sites for California least tern and western snowy plover in San Diego Bay are behind fences or in secured areas, others are not, and even fenced sites are accessible by water. Therefore, indirect impacts related to increased boat traffic, foot traffic, and human-generated trash and debris in the vicinity of nesting and roosting areas may be significant.</p>		<p>by the municipal fire marshal with jurisdiction over the fireworks display event, the fireworks operator shall pick up all loose material on the barge, including all trash and debris resulting from the discharge of the fireworks, to prevent it from being discharged into the water while the barge is underway.</p> <p>6. Upon return to the loading facility, the fireworks operator shall clean the barge of all fireworks related material and shall photograph and properly dispose of all fireworks trash and debris. Unexploded fireworks and related components shall be collected and disposed of by the fireworks operator in accordance with all applicable regulations. Fireworks operators shall photograph the barge prior to and after cleaning.</p> <p>7. Following the fireworks display event and upon expiration of any safety period required by the municipal fire marshal with jurisdiction over the event, the fireworks organizer shall provide cleanup crews and boats to conduct sweeps of the fireworks detonation zone to gather any floating debris from spent fireworks using hand held fishnets, pool skimmers, or other similar equipment.</p> <p>8. The morning after the fireworks display event, the fireworks organizer shall conduct another sweep of the fireworks detonation zone and quays, piers and docks adjacent to the fireworks detonation zone to remove fireworks trash and debris. The fireworks organizer shall collect, bag, weigh and photograph all trash and debris collected</p>	

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			<p>prior to its disposal.</p> <p>9. The morning after the fireworks display event, the fireworks organizer shall perform a cleanup of the shoreline using crews of not fewer than five persons per barge on the shoreline adjacent to each barge location. Each crew member shall be equipped with trash bags and a trash grabber. The fireworks organizer shall collect, bag, weigh, and photograph all trash and debris collected prior to its disposal.</p> <p>10. Within five (5) business days after a fireworks display event, the fireworks organizer shall provide the Executive Director with the photographs and written evidence of the weight of the fireworks trash and debris collected pursuant to subdivisions (5) through (9) above. If the weight of the fireworks trash and debris collected is less than fifty percent (50 percent) of the net weight of fireworks launched during the fireworks display event, the fireworks organizer shall offset the remaining amount by providing a crew of not fewer than two (2) persons for each barge or other launch site used in the fireworks display event to participate in the next scheduled "Operation Clean Sweep" or other District-sponsored clean-up event prior to the end of the calendar year to recover trash and debris from San Diego Bay and/or the Imperial Beach Oceanfront.</p> <p>(i) Compliance with San Diego Water Board General Permit.</p> <p>1. Prior to the Executive Director's issuance of a permit pursuant to this article, the Applicant</p>	

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			<p>shall demonstrate that it has applied for coverage and has been enrolled under the San Diego Water Board General Permit.</p> <p>2. The Applicant shall comply with all applicable terms, conditions and Best Management Practices required by the San Diego Water Board General Permit, which shall be incorporated into and considered in the terms, conditions and Best Management Practices of any permit issued by the Executive Director pursuant to this article.</p> <p>3. The Applicant shall submit to the District copies of all applications, plans, reports and other documentation required by the San Diego Water Board General Permit, including without limitation the Notice of Intent, Fireworks Best Management Practices Plan, Public Fireworks Display Log and the Public Display of Fireworks Post Event Report, within the time required for the submission of such reports to the San Diego Water Board.</p> <p>(j) Compliance with Other Required Permits: Prior to the Executive Director's issuance of a Permit pursuant to this article, the Applicant shall demonstrate that it has obtained and shall comply with all other permits and approvals required by federal, state and local laws and regulations including, without limitation, such permits and approvals as are required by the United States Coast Guard, California Coastal Act, the District Code, including Article 10 (Stormwater Management and Discharge Control), and the fire marshal of any city which has jurisdiction over all or any part of the activity allowed under said Permit.</p>	

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			<p>(k) Compliance with Laws: The Applicant shall comply with any and all applicable rules and regulations promulgated by the District, including without limitation the District Code, the Chula Vista Bayfront Master Plan Settlement Agreement and Natural Resources Management Plan, and with the laws, rules and regulations of the United States of America and the State of California, and of any department or agency thereof, and with the applicable ordinances, rules and regulations of any city which has jurisdiction over all or any part of the activity allowed under said Permit. The Applicant's failure to comply with any applicable law, ordinance, rule or regulation shall be cause for immediate revocation of said permit and for the denial of applications for future Permits.</p> <p>MM-BIO-2: Implementation of Biological Resources–Related Conditions of the Proposed Ordinance for Indirect Impacts. The fireworks organizer and operator are required to comply with the following biological resources–related condition of the proposed ordinance.</p> <p>Section X.07 – Permits – Conditions of Approval</p> <p>(e) Protection of Species and Habitat. The following conditions shall apply to fireworks display events that occur between February 15 and September 15 (i.e., avian breeding season) and are located less than one (1) mile from any federally or state-listed avian species nesting colonies:</p> <p>3. Security. For fireworks display events with public viewing areas (i.e., parks, promenades, publicly accessible piers, and other similar facilities) that occur within one-half mile of unprotected (i.e., unfenced) federally or state-listed nesting colonies or habitat areas, the</p>	

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			<p>fireworks organizer shall provide a minimum of two professional security guards to direct persons away from and to discourage trespass into sensitive nesting areas or habitat during such displays.</p> <p>4. Signage. For fireworks display events with public viewing areas (i.e., parks, promenades, publicly accessible piers, and other similar facilities) that occur within one half-mile of nesting colonies or habitat areas for federally or state-listed species, the fireworks organizer, in cooperation with the District, shall post temporary signage along primary access points to sensitive nesting colonies and habitat areas to identify safe viewing locations, to educate visitors on locations of sensitive wildlife habitats, to prevent viewers from trespassing into sensitive areas and to encourage appropriate viewing behavior.</p> <p>5. Education. Beginning not less than seven (7) days before fireworks display events with public viewing areas (i.e., parks, promenades, publicly accessible piers, and other similar facilities) located within one-half mile of federally or state-listed nesting colonies or habitat areas, the fireworks organizer shall implement a public education program using social media, press releases, and information posted at parks, boat launch facilities, marinas, yacht clubs and other viewing locations, to educate potential viewers regarding appropriate viewing and boat docking areas, to discourage trespass into sensitive wildlife habitat, and to remind viewers of appropriate viewing behavior in and near sensitive nesting colonies and</p>	

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			<p>habitat areas (e.g., appropriate disposal of trash, prevention of illegal fireworks, and safe boating procedures).</p> <p>(f) Best Management Practices (BMPs). Fireworks display events shall implement the following BMPs for fireworks display event preparation, discharge and clean-up:</p> <p>11. For all Fourth of July fireworks display events and for Non-Fourth of July fireworks display events which are advertised to the public, the fireworks operator shall double the number of trash receptacles at major viewing areas prior to each fireworks display event; trashcans shall be emptied and parks and viewing areas shall be cleaned following the event.</p>	
<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>				
	The effects of the proposed ordinance on existing fireworks display events would not have an adverse effect on candidate, sensitive, or special-status species.	LS	No mitigation is required.	N/A
<i>Proposed New Fireworks Display Events</i>				
Sensitive Natural Community/ Federally Protected Wetlands	Impact-BIO-5: Potential Direct Impact on Sensitive Habitat and Wetlands from Fireworks-Generated Trash and Debris. The waste resulting from exploded fireworks shells could fall primarily into the waters of San Diego Bay. It is anticipated that some of this debris could sink to the bottom, and a smaller amount could wash onto adjacent beaches and shorelines. Direct impacts on sensitive habitats and	PS	<p>Implement MM-BIO-1 and MM-BIO-2.</p> <p>MM-BIO-3: Implementation of the Biological Resources-Related Conditions of the Proposed Ordinance for Direct Eelgrass Impacts. The fireworks organizer and operator are required to comply with the following biological resources-related conditions of the proposed ordinance.</p> <p>Section X.07 – Permits – Conditions of Approval</p> <p>(g) Eelgrass Avoidance and Mitigation. For fireworks display events with launching sites located in</p>	LS

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
	<p>federally protected wetlands of south San Diego Bay from fireworks-generated trash and debris that enter the water are considered significant.</p> <p>Impact-BIO-6: Potential Direct Impact on Eelgrass Habitat from Fireworks Barges and Tugboat Activity. The positioning of fireworks barges along the Chula Vista Bayfront over the shallow flats could result in direct impacts on eelgrass habitat and its nursery habitat functions, particularly at low tides. Impacts could occur as a result of temporary grounding or settling of barges and tugboats on the bottom at low tide. Additional impacts could occur from propeller wash or propeller drag from tugboats during barge maneuvering. Tugboats have large propellers and high thrust capacity that could dredge up eelgrass in shallow waters, even if grounding does not occur. Potential direct impacts on eelgrass habitat are considered significant.</p> <p>Impact-BIO-7: Potential Indirect Impact on Sensitive Habitat and Wetlands from Increased Human and Boating Activity. Increased boat traffic could result in minor damage to eelgrass beds through unauthorized anchoring and/or propeller dragging. Additionally, visitors that view the proposed new fireworks display events from kayaks or personal watercraft could drag these watercraft onto</p>		<p>shallow water with the potential for eelgrass to occur, fireworks barges shall be held in place by tugboats and shall not require temporary moorings. To the extent practicable, barges shall be located in unvegetated deep water channels outside of eelgrass beds. Pre-event and post-event eelgrass surveys shall be completed to identify the distribution of eelgrass to assist tug operators and to assess any impacts to eelgrass that may occur. Through a pre-event training, tug operators shall be made aware of shallow eelgrass and instructed not to use high thrust in the vicinity of eelgrass beds. If an unanticipated impact to eelgrass occurs, this impact shall be mitigated by replacing the eelgrass at a ratio determined by the California Eelgrass Mitigation Policy.</p>	

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
	shorelines adjacent to coastal salt marshes and inadvertently damage eelgrass or marsh habitat. The proposed new fireworks display events could attract crowds to the Silver Strand State Beach, some of whom may trespass into restricted beach areas that are utilized by sensitive avian species. Potential impacts on habitats include trampling of vegetation and an increase of human-generated trash and litter. Indirect impacts on sensitive habitat and wetlands of south San Diego Bay would be significant.			
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not have a substantial adverse effect on riparian habitat and/or other sensitive natural communities or wetlands.	LS	No mitigation is required.	N/A
Interference with Wildlife Movement	<i>Proposed New Fireworks Display Events</i>			
	Impact-BIO-8: Potential Indirect Impact on Usage of Nursery Sites from Increased Human Activity. Indirect impacts on protected avian species from proposed new fireworks display events, such as increased foot traffic in or adjacent to nesting sites, increased human-generated trash, and noise associated with boating activity, are potentially a greater threat than direct impacts. While many nesting sites for California least tern and western snowy plover in San Diego Bay	PS	Implement MM-BIO-1 and MM-BIO-2	LS

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
	are located behind fences or in secured areas, others are not, and even fenced sites are accessible by water. Therefore, indirect impacts of proposed new fireworks display events on usage of nursery sites are considered potentially significant due to disturbance noted in nesting birds.			
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not interfere substantially with the movement of 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.	LS	No mitigation is required.	N/A
Conflicts with Local Policies or Ordinances Protecting Biological Resources/ Conflicts with the Provisions of an Adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other Approved Local, Regional, or State Habitat Conservation Plan.	<i>Proposed New Fireworks Display Events</i> Impact-BIO-9: Potential Conflict with the City of San Diego and Chula Vista MSCP Subarea Plans. The proposed new fireworks display events have the potential to result in significant direct and indirect impacts on habitat within the City of San Diego Multi-Habitat Planning Area and City of Chula Vista Multiple Species Conservation Program (MSCP) Preserve. Any impacts, whether direct or indirect, would be significant. Consequently, the proposed project would have the potential to conflict with the City of San Diego and City of Chula Vista MSCP Subarea Plans. Impact-BIO-10: Potential Conflict	PS	Implement MM-BIO-1 and MM-BIO-2	LS

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
	<p>with the San Diego Bay National Wildlife Refuge Comprehensive Conservation Plan. The proposed new fireworks display events have the potential to result in direct and indirect impacts on sensitive habitat and green sea turtles present within the San Diego Bay National Wildlife Refuge, which would be considered significant. Consequently, the proposed project would have the potential to conflict with the San Diego Bay National Wildlife Refuge Comprehensive Conservation Plan.</p>			
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not conflict with applicable local policies or ordinances protecting biological resources, or with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.	LS	No mitigation is required.	N/A
Cumulative Impacts				
Sensitive Habitat	<i>Proposed New Fireworks Display Events</i>			
	<p>Impact-C-BIO-1: Cumulatively Considerable Accumulation of Trash and Debris in Upland and Marine Habitats. The proposed new fireworks display events have the potential to directly and indirectly contribute to a cumulatively considerable</p>	PS	Implement mitigation measures MM-BIO-1 and MM-BIO-2 .	LS

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
	accumulation of trash and debris in upland and marine habitats when combined with past, present, and reasonably foreseeable future projects.			
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative biological resources impacts, and therefore would not be cumulatively considerable.			
4.4 Greenhouse Gas Emissions, Climate Change, and Energy				
Project Impacts				
Direct and Indirect Generation of GHGs by 2020	<i>Proposed New Fireworks Display Events</i>			
	Implementation of the proposed new fireworks display events would not result in direct or indirect impacts related to the generation of greenhouse gases (GHGs) by 2020.	LS	No mitigation is required.	N/A
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not result in direct or indirect impacts related to the generation of GHGs by 2020.	LS	No mitigation is required.	N/A
Effects from Climate Change on Project	<i>Proposed New Fireworks Display Events</i>			
	Implementation of the proposed new fireworks display events would not place people or structures at substantial risk of harm due to predicted climate change effects, including sea level rise.	LS	No mitigation is required.	N/A
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not place people or structures at	LS	No mitigation is required.	N/A

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
	substantial risk of harm due to predicted climate change effects, including sea level rise.			
Energy	<i>Proposed New Fireworks Display Events</i>			
	Implementation of the proposed new fireworks display events would not result in the wasteful, inefficient, or unnecessary use of energy and would not require construction of new energy system infrastructure.	LS	No mitigation is required.	N/A
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not result in the wasteful, inefficient, or unnecessary use of energy and would not require construction of new energy system infrastructure.	LS	No mitigation is required.	N/A
Cumulative Impacts				
The contribution of the proposed new fireworks display events and the proposed ordinance to cumulative GHG and energy impacts would not be cumulatively considerable.				
4.5 Hazards and Hazardous Materials				
Project Impacts				
Routine Transport, Use, or Disposal of Hazardous Materials	<i>Proposed New Fireworks Display Events</i>			
	Implementation of the proposed new fireworks display events would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	LS	No mitigation is required.	N/A
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance	LS	No mitigation is required.	N/A

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
	on existing fireworks display events would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.			
Accidental Release of Hazardous Materials	<i>Proposed New Fireworks Display Events</i>			
	The proposed new fireworks display events would not create a significant hazard to the public or the environment through the release of hazardous materials associated with fireworks.	LS	No mitigation is required.	N/A
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not create a significant hazard to the public or the environment through the release of hazardous materials associated with fireworks.	LS	No mitigation is required.	N/A
Emergency Plans	<i>Proposed New Fireworks Display Events</i>			
	Implementation of the proposed new fireworks display events would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	LS	No mitigation is required.	N/A
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	LS	No mitigation is required.	N/A
Cumulative Impacts				

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
The contribution of the proposed new fireworks display event and the proposed ordinance to cumulative hazard and hazardous materials impacts would not be cumulatively considerable.				
4.6 Hydrology and Water Quality				
Project Impacts				
Water Quality Standards and Requirements	<i>Proposed New Fireworks Display Events</i>			
	Implementation of the proposed new fireworks display events would not violate any water quality standards or waste discharge requirements.	LS	No mitigation is required.	N/A
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not violate any water quality standards or waste discharge requirements.	LS	No mitigation is required.	N/A
Otherwise degrade water quality.	<i>Proposed New Fireworks Display Events</i>			
	Impact-WQ-1: Surface Water Pollutant Related to Fireworks Debris. There is a potential for the proposed fireworks display events to pollute surface waters if fireworks debris is not properly recovered, which would be considered a significant impact. Impact-WQ-2: Surface Water Pollutant Related to Increased Human-Generated Trash and Litter. There is a potential for publicly advertised fireworks display events to pollute surface waters if increased human-generated trash and litter within the major public viewing areas is not properly disposed of and cleaned	PS	MM-WQ-1: Implementation of Water Quality-Related Conditions of the Proposed Ordinance for Fireworks Debris. The fireworks organizer and operator are required to comply with the following water quality-related conditions of the proposed ordinance. Section X.07 – Permits – Conditions of Approval (d) Fireworks Chemical Composition and Packaging. <ol style="list-style-type: none"> 1. Chemical Composition. <ol style="list-style-type: none"> B. All fireworks display events shall use alternative fireworks produced with pyrotechnic formulas which replace perchlorate with other oxidizers and propellants that burn cleaner, produce less smoke and reduce pollutant waste loading to surface waters, unless the Applicant establishes in writing and to the 	Impact-WQ-1: SU Impact-WQ-2: LS

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
	up, which would be considered a significant impact.		<p>satisfaction of the Executive Director that such alternative fireworks are not commercially available.</p> <p>2. Packaging.</p> <p>A. Prior to commencement of a fireworks display event, the fireworks operator shall remove and properly dispose of all packaging, wrapping and labels from all fireworks to be used in the event.</p> <p>B. Fireworks that include a plastic outer casing or non-biodegradable inner components that make up more than five (5) percent of the mass of the shell or device are prohibited.</p> <p>(f) Best Management Practices (BMPs). Fireworks display events shall implement the following BMPs for fireworks display event preparation, discharge and clean-up:</p> <p>1. Fireworks display events on barges shall be set up at a loading facility in accordance with the requirements and under the supervision of the municipal fire department with jurisdiction over the event. Barges shall be inspected for leaks and other potential safety issues. Idling time for delivery trucks and loading equipment shall not exceed three (3) minutes and all such trucks and equipment shall be shut down when not in use.</p> <p>2. Fireworks shall be brought to the barge and loaded in their California Department of Transportation (DOT)-approved shipping cartons. Fireworks shall be encased in paper to prevent spillage of loose compounds. All packaging material and debris, including fuses, wires, shipping cartons and other</p>	

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			<p>wrapping, shall be properly disposed of in trash receptacles as the fireworks display event is set up. Unless prohibited by the municipal fire marshal with jurisdiction over the fireworks display event, barges shall be equipped with a fire-retardant debris barrier that extends six feet (6') in height, with openings no larger than ¼ inch, around the perimeter of the Fireworks launch area to contain debris.</p> <ol style="list-style-type: none"> 3. Wires from the electric match placed in the fireworks fuse shall be wrapped around nails that are installed on the racks to prevent wires from being pulled out and falling into the water. Wire cables connected to computer firing equipment modules shall also be properly secured to ensure they remain on the barge during the fireworks display event. 4. Once the fireworks are prepared for launch, all trash and debris shall be removed from the barge while it is at the loading facility and prior to the barge being moved into position. No loose material shall be allowed on the barges during the fireworks display event. 5. Following the fireworks display event and upon expiration of any safety period required by the municipal fire marshal with jurisdiction over the fireworks display event, the fireworks operator shall pick up all loose material on the barge, including all trash and debris resulting from the discharge of the fireworks, to prevent it from being discharged into the water while the barge is underway. 6. Upon return to the loading facility, the fireworks operator shall clean the barge of all 	

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			<p>fireworks related material and shall photograph and properly dispose of all fireworks trash and debris. Unexploded fireworks and related components shall be collected and disposed of by the fireworks operator in accordance with all applicable regulations. Fireworks operators shall photograph the barge prior to and after cleaning.</p> <p>7. Following the fireworks display event and upon expiration of any safety period required by the municipal fire marshal with jurisdiction over the event, the fireworks organizer shall provide cleanup crews and boats to conduct sweeps of the fireworks detonation zone to gather any floating debris from spent fireworks using hand held fishnets, pool skimmers, or other similar equipment.</p> <p>8. The morning after the fireworks display event, the fireworks organizer shall conduct another sweep of the fireworks detonation zone and quays, piers and docks adjacent to the fireworks detonation zone to remove fireworks trash and debris. The fireworks organizer shall collect, bag, weigh and photograph all trash and debris collected prior to its disposal.</p> <p>9. The morning after the fireworks display event, the fireworks organizer shall perform a cleanup of the shoreline using crews of not fewer than five persons per barge on the shoreline adjacent to each barge location. Each crew member shall be equipped with trash bags and a trash grabber. The fireworks organizer shall collect, bag, weigh, and</p>	

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			<p>photograph all trash and debris collected prior to its disposal.</p> <p>10. Within five (5) business days after a fireworks display event, the fireworks organizer shall provide the Executive Director with the photographs and written evidence of the weight of the Fireworks trash and debris collected pursuant to subdivisions (5) through (9) above. If the weight of the fireworks trash and debris collected is less than fifty percent (50 percent) of the net weight of fireworks launched during the fireworks display event, the fireworks organizer shall offset the remaining amount by providing a crew of not fewer than two (2) persons for each barge or other launch site used in the fireworks display event to participate in the next scheduled "Operation Clean Sweep" or other District-sponsored clean-up event prior to the end of the calendar year to recover trash and debris from San Diego Bay and/or the Imperial Beach Oceanfront.</p> <p>(i) Compliance with San Diego Water Board General Permit.</p> <ol style="list-style-type: none"> 1. Prior to the Executive Director's issuance of a permit pursuant to this article, the Applicant shall demonstrate that it has applied for coverage and has been enrolled under the San Diego Water Board General Permit. 2. The Applicant shall comply with all applicable terms, conditions and Best Management Practices required by the San Diego Water Board General Permit, which shall be incorporated into and considered in the terms, conditions and Best Management Practices of 	

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			<p>any permit issued by the Executive Director pursuant to this article.</p> <p>3. The Applicant shall submit to the District copies of all applications, plans, reports and other documentation required by the San Diego Water Board General Permit, including without limitation the Notice of Intent, Fireworks Best Management Practices Plan, Public Fireworks Display Log and the Public Display of Fireworks Post Event Report, within the time required for the submission of such reports to the San Diego Water Board.</p> <p>(i) Compliance with Other Required Permits: Prior to the Executive Director's issuance of a Permit pursuant to this article, the Applicant shall demonstrate that it has obtained and shall comply with all other permits and approvals required by federal, state and local laws and regulations including, without limitation, such permits and approvals as are required by the United States Coast Guard, California Coastal Act, the District Code, including Article 10 (Stormwater Management and Discharge Control), and the fire marshal of any city which has jurisdiction over all or any part of the activity allowed under said Permit.</p> <p>(j) Compliance with Laws: The Applicant shall comply with any and all applicable rules and regulations promulgated by the District, including without limitation the District Code, the Chula Vista Bayfront Master Plan Settlement Agreement and Natural Resources Management Plan, and with the laws, rules and regulations of the United States of America and the State of California, and of any department or agency thereof, and with the</p>	

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			<p>applicable ordinances, rules and regulations of any city which has jurisdiction over all or any part of the activity allowed under said Permit. The Applicant's failure to comply with any applicable law, ordinance, rule or regulation shall be cause for immediate revocation of said permit and for the denial of applications for future Permits.</p> <p>MM-WQ-2: Implementation of Water Quality-Related Conditions of the Proposed Ordinance for Human-Generated Trash and Litter. The fireworks organizer and operator are required to comply with the following water quality-related condition of the proposed ordinance.</p> <p>Section X.07 – Permits – Conditions of Approval</p> <p>(f) Best Management Practices. Fireworks display events shall implement the following BMPs for fireworks display event preparation, discharge and clean-up:</p> <p>11. For all Fourth of July fireworks display events and for Non-Fourth of July fireworks display events which are advertised to the public, the fireworks operator shall double the number of trash receptacles at major viewing areas prior to each fireworks display event; trashcans shall be emptied and parks and viewing areas shall be cleaned following the event.</p>	
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not degrade water quality	LS	No mitigation is required.	N/A
	<i>Proposed New Fireworks Display Events</i>			
Create or Contribute Runoff Water	The proposed new fireworks display events would not create or contribute runoff water that would exceed the	LS	No mitigation is required.	N/A

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
	capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.			
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	LS	No mitigation is required.	N/A
Cumulative Impacts				
Water Quality Standards and Requirements/Stormwater Runoff/Water Quality	<p>Impact-C-WQ-1: Contribute to a Cumulatively Considerable Water Quality Impact from an Accumulation of Debris. There is a potential that the proposed new fireworks display events could contribute to an accumulation of fireworks debris when combined with multiple past, present, and foreseeable future fireworks display events that occur in San Diego Bay throughout the year, which could degrade surface water quality if fireworks debris is not properly recovered. Potential impacts on water quality would be cumulatively considerable.</p> <p>Impact-C-WQ-2: Contribute to a Cumulatively Considerable Water Quality Impact from an Accumulation of Trash and Litter. There is a potential that the proposed</p>	PS	Implement MM-WQ-1 and MM-WQ-2 .	<p>Impact-C-WQ-1: SU</p> <p>Impact-C-WQ-2: LS</p>

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
	new fireworks display events could contribute to an accumulation of trash and litter in San Diego Bay when combined with multiple past, present, and foreseeable future fireworks display events that occur in San Diego Bay throughout the year, which could degrade water quality. Potential impacts on water quality would be cumulatively considerable.			
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative impacts related to hydrology and water quality, and therefore would not be cumulatively considerable.	LS	No mitigation is required.	N/A
4.7 Land Use and Planning				
Project Impacts				
Land Use Plans, Policies, or Regulations	<i>Proposed New Fireworks Display Events</i>			
	The proposed new fireworks display events would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.	LS	No mitigation is required.	N/A
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not conflict with an applicable land use plan, policy, or regulation of an	LS	No mitigation is required.	N/A

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
	agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.			
Habitat Conservation Plan or Natural Community Conservation Plan	<i>Proposed New Fireworks Display Events</i>			
	The proposed new fireworks display events would not conflict with an applicable habitat conservation plan or natural community conservation plan.	LS	No mitigation is required.	N/A
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not conflict with an applicable habitat conservation plan or natural community conservation plan.	LS	No mitigation is required.	N/A
Cumulative Impacts				
The contribution of the proposed new fireworks display events and the proposed ordinance to land use impacts would not be cumulatively considerable.				
4.8 Noise and Vibration				
Project Impacts				
Generate noise levels in excess of established standards	<i>Proposed New Fireworks Display Events</i>			
	The proposed new fireworks display events would not expose persons to or generate noise levels in excess of standards established in the applicable city of Imperial Beach, Chula Vista, and National City municipal codes.	LS	No mitigation is required.	N/A
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not expose persons to or generate noise levels in excess of	LS	No mitigation is required.	N/A

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
	standards established in the applicable city of Imperial Beach, Chula Vista, and National City municipal codes.			
Temporary Increase in Ambient Noise Levels	<p><i>Proposed New Fireworks Display Events</i></p> <p>Impact NOI-1: Substantial Periodic or Temporary Increase in Ambient Noise Levels of the Proposed New Fireworks Display Events. For proposed new fireworks display events (both Fourth of July and non-Fourth of July events), these noise increases would occur at homes and the Grand Caribe Shoreline Park in the City of Coronado, west of the proposed National City and Chula Vista launch locations. Depending on the precise location of the proposed Chula Vista launch barge, substantial noise increases due to the proposed new Fourth of July fireworks display events may also occur at Loews Coronado Bay Resort. If the ultimate location of the launch barge for the proposed Chula Vista fireworks display event is closer to the Chula Vista Bayfront than was assumed in the analysis, then it is possible some significant impacts could also occur within the City of Chula Vista. Because the proposed new fireworks display events would occur at locations that do not currently have similar fireworks displays, the affected noise-sensitive receptors are not currently exposed to similar levels of fireworks noise and the impacts would be</p>	PS	<p>MM-NOI-1: Implementation of Noise-Related Conditions of the Proposed Ordinance. The fireworks organizer and operator are required to comply with the following noise related conditions of the proposed ordinance.</p> <p>Section X.07 – Permits – Conditions of Approval</p> <p>(e) Protection of Sensitive Species and Habitat. The following conditions shall apply to Fireworks Display Events that occur between February 15 and September 15 (i.e., avian breeding season) and are located less than one (1) mile from any federally or state-listed avian species nesting colonies:</p> <ol style="list-style-type: none"> <li>1. Location. Fireworks display events shall be located not less than one (1) mile from any federally or state-listed avian species nesting colony unless the maximum size of shells used in the event is limited to eight (8) inches. <li>2. Salutes. Fireworks display events shall not use concussion type, non-color shells such as “salutes” or “reports” during the initial twenty-five percent (25 percent) of the duration of any display (e.g., within the first 5 minutes of a 20-minute display). 	SU

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
	significant. However, it is also noted that the impacts would be very infrequent (approximately three times per year) and would include the Fourth of July, which is a traditional nationwide event during which most people have a reasonable expectation and understanding that fireworks will occur.			
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not cause or contribute to any increase in ambient noise levels.	LS	No mitigation is required.	N/A
Cumulative Impacts				
The contribution of the proposed new fireworks display events and the proposed ordinance to noise impacts would not be cumulatively considerable.				
4.9 Public Services and Facilities				
Project Impacts				
Fire Protection and Emergency Services	<i>Proposed New Fireworks Display Events</i>			
	Implementation of the proposed new fireworks display events would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection and emergency services.	LS	No mitigation is required.	N/A
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance	LS	No mitigation is required.	N/A

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
	on existing fireworks display events would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection and emergency services.			
Police Protection	<i>Proposed New Fireworks Display Events</i>			
	Implementation of the proposed new fireworks display events would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police protection.	LS	No mitigation is required.	N/A
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other	LS	No mitigation is required.	N/A

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
	performance objectives for police protection.			
Other Public Facilities	<i>Proposed New Fireworks Display Events</i>			
	Implementation of the proposed new fireworks display events would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for U.S. Coast Guard (USCG) protection services.	LS	No mitigation is required.	N/A
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for USCG protection services.	LS	No mitigation is required.	N/A
Cumulative Impacts				
The contribution of the proposed new fireworks display events and the proposed ordinance to cumulative public services and facilities impacts would not be cumulatively considerable.				

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
4.10 Transportation, Circulation, and Parking				
Project Impacts				
Performance of the Circulation System	<i>Proposed New Fireworks Display Events</i>			
	The proposed new fireworks display events would not conflict with an applicable plan, ordinance, or policy establishing measures of performance of the circulation system.	LS	No mitigation is required.	N/A
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not conflict with an applicable plan, ordinance, or policy establishing measures of performance of the circulation system.	LS	No mitigation is required.	N/A
Conflict with an applicable congestion management program	<i>Proposed New Fireworks Display Events</i>			
	Implementation of the proposed new fireworks display events would not conflict with an applicable congestion management program including, but not limited to, level of service (LOS) standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways. Impacts would be less than significant.	LS	No mitigation is required.	N/A
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not conflict with an applicable congestion management program including, but not limited to, LOS standards and travel demand measures,	LS	No mitigation is required.	N/A

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
	or other standards established by the county congestion management agency for designated roads or highways. Impacts would be less than significant.			
Inadequate emergency access	<i>Proposed New Fireworks Display Events</i>			
	Implementation of the proposed new fireworks display events would not result in inadequate emergency access.	LS	No mitigation is required.	N/A
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not result in inadequate emergency access.	LS	No mitigation is required.	N/A
Conflict with Alternative Transportation	<i>Proposed New Fireworks Display Events</i>			
	Impact-TRA-1: Decrease in the Performance of Roadway, Pedestrian, and Bicycle Facilities from Proposed New Fireworks Display Events. The proposed new fireworks display events have the potential to temporarily decrease the performance of roadway, pedestrian, and bicycle facilities as a result of increased levels of vehicular, pedestrian, and bicycle activity. Potential impacts would be significant.	PS	MM-TRA-1: Implementation of the Transportation-Related Conditions of the Proposed Ordinance. The fireworks organizer is required to comply with the following transportation-related condition of the proposed ordinance. Section X.07 – Permits – Conditions of Approval (h) Event Transportation and Parking Management Plans. For all Fourth of July fireworks display events and for non-Fourth of July fireworks display events that are advertised to the public, the fireworks organizer shall prepare and submit an event transportation and parking management plan to the Executive Director for approval as part of the Application, which shall be designed to ensure safe and convenient access to public viewing areas while limiting conflicts between transportation modes and reducing impacts on surrounding transportation facilities to the maximum extent feasible. The Event Transportation and Parking Management Plan	SU

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			<p>shall take into account anticipated attendance, existing transportation and parking facilities, and other concurrent public events in the surrounding areas, and shall include but is not limited to the following:</p> <ol style="list-style-type: none"> 1. Transportation management strategies, including but not limited to a public awareness program, traffic management and enforcement, incident management, and public transit and alternative modes of transportation management, which shall be implemented for the fireworks display event; and 2. Parking management strategies, including but not limited to a public awareness program, coordination with parking vendors, offsite parking arrangements, designated areas for taxi and rideshare pick-up/drop-off, promotional programs with rideshare vendors, joint event ticketing programs with public transit agencies, and expanded shuttle operations. <p>(i) Compliance with Other Required Permits: Prior to the Executive Director's issuance of a Permit pursuant to this article, the Applicant shall demonstrate that it has obtained and shall comply with all other permits and approvals required by federal, state, and local laws and regulations including, without limitation, such permits and approvals as are required by the United States Coast Guard, California Coastal Act, the District Code, including Article 10 (Stormwater Management and Discharge Control), and the fire marshal of any city that has jurisdiction over all or any part of the activity allowed under said Permit.</p>	

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>				
	The effects of the proposed ordinance on existing fireworks display events would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	LS	No mitigation is required.	N/A
Insufficient Parking	<i>Proposed New Fireworks Display Events</i>			
	Impact-TRA-2: Inadequate Parking Supply During Proposed New Fireworks Display Events. The proposed new fireworks display events have the potential to result in a temporary inadequate supply during the displays due to an increased demand on parking facilities serving the viewing locations. Potential impacts would be temporary, but are considered significant.	PS	Implement MM-TRA-1 .	SU
	<i>Effects of Proposed Ordinance on Existing Fireworks Display Events</i>			
	The effects of the proposed ordinance on existing fireworks display events would not result in an inadequate supply of parking.	LS	No mitigation is required.	N/A
Cumulative Impacts				
The contribution of the proposed new fireworks display event and the proposed ordinance to cumulative transportation, circulation, and parking impacts would not be cumulatively considerable.				
Notes: PS = Potentially significant; LS = Less than significant; SU = Significant and Unavoidable; N/A = Not applicable				

1.1 Project Overview

The proposed San Diego Bay and Imperial Beach Oceanfront Fireworks Display Events Project (herein referred to as the proposed project) consists of (1) an ordinance establishing a San Diego Unified Port District (District) Code section (District Code section) to govern existing and proposed new fireworks display events that occur throughout the year in and around San Diego Bay and Imperial Beach Oceanfront that require a discretionary action by the District or that are operated by the District's tenants, and (2) four proposed new fireworks display events, which would be located adjacent to the National City and Chula Vista Bayfronts and are anticipated to require a future discretionary action by the District. The most prominent existing fireworks display events are the annual Fourth of July Big Bay Boom in San Diego Bay, the Fourth of July Imperial Beach Fireworks Show over the Pacific Ocean near Imperial Beach, and the Fireworks Show Over Glorietta Bay. Other existing displays include those associated with the U.S.S. Midway Aircraft Carrier Museum (U.S.S. Midway Museum), General Dynamics National Steel and Shipbuilding Company (NASSCO), San Diego Symphony's Summer Pops concert series, and Our Lady of Rosary Church Annual Procession.

This environmental impact report (EIR) discusses the environmental baseline conditions and evaluates the potential environmental impacts of the proposed project. This Draft EIR assumes the continuation of existing fireworks display events at the same location and of the same magnitude and duration.

In addition to the project overview provided above, this chapter briefly discusses (1) the purpose of the California Environmental Quality Act (CEQA) and this Draft EIR, (2) the intended uses of this Draft EIR, (3) the scope and content of this Draft EIR, and (4) the organization of this Draft EIR.

1.2 Purpose of the California Environmental Quality Act and the Environmental Impact Report

This Draft EIR evaluates the potential environmental effects of the proposed project and has been prepared in compliance with CEQA (Public Resources Code Section 21000 et seq.) and the procedures for implementation of CEQA set forth in the State CEQA Guidelines (California Code of Regulations Title 14, Section 15000 et seq.). This Draft EIR has also been prepared in compliance with the District's *Guidelines for Compliance with CEQA* (Resolution 97-191; Clerk Document No. 36294).

CEQA was enacted by the California legislature in 1970. As noted under State CEQA Guidelines Section 15002, CEQA has four basic purposes:

1. Inform governmental decision-makers and the public about the potential significant environmental effects of proposed activities.

2. Identify the ways in which environmental damage can be avoided or significantly reduced.
3. Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
4. Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

An EIR is an informational document that is intended to inform members of the public and agency decision-makers of the significant environmental effects of a proposed project, to identify feasible ways to reduce the significant effects of the proposed project, and to describe a reasonable range of feasible alternatives to the project that would reduce one or more significant effects and still meet the proposed project's objectives. In instances where significant impacts cannot be avoided or mitigated, the proposed project may nonetheless be carried out or approved if the approving agency finds that economic, legal, social, technological, or other benefits outweigh the unavoidable significant environmental impacts.

1.3 Intended Uses of the Environmental Impact Report

This section discusses the intended uses of this Draft EIR and includes (1) a list of agencies that would be expected to use this Draft EIR for decision-making, and (2) a list of required permits and other approvals that would be required to implement the proposed project. Environmental review and consultation requirements under federal, state, or local laws, regulations, or policies that are in addition to CEQA are discussed in the applicable individual resource sections within Chapter 4, *Environmental Analysis*.

1.3.1 Lead Agency's Use of This Environmental Impact Report

The District is the CEQA lead agency, as defined under State CEQA Guidelines Section 15367, because it has principal responsibility for carrying out or approving fireworks display events, subject to the proposed ordinance. As the lead agency, the District also has primary responsibility for complying with CEQA. As such, the District has analyzed the environmental effects of the proposed project, the results of which are presented in this Draft EIR. The Board of Port Commissioners, in its role as the decision-making body of the District, is responsible for certifying the Final EIR and approving the Findings of Fact and Statement of Overriding Considerations pursuant to Sections 15090–15093 of the State CEQA Guidelines prior to project approval.

This EIR is intended to be an informational document to be used by the District's Board of Port Commissioners, public agencies, stakeholder organizations and individuals, and the general public during the decision-making process for the proposed project. In accordance with the State CEQA Guidelines and the District's *Guidelines for Compliance with CEQA* (Resolution 97-191; Clerk Document No. 36294), this EIR will inform readers of the potential significant environmental effects of the proposed project, identify possible means of minimizing the significant effects, and describe a range of reasonable alternatives to the proposed project. The Board of Port Commissioners will consider the EIR, along with other substantial evidence in the administrative record, when making a decision on the proposed project.

In order to certify this EIR, the Board of Port Commissioners must find that it has been completed in compliance with CEQA (Public Resources Code §21000 et seq.), the State CEQA Guidelines (14 CCR §15000 et seq.), and the District's *Guidelines for Compliance with CEQA* (Resolution 97-191; Clerk Document No. 36294) Section VI, and that all information contained in this EIR was considered prior to approval of the proposed project.

Table 1-1 provides a summary list of the approvals and permits that would be required.

Table 1-1. List of Required Discretionary Actions by the District

Discretionary Action
Certification of Final EIR
Adoption of Findings of Fact
Adoption of Statement of Overriding Considerations
Adoption of Mitigation Monitoring and Reporting Program
Adoption of an Ordinance Establishing a San Diego Unified Port District Code Section to Govern Fireworks Display Events

1.3.2 Other Agencies Expected to Use This Environmental Impact Report

The operation of fireworks display events may require permits and authorization by other agencies including, but not limited to, the following.

- National Oceanic and Atmospheric Administration, National Marine Fisheries Service
- U.S. Army Corps of Engineers
- U.S. Coast Guard
- U.S. Fish and Wildlife Service
- California Coastal Commission
- California Department of Fish and Wildlife
- California State Lands Commission
- San Diego Regional Water Quality Control Board
- City of Chula Vista Fire Department
- City of Coronado Fire Department
- City of Imperial Beach Fire Department
- City of National City Fire Department
- City of San Diego Fire Department

As defined under State CEQA Guidelines Section 15386, a trustee agency is a state agency that has jurisdiction by law over natural resources affected by a project that are held in trust for the people

of the state of California. The California State Lands Commission (CSLC) and California Department of Fish and Wildlife (CDFW) are trustee agencies, as defined in State CEQA Guidelines Section 15386. CSLC has jurisdiction and management control over those public trust lands of the state received by the state upon its admission to the United States in 1850. CSLC has jurisdiction over submerged lands within San Diego Bay that are not under the jurisdiction of the District. Several of the barges for the existing fireworks display events are situated within CSLC jurisdiction. However, because the barges are not anchored or moored, a lease or any other similar approval is not required from CSLC (Collins pers. comm.).

It is anticipated that CDFW may have an interest in the proposed project; however, CDFW would not issue approvals or permits that would be required to implement the proposed project. There are no other trustee agencies for the proposed project as defined in State CEQA Guidelines Section 15386.

1.3.3 Program-Level Analysis

This Draft EIR provides a program-level analysis of the proposed District Code section governing fireworks displays and the potential future occurrence of four new proposed fireworks display events adjacent to the National City and Chula Vista Bayfronts. Because no applications for approval of the four proposed new fireworks display events have been submitted, some project details for each of the proposed new fireworks display events are not available at the time of this Draft EIR's preparation. The EIR includes assumptions regarding the total pounds of fireworks, duration, shell size, time of year, and barge location for each of the proposed new fireworks display events. Therefore, if, in the future, an existing fireworks display event is modified or a new fireworks display event is proposed that is different from the type of event analyzed in this Draft EIR, the fireworks display event will be subject to additional environmental review pursuant to State CEQA Guidelines Section 15168(c).

1.4 Scope and Content of the Draft Environmental Impact Report

As the CEQA lead agency, the District is responsible for determining the scope and content of this Draft EIR, a process referred to as "scoping." As part of the scoping process, the District considered the environmental resources present within the project area and in the surrounding areas and identified the potential environmental effects of the proposed project. To initiate the public scoping process for this Draft EIR, the District circulated a Notice of Preparation (NOP) in accordance with Section 15082 of the State CEQA Guidelines to solicit agency and public comments on the scope and content of the environmental analysis to be included in the Draft EIR. The 30-day public review period for the NOP began on August 7, 2015, and ended on September 8, 2015. The NOP was mailed to public agencies, organizations, and other interested individuals to solicit their comments on the scope and content of the environmental analysis. The District also held a public scoping meeting on August 25, 2015, at the District's Administration Building at 3165 Pacific Highway, San Diego, CA, 92101. Free public parking was available at the surface lot in front of the building, as well as adjacent to the building. Comments received in response to the NOP and during the public scoping meeting were used to determine the scope of this Draft EIR. The comments are summarized in Table 1-2, below. Based on the District's preliminary evaluation of the probable effects of the proposed

project and a thorough review of the comments on the NOP, the Draft EIR analyzes effects associated with the following resources:

- Aesthetics and Visual Resources
- Air Quality and Health Risk
- Biological Resources
- Greenhouse Gas Emissions, Climate Change, and Energy
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise and Vibration
- Public Services and Facilities
- Transportation, Circulation, and Parking

There are no agricultural, forestry, or mineral resources within the project area; therefore, the proposed project would not have an adverse effect on any of these resources. In addition, the proposed project would not have a significant adverse effect on cultural resources, geology and soils, population and housing, recreational facilities, or utilities and service systems. Chapter 6, *Additional Consequences of Project Implementation*, includes a brief analysis as to why impacts on agricultural and forestry resources, mineral resources, cultural resources, geology and soils, population and housing, recreational facilities, and utilities and service systems would not be significant, as discussed in the Initial Study/Environmental Checklist included in Appendix A of this Draft EIR.

1.4.1 Comments Received in Response to the Notice of Preparation

Several specific environmental issues were raised in the comments on the NOP. A summary of these comments and the sections where they are addressed in this Draft EIR are provided in Table 1-2. Only comments that pertain to the environmental scope of this Draft EIR are summarized. Copies of all NOP comment letters are provided in Appendix B of this Draft EIR and the NOP is included in Appendix A.

Table 1-2. Summary of NOP Comments Received

Commenter	Environmental Topic(s)	Location Where Addressed in This Draft EIR
State of California, Governor's Office of Planning and Research, State Clearinghouse and Planning Unit (SCH), August 7, 2015	Provides SCH# 2015081013 and notes which state agencies received a copy of the NOP.	N/A
California Department of Transportation (Caltrans), District 11, Jacob M. Armstrong, August 14, 2015	Any special events that may affect traffic on state facilities should be reviewed by Caltrans.	Section 4.11, <i>Transportation, Circulation, and Parking</i> Appendix J, <i>Transportation Assessment</i>
	An encroachment permit should be issued for any traffic control or management within Caltrans' right of way.	Section 4.11, <i>Transportation, Circulation, and Parking</i> Appendix J, <i>Transportation Assessment</i>
Federal Emergency Management Agency, Region 9, Gregor Blackburn, August 24, 2015	Review the current effective countywide Flood Insurance Rate Maps for the County of San Diego (Community Number 060284) and City of San Diego (Community Number 06029), May 16, 2012.	Section 4.7, <i>Hydrology and Water Quality</i> Appendix G, <i>Water Quality Technical Report</i>
	The City of San Diego, San Diego County, California is a participant in the National Flood Insurance Program (NFIP). The minimum, basic NFIP floodplain management building requirements are described in Vol. 44 Code of Federal Regulations (44 CFR), Sections 59 through 65.	Section 4.7, <i>Hydrology and Water Quality</i> Appendix G, <i>Water Quality Technical Report</i>
	Many NFIP participating communities have adopted floodplain management building requirements that are more restrictive than the minimum federal standards described in 44 CFR. Contact the local community's floodplain manager for more information on local floodplain management building requirements.	Section 4.7, <i>Hydrology and Water Quality</i> Appendix G, <i>Water Quality Technical Report</i>
California Department of Fish and Wildlife, Region 5, Gail K. Sevrens, September 8, 2015	Concern with the potential direct and indirect effects of fireworks displays and the associated human disturbances on sensitive species that occur in and around the project area, including marine mammals, sea turtles, seabirds, shorebirds, and passerines.	Section 4.3, <i>Biological Resources</i> Appendix F, <i>Biological Technical Study</i>
	Summarize results from past studies that have monitored wildlife responses to fireworks displays and the recommendations offered to avoid, minimize, or mitigate the effects on these species.	Section 4.3, <i>Biological Resources</i> Appendix F, <i>Biological Technical Study</i>

Commenter	Environmental Topic(s)	Location Where Addressed in This Draft EIR
	A comprehensive mitigation strategy should include developing a monitoring protocol for those sites determined to be most likely affected by fireworks displays.	Section 4.3, <i>Biological Resources</i> Appendix F, <i>Biological Technical Study</i>
	The National Marine Fisheries Service document provides a useful resource on the types of effects analyses that should be incorporated into the Draft EIR.	Section 4.3, <i>Biological Resources</i> Appendix F, <i>Biological Technical Study</i>
	Commenter suggests the inclusion of a number of different figures.	Chapter 3, <i>Project Description</i> Section 4.3, <i>Biological Resources</i> Appendix F, <i>Biological Technical Study</i>
	The impact analysis should define the area where sound, light, and debris effects have a direct impact on wildlife and associated habitats.	Section 4.3, <i>Biological Resources</i> Appendix F, <i>Biological Technical Study</i>
	The analysis should also define the distance that impacts can extend beyond the center of the detonation point.	Section 4.3, <i>Biological Resources</i> Appendix F, <i>Biological Technical Study</i>
	Recommends that the detonation structures be located as far from sensitive resource use areas as possible to reduce the effects of noise, light, fall-out, and/or human intrusion on sensitive wildlife species.	Section 4.3, <i>Biological Resources</i> Appendix F, <i>Biological Technical Study</i>
	The District should also consider altered habitat conditions when determining future locations of the fireworks detonation sites.	Section 4.3, <i>Biological Resources</i> Appendix F, <i>Biological Technical Study</i>
	Evaluate the potential cumulative impacts on wildlife species of repeated nightly exposure from fireworks displays.	Chapter 5, <i>Cumulative Impacts</i>
	To avoid impacts on eelgrass meadows it is recommended that the District institute patrols or other methodologies to prohibit spectator motorized watercraft from entering these sensitive areas.	Section 4.3, <i>Biological Resources</i> Appendix F, <i>Biological Technical Study</i>
	The Draft EIR should provide a thorough analysis of the need for an increase in the number of fireworks display events.	Chapter 3, <i>Project Description</i>
	Recommends consideration of an alternative that would set a limit on the number of events that can occur and/or reduces the number of events below what is currently allowed.	Chapter 7, <i>Alternatives to the Proposed Project</i>

Commenter	Environmental Topic(s)	Location Where Addressed in This Draft EIR
	The Draft EIR should include mitigation measures for all adverse project-related impacts on sensitive animals and habitats. Mitigation measures should emphasize avoidance and reduction of project impacts.	Section 4.3, <i>Biological Resources</i> Appendix F, <i>Biological Technical Study</i>
California State Lands Commission, Cy R. Oggins, September 8, 2015	A thorough and complete project description should be included in the Draft EIR to facilitate meaningful environmental review of potential impacts, mitigation measures, and alternatives.	Chapter 3, <i>Project Description</i>
	Specific locations for firework discharge should be identified, as well as the estimated radius of potential chemicals.	Chapter 3, <i>Project Description</i> ; Section 4.2, <i>Air Quality and Health Risk</i> ; Section 4.7, <i>Hydrology and Water Quality</i> Appendix G, <i>Water Quality Technical Report</i>
	The Draft EIR should evaluate the levels of chemical residues, including perchlorate, nitrate, and sulfur, that could be discharged into waters of the U.S./state on an annual basis due to the fireworks displays.	Section 4.7, <i>Hydrology and Water Quality</i> Appendix G, <i>Water Quality Technical Report</i>
	Staff requests that mitigation be included to address surface debris cleanup by a boat crew the night of a fireworks show, surface and underwater cleanup by a boat crew and divers, and foot patrols to hunt for debris on area beaches.	Section 4.7, <i>Hydrology and Water Quality</i> Appendix G, <i>Water Quality Technical Report</i>
	The Draft EIR should disclose and analyze all potentially significant effects (such as noise, water quality, and increases to light/glare) on sensitive species and habitats in and around the project area, including special-status wildlife, fish, and plants, and if appropriate identify feasible mitigation.	Section 4.3, <i>Biological Resources</i> Appendix F, <i>Biological Technical Study</i>
	The District should conduct queries of the California Department of Fish and Wildlife's California Natural Diversity Database to identify any special-status plant or wildlife species that may occur in the project area.	Section 4.3, <i>Biological Resources</i> Appendix F, <i>Biological Technical Study</i>
	The Draft EIR should also include a discussion of consultation with the CDFW and USFWS, including any recommended mitigation measures and potentially required permits identified by these agencies.	Section 4.3, <i>Biological Resources</i> Appendix F, <i>Biological Technical Study</i>
	A greenhouse gas (GHG) emissions analysis consistent with the California Global Warming Solutions Act (Assembly Bill 32) and required by the State CEQA Guidelines should be included in the Draft EIR.	Section 4.4, <i>Greenhouse Gas Emissions, Climate Change, and Energy</i>

Commenter	Environmental Topic(s)	Location Where Addressed in This Draft EIR
U.S. Fish and Wildlife Service, Region 8, Karen A. Goebel, October 6, 2015	The GHG analysis should identify a threshold of significance for GHG emissions, quantify the direct and indirect operational GHG emissions from the project, determine the significance of the impacts of those emissions, and, if impacts are significant, identify mitigation measures that would reduce them to the extent feasible.	Section 4.4, <i>Greenhouse Gas Emissions, Climate Change, and Energy</i>
	To avoid the improper deferral of mitigation, mitigation measures should either be presented as specific, feasible, enforceable obligations, or should be presented as formulas containing performance standards that would mitigate the significant effects of the project and that may be accomplished in more than one specified way.	Throughout EIR
	The District should identify and analyze a range of reasonable alternatives to the proposed project that would attain most of the project objectives while avoiding or reducing one or more of the potentially significant impacts.	Chapter 7, <i>Alternatives to the Proposed Project</i>
	Include in the Draft EIR a thorough review of the available literature pertaining to the potential or documented impacts of fireworks displays or similar punctuated disturbances on wildlife.	Section 4.3, <i>Biological Resources</i> Appendix F, <i>Biological Technical Study</i>
	Commenter suggests the inclusion of a number of different figures.	Throughout EIR
	Recommends that the Draft EIR include information regarding the abundance and distribution of water birds that use San Diego Bay, Tijuana Estuary, and Imperial Beach.	Section 4.3, <i>Biological Resources</i> Appendix F, <i>Biological Technical Study</i>
	Include in the Draft EIR detailed information regarding the number, location, and duration of baseline events that have occurred in recent years, and the number, location and duration of additional proposed events.	Chapter 3, <i>Project Description</i>
	The Draft EIR should include an analysis of the intensity and extent of light, sound, vibration, and debris/fallout anticipated as a result of the fireworks displays, based on the size and number of fireworks shells that will be used.	Section 4.1, <i>Aesthetics and Visual Resources</i> ; Section 4.2, <i>Air Quality and Health Risk</i> ; Section 4.8, <i>Noise and Vibration</i>
	The analysis of the effects of the proposed action should include an assessment of the areas where light, sound, vibration, and debris are expected to have a direct impact on wildlife.	Section 4.3, <i>Biological Resources</i> Appendix F, <i>Biological Technical Study</i>

Commenter	Environmental Topic(s)	Location Where Addressed in This Draft EIR
	The Draft EIR should include an analysis of the potential indirect effects of the fireworks displays on wildlife resources in the project area including, but not limited to, disturbance of or impacts on resources from spectators, and changes in water quality associated with debris or fallout from fireworks.	Section 4.3, <i>Biological Resources</i> Appendix F, <i>Biological Technical Study</i>
	The Carlsbad Fish and Wildlife Office has previously recommended, and continues to recommend, that no fireworks displays occur within the Chula Vista Bayfront during the avian breeding season due to the close proximity to the abundance of sensitive wildlife resources that occur within and around the Sweetwater National Wildlife Refuge, the South San Diego Bay National Wildlife Refuge, and the Chula Vista Wildlife Reserve.	Chapter 3, <i>Project Description</i> ; Section 4.3, <i>Biological Resources</i> Appendix F, <i>Biological Technical Study</i>
	Recommended and continues to recommend that fireworks displays be minimized at the Loew's Coronado Resort during the avian breeding season due to the proximity of this hotel to protected least tern and snowy plover habitat at Silver Strand State Beach and Naval Base Coronado.	Chapter 3, <i>Project Description</i> ; Section 4.3, <i>Biological Resources</i> Appendix F, <i>Biological Technical Study</i>
	The Draft EIR should include conservation measures to avoid and minimize the potential impacts of the project on sensitive wildlife.	Section 4.3, <i>Biological Resources</i> Appendix F, <i>Biological Technical Study</i>
	The Draft EIR should analyze the need for an increased number of fireworks displays.	Chapter 3, <i>Project Description</i> , and throughout EIR
	Recommends that the District consider limiting the number of fireworks displays that may occur throughout the year at approved launch sites.	Chapter 7, <i>Alternatives to the Proposed Project</i>
Coast Law Group, LLP, Sara S. Kent, September 23, 2015	A summary of substantial evidence of potentially significant water and air quality impacts from fireworks displays in the city of San Diego. Cites extracts from a number of documents that support the contention that fireworks discharges over water have the potential to cause significant environmental harm and affect water and air quality. These include, among others, the Draft Clean Water Act permit (federal and state); the Coastal Environmental Rights Foundation's comment letter dated April 11, 2011, to the San Diego Regional Water Quality Control Board (SDRWQCB) regarding Tentative Order No. R9-2011-0022; and an SDRWQCB report dated	Section 4.2, <i>Air Quality and Health Risk</i> Section 4.6, <i>Hydrology and Water Quality</i> Appendix G, <i>Water Quality Technical Report</i>

Commenter	Environmental Topic(s)	Location Where Addressed in This Draft EIR
	December 12, 2007, regarding a Sea World National Pollutant Discharge Elimination System permit amendment to establish water discharge requirements for discharges of waste from aerial fireworks displays into Mission Bay.	
	Provides a summary of substantial evidence of potentially significant wildlife impacts from fireworks displays in the city of San Diego. Includes extracts from a number of documents, including, among others, emails from Robert Patton to Richard Gilb regarding California least tern fireworks monitoring; newspaper articles linking black bird deaths to fireworks; applications for permits for small takes of marine mammals incidental to the launching of space launch vehicles, long-range ballistic missiles, and smaller missile systems at Kodiak Launch Complex, Alaska; and guidelines for managing fireworks in the vicinity of piping plovers and seabeach amaranth on the U.S. Atlantic coast.	Section 4.3, <i>Biological Resources</i> Appendix F, <i>Biological Technical Study</i>

1.5 Organization of the Draft EIR

The content and format of this Draft EIR are designed to meet the requirements of CEQA and State CEQA Guidelines Article 9. Table 1-3 summarizes the organization and content of the Draft EIR.

Table 1-3. Document Organization and CEQA Requirements

Draft EIR Chapter	Contents
Summary	Includes a brief summary of the proposed project; identifies each significant effect, including proposed mitigation measures and alternatives to reduce or avoid the effect; identifies the areas of controversy known to the lead agency, including issues raised by agencies and the public; and summarizes the issues to be resolved, including the choice among alternatives and whether or how to mitigate the significant effects (State CEQA Guidelines Section 15123).
Chapter 1 Introduction	Discusses the purpose of CEQA and this Draft EIR, the scope and content of this Draft EIR, the organization of this Draft EIR, and the intended uses of this Draft EIR (State CEQA Guidelines Section 15124(d)).
Chapter 2 Environmental Setting	Describes the overall existing physical conditions in the vicinity of the proposed project when the analysis was initiated, including existing fireworks display events that presently occur in and around San Diego Bay and the Imperial Beach Oceanfront. In addition, the specific existing conditions for each resource area are described in the applicable resource section in Chapter 4, <i>Environmental Analysis</i> (State CEQA Guidelines Section 15125).

Draft EIR Chapter	Contents
Chapter 3 Project Description	Contains both a map of the precise location and boundaries of the proposed project and its location relative to the region, lists the proposed project's central objectives and underlying purpose, and provides a detailed description of the proposed project's characteristics (State CEQA Guidelines Section 15124(a), (b), and (c)).
Chapter 4 Environmental Analysis	Describes the existing physical conditions for each resource area, lists the applicable laws and regulations germane to the specific resource, describes the impact assessment methodology, lists the criteria for determining whether an impact is significant, identifies the direct and indirect significant impacts that would result from implementation of the proposed project, and lists feasible mitigation measures that would eliminate or reduce the identified significant impacts (State CEQA Guidelines Sections 15125–15126.4).
Chapter 5 Cumulative Impacts	Defines the cumulative study area for each resource; identifies past, present, and reasonably foreseeable future projects with related impacts within each study area; and evaluates the contribution of the proposed project to a cumulatively significant impact. This chapter also lists feasible mitigation measures that would eliminate or reduce the identified significant cumulative impacts (State CEQA Guidelines Section 15130).
Chapter 6 Additional Consequences of Project Implementation	Discusses the way the proposed project could foster economic or population growth, either directly or indirectly, in the surrounding environment; describes the significant irreversible changes associated with the proposed project's implementation; and provides a brief discussion of the environmental resource impacts that were found to be not significant during preparation of this Draft EIR (State CEQA Guidelines Sections 15126.2(c) and (d), 15127, and 15128).
Chapter 7 Alternatives to the Proposed Project	Describes a reasonable range of alternatives to the proposed project, including the No-Project Alternative; compares and contrasts the significant environmental impacts of alternatives to the proposed project; and identifies the environmentally superior alternative (State CEQA Guidelines Section 15126.6).
Chapter 8 List of Preparers and Agencies Consulted	Lists the individuals and agencies involved in preparing this Draft EIR (State CEQA Guidelines Section 15129).
Chapter 9 References	Provides a comprehensive listing by chapter of all references cited in this Draft EIR (State CEQA Guidelines Section 15148).
Acronyms and Abbreviations	A list of acronyms and abbreviations is provided for the reader's reference immediately following the list of tables and figures in the Table of Contents.
Appendices	Presents additional background information and technical detail for several of the resource areas.

2.1 Introduction

This chapter provides a description of the overall physical environmental conditions in the vicinity of the proposed project, from both a local and regional perspective, as they existed at the time the Notice of Preparation was published on August 7, 2015.¹ Resource-specific existing conditions are described within each individual resource section of Chapter 4, *Environmental Analysis*. Chapter 4 also describes any inconsistencies with applicable plans.²

2.2 Regional Context

Existing public fireworks displays (also referred to as fireworks shows or events) are conducted throughout the year at various locations within the San Diego region, including areas adjacent to and within the District's jurisdiction, as part of national and community celebrations and other special events. Such existing displays have occurred on a regular basis for decades.

In addition to existing fireworks display events that occur within San Diego Bay and in the Pacific Ocean near Imperial Beach that require a discretionary action by the District or are operated by the District's tenants, landside and waterside fireworks display events also occur during regular activities and special events at other locations throughout the San Diego region, including entertainment theme parks and major league football and baseball stadiums. Additionally, fireworks displays and pyrotechnic special effects are periodically used in other venues, such as business grand openings and special events, public and private school homecoming and graduation events, sporting events, and local fairs. The most significant and widespread use of fireworks displays is primarily for Fourth of July celebrations. In addition, fireworks displays occur for other occasions throughout the year, such as events at SeaWorld, La Jolla Cove, Ocean Beach, San Ysidro, National City (Kimball Park), and Chula Vista (Olympic Training Center). The preferred setting for fireworks display sites is often on or adjacent to urban shorelines to provide public access and avoid the potential public safety and fire hazards associated with terrestrial display sites.

The proposed project is an ordinance that would govern existing and proposed new fireworks display events located in southwestern San Diego County adjacent to or within District-controlled areas that are surrounded by the incorporated cities of San Diego, Coronado, National City, Chula Vista, and Imperial Beach, all of which compose the District's member cities. The City of San Diego,

¹ State CEQA Guidelines Section 15125 states that an EIR must include "a description of the physical environmental conditions in the vicinity of the proposed project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will *normally* constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. The description of the environmental setting shall be no longer than is necessary to provide an understanding of the significant effects of the proposed project and its alternatives" (emphasis added).

² For example, Section 4.2, *Air Quality and Health Risk*, contains a project consistency analysis with the applicable air quality plans.

which is the largest city in the region and within proximity to the fireworks display events, covers approximately 323 square miles and is home to an estimated population of approximately 1.37 million residents (SANDAG 2015). The City of San Diego is approximately 17 miles north of the U.S.-Mexico border and is bordered on the north by the cities of Del Mar and Poway and unincorporated San Diego County land; on the east by the cities of Santee, El Cajon, La Mesa, and Lemon Grove, and unincorporated County of San Diego land; to the south by the cities of Coronado, Chula Vista, and National City, and the U.S.-Mexico border; and to the west by the Pacific Ocean. The neighborhoods of the City of San Diego that are in the vicinity of the fireworks display events within San Diego Bay include Point Loma to the north (adjacent to Shelter Island), downtown San Diego, which includes Little Italy (adjacent to Harbor Island and North Embarcadero), and Barrio Logan, which is south and east of the South Embarcadero.

Across San Diego Bay from downtown San Diego, the City of Coronado is a small resort city of almost 14 square miles with approximately 24,000 residents (SANDAG 2015). Coronado is bordered on the north and east by San Diego Bay (and the City of San Diego beyond that) and on the south by the City of Imperial Beach, which connects to Coronado via the narrow strip of land known as the Silver Strand that is a part of the incorporated area of Coronado. The Pacific Ocean borders Coronado to the west.

National City is 5 miles south of downtown San Diego, on San Diego Bay, and 10 miles north of the U.S.-Mexico border. National City is bordered by the City of San Diego to the north and east, Chula Vista to the south, the unincorporated areas of Lincoln Acres and Bonita to the south and southeast, and San Diego Bay to the west. National City comprises approximately 9.2 square miles and has an estimated population of approximately 60,000 residents (SANDAG 2015).

Chula Vista is the second-largest city in San Diego County, with an area of approximately 52 square miles and a population of approximately 258,000 residents (SANDAG 2015). It is 7.5 miles from downtown San Diego and 7.5 miles from the U.S.-Mexico border. Chula Vista is bordered on the north by the cities of San Diego and National City and the unincorporated community of Bonita; to the north and east by unincorporated areas of San Diego County; and on the south by the City of San Diego. San Diego Bay borders Chula Vista to the west.

The City of Imperial Beach is a beach community in the southwestern-most corner of the continental United States and is bordered on the north by the City of Coronado and San Diego Bay, on the east by the City of San Diego, on the west by the Pacific Ocean, and on the south by the U.S.-Mexico border. It is a city of approximately 4.5 square miles with a population of approximately 27,000 residents (SANDAG 2015).

2.2.1 District

The mission of the District is to protect Tidelands Trust resources by providing economic vitality and community benefit through a balanced approach to maritime industry, tourism, water and land recreation, environmental stewardship, and public safety. The District was created with the San Diego Unified Port District Act (Port Act), adopted by the California State Legislature in 1962, as amended. The Port Act recognizes the Public Trust Doctrine and states that tidelands and submerged lands are to be used only for statewide public purposes. To this end, the District is charged with management of the tidelands and diverse waterfront uses along San Diego Bay that promote commerce, navigation, fisheries, recreation, and ecological preservation on the granted lands.

The District is one of several governmental agencies with jurisdiction over the land and water areas of San Diego Bay. The area of San Diego Bay encompassed by the historic mean high tide line amounts to approximately 14,951 acres of filled and submerged lands and an existing shoreline of approximately 54.01 miles in length (District 2015). These historic tideland areas are owned or controlled by the federal government, the State of California, local governments, and the District. Specifically, the District has been granted approximately 5,483 acres, or about 37 percent, of the tidelands on San Diego Bay. The shoreline frontage granted to the District approaches 33 miles, which is equivalent to 61 percent of the total San Diego Bay shoreline. Locations on San Diego Bay and the Imperial Beach Oceanfront in which fireworks display events currently occur and are proposed to occur are detailed below.

2.3 Existing Setting

2.3.1 Existing Fireworks Display Events

A number of existing fireworks display events that require a discretionary action by the District or are operated by the District's tenants occur year-round; however, the greatest number of fireworks display events occurs in the summer months from July to September. A list of existing fireworks display events that occur in and around San Diego Bay and the Pacific Ocean near Imperial Beach annually is provided in Table 2-1 below. A detailed description of these existing fireworks display events is provided below.

All of the existing fireworks display events identified in Table 2-1 are subject to applicable federal laws set forth in the Code of Federal Regulations, which are enforced by the U.S. Coast Guard (only for fireworks display events occurring within Navigable Waters of the U.S.), as well as state and local laws set forth in the California Department of Forestry and Fire Protection's *Fireworks in California* handbook (Appendix C), which are enforced by the responsible city fire department with jurisdiction over each fireworks display event. These fireworks display events are also conducted in accordance with the requirements of the San Diego Regional Water Quality Control Board's (SDRWQCB's) General Permit for Public Display of Fireworks (Order No. R9-2011-0022) (General Permit). The General Permit is discussed in more detail in Section 4.6, *Hydrology and Water Quality*, of this EIR and is included as Appendix G.

Table 2-1. Existing Fireworks Display Events Requiring a Discretionary Action by the District or Operated by the District's Tenants

Time of Year	Approximate Number of Fireworks Display Events	Fireworks Display Event Tenant/Sponsor	Location(s) of Fireworks Display Event	Approximate Duration of Each Fireworks Display Event (minutes)	Approximate Shell Size (inches)
January–March	7	<ul style="list-style-type: none"> U.S.S. Midway (7) 	<ul style="list-style-type: none"> North Embarcadero¹ 	4–10	2–6 inch
April–June	8	<ul style="list-style-type: none"> Symphony Summer Pops (1) NASSCO (1) U.S.S. Midway (6) 	<ul style="list-style-type: none"> South Embarcadero² NASSCO 	3–10	2–6-inch
July–September	29	<ul style="list-style-type: none"> Symphony Summer Pops (19) Big Bay Boom (1) Fourth of July Imperial Beach (1) Fireworks Show Over Glorietta Bay (1) U.S.S. Midway (6) NASSCO (1) 	<ul style="list-style-type: none"> Shelter Island³ Harbor Island³ North Embarcadero^{4,3} Central Embarcadero³ South Embarcadero² Glorietta Bay⁴ NASSCO Imperial Beach Oceanfront⁴ 	15–20 (Fourth of July) and 3–10 (non-Fourth of July displays)	3–10-inch (larger displays [e.g., Fourth of July]) 2–6-inch (non-Fourth of July displays)
October–December	5	<ul style="list-style-type: none"> U.S.S. Midway (4) Our Lady of Rosary Church (1) 	<ul style="list-style-type: none"> North Embarcadero^{1,5} 	3–10 (intermittently during the 80-minute procession for Our Lady of Rosary Church Annual Procession)	2.5–6 inch
TOTAL	49				

Notes:¹ U.S.S. Midway Museum (includes a total of 23 annual fireworks display events)² Symphony Summer Pops concert display (includes a total of 20 annual fireworks display events)³ Big Bay Boom, Fourth of July⁴ Fourth of July display⁵ Our Lady of Rosary Church Annual Procession

Table 2-2 summarizes the total pounds of fireworks used for each existing fireworks display event. The total pounds of fireworks for the Big Bay Boom, Fireworks Show Over Glorietta Bay, Fourth of July Imperial Beach Fireworks Show, San Diego Symphony Summer Pops concert displays, Our Lady of Rosary Church Annual Procession fireworks display event, and any fireworks displays associated with the U.S.S. Midway Aircraft Carrier Museum (U.S.S. Midway Museum) (multiple small shows) and General Dynamics National Steel and Shipbuilding Company (NASSCO) were determined through a review of the post-event reports submitted in compliance with SDRWQCB's General Permit for these displays, special event permits obtained from the District's five member cities, and data collected from the fireworks organizers, fireworks operators, and/or District tenants.

Table 2-2. Summary of Activity Associated with the Existing Fireworks Display Events

Fireworks Display Event	Day of Event	No. of events (2015)	Pounds of Fireworks per Event	Pounds of Fireworks Annually	No. of barges used per event
Big Bay Boom	Fourth of July	1	5,342	5,342	4
Fireworks Over Glorietta Bay Show	Fourth of July	1	397	397	1
Fourth of July Imperial Beach Fireworks Show	Fourth of July	1	456	456	0
Symphony Summer Pops Concert Display	non-Fourth	20	varies between 52.6 to 95 ¹	1,498 ¹	1
Our Lady of Rosary Church Annual Procession	non-Fourth of July	1	17.25	17.25	0
U.S.S. Midway Museum	non-Fourth of July	23	varies between 7.8 and 234.9	1,759	1 ²
General Dynamics NASSCO Ship Repair Facility	non-Fourth of July	2	157.5 and 281.6	439	0 ³

Source: SDRWQCB 2015; District 2016

Notes:

¹ Pounds of fireworks for the Symphony Summer Pops events for year 2015 was obtained from the fireworks organizer. The largest shows (95.0 pounds per show) were three shows during Labor Day weekend. The remaining 17 shows throughout the year are smaller (between 52.6 and 78.8 pounds per show), and all shows average 74.9 pounds per show (74.9 x 20 = 1,498).

² Fireworks for displays on the U.S.S. Midway Museum are detonated either off of a barge in San Diego Bay or off the end of flight deck of the Midway.

³ Fireworks for these displays are launched from the end of Pier 12.

Existing Fourth of July Fireworks Display Events

The following existing Fourth of July fireworks display events either currently require a discretionary action or are anticipated to require a discretionary action by the District.

Big Bay Boom

The Big Bay Boom is a large, multi-barge outdoor fireworks display event that takes place in North San Diego Bay on the Fourth of July. The District considers annually whether or not to provide event sponsorship for this free fireworks display event, which was first established in 2001. Given the

natural amphitheater provided by the various neighborhoods, parks, and commercial centers surrounding San Diego Bay, including Point Loma, Shelter Island, Harbor Island, Liberty Station, Little Italy, North Embarcadero, Central Embarcadero, South Embarcadero, and the Coronado Ferry Landing, the Big Bay Boom is viewed by thousands of people annually. In addition, other private viewing locations are available at the U.S.S. Midway Museum, Hornblower Cruises and Events, Flagship Cruises and Events, and the San Diego Maritime Museum.

This fireworks display event entails the strategic temporary placement of four barges (moved and held in place by tugboats) around San Diego Bay near Central Embarcadero, North Embarcadero, Harbor Island, and Shelter Island and does not require construction of any on-land support facilities. The barges are not moored and instead are held in place by tugboats at their designated locations. During the fireworks display event, the U.S. Coast Guard (USCG), San Diego Fire Department (SDFD), San Diego Harbor Police Department (HPD), and special patrol vessels provide safety on the water, while HPD and San Diego Police Department provide traffic coordination and public safety on land. The fireworks display event lasts approximately 18 minutes, after which the barges are removed and, once the Fire Marshal has determined it is safe to do so, cleanup is conducted. A detailed description of barge setup, preparation, and cleanup practices is provided below.

Barge Setup and Preparation

Preparation of this fireworks display event includes placing fireworks on barges, which are set up primarily by the fireworks operator at a loading facility yard in accordance with the special event permits issued by SDFD and under supervision by governing fire officials. The barges are inspected for safety issues by the Fire Marshal and fireworks operator. The fireworks, which are encased in paper, are then loaded onto the barges in their California Department of Transportation (Caltrans)-approved shipping cartons by the fireworks operator. An electric match is placed in the fireworks fuse, and the wire from the match is wrapped around nails to prevent the wires from being pulled into the air. Once the fireworks are prepared, all debris, including water bottles, paper wrappers, cardboard shipping boxes, fuses, wires, and wrapping, is removed from the barges and properly disposed of by the fireworks operator. The barges are then moved by tugboats to their designated locations. After reaching their designated locations, the barges are held in place by tugboats and a safety exclusion zone is established around each barge by USCG and/or the Fire Marshal, as appropriate. Public access is prohibited in this zone, and neither spectators nor occupied vessels not transporting fireworks technicians are allowed within the area until the Fire Marshal determines it is safe to do so after the conclusion of the fireworks display event.

Post-Fireworks Display Event Cleanup Practices

Once the fireworks display event is over, the fireworks operator and the Fire Marshal inspect the mortars and surrounding areas for any safety issues, such as unexploded firework components, in accordance with the requirements of Title 19 of the California Code of Regulations (CCR). The duration of this inspection varies but historically has been approximately 15 to 20 minutes. All unexploded fireworks on the barges are collected, handled, and disposed of by the fireworks operator in accordance with Title 19 of the CCR. No one is allowed into the safety zone until granted permission by the Fire Marshal (Perry pers. comm.). Once the site is cleared by the Fire Marshal, and consistent with the requirements of the General Permit, the fireworks operator focuses on picking up large debris on the barge to prevent it from blowing into the water. The barges are brought back into the loading/setup yard facility to be further cleaned and have the mortars removed by the fireworks operator. In addition, as soon as permission is granted by the Fire Marshal, and consistent

with the requirements of the SDRWQCB General Permit, the fireworks organizer and fireworks operator conduct a sweep of the fireworks detonation zone surrounding each of the four barges to gather and properly dispose of floating debris from spent fireworks. Any unexploded fireworks, including unexploded components, are collected, handled, and disposed of by the fireworks operator. Consistent with the SDRWQCB General Permit requirements, the fireworks detonation zone and shoreline areas adjacent to the four barge locations are inspected again for debris no later than 24 hours following the fireworks display event by the fireworks organizer. Any cardboard, paper, or other debris is removed. A contractor is also hired to pick up any litter left in the District's public parks beginning at midnight on the Fourth of July.

Fourth of July Imperial Beach Fireworks Show

The Fourth of July Imperial Beach Fireworks show is a small, single-location outdoor fireworks display event that takes place within the District's Coastal Development Permit jurisdiction in Imperial Beach on the Fourth of July. The District considers annually whether or not to provide event sponsorship for this free fireworks display event, which was first established in the early 2000s. Primary viewing locations for this event are from Portwood Pier Plaza, Dunes Park, and along the beach from Palm Avenue to Imperial Beach Boulevard. Thousands of people directly view this fireworks display event.

For this fireworks display event, fireworks are launched over the Pacific Ocean in Imperial Beach from the Imperial Beach Pier (Pier). During the fireworks display event, the City of Imperial Beach and San Diego County Sheriff's Department provide traffic coordination and public safety on land. The fireworks display event lasts approximately 18 minutes. After completion of the fireworks display event, and once the Fire Marshal has determined it is safe to do so, cleanup is conducted. A detailed description of Pier setup, preparation, and cleanup practices is provided below.

Pier Setup and Preparation

The fireworks display event on the Pier is set up primarily by the fireworks operator in accordance with the requirements of Title 19 of the CCR and is subject to review by the Imperial Beach Fire Department. Public access on the Pier is restricted beginning on the evening of July 3 and ending on the morning of July 5 to facilitate rack installation, occurrence of the fireworks display event, and cleanup after the fireworks display event. The Pier is inspected for safety issues by the Fire Marshal and fireworks operator, and fireworks are loaded onto the Pier in their Caltrans-approved shipping cartons onto racks by the fireworks operator. The wires used to trigger the fireworks are secured to the racks to prevent the wires from being pulled into the air. Once the fireworks are prepared, all debris, including water bottles, paper wrappers, cardboard shipping boxes, fuses, wires, and wrapping, is removed from the Pier and properly disposed of by the fireworks operator. A minimum safety zone is established around the Pier by USCG and/or the Fire Marshal, as appropriate. Public access is prohibited in this zone, and neither spectators nor occupied vessels not transporting fireworks technicians are allowed within the area until the Fire Marshal determines it is safe to do so after the conclusion of the fireworks display event.

Post-Fireworks Display Event Cleanup Practices

Once the fireworks display event is over, the fireworks operator and the Fire Marshal inspect the mortars and surrounding areas for any safety issues, such as unexploded firework components, in accordance with Title 19 of the CCR. The duration of this inspection varies but historically has been approximately 15 to 20 minutes. All unexploded fireworks on the Pier are collected, handled, and

disposed of by the fireworks operator in accordance with Title 19 of the CCR. No one is allowed into the safety zone until granted permission by the Fire Marshal. Once the site is cleared by the Fire Marshal, and consistent with the requirements of the SDRWQCB General Permit, the fireworks operator immediately picks up debris from and sweeps the decks of the Pier to prevent debris and solid waste from blowing off the Pier into the water. The fireworks organizer and the fireworks operator, along with City of Imperial Beach Lifeguard and Public Works staff, also conduct several sweeps of the fireworks detonation zone and waterline to gather and properly dispose of all remaining debris. Any unexploded fireworks, including unexploded components, are collected, handled, and disposed of by the fireworks operator in accordance with Title 19 of the CCR. Consistent with the SDRWQCB General Permit requirements, the fireworks detonation zone, adjacent shorelines, and areas surrounding the Pier are inspected again for debris no later than 24 hours following the fireworks display event by the fireworks organizer. Any cardboard, paper, or other debris is removed.

Fireworks Show Over Glorietta Bay

The Fireworks Show Over Glorietta Bay is a single-barge fireworks display event that takes place in the Glorietta Bay inlet of San Diego Bay annually on the Fourth of July. It is anticipated that the District would consider annually whether or not to provide event sponsorship for this free fireworks display event, which was first established in 1993. Thousands of people directly view the Fireworks Show Over Glorietta Bay from the expansive walkway that extends along the western edge of the bay from Glorietta Bay Marina to Glorietta Bay Park; from Glorietta Bay Park at the southwestern corner of Glorietta Bay; from the Naval Amphibious Base to the south of Glorietta Bay; from Coronado Municipal Golf Course on the northern side of Glorietta Bay; from the high-rise condominiums at the Coronado Shores complex immediately to the west of Glorietta Bay; and from vessels that are either moored at Glorietta Bay Marina or visit and anchor there for the fireworks display event. The fireworks display event can also be seen from a distance along San Diego Bay.

The Fireworks Show Over Glorietta Bay involves the temporary placement of a single barge at the southeastern corner of Glorietta Bay. The barge is moved into its location and held in place by a tugboat. The preparation and placement of the barge do not require construction of any on-land support facilities. During the event, USCG, HPD, and special patrol vessels provide safety on the water, while the Coronado Police Department provides traffic coordination and public safety on land. The fireworks display event lasts approximately 19 minutes, after which the barge is removed and cleanup is conducted. A detailed description of barge setup, preparation, and cleanup practices follows.

Barge Setup and Preparation

The barge is set up primarily by the fireworks operator at a loading facility yard in accordance with the permits issued by the City of Coronado Fire Department and under supervision of governing fire officials (i.e., Fire Marshal). The barge is inspected for safety issues by the Fire Marshal and fireworks operator. The fireworks, which are encased in paper, are then loaded onto the barge in their Caltrans-approved shipping cartons by the fireworks operator. An electric match is placed in the fireworks fuse, and the wire from the match is wrapped around nails to prevent the wires from being pulled into the air. Once the fireworks are prepared, all debris, including water bottles, paper wrappers, cardboard shipping boxes, fuses, wires, and wrapping, is removed from the barge and properly disposed of by the fireworks operator. The barge is then moved by tugboat to its designated location. After reaching its designated location, the barge is held in place by a tugboat

and a minimum safety exclusion zone is established around the barge by USCG and/or the Fire Marshal, as appropriate. Public access is prohibited in this zone, and neither spectators nor occupied vessels not transporting fireworks technicians are allowed within the area until the Fire Marshal determines it is safe to do so after the conclusion of the fireworks display event.

Post-Fireworks Display Event Cleanup Practices

Once the fireworks display event is over, the fireworks operator and the Fire Marshal inspect the mortars and surrounding areas for any safety issues, such as unexploded firework components, in accordance with the requirements of Title 19 of the CCR. The duration of this inspection varies but historically has been approximately 15 to 20 minutes. All unexploded fireworks are collected, handled, and disposed of by the fireworks operator in accordance with Title 19 of the CCR. No one is allowed into the safety zone until granted permission by the Fire Marshal (Szymanski pers. comm.). Once the site is cleared by the Fire Marshal, and consistent with the requirements of the SDRWQCB General Permit, the fireworks operator focuses on picking up large debris on the barge to prevent it from blowing into the water. The barge is then brought back into the loading/setup yard facility to be further cleaned and have the mortars removed by the fireworks operator. In addition, as soon as permission is granted by the Fire Marshal, and consistent with the requirements of the SDRWQCB General Permit, the fireworks organizer, fireworks operator, and/or the Coronado Lifeguard conduct a sweep of the fireworks detonation zone to gather and properly dispose of floating debris from spent fireworks. Any unexploded fireworks, including unexploded components, are collected, handled, and disposed of by the fireworks operator. Consistent with the SDRWQCB General Permit requirements, the fireworks organizer and/or the Coronado Lifeguard also conduct an inspection of the waterfront around Glorietta Bay to look for and remove any debris along the shoreline no later than 24 hours following the fireworks display event.

Other Existing Fireworks Display Events

A number of other existing fireworks display events that require a discretionary action by the District or are operated by the District's tenants occur in and around San Diego Bay throughout the year, including displays associated with the U.S.S. Midway Museum, NASSCO, San Diego Symphony Summer Pops concerts, and private events sponsored by organizations, such as the Our Lady of Rosary Church Annual Procession.

The Symphony Summer Pops is a concert series sponsored by the San Diego Symphony, which is held annually during the summer months at Embarcadero Marina Park South. The District considers annually whether or not to provide event sponsorship and issue a Tideland Use and Occupancy Permit, Lease, or other similar approval for this concert series, which includes fireworks display events. These concerts are held on most weekends from late June through August; however, not every concert is accompanied by a fireworks display event. When the concerts do include a fireworks display event, the pyrotechnics are launched from a barge located off Embarcadero Marina Park South in an area known as South Embarcadero. Each of these fireworks display events lasts approximately 5 minutes, with one show lasting approximately 10 minutes. It should be noted that the San Diego Symphony has applied for approval to construct a permanent year-round concert venue with the same number of fireworks display events that currently occur.

The Our Lady of Rosary Church Annual Procession is a private event sponsored by Our Lady of Rosary Church that involves the launching of fireworks from the Grape Street Pier while a procession marches down Harbor Drive, within the North Embarcadero area. The District considers

annually whether or not to issue a Special Event Permit for this fireworks display event. Fireworks for this display are launched intermittently during the 80-minute procession.

Other existing non-Fourth of July fireworks display events within and/or adjacent to the District's jurisdiction include those associated with the U.S.S. Midway Museum (multiple small shows) and NASSCO. The U.S.S. Midway Museum conducts up to 23 fireworks display events annually. Existing fireworks display events last approximately 3 to 10 minutes and are typically launched from the U.S.S. Midway flight deck or on a barge within San Diego Bay. NASSCO's two existing fireworks display events last approximately 10 minutes and are typically launched from the end of Pier 12 within San Diego Bay.

2.3.2 Fireworks Display Event Locations

Existing Fireworks Display Events

Existing fireworks display events currently occur at several locations within San Diego Bay, a natural harbor and deep-water port in southern San Diego County, and the Imperial Beach Oceanfront. San Diego Bay is an active maritime environment that provides passage and berthing for numerous types of boats and vessels, including small recreational boats that moor at dock marinas and open anchorage marinas within the Bay, mid-sized vessels such as private yachts and harbor cruise boats, and large vessels that consist of naval ships, cruise ships, cargo ships, and shipping barges. Fireworks display events within San Diego Bay take place off Shelter Island, Harbor Island, Centre City Embarcadero (which includes North Embarcadero, Central Embarcadero, and South Embarcadero), and the NASSCO ship repair facility. In addition, fireworks display events take place along the Coronado Bayfront within Glorietta Bay (an inlet of San Diego Bay adjacent to Coronado Island) and the Imperial Beach Oceanfront. Estimated existing fireworks display event launch locations are depicted in Figure 2-1 and are described below.

North San Diego Bay

North San Diego Bay fireworks display events occur primarily from barges placed adjacent to Shelter Island, Harbor Island, North Embarcadero, Central Embarcadero, and South Embarcadero. Existing displays occurring at these locations include Big Bay Boom, which occurs on the Fourth of July and includes the placement of four barges within the Bay adjacent to Shelter Island, Harbor Island, North Embarcadero, and the Central Embarcadero. Non-Fourth of July fireworks display events that occur in the north San Diego Bay include the San Diego Symphony Summer Pops concerts, which include 20 displays per year launched from a barge off Embarcadero Marina Park South in the South Embarcadero, and the Our Lady of Rosary Church Annual Procession fireworks display event, which takes place during the fall at the Grape Street Pier within the North Embarcadero area. In addition, the U.S.S. Midway Museum holds approximately 23 fireworks display events generally associated with private events, which take place either from the flight deck or off a barge within San Diego Bay in the North Embarcadero area. These locations are discussed below along with the fireworks display events that occur within them.

Shelter Island

Shelter Island is directly south of the community of Point Loma, north of Naval Air Station North Island, and east of the Space and Naval Warfare Systems Center. California State Route (SR) 209 runs northwesterly approximately 0.75 mile from the site boundary. The only fireworks display event

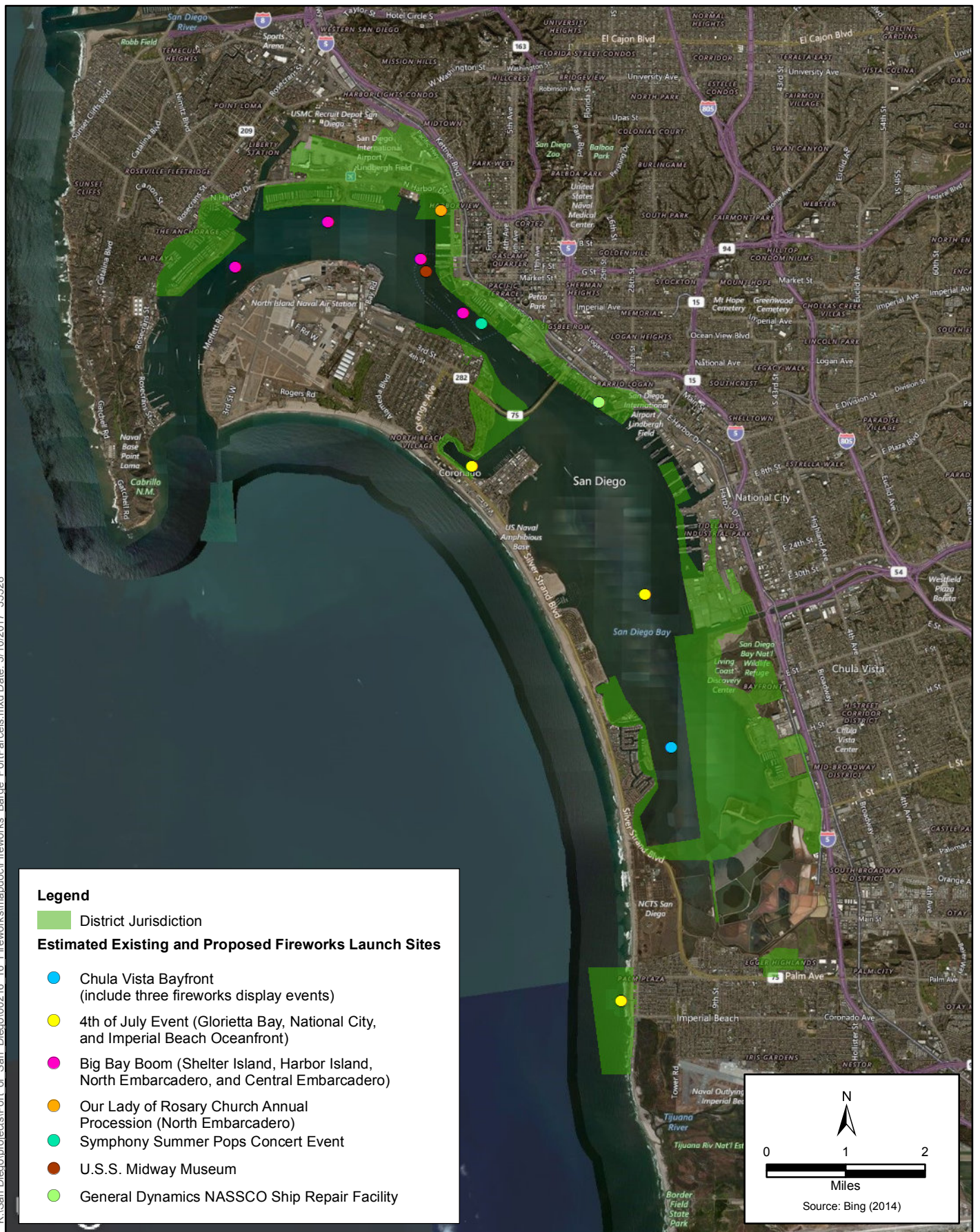


Figure 2-1
Estimated Existing and Proposed Fireworks Launch Sites
San Diego Bay and Imperial Beach Oceanfront Fireworks Display Events EIR

that occurs near Shelter Island is the Big Bay Boom Fourth of July event, which entails the placement of a single, temporary barge just offshore of Shelter Island.

Harbor Island

Harbor Island is south of San Diego Lindbergh Field International Airport, north of Coronado Island, east of the Fleet Anti-Submarine Warfare Training Center, and across the Bay directly west of the County of San Diego Administration Center. North Harbor Drive is approximately 0.3 mile directly to the north of the site. The only fireworks display event that occurs near Harbor Island is the Big Bay Boom Fourth of July event, which entails the placement of a single, temporary barge just offshore of Harbor Island.

Centre City Embarcadero

The Centre City Embarcadero spans the length of San Diego Bay within the downtown San Diego area beginning at Laurel Street on the north end (just south of San Diego Lindbergh Field International Airport) and ending roughly at Park Boulevard, which is south of the Convention Center and north of the Tenth Avenue Marine Terminal. For the purposes of this EIR, the Centre City Embarcadero is broken down into three segments: North Embarcadero, Central Embarcadero, and South Embarcadero, as described below.

North Embarcadero

The North Embarcadero area is bounded by Laurel Street to the north, Pacific Highway to the east, San Diego Bay to the west, and the point where Harbor Drive turns east (just north of Ruocco Park and the Seaport Village) to the south. Fireworks display events that occur within the North Embarcadero include the Big Bay Boom Fourth of July event, which entails the placement of a single, temporary barge just offshore of the North Embarcadero, displays associated with private events at the U.S.S. Midway Museum, which are launched from the flight deck or off a barge within San Diego Bay, and the Our Lady of Rosary Church Annual Procession display, which occurs in the fall from the end of the Grape Street Pier. The Grape Street Pier is southeast of San Diego Lindbergh Field International Airport within the “Crescent Zone” of the North Embarcadero (the curvilinear portion of coastline that is bounded by the U.S. Coast Guard facility to the north and the Grape Street Pier to the south).

Central Embarcadero

The Central Embarcadero area comprises Seaport Village, an approximately 2-acre waterfront shopping and dining complex south of the intersection of Pacific Highway and West Harbor Drive. The Big Bay Boom Fourth of July event is the only fireworks display event that occurs within the Central Embarcadero area, and it entails the placement of a single, temporary barge just offshore of the Central Embarcadero.

South Embarcadero

The South Embarcadero includes the portion of the Centre City Embarcadero situated south of the Seaport Village and north of the Tenth Avenue Marine Terminal and is bounded by East Harbor Drive to the east. This area includes the San Diego Convention Center as well as several multi-story hotels. Fireworks display events that occur within the South Embarcadero include those associated with the San Diego Symphony’s Summer Pops concert series, which entail the placement of a single, temporary barge just offshore of the Embarcadero Marina Park South. Although one of the Big Bay

Boom barges is located closer to the Central Embarcadero area, the fireworks display event is visible from the South Embarcadero area, and viewers utilize the Embarcadero Marina Park South and public access areas to view the fireworks.

Coronado Bayfront

In the vicinity of the Fireworks Show Over Glorietta Bay fireworks display event, the Coronado Bayfront mostly comprises the publicly accessible Coronado Golf Course and Glorietta Bay. The Coronado Golf Course extends along the eastern shore of the Coronado Bayfront, south of the San Diego-Coronado Bay Bridge, and wraps around the Coronado Bayfront into Glorietta Bay. The Glorietta Bay inlet is adjacent to Coronado Island, north and west of the Naval Amphibious Base, east of SR-75, and south and west of the Coronado Municipal Golf Course. The only fireworks display event that occurs along the Coronado Bayfront is the Fireworks Show Over Glorietta Bay, a Fourth of July event that entails the placement of a single, temporary barge at the southeastern corner of Glorietta Bay. In addition, landside areas along the northern Coronado Bayfront, particularly Coronado Ferry Landing Park, are used as viewing areas for the Big Bay Boom Fourth of July event.

General Dynamics NASSCO Ship Repair Facility

Fireworks display events also currently occur at the NASSCO ship repair facility, which is located on tidelands adjacent to (west of) the Barrio Logan neighborhood, south of the San Diego-Coronado Bay Bridge, and north of Chollas Creek and Naval Base San Diego. Fireworks display events at NASSCO typically occur on Pier 12 in celebration of the launching of a new ship.

Imperial Beach Oceanfront

The Imperial Beach Pier is an approximately 1,300-foot-long pier located within the City of Imperial Beach, which is the southernmost city in San Diego County, just north of the U.S.-Mexico border. Access to the Pier is provided via Evergreen Avenue. The Pier is within the District's jurisdiction in Imperial Beach and is located along the oceanfront of Imperial Beach, south of Dunes Park, north of the Tijuana River National Estuarine Research Reserve, and west of the Portwood Pier Plaza. SR-75 runs northwesterly approximately 0.9 mile from the site boundary. The only fireworks display event that currently occurs at this site is the Fourth of July Imperial Beach Fireworks Show. For this event, fireworks are launched over the Pacific Ocean from the end of the Pier.

Proposed New Fireworks Display Events

National City Bayfront

While there are currently no existing fireworks display events along the National City Bayfront, it is anticipated that any future fireworks display events would take place within view of Pepper Park because Pepper Park is the closest publicly accessible gathering space near the National City Bayfront. Pepper Park is located along Tidelands Avenue in National City. The site is adjacent to the Sweetwater Channel, north of the Sweetwater Marsh Unit of the San Diego Bay National Wildlife Refuge, which includes Paradise Creek to the east and D Street Fill to the south, south of the National City Marine Terminal, east of San Diego Bay, and west of Pier 32 Marina. Interstate 5 (I-5) runs northeasterly approximately 0.4 mile from the park site boundary. Pepper Park site access is provided via Tidelands Avenue, which turns into Goesno Place as it approaches the park. One

fireworks display event, likely a Fourth of July event, may occur along the National City Bayfront and is anticipated to involve the placement of a single, temporary barge in the vicinity of Pepper Park.

Chula Vista Bayfront

While there are currently no existing fireworks display events along the Chula Vista Bayfront, it is anticipated that fireworks display events would occur within view of both the Chula Vista Bayside Park and the Chula Vista Bayfront Park. Bayside Park is a waterfront park accessed by Bayside Parkway. It is bounded to the north by a boatworks facility, to the south by a man-made inlet that contains marinas, to the east by a recreational vehicle (RV) park, and to the west by San Diego Bay. Bayfront Park is on the south side of the man-made inlet and is bounded to the south and west by San Diego Bay and to the east by the marinas of the man-made inlet as well as vacant land. The park is accessed by Marina Way. I-5 is approximately 0.5 mile to the east of the Chula Vista Bayfront. A total of three fireworks display events (including one on the Fourth of July) along the Chula Vista Bayfront area are allowed under the Chula Vista Bayfront Master Plan Settlement Agreement and Natural Resources Management Plan and are anticipated to involve the placement of a single, temporary barge in the Bay in the vicinity of the two parks.

2.3.3 Surrounding Conditions

The following discussion provides a brief overview of the land uses within the vicinity of the project areas where fireworks display events currently occur or are proposed to occur, as well as a discussion of the public viewing opportunities of the fireworks display events for each project area. A detailed discussion of the existing surrounding land uses can be found in Section 4.8, *Land Use and Planning*, of this Draft EIR. The discussion below focuses on landside publicly accessible viewing opportunities for the fireworks display events; however, the entire Bay and Pacific Ocean near Imperial Beach are also publicly accessible amenities for people on boats, including private boats, rental boats, or charter boats (e.g., harbor cruise boats). In addition, there are a number of restaurants and hotels that provide viewing opportunities for most of the locations within San Diego Bay and along the Imperial Beach Oceanfront.

Existing Fireworks Display Events

North San Diego Bay

The north San Diego Bay comprises an active waterfront with a diverse set of uses that represent the many industries that require access to waterfront areas. These include primarily tourist and recreational uses within Shelter Island and Harbor Island, which include many hotels, restaurants, marinas, and boat launches. North, Central, and South Embarcadero also provide tourist-oriented uses, such hotels and restaurants, but also include harbor cruise businesses, maritime museums, specialty retail facilities, shopping destinations, the B Street Cruise Ship Terminal, and the San Diego Convention Center.

Public viewing locations are plentiful within the north San Diego Bay, as there are many publicly accessible areas. These viewing locations include the following:

- Shelter Island
 - Shoreline Park—runs the entire bayside length of Shelter Island—adjacent to the Point Loma neighborhood of San Diego

- Harbor Island
 - Spanish Landing Park (on the mainland side)
 - Harbor Island Drive Park—a narrow parkway (mostly a waterfront promenade) along most of the Bayfront with a larger portion that includes green lawns and other amenities about mid-way along the west side of Harbor Island.
- North Embarcadero (the entire length of the North Embarcadero includes a publicly accessible waterfront pathway, but because barges would be placed nearer the southern end of the North Embarcadero, the following locations are concentrated in that area)
 - Tuna Harbor Park—located along the waterfront of the North Embarcadero and then continues out onto a pier off North Harbor Drive and south of the U.S.S. Midway Museum
 - Ruocco Park—located along the waterfront, just south of Tuna Harbor Park and north of Seaport Village
- Central Embarcadero
 - Seaport Village/The Headquarter—located where the shoreline of the waterfront turns east, includes large pedestrian pathways and a large collection of restaurants and specialty retail facilities
 - Embarcadero Marina Park North—a large park that extends into the Bay adjacent to Seaport Village and includes a waterfront walkway, large green lawns, benches, picnic tables, and other similar amenities
- South Embarcadero
 - Embarcadero Marina Park South—a large park that extends into the Bay adjacent to the Convention Center and includes a waterfront walkway, a public fishing pier, large green lawns, benches, picnic tables, and other similar amenities. This is also the location of the San Diego Symphony's Summer Pops concert series.
- Coronado Bayfront—there are several large public parks on the Coronado Bayfront, directly across the Bay from the South Embarcadero, that provide excellent viewing opportunities for barges located in that area. These include Bayview Park, Centennial Park, Coronado Landing Park, and Coronado Tidelands Park.

Coronado Bayfront

Both the north and east shores of the Coronado Bayfront are in proximity to existing fireworks display events. Uses along the northern shore of the Coronado Bayfront include the Naval Air Station North Island and primarily single-family and multi-family residential uses that front the Bay along 1st Street between Alameda Boulevard and A Avenue. Commercial uses are concentrated toward the eastern end of the north Bayfront, including the Ferry Landing Marketplace, which includes a number of restaurants and small boutique or tourist-oriented shops. A hotel—the Coronado Island Marriott Resort and Spa—is located at the northeast corner of the Coronado Bayfront. Public open spaces along the north Bayfront include Bayview Park at I Avenue and 1st Street, Centennial Park at Orange Avenue and 1st Street, and Coronado Ferry Landing Park at B Avenue and 1st Street.

Land uses along the east shore of the Coronado Bayfront include a marina, boat rentals, yacht clubs, hotels, the Coronado Municipal Golf Course, high-rise condominiums, a community center and

public parks, and the U.S. Naval Amphibious Base. Public viewing opportunities along the eastern Coronado Bayfront include the waterfront pedestrian paths that are part of the Coronado Community Center located along the western side of Glorietta Bay as well as Glorietta Bay Park, located along the southwestern portion of Glorietta Bay, north of the U.S. Naval Amphibious Base.

General Dynamics NASSCO Ship Repair Facility

The NASSCO ship repair facility is located on tidelands adjacent to (west of) the Barrio Logan neighborhood, south of the San Diego-Coronado Bay Bridge, and north of Chollas Creek and Naval Base San Diego. The segment of the Bayfront spanning from the Coronado Bay Bridge to Chollas Creek is occupied largely by ship repair yards and is highly industrialized. The area consists of numerous ship repair docks, ships or ship parts in various stages of repair, cranes and other large equipment, and warehouse buildings. Land uses in the area surrounding the NASSCO ship repair facility include marine-related uses, while the waterside uses include specialized berthing. Public viewing opportunities are not provided for fireworks display events held at the NASSCO ship repair facility.

Imperial Beach Oceanfront

The Imperial Beach Oceanfront consists entirely of the beach, which is abutted predominantly by residential uses, including single-family homes, condominium complexes, and multi-family apartment complexes. Other nearby uses include hotels, restaurants, and retail shops. The beach is publicly accessible and provides a large, open area for public viewing opportunities. In addition to the beach, there are two beach-side publicly accessible parks. These include Dunes Park, approximately 800 feet north of the Pier, and Portwood Pier Plaza, directly adjacent to the Pier. While normally the Pier is a publicly accessible amenity in Imperial Beach, it is closed for safety reasons during fireworks display events because fireworks are launched from the Pier.

Proposed New Fireworks Display Events

National City Bayfront

The National City Bayfront is largely industrial and includes the National City Marine Terminal as well as a naval base. Only a small portion of the National City Bayfront is publicly accessible. Public viewing opportunities are limited to Pepper Park, which is approximately 0.4 mile from the San Diego Bay waterfront.

Chula Vista Bayfront

Large portions of the Chula Vista Bayfront area are dedicated to wildlife reserves and marshes. Other uses include public parks, a marina, an RV park, a salt works operation, and a boat repair facility. However, the middle of the Chula Vista Bayfront includes three publicly accessible parks in the vicinity of the waterfront, including Bayside Park, Bayfront Park, and Marina View Park, which is just east of Bayfront Park.

3.1 Introduction

The proposed project consists of (1) an ordinance establishing a San Diego Unified Port District (District) Code section (proposed ordinance) to govern existing and proposed new fireworks display events that occur within San Diego Bay and the Imperial Beach Oceanfront that require a discretionary action by the District or that are operated by the District's tenants, and (2) four proposed new fireworks display events, which would be located adjacent to the National City and Chula Vista Bayfronts and are anticipated to require a future discretionary action by the District. Discretionary actions for fireworks display events that may require District approval include, but are not limited to, the following:

- Sponsorship agreement
- Special event permit
- Lease and lease amendment
- Tideland Use and Occupancy Permit
- Right of Entry Permit
- Coastal Act Categorical Determination of Exclusion
- Coastal Development Permit

Fireworks display events that require a discretionary action by the District or are operated by the District's tenants have been occurring on the Fourth of July and at other times throughout the year for more than a decade. The most prominent existing fireworks display events are the annual Fourth of July Big Bay Boom in San Diego Bay and the Fourth of July Imperial Beach Fireworks Show. The Fireworks Show Over Glorietta Bay is an existing display whose fireworks organizers may seek to obtain funding from the District in the future, which would require a discretionary action by the District. Existing fireworks display events that occur at other times throughout the year include those associated with the San Diego Symphony's Summer Pops concert series (multiple small displays) and the Our Lady of Rosary Church annual procession, along with the U.S.S. Midway Aircraft Carrier Museum (U.S.S. Midway Museum) (multiple small displays) and General Dynamics National Steel and Shipbuilding Company (NASSCO) displays. Four proposed new fireworks display events, which would be located adjacent to the National City and Chula Vista Bayfronts, are anticipated to require a future discretionary action by the District, as discussed further below.

3.2 Project Objectives

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

1. To develop a District ordinance that establishes policies, performance standards, and other requirements that would be applied to fireworks display events that occur in and around San Diego Bay and the Pacific Ocean near Imperial Beach and require a discretionary action by the District or are operated by the District's tenants;
2. To allow for the continued occurrence of traditional fireworks display events¹ in and around San Diego Bay and the Pacific Ocean near Imperial Beach that require a discretionary action by the District or are operated by the District's tenants, including on the Fourth of July, providing a popular and region-wide way to celebrate and express civic pride;
3. To allow for the continued occurrence of existing and future occurrence of proposed new traditional fireworks display events in and around San Diego Bay and the Pacific Ocean near Imperial Beach that require a discretionary action by the District or are operated by the District's tenants in a manner that considers the health, safety, and welfare of people, property, and the environment; and
4. To continue to enhance the visitor-serving experience of viewing fireworks display events from various vantage points around District tidelands by providing safe, high-quality fireworks display events using existing and new fireworks technologies as they become available.

3.3 Project Characteristics

The proposed project consists of an ordinance to govern existing and proposed new fireworks display events that occur throughout the year in and around San Diego Bay and the Pacific Ocean near Imperial Beach that require a discretionary action by the District or that are operated by the District's tenants. These existing fireworks display events include the Fourth of July Big Bay Boom, Fourth of July Imperial Beach Fireworks Show, and Fireworks Show Over Glorietta Bay, along with several other events sponsored by the District, the District's tenants, and other organizations throughout the year. The fireworks display events are organized and/or sponsored by various fireworks organizers, and the fireworks displays are conducted by a number of licensed fireworks operators. Typically, fireworks associated with these displays are launched from piers, flight decks, and/or barges adjacent to and/or within the waters of San Diego Bay and the Pacific Ocean near Imperial Beach. Spectators for each of the fireworks display events typically gather in public areas

¹ A traditional fireworks display event involves the use of display fireworks that are defined by the U.S. Bureau of Alcohol, Tobacco, Firearms and Explosives as large fireworks used in fireworks display shows, generally under the supervision of a trained pyrotechnician. These fireworks are designed primarily to produce visible or audible effects by combustion, deflagration, or detonation. They include, but are not limited to, salutes containing more than 2 grains (130 milligrams) of flash powder, aerial shells containing more than 40 grams of pyrotechnic compositions (including any break charge and visible/audible effect composition but exclusive of lift charge), and other display pieces that exceed the limits of explosive materials for classification as "consumer fireworks." They also include fused set pieces containing components that together exceed 50 milligrams of flash powder. Display fireworks are classified as fireworks UN0333, UN0334, or UN0335 by the U.S. Department of Transportation (U.S. ATF 2016).

along District tidelands near the fireworks display event locations, utilizing the surrounding transportation network and public parking facilities. The four new fireworks display events included as part of the proposed project would be similar in duration and magnitude as the existing fireworks display events that occur in and around San Diego Bay and the Pacific Ocean near Imperial Beach.

3.3.1 Proposed Ordinance

As stated above, the proposed project consists of an ordinance to govern existing and proposed new fireworks display events that occur within San Diego Bay and the Imperial Beach Oceanfront that require a discretionary action by the District or that are operated by the District's tenants. The proposed ordinance is included as Appendix D. The proposed ordinance addresses the following:

- Permit procedures and requirements for the conduct of fireworks displays
- Compliance with applicable federal, state, and local laws and regulations governing fireworks, including, but not limited to:
 - Code of Federal Regulations
 - Clean Water Act
 - California Health and Safety Code
 - California Code of Regulations
 - California Environmental Quality Act (CEQA)
 - California Coastal Act
- Compliance with applicable federal, state, and local plans and permits governing fireworks, including, but not limited to:
 - San Diego Regional Water Quality Control Board's (SDRWQCB's) General Permit for Public Display of Fireworks (Order No. R9-2011-0022)
 - District's Climate Action Plan
 - District's Stormwater Management and Discharge Control Code
 - Integrated Natural Resources Management Plan
 - Chula Vista Bayfront Master Plan Natural Resources Management Plan
- Consistency with the features and characteristics of each individual fireworks display event analyzed in this Draft EIR, including, but not limited to:
 - Allowable launch site locations for individual displays
 - Total pounds of fireworks for individual displays
 - Allowable shell size(s) for individual displays
 - Frequency of individual displays
 - Duration of individual displays

- Compliance with the applicable mitigation measures identified in the Mitigation Monitoring and Reporting Program for the proposed project.

3.3.2 Project Operations

As discussed in Chapter 2, *Environmental Setting*, a number of existing fireworks display events occur year-round in and around San Diego Bay and the Pacific Ocean near Imperial Beach. A list of these fireworks display events, and a description of their operational characteristics, is provided in Tables 2-1 and 2-2 respectively, of Chapter 2, *Environmental Setting*. These fireworks display events would be subject to the proposed ordinance.

In addition to the existing fireworks display events, the proposed ordinance would govern four proposed new fireworks display events, including three displays along the Chula Vista Bayfront as allowed under the Chula Vista Bayfront Master Plan Settlement Agreement and Natural Resources Management Plan, and one Fourth of July display along the National City Bayfront. The three proposed fireworks display events along the Chula Vista Bayfront include one Fourth of July display and two non-Fourth of July displays. It is anticipated that the District would consider annually whether or not to provide event sponsorship and/or issue a Special Event Permit, Right-of-Entry Permit, Tideland Use and Occupancy Permit, Coastal Development Permit, Coastal Act Categorical Determination of Exclusion, or other similar approval for these proposed new fireworks display events. These proposed new fireworks display events are anticipated to last approximately 3 to 10 minutes for non-Fourth of July displays, and 15 to 20 minutes for Fourth of July displays, and the fireworks are anticipated to be launched from barges within San Diego Bay. These proposed new fireworks display events would also be governed by the proposed ordinance. The proposed new fireworks display events are identified in Table 3-1, below. Figure 2-1 depicts the estimated proposed barge locations along the Chula Vista and National City Bayfronts.

Table 3-1. Proposed New Fireworks Display Events Requiring a Future Discretionary Action by the District

Time of Year	Approximate Number of Fireworks Display Events	Location(s) of Fireworks Display Event	Approximate Duration of Each Fireworks Display Event	Approximate Shell Size
January–March	1	• Chula Vista ¹	3–10 minutes	2–8 inches
April–June	—	—	—	—
July–September	2	• Chula Vista ² • National City ²	15–20 minutes	3–8 inches
October–December	1	• Chula Vista ¹	3–10 minutes	2–8 inches
TOTAL³	4			

¹ Non-Fourth of July display (smaller display)

² Fourth of July display

³ Total includes three fireworks display events along the Chula Vista Bayfront, as allowed under the Chula Vista Bayfront Master Plan Settlement Agreement and Natural Resources Management Plan.

Table 3-2 summarizes the total pounds of fireworks estimated in this Draft EIR for each proposed new fireworks display event. As discussed in Chapter 2, *Environmental Setting*, the total pounds of fireworks for the existing fireworks display events identified in Table 2-2 was determined through a review of the post-event reports submitted in compliance with SDRWQCB's General Permit for these displays, special event permits obtained from the District's five member cities, and data collected from the fireworks organizers, fireworks operators, and/or District tenants. Because no fireworks display events currently occur along the National City or Chula Vista Bayfronts, the total pounds of fireworks used to produce these displays is not yet known. However, for the purposes of this Draft EIR, the total pounds of fireworks for the National City and Chula Vista Bayfronts Fourth of July fireworks display events is anticipated to be 456 pounds for each display, which is similar to the Fourth of July Imperial Beach Fireworks Show. For the proposed new non-Fourth of July fireworks display events that would occur along the Chula Vista Bayfront, the total pounds of fireworks was estimated by scaling the duration of the Fourth of July Imperial Beach Fireworks Show (20-minute display) by the number of minutes for each proposed new fireworks display event (assumed to range between 3 and 10 minutes with an average duration of 5 minutes, similar to existing displays operated by the San Diego Symphony during the Summer Pops concert series and U.S.S. Midway Museum), which equals an estimated 114 pounds for each display. Because the proposed ordinance would require consistency with the features and characteristics of each individual fireworks display event analyzed in this Draft EIR, including, but not limited to, the total pounds of fireworks and durations for individual displays, the values provided in Table 3-2, below, represent the maximum allowable pounds of fireworks and durations for the proposed new displays along the Chula Vista and National City Bayfronts assumed in this Draft EIR. Similarly, because the proposed ordinance would also govern the existing fireworks display events identified in Chapter 2, *Environmental Setting*, the values provided in Table 2-2 also represent the maximum allowable pounds of fireworks for each existing fireworks display assumed in this Draft EIR. If an existing fireworks display event identified in Table 2-2 is proposed to be modified in the future, a new additional fireworks display event is proposed that was not analyzed in this Draft EIR, or any of the characteristics provided in Table 3-2 (e.g., magnitude and/or duration) of the four proposed new fireworks display events are proposed to be modified, the fireworks display event will be subject to additional environmental review, pursuant to State CEQA Guidelines Section 15168(c).

Table 3-2. Summary of Activity Associated with the Proposed Fireworks Display Events

Fireworks Display Event	Day of Event	Number of Events	Pounds of Fireworks per Event	Pounds of Fireworks Annually	Number of Barges Used per Event
Chula Vista Bayfront ¹	Fourth of July plus two other shows	3	456 ¹ 114 ²	684	1
National City Bayfront ¹	Fourth of July	1	456 ¹	456	1

Source: District 2016

¹ The total pounds of fireworks display events in the Chula Vista Bayfront and National City Bayfront areas on the Fourth of July is anticipated to be 456 pounds, similar to the Fourth of July Imperial Beach Fireworks Show.

² The total pounds of non-Fourth of July fireworks events estimated by scaling the Fourth of July Imperial Beach Fireworks Show (20-minute event) by the number of minutes for each fireworks display event (assumed to average 5 minutes), which equals an estimated 114 pounds each.

Both existing and proposed new fireworks display events involve coordination between several agencies, organizations, and businesses, as detailed below. The definitions below pertain to terminology used in the description of fireworks display events in the following paragraphs and throughout this Draft EIR.

- *Sponsor* generally refers to an individual, association, partnership, nonprofit organization, corporation, limited liability company, trustee, municipality, public agency, or other legal entity, or the agent or employee thereof, that contributes funds, services, or other similar goods to a *fireworks organizer* in support of a fireworks display event. The District has historically been a *sponsor* of several of the fireworks display events described below.
- *Fireworks organizer* generally refers to the individual, association, partnership, nonprofit organization, corporation, limited liability company, trustee, municipality, public agency, or other legal entity, or the agent or employee thereof, proposing to conduct a fireworks display event. The *fireworks organizer* is typically responsible for obtaining all required funding, entitlements, and approvals for a fireworks display event, as well as contracting with a *fireworks operator* to produce the fireworks display event. Historically, the District has entered into agreements with *fireworks organizers* in order to *sponsor* several of the fireworks display events described below.
- *Fireworks operator* generally refers to a State of California–licensed pyrotechnic operator who, by examination, experience, and training, has demonstrated the required skill and ability in the use and discharge of fireworks as authorized by the license granted. A *fireworks operator* is typically responsible for supplying, setting up, and detonating the pyrotechnic devices associated with a fireworks display event. The *fireworks operator* is also typically under contract with the *fireworks organizer* to produce the fireworks display event. Historically, the District has not had a direct relationship with the *fireworks operator*.

All existing and proposed new fireworks display events that either require a discretionary action by the District or that are operated by the District’s tenants would be subject to all applicable federal, state, and local laws and regulations governing fireworks as well as any additional requirements set forth in the proposed ordinance.

3.3.3 Description of Pyrotechnic Devices

Fireworks are a class of low-explosive pyrotechnic devices used for aesthetic or entertainment purposes. Fireworks devices take many forms to produce four primary effects: noise, light, smoke, and floating materials (e.g., confetti). Fireworks may be designed to burn with flames and sparks of various colors, including red, orange, yellow, green, blue, purple, and silver. Professional pyrotechnic devices used in fireworks display events can be grouped into three general categories: (1) aerial shells (i.e., paper and cardboard spheres or cylinders filled with pyrotechnic materials), (2) low-level comet and multi-shot devices, such as roman candles, and (3) set piece displays mounted on the ground.

Aerial Fireworks/Shells

Aerial fireworks typically either provide their own propulsion (e.g., a skyrocket using a solid rocket motor) or are launched into the air in an aerial shell by a mortar using a black powder lifting charge or propellant. Most of the incendiary elements and shell casings burn up in the atmosphere;

however, portions of the casings and some internal structural components and chemical residue fall back to the ground and/or receiving water bodies. The aerial shell typically consists of a cylinder or spherical cartridge, usually constructed of paper, plastic, or cardboard, and may include some plastic or paper internal components used to compartmentalize chemicals within the shell. The shell casing contains a burst charge, pyrotechnic material that emits prescribed colors when detonated, a fuse, and a black powder lift charge.

Aerial shells are often combined so as to make a great variety of sparkling shapes, often variously colored, when detonated. Colors in fireworks are usually generated by pyrotechnic stars (usually just called *stars*), which produce intense light when ignited. Stars contain five basic types of ingredients.

- A fuel, which allows the star to burn
- An oxidizer, which usually produces oxygen to support combustion of the fuel
- Color-producing chemicals
- A binder, which holds the pellet together
- A chlorine donor, which intensifies the color of the flame (sometimes the oxidizer can serve this purpose)

Attached to the bottom of an aerial shell is a lift charge of black powder. The lift charge and shell are placed at the bottom of a mortar buried in earth/sand or affixed to a wooden rack. When a fuse attached to the lift charge is ignited with an electric charge or heat source, the lift charge explodes and propels the shell through the mortar tube and into the air to a height determined by the amount of powder in the lift charge and the weight of the shell. As the shell travels skyward, a time-delayed secondary fuse eventually ignites the burst charge within the shell at peak altitude. The burst charge detonates, igniting and scattering the stars, which may, in turn, have small secondary explosions. Shells can be launched one at a time or in a barrage of simultaneous or quick-succession launches and are typically designed to detonate between 200 and 1,000 feet in the air.

As identified in Tables 2-1 and 3-1, aerial shells range in diameter from 2 inches to 10 inches for existing and proposed new fireworks display events within San Diego Bay and the Imperial Beach Oceanfront. The weight, height of the burst, burst radius, and burst delay of a firework is dependent upon the size of the shells (i.e., diameter of the shell). As the shell size increases, these characteristics also increase (Poulton and Kosanke 1995).

Low-Level Fireworks Devices

Low-level fireworks devices consist of stars packed linearly within a tube. When ignited, the stars exit the tube in succession, producing a fountain effect of single- or multi-colored light as the stars incinerate through the course of their flight. Typically, the stars burn rather than explode, thus producing a ball or trail of sparkling light to a prescribed altitude, where they simply extinguish. Sometimes they terminate with a small explosion similar to a firecracker. Other low-level devices emit a projected hail of colored sparks or perform erratic, low-level flight while emitting a high-pitched whistle. Some emit a pulsing light pattern or crackling or popping sound effects. In general, low-level launch devices and encasements remain on the ground or attached to a fixed structure and can be removed upon completion of the fireworks display event. Common low-level devices are

multi-shot devices, mines, comets, meteors, candles, strobe pots, and gerbs. They are designed to produce effects between 0 and 200 feet in the air.

Set Piece/Ground-Level Fireworks

Set piece or ground-level fireworks are primarily static in nature and remain close to the ground. They are usually attached to a framework crafted in the design of a logo or familiar shape, illuminated by pyrotechnic devices such as flares, sparklers, and strobes. These fireworks typically employ bright flares and sparkling effects and may also emit limited sound effects such as cracking, popping, or whistling. Set pieces usually are used in concert with low-level effects or an aerial show and sometimes act as a centerpiece for the fireworks display event. They may have some moving parts, but typically do not launch devices into the air. Set piece displays typically are designed to produce effects between 0 and 50 feet in the air.

3.3.4 Fireworks Chemical Constituents

Typical fireworks constituents include, but are not limited to, aluminum, antimony, barium, carbon, calcium, chlorine, cesium, copper, iron, potassium, lithium, magnesium, oxidizers (including nitrates, chlorates, and perchlorates), phosphorus, sodium sulfur, strontium, titanium, and zinc. The chemical constituents burn at high temperatures when a firework is detonated, which promotes incineration. The chemical constituents within the fireworks are scattered by the burst charge, which separates them from the fireworks casing and internal shell components. Combustion residue is produced in the form of smoke, airborne particulates, chemical pollutants, and debris, including paper, cardboard, cotton, metal, wires, fuses, and other similar components. A list of chemicals typically used in fireworks for fuels, oxidizers, binding agents, coloration effects, and sound effects is provided in Table 3-3, below. Based on literature review, the total net weight of non-chemical pyrotechnic materials (i.e., debris) in a firework shell is typically approximately one-half their gross weight (Poulton and Kosanke 1995).

Table 3-3. Fireworks Chemical Constituents

Symbol	Name	Purpose in Fireworks Usage
Al	Aluminum	Aluminum is used to produce silver and white flames and sparks. It is a common component of sparklers.
Ba	Barium	Barium is used to create green colors. It can also help stabilize other volatile elements.
C	Carbon	Carbon is one of the main components of black powder, which is used as a propellant. Carbon provides the fuel for a firework. Common forms include carbon black, sugar, or starch.
Ca	Calcium	Calcium is used to deepen colors. Calcium salts produce orange fireworks.
Cl	Chlorine	Chlorine is an important component of many oxidizers. Several of the metal salts that produce colors contain chlorine.
Cs	Cesium	Cesium compounds produce indigo color.
Cu	Copper	Copper compounds produce blue colors.
Fe	Iron	Iron is used to produce sparks. The heat of the metal determines the color of the sparks.

Symbol	Name	Purpose in Fireworks Usage
K	Potassium	Potassium compounds help to oxidize fireworks mixtures. Potassium nitrate, potassium chlorate, and potassium perchlorate are all-important oxidizers. The potassium content can impart a violet color to the sparks.
Li	Lithium	Lithium is a metal used to impart a red color. Lithium carbonate, in particular, is a common colorant.
Mg	Magnesium	Magnesium burns a very bright white, so it is used to add white sparks or improve the overall brilliance of a firework.
Na	Sodium	Sodium imparts a gold or yellow color; however, the color is often so bright that it frequently masks less intense colors.
O	Oxygen	Fireworks include oxidizers, which produce oxygen to promote burning. Oxidizers usually are nitrates, chlorates, or perchlorates. Sometimes the same substance is used to provide oxygen and color.
P	Phosphorus	Phosphorus burns spontaneously in air and is also responsible for some glow-in-the-dark effects. It may be a component of a firework's fuel.
S	Sulfur	Sulfur is a component of black powder and, as such, it is found in a firework's propellant/fuel.
Sb	Antimony	Antimony is used to create glitter effects.
Sr	Strontium	Strontium salts impart a red color. Strontium compounds are also important for stabilizing fireworks mixtures.
Ti	Titanium	Titanium metal can be burned as powder or flakes to produce silver sparks.
Zn	Zinc	Zinc is a bluish-white metal that is used to create smoke effects for fireworks and other pyrotechnic devices.

Source: SDRWQCB 2011

Introduction

Sections 4.1 through 4.10 of Chapter 4 of this Draft EIR contain a discussion of the potential significant environmental effects resulting from implementation of the proposed project, including information related to existing site conditions, criteria for determining significance of potential environmental impacts, analyses of the type and magnitude of environmental impacts, and feasible mitigation measures that would reduce or avoid significant environmental impacts.

Potential Environmental Impacts

This chapter provides an analysis of the following potential environmental impacts of the proposed project:

- 4.1, Aesthetics and Visual Resources
- 4.2, Air Quality and Health Risk
- 4.3, Biological Resources
- 4.4, Greenhouse Gas Emissions, Climate Change, and Energy
- 4.5, Hazards and Hazardous Materials
- 4.6, Hydrology and Water Quality
- 4.7, Land Use and Planning
- 4.8, Noise and Vibration
- 4.9, Public Services and Facilities
- 4.10, Transportation, Circulation, and Parking

It was determined during preparation of the Initial Study/Environmental Checklist (Appendix A) that the proposed project would have either a less than significant impact or no impact associated with the following topics: agriculture and forestry resources; cultural resources; geology and soils; mineral resources; population and housing; recreation; and utilities and service systems. These topics are described in Section 6.4, *Effects Not Found to be Significant*, of this Draft EIR.

Format of the Environmental Analysis

Each of the 10 environmental topic sections of this chapter includes the following subsections.

Overview

This subsection briefly describes the criteria considered in the particular resource section, summarizes the resources used to compile the information presented for the environmental

analysis, and summarizes the environmental effects of the proposed project and any feasible mitigation measures.

Existing Conditions

According to Section 15125 of the State CEQA Guidelines, an EIR must include a description of the existing physical environmental conditions in the vicinity of a project to provide the “baseline condition” against which project-related impacts are compared. Typically, the baseline condition is the physical condition that exists when the Notice of Preparation (NOP) is published; however, a different baseline may be used in specific cases where it is deemed appropriate. Unless otherwise indicated, the environmental setting described in each of the following sections will be the physical environmental conditions that existed in the vicinity of existing and proposed new fireworks display events in San Diego Bay and along the Imperial Beach Oceanfront on the date the NOP was published.

As discussed in Section 1.4, the NOP for the proposed project was issued on August 7, 2015. At the time the NOP was published, the existing conditions included 49 annual fireworks display events within the San Diego Bay and Imperial Beach Oceanfront that required a discretionary action by the District or that were operated by the District’s tenants. The existing fireworks display events are identified in Table 2-1 of Chapter 2, *Environmental Setting*.

Applicable Laws and Regulations

This subsection provides a summary of regulations, plans, policies, and laws at the federal, state, regional, and local levels that are relevant to the proposed project as they relate to the particular environmental resource area in discussion. Compliance with these applicable laws and regulations is mandatory unless noted otherwise within the analysis. Therefore, as it relates to the project impact analysis below, compliance is assumed because it is required by law, and mitigation would generally not be required when compliance with an existing law or regulation would ensure that a significant impact would not occur.

Project Impact Analysis

This subsection describes the methodology used for the analysis of the potential environmental impacts of the proposed project; identifies the criteria for determining the significance of potential impacts; and states a conclusion as to whether the environmental impacts would be considered significant and unavoidable, less than significant with mitigation incorporated, or less than significant, or indicates that no impact would occur (see definitions below). Each topic analyzed is divided into specific issues, based on potential impacts. The discussion of potential impacts is based on the applicable threshold of significance (see below) for each issue. Where potential impacts are significant, mitigation measures are identified, as feasible, to minimize, rectify, reduce, eliminate, or compensate for the significant impacts with the goal of reaching a less-than-significant impact determination.

Methodology

Each methodology subsection describes the means used to analyze potential impacts on a particular resource, discussing the steps followed and listing any studies relied on for arriving at conclusions as to significance.

Thresholds of Significance

Thresholds of significance are criteria used to assess whether potential environmental effects are significant. The significance criteria used in this analysis are primarily based on the recommendations provided in Appendix G of the State CEQA Guidelines. The thresholds of significance define the type, amount, and/or extent of an impact that would be considered a significant adverse change in the environment. The thresholds of significance for some environmental topics, such as air quality and noise, are quantitative, while those for other topics, such as aesthetics and visual resources, are qualitative. The thresholds of significance are intended to assist the reader in understanding how the significance of an impact is determined.

Project Impacts and Mitigation

The analysis of environmental impacts considers both the construction and operation of the proposed project. As required by Section 15126.2(a) of the State CEQA Guidelines, direct, indirect, short-term, long-term, onsite, and/or offsite impacts are addressed, as appropriate, for the environmental issue being analyzed. This Draft EIR utilizes the following terms to describe the level of significance of impacts identified during the course of the environmental analysis.

No Impact: This term is used when implementation of the proposed project would have no adverse effect on a resource.

Less than Significant: This term is used to refer to impacts resulting from implementation of the proposed project that are not likely to exceed the defined thresholds of significance, and potentially significant impacts that are reduced to a level that does not exceed the defined thresholds of significance after implementation of mitigation measures. In the latter case, the determination may also be stated as “less than significant with mitigation incorporated.”

Significant: This term is often used to refer to impacts resulting from implementation of the proposed project that exceed the defined thresholds of significance before identification of any mitigation measures. A “significant effect” is defined by Section 15382 of the State CEQA Guidelines as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment [but] may be considered in determining whether the physical change is significant.” For impacts that exceed a threshold of significance, mitigation measures that avoid or reduce the potential impact are identified, which may cause the impact to be reclassified as less than significant if it is sufficiently reduced, or the impact may remain significant, even after the application of feasible mitigation measures, in which case it is referred to as a significant and unavoidable impact (or unavoidable significant impact).

Significant and Unavoidable: This term is used to refer to significant impacts resulting from implementation of the proposed project that cannot be eliminated or reduced to below standards of significance through implementation of feasible mitigation measures.

Mitigation Measures

Section 15126.4 of the State CEQA Guidelines requires an EIR to “describe feasible measures which could minimize significant adverse impacts.” Mitigation includes avoiding an impact altogether, minimizing impacts, rectifying impacts, reducing or eliminating impacts over time, or compensating for impacts by replacing or providing substitute resources. The State CEQA Guidelines define

feasibility as “capable of being accomplished in a successful manner within a reasonable period of time taking into account economic, legal, social, technological, or other considerations.” This subsection lists the mitigation measures that could reduce the severity of impacts identified in the *Impact Analysis* subsection. Mitigation measures are the specific environmental requirements for implementation of the proposed project that will be included in the Mitigation Monitoring and Reporting Program and adopted as conditions of project approval.

Section 4.1

Aesthetics and Visual Resources

4.1.1 Overview

This section describes the existing aesthetic and visual conditions that could be adversely affected by the proposed project and discusses the applicable laws and regulations related to aesthetics and visual quality. The impact analysis contained in this section describes the potential impacts on aesthetics and visual resources associated with the proposed new fireworks display events. Impacts related to aesthetics and visual resources were considered significant if the proposed project would create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. Other potential impacts on aesthetic and visual resources, including (1) substantial adverse effects on designated scenic views, (2) substantially damaging scenic resources within a designated scenic highway, or (3) substantially degrading the existing visual character of the site and its surroundings, were analyzed in Section I of the Initial Study/Environmental Checklist (Appendix A), which is hereby incorporated by reference. The potential impacts were determined to be less than significant. The analysis and conclusions regarding these impacts are included in Chapter 6, Section 6.4, *Effects Not Found to Be Significant*.

Based on the analysis that follows, all impacts related to aesthetics and visual resources would be less than significant. No mitigation is required.

4.1.1.1 Concepts and Terminology

This section defines the key concepts and terminology used to describe existing aesthetic and visual conditions or the change in existing conditions after implementation of the proposed project. Although there may be more than one definition for any of these terms, these common definitions are used for analytical consistency.

View refers to visual access and obstruction, or whether it is possible to see a focal point or panoramic scene from an area. Views may be discussed in terms of foreground, middleground, and background. *Foreground* views are immediately presented to the viewer and include objects at close range that may tend to dominate the view. *Middleground* views occupy the center of the viewshed and tend to include objects that are the center of attention if they are large enough or visibly different from adjacent visual features. *Background* views include distant objects and other objects that make up the horizon. Objects in the background eventually fade to obscurity with increasing distance. In the context of background, the skyline or the ocean can be an important visual feature because objects above this point are highlighted against the background of the sky or water. These *skylined* elements are typically more evident to the viewer because of their inherent contrast.

Visual quality is evaluated according to the relative degree of vividness, intactness, and unity within a landscape, as modified by viewer preference and sensitivity. *Vividness* is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns. *Intactness* is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements; this factor can be present in well-kept urban and rural landscapes as well as

natural settings. *Unity* is the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the landscape. High-quality views are highly vivid and relatively intact and exhibit a high degree of visual unity. Low-quality views lack vividness, are not visually intact, and possess a low degree of visual unity (Federal Highway Administration 1981).

The following additional definitions pertain to the terminology used in this visual analysis:

- *Aesthetics* generally refers to the identification of visual resources and the quality of what can be seen, or the overall visual perception of the environment.
- *Viewer sensitivity*, or viewer concern about noticeable changes to views, is based on the visibility of a scenic resource, proximity of viewers to the resource, relative elevation of viewers to the resource, frequency and duration of views, number of viewers, and types and expectations of the viewers.
- *Viewshed* is all of the surface area visible from a particular location or sequence of locations (e.g., roadway or trail).
- *Vista areas* are “points of natural visual beauty, photo vantage points, and other panoramas,” as depicted in the Port Master Plan (PMP) (District 2012:28)

4.1.2 Existing Conditions

4.1.2.1 Aesthetic Character and Site Features

Existing fireworks display events originate from barges, flight decks, and/or piers adjacent to and/or in the waters of North San Diego Bay, including areas adjacent to Shelter Island, Harbor Island, Centre City Embarcadero (which includes North Embarcadero, Central Embarcadero, and South Embarcadero), Glorietta Bay in Coronado, NASSCO ship repair facility, and the Imperial Beach Oceanfront. In addition, the proposed new fireworks display events would originate from barges adjacent to the National City and Chula Vista Bayfronts.

The sites for the existing and proposed new fireworks display events comprise primarily the waters within the Bay, consisting of calm waters that are characteristic of an enclosed and protected bay (versus the rougher waters of an open ocean). These sites are immediately surrounded by other maritime and recreational boating uses. In general, views of watercraft, ranging from small recreational craft to large vessels, such as container and general cargo vessels as well as U.S. naval vessels, are present primarily within foreground and middleground views. The remaining site occurs over the Pacific Ocean near Imperial Beach, consisting of open ocean and the beach. Along the oceanfront, views of watercraft, such as those seen in the Bay, are also present; however, they are generally farther out and part of the background views. All of these waterside sites are surrounded by or adjacent to developed, urbanized waterfronts. The aesthetic character of these waterfront areas is described below.

North San Diego Bay

Barges, flight decks, and/or piers used for existing fireworks display events are located within North San Diego Bay adjacent to Shelter Island, Harbor Island, and the Centre City Embarcadero. Most of

the waterfront land uses within these areas comprise tourist destinations and visitor-serving uses, such as hotels, restaurants, and marinas.

Shelter Island

Shelter Island proper is a long, narrow strip of land that is approximately 1 mile in length and less than 0.1 mile in width, connecting to the mainland at Point Loma via Shelter Island Drive. The only Fourth of July fireworks display event that currently occurs near Shelter Island is the Big Bay Boom, which entails the placement of a single temporary barge just offshore of Shelter Island. The visual character of Shelter Island is largely defined by the visitor-serving uses that occupy the island, with development concentrated along the island's western side. Development along Shelter Island is not dense, consisting primarily of low-rise (i.e., no more than three stories in height) but expansive hotels and yacht clubs and one- or two-story restaurants and retail stores that are separated from each other and/or the roadway by large surface parking lots. The buildings are contemporary in style. Many include beige or yellow stucco siding, while others have elements of island or "tiki" architectural styles, such as the use of dark woods, shutters, and/or steeply pitched and extended porch roofs.

Roadways and parking lots run the length of the middle of the island, providing public access to the waterfront parks, beaches, marinas, and boat launches. Waterfront parks, consisting primarily of wide green lawns, occupy the entire eastern side of the island, creating an open and accessible bayside area. Although the open green lawns are the most visually prominent component of the waterside parks, trees, public art (statues), play equipment, walking paths, picnic tables, and fishing piers also contribute to the views of the Bayfront areas. Several small-boat marinas with many boat slips occupy the area between Shelter Island and the mainland east and west of the segment of Shelter Island Drive that extends to the mainland. From a visual perspective, middleground and background views of small-boat marinas generally consist of a high concentration of regularly spaced (and usually white) boats topped by a forest of masts. In closer foreground views, individual features of the boats are evident, and the regular spacing of the boats is not distinguishable. The collection of masts, however, still forms a prominent and forest-like visual feature. The high concentration of masts may obscure but generally does not completely block views beyond the marinas.

Visitor-serving and recreational boating uses continue east of Shelter Island along Harbor Drive on the mainland between Shelter and Harbor islands. These uses include additional marinas, yacht sales, sportfishing services, and several restaurants. The structures housing these uses are sporadically positioned along the waterfront in one- or two-story structures of varying sizes and architectural styles and generally separated from each other by large surface parking lots. Similar to Shelter Island, there is no unifying context to this area.

Harbor Island

The shape and visual features of Harbor Island are similar to those of Shelter Island. Harbor Island proper consists of a long and narrow strip of land, approximately 1.5 miles long and less than 317 feet wide, that extends off the San Diego mainland via Harbor Island Drive. The clusters of development along Harbor Island are somewhat sparse and separated by large parking lots. In addition, Harbor Island includes several hotels that are about 10 stories in height, while other uses, primarily restaurants and marina boathouses, are generally single-story structures. A public walkway, bordered mostly by narrow strips of green lawn and the roadway, runs the entire length of Harbor Island along the Bay; however, there is a larger bayside park midway down the island's

western side. Several marinas occupy the water area between the island and the mainland along both the east and west sides of the island, creating visual elements similar to those described above for Shelter Island. Spanish Landing Park and former car rental lots occupy the landward side of the island north of the marinas. Spanish Landing Park is a long, narrow park that fronts the inlet between Harbor Island and the mainland on the western side of the island. The park includes a Bayfront promenade, picnic areas, play areas, public art, the Callaway Carillon bell tower, and a small beach. In addition, the former car rental lots occupy the eastern portion of the landward side of Harbor Island. This area has an industrial character to it. Expansive surface parking lots are dotted by small single-story warehouse buildings, out of which the car rental operations were managed. The Harbor Police Department administrative building and storage lot is also situated in this area. The promenade that begins in Spanish Landing Park continues through this side of the island; however, it is situated north of the car rental area, adjacent to North Harbor Drive; it is not directly adjacent to the Bay. The only fireworks display event that currently occurs near Harbor Island is the Big Bay Boom Fourth of July event, which entails the placement of a single temporary barge just offshore of Harbor Island.

Centre City Embarcadero

Centre City Embarcadero extends the length of San Diego Bay within the downtown San Diego area, beginning at Laurel Street on the north end (just south of San Diego International Airport [formerly known as Lindbergh Field]) and ending roughly at Park Boulevard, which is south of the Convention Center and north of the Tenth Avenue Marine Terminal. The Centre City Embarcadero is broken down into three segments: North Embarcadero, Central Embarcadero, and South Embarcadero, as described below. Overall, the visual character of the Centre City Embarcaderos reflects a diverse mix of uses and building types, which are characteristic of active waterfront and downtown environments. The specific visual character of each segment is described below.

North Embarcadero

The North Embarcadero is bounded by Laurel Street at its northern end and Seaport Village at its southern end. The landside features at the northern end are dominated by the manufacturing facilities and office buildings of Solar Turbines, an industrial use that manufactures industrial gas turbines for onshore and offshore electrical power generation, marine propulsion, and natural gas and oil production. Although somewhat obscured by vegetation, the cranes, piping, and scaffolding associated with Solar Turbines' operations are visible in the midst of the large, white, approximately two- or three-story warehouse/office buildings of the large multi-block facility.

Moving south, the industrial character of Solar Turbines transitions to institutional uses with the four-story Beaux-Arts/Spanish Revival-style San Diego County Administration Center, which features a prominent clock tower, pink stucco siding, and a red tiled roof. The building is situated in a park-like setting and surrounded by an expansive green lawn, fountains, and a splash park. The surrounding park and splash park are relatively low in profile, especially compared to the high-rise buildings in the surrounding area. The Administration Center has some visual prominence, given the long linear wading pool and fountains along the approximately 1,500-foot length of the site, which contrast with the undulating bright green, blue, and beige surfaces of the whimsically designed splash park.

The Administration Center is followed by a large hotel complex with multiple buildings that reach up to 14 stories in height. The remainder of the landside area of North Embarcadero is occupied by

administration buildings for the U.S. Navy, including multi-story buildings and single-story barracks-style facilities.

The waterfront side of North Embarcadero is characterized by concrete pedestrian pathways and wide drives/parking aisles that provide direct vehicular and pedestrian access to the piers and anchorages of the various maritime enterprises that are accessible from the North Embarcadero. Piers of varying lengths, widths, and materials punctuate the coastline of the North Embarcadero. The Grape Street Pier, which currently includes one fireworks display event per year, is located at the northern end of the North Embarcadero, within the “Crescent Zone” (the curvilinear portion of coastline that is bounded by the U.S. Coast Guard facility to the north and the Grape Street Pier to the south). The wooden pier is approximately 550 feet in length.

Various types of ships and boats also contribute to the character of the waterfront along the North Embarcadero, ranging from small to medium-sized yachts for harbor tours to the 19th-century merchant ship *Star of India*; the U.S.S. Midway Museum, which currently hosts public and private fireworks display events; and multi-story cruise ships and medium-sized commercial fishing vessels. The southern end of the North Embarcadero includes large public passive-use parks with green lawns, pedestrian pathways, public art, surface parking lots, and restaurants. Another marina is situated at the southern end of the North Embarcadero that houses a commercial fishing operation with more rustic-looking vessels that often have multiple booms with fishing nets attached. The Big Bay Boom Fourth of July event also currently occurs within the North Embarcadero area, involving the placement of a single temporary barge just offshore of the North Embarcadero.

Central Embarcadero

The Central Embarcadero includes the approximately 2-acre Seaport Village retail complex, which is situated within a waterfront park-like setting and includes a collection of low-rise (one- or two-story) freestanding buildings with a mix of architectural styles, including traditional Mexican, Spanish Revival, and Victorian. Seaport Village houses an assortment of tourist-oriented gift shops, art galleries, and restaurants, one of which is situated over the water at the northern end of the Central Embarcadero. In addition, the Central Embarcadero includes the publicly accessible Embarcadero Marina Park North, which is on a peninsula that extends into the Bay from Seaport Village. The park includes passive-use amenities such as pedestrian pathways, green lawns, benches, and shade trees. It also includes a large surface parking lot. The Big Bay Boom Fourth of July event is the only fireworks display event that currently occurs within the Central Embarcadero area. It entails the placement of a single temporary barge just offshore of the Central Embarcadero.

South Embarcadero

The South Embarcadero area is bounded on the north by the Seaport Village shopping center and on the south by the Tenth Avenue Marine Terminal. It comprises mostly hotels and the San Diego Convention Center.

Reflecting the South Embarcadero’s proximity to downtown and the San Diego Convention Center, high-rise hotels, featuring multiple glass-clad towers of 20 or more stories, are located to the southeast of Seaport Village. The two-story Convention Center is situated centrally within the South Embarcadero and dominates the majority of the area. The Convention Center features a modern architectural style, with an emphasis on horizontality. Two elongated segments extend off a central outdoor stairway. Building materials make heavy use of glass and concrete buttressing, with varying surface shapes, such as side-rounded glass walls on one story, slanted glass walls on another, and

vertical glass walls on another. The distinctive Sails Pavilion, with its white pointed fabric roof intended to be reminiscent of the sails and masts of a ship, is just north of center within the complex.

Embarcadero Marina Park South extends into the Bay from the Convention Center and, similar to its northern counterpart, includes a publicly accessible open space with a parking lot, green lawns, pedestrian pathways, and benches. This park also includes basketball courts and a public fishing pier. A recreational boat marina is located within the cove created by the two L-shaped segments that form Embarcadero Marina Park North and South. The southernmost end of the South Embarcadero area is occupied by another modern high-rise hotel. Existing fireworks display events within the South Embarcadero include those associated with the San Diego Symphony's Summer Pops concert series, which entail the placement of a single temporary barge just offshore of Embarcadero Marina Park South.

Coronado Bayfront

The northern and eastern shores of the Coronado Bayfront are located in the vicinity of existing fireworks display events. The north Bayfront area includes Naval Air Station North Island as well as residential and commercial uses. Typical of military bases, Naval Air Station North Island, which is not publicly accessible, is characterized by industrial features, including large swaths of concrete paving, used for storage areas or runways; large gray military vessels along the waterfront; and warehouse buildings. Residential uses are located east of Naval Air Station North Island and make up most of the rest of the north Bayfront area between Alameda and D Avenues. These residential uses comprise a mix of single-family houses and condominium buildings, ranging in height from one to two stories. East of D Avenue, the condominium complexes become larger, including several four-story residential buildings along 1st Street between D and B Avenues. The architecture of these buildings is reminiscent of the Hotel del Coronado, including a white façade topped by a red gabled roof pocked by frequent gabled dormers. This area also contains the Ferry Landing Marketplace, which is a collection of shops and restaurants that are housed in single-story buildings, reflecting the Cape Cod-style (cottages with natural wood siding and moderately pitched gable roofs). The marketplace is centered around the publicly accessible Coronado Ferry Landing Park, which comprises a green lawn, a small beach area fronting the Bay, and the Bayshore bikeway. Coronado Ferry Landing Park connects to Centennial Park, which is located off 1st Street and Orange Avenue via a Bayfront promenade. Centennial Park consists mostly of green lawns, walkways, and a small beach. Finally, the northeastern corner of Coronado is occupied by the sprawling complex of buildings that compose the Coronado Island Marriott Resort and Spa. The white three-story buildings are of a contemporary style. The property also includes multiple swimming pools and tennis courts.

The east Coronado Bayfront comprises large swaths of green lawns, associated with the publicly accessible Coronado Tidelands Park (north of State Route [SR] 75), which includes public art and a portion of the Bayshore bikeway, and the Coronado Municipal Golf Course (south of SR-75), as well as Glorietta Bay. Coronado Municipal Golf Course extends along the eastern shore of the Coronado Bayfront, south of the San Diego-Coronado Bay Bridge, and wraps around into Glorietta Bay. Similar to views of most golf courses, views of the Coronado Municipal Golf Course consist of an expansive manicured green lawn dotted by sand pits, trees, water features, and putting greens. The clubhouse is situated in the middle and includes a contemporary building with eclectic Mediterranean-style architectural embellishments, such as stucco siding, a red tiled roof, columns, and arched doorways.

The only fireworks display event that currently occurs along the Coronado Bayfront is the Fireworks Show Over Glorietta Bay, a Fourth of July event that entails the placement of a single temporary barge at the southeastern corner of Glorietta Bay. Glorietta Bay is a small bay, nestled within the southern end of Coronado Island where the island meets the Silver Strand. It connects to San Diego Bay at an opening within its eastern end. The entire waterside area of Glorietta Bay is occupied by a marina that includes regularly spaced white boats with tall masts. To the north/northeast, Coronado Municipal Golf Course, with characteristic expansive green lawns, sand pits, and trees, abuts Glorietta Bay. Additionally, there is a small stretch of beach along the southern tip of the golf course. The aesthetic character of the north-to-northwestern portion of the waterfront area is defined by the urban uses of downtown Coronado, including the landmark Hotel del Coronado, with its distinctive red coned roof and white stucco siding, as well as other high-rise hotels and/or condominium buildings, single-story yacht clubs, and surface parking lots. Most of the western waterfront area is dedicated to the Coronado Community Center, which includes a multi-building complex with contemporary single-story structures surrounded by parks, public art, and a swimming pool, as well as a boat launch ramp that provides public water access to Glorietta Bay. A large pier at the southern end of Glorietta Bay is occupied by an expansive U.S. Navy facility and includes a mass of many types of buildings (office, warehouse, and lodging), open storage areas, and a series of smaller piers to accommodate smaller naval vessels.

General Dynamics NASSCO Ship Repair Facility

Existing fireworks display events also occur at the NASSCO ship repair, which is located on tidelands adjacent to (west of) the Barrio Logan neighborhood, south of the San Diego-Coronado Bay Bridge and north of Chollas Creek and Naval Base San Diego. The segment of the Bay spanning from the Coronado Bay Bridge to Chollas Creek is occupied largely by ship repair yards. The character of the area is highly industrialized. Views of the area consist of numerous ship repair piers and docks, ships or ship parts in various stages of repair, cranes and other large equipment, and warehouse buildings.

Imperial Beach Oceanfront

Imperial Beach Pier is approximately 1,300 feet long and has a nautically themed fish restaurant at its western end. The Pier is surrounded by the open ocean and the beach. One fireworks display event currently takes place on the Fourth of July near the middle of Imperial Beach Pier. Along the oceanfront, views of watercraft, such as those seen in the Bay, are present; however, they are generally farther out and part of the background views. The Imperial Beach Oceanfront comprises a long (more than 1 mile) sandy beach that is bordered almost entirely by relatively dense residential development, including closely positioned one- or two-story single-family homes as well as several multi-story (not exceeding four stories), multi-family residential buildings. Small commercial uses, such as small restaurants, boutique shops, and hotels, are also near the waterfront, although these tend to be behind residential uses along Seacoast Drive.

National City Bayfront

Bayfront uses within National City are almost entirely industrial, with large portions dedicated to a U.S. Navy base and the National City Marine Terminal. The aesthetic character, therefore, is dominated by a smattering of wide low-profile (two- or three-story) warehouses. Concrete paving in the form of very large surface parking lots and other open storage areas also dominates the visual character of the area. Very little landscaping or other sources of greenery are available, with the

exception of Pepper Park, the Sweetwater Marsh Unit of the San Diego Bay National Wildlife Refuge, which includes Paradise Creek to the east and D Street fill to the south, minimal landscaping along the roadways, and some recreational fields within the naval base, which is not publicly accessible.

Chula Vista Bayfront

Large portions of the northern and southern Chula Vista Bayfront are undeveloped and dedicated to wildlife reserves and marshes. The northern and southern portions, which are not currently publicly accessible, are partially reserved for a wildlife buffer and, as such, appear as a natural vegetated landscape. The southern portion is occupied by a saltworks operation, which is distinguished by the vivid colors of the salt evaporation ponds. The colors are due to variable algal and salinity concentrations. The middle portion of the Chula Vista Bayfront is occupied by Bayfront parks, featuring green lawns, pedestrian pathways, picnic benches, boat launches, expansive surface parking lots, public art, a boat and superyacht refit and repair facility, a recreational vehicle park, two large marinas, and the Chula Vista Wildlife Reserve.

4.1.2.2 Designated Scenic Views

The PMP considers the scenic quality of the land within its jurisdiction and establishes District policies for maintenance of important public views. Within many of its precise plans, the District has identified vista areas—key public viewpoints from which to enjoy the scenic beauty of the Bay and other visible District features. Vista areas within the District’s jurisdiction are identified on the PMP’s precise plans by arrow symbols placed on the vista areas that point toward the intended view. The Public Recreation portion of Section III of the PMP explains that these symbols identify “points of natural visual beauty, photo vantage points, and other panoramas. It is the intent of [the PMP] to guide the arrangement of development on those sites to preserve and enhance such vista points” (District 2012:28).

All of the existing fireworks display events are located within San Diego Bay and the Imperial Beach Oceanfront area near land that is publicly accessible (e.g., waterfront promenades, beaches). Additionally, the proposed new fireworks display events would be located within South San Diego Bay, along the National City and Chula Vista Bayfronts. As such, all of the existing and proposed fireworks display events, with the exception of the proposed display along the National City Bayfront, are or would be visible from multiple designated vista areas. The only designated vista area within the National City Bayfront is at Pepper Park, which is adjacent to the Sweetwater River, but approximately 0.45 mile from the Bayfront and separated from the Bayfront by the National City Marine Terminal. Finally, there are no designated vista areas in the vicinity of the NASSCO facility.

4.1.2.3 Scenic Highways

SR-75 is a state-designated scenic highway where it crosses the San Diego-Coronado Bay Bridge and travels down the Silver Strand into Imperial Beach (Caltrans 2011). Views from the 200-foot-tall Coronado Bay Bridge are expansive in all directions. However, the bridge is open only to motor vehicles, there are no pullouts for viewing, and stopping on the bridge is prohibited by law. Also, the bridge has a speed limit of 50 miles per hour and a concrete guardrail that limits the view from lower-profile vehicles. Regardless, existing and proposed new fireworks display events occurring within San Diego Bay currently are or would be visible from the bridge. Views of existing fireworks display events occurring at the Imperial Beach Oceanfront may be visible on the horizon from the

portion of SR-75 that extends into Imperial Beach before turning east and connecting with Interstate 5; however, SR-75 is more than 0.5 mile inland from the oceanfront, and views are obstructed by the restricted naval property, houses, and other urban development. As such, views of the Imperial Beach Oceanfront from SR-75 are largely obscured.

4.1.2.4 Existing Lighting and Glare

Existing Ambient Light and Glare Conditions

There are two typical types of light intrusion. First, light that emanates from the interior of structures and passes out through windows. Second, light that projects from exterior sources, such as street, security, and landscape lighting. Light spillover is typically defined as the presence of unwanted or misdirected light on properties adjacent to the property being illuminated. Light spillover can be a nuisance in adjacent areas and diminish views of the clear night sky.

Glare is described as the distraction, discomfort, or impairment of vision caused by extreme contrasts in the field of vision where light sources, such as sunlight, lamps, luminaries, or reflecting surfaces, are excessively bright in relation to the general brightness of the surroundings. Glare also results from sunlight reflecting off flat building surfaces, with glass typically contributing the highest degree of reflectivity.

Lighting

Within the waters of San Diego Bay and the Pacific Ocean near Imperial Beach, existing sources of nighttime lighting are limited primarily to boats, such as harbor cruise yachts, container shipping vessels, and recreational boats.

The land area surrounding the Bay and the Pacific Ocean near Imperial Beach is highly urbanized and supports a mixture of commercial, industrial, recreational, residential, civic, and marine-related uses. The existing nighttime lighting environment surrounding the sites of the existing and proposed new fireworks display events consists mainly of ambient light produced by recreational facilities, interior and exterior building (residential, office, and commercial) lighting, highly ordered/structured lighting from streetlights, and transitory lighting from headlights on automobiles and transit-related (i.e., buses and trolleys) vehicles.

Commercial developments, such as large-scale hotel developments, also contribute to ambient lighting conditions. Exterior security lighting and interior operational lighting at hotels cause light spillover, which illuminates areas along the Bayfront.

Other significant sources of existing nighttime lighting include commercial, residential, and transit-related development in the downtown community. Several high-rise hotels and residential buildings contribute to ambient nighttime lighting conditions in the form of spillover light from exterior and interior security and operational lighting. Also, Petco Park, just north of the South Embarcadero, is a major contributor to nighttime lighting during the baseball season from both normal stadium lighting and occasional fireworks displays. Finally, transitory nighttime lighting from headlights on automobiles and transit-related (i.e., buses and trolleys) vehicles further contributes to ambient lighting conditions in the area. Overall, because the area is highly urbanized, existing ambient lighting levels are considered to be high.

Glare

A primary source of existing daytime glare at the sites of existing and proposed new fireworks display events is sunlight reflecting off the open waters of the Bay and Pacific Ocean. Glare from horizontal water surfaces is most prevalent in the early and late portions of the day when reflected sunlight is most likely to affect viewers. Another scattered source of daytime glare is sunlight reflecting off windows of boats docked at the marina, which produces minor amounts of glare.

Offsite glare conditions, which are not as prevalent as nighttime lighting, are generally moderate in the area surrounding the sites of the existing and proposed displays. The most noticeable sources of glare are the numerous mid- and high-rise hotels and residential developments inland of the sites of the existing and proposed displays. Glare occurs as a result of light reflecting off the architectural finishes of buildings. Glare conditions are most severe when light reflects off glass surfaces. Most of these high-rise buildings have highly finished surfaces, including window and glass façades, which result in noticeable amounts of daytime glare. Other sources of glare include sunlight reflecting off vehicles and delivery trucks traveling along Harbor Drive, Convention Way, and other surrounding roadways, which also produce minor amounts of transitory glare. Overall, existing daytime glare conditions surrounding the Bay and Imperial Beach Oceanfront are considered to be moderate.

Existing Fireworks Display Events Light and Glare Conditions

A number of fireworks display events currently occur within San Diego Bay and the Imperial Beach Oceanfront throughout the year. These existing fireworks display events occur for approximately 3 to 20 minutes each, depending on the show, and primarily at night, with the exception of the Our Lady of the Rosary Church annual procession, which occurs during daytime hours.¹ These existing fireworks display events occur in highly urbanized areas along San Diego Bay and the Imperial Beach Oceanfront where, as discussed above, the ambient nighttime lighting levels are considered high. Generally, the fireworks are launched to a height where their light considerably exceeds normal ambient lighting levels, creating brief but very bright flashes of light for the duration of the display, particularly during the finales when higher concentrations of fireworks are set off at one time. Existing fireworks display events are visible from sensitive land uses in the vicinity of the displays, such as public parks and open space, roadways, and residences.

Generally, park users are considered sensitive receptors to increases in light and glare because increases in light and glare can interfere with recreational activities. However, the majority of the existing fireworks display events are intentionally located proximal to public parks and open spaces in the Bay in order to maximize the viewing area of the fireworks display events. The vast majority of park visitors who are present during existing nighttime fireworks display events are there to view the displays, especially during the Fourth of July. For existing non-Fourth of July fireworks display events, such as those associated with the San Diego Symphony Summer Pops concerts, U.S.S. Midway Museum, and NASSCO, the displays constitute a brief (no more than 5- to 10-minute) increase in light and glare in the immediate vicinity of the event. However, these displays also make use of smaller shell sizes, resulting in less height and a smaller area of visibility. Furthermore, for the Symphony Summer Pops concert series, access to a portion of Embarcadero Marina Park South requires paid admission to attend the concerts and, as such, many users at Embarcadero Marina Park South are there for the Symphony Summer Pops concerts and expect to see the accompanying

¹ During the fireworks display event for the Our Lady of the Rosary Church annual procession, firework detonation occurs intermittently during the 80-minute procession.

fireworks display. In addition, as noted above, the Our Lady of the Rosary Church annual procession fireworks display event occurs during daylight hours, and the additional light generated by the fireworks is barely discernible from the bright ambient light conditions of any given day.

Residential uses are also considered sensitive receptors to increases in light and glare. The majority of the existing fireworks display events are at least 0.5 mile from the nearest residential uses. Although most of the fireworks display events are likely visible from the yards, rooftops, or windows of nearby residential uses in the vicinity of the displays, the light and glare generated by fireworks are not so intense as to intrude into the structures to the point that typical nighttime activities are disturbed (such as sleeping, watching television, etc.). The Fourth of July Imperial Beach Fireworks Show occurs near the middle of the Imperial Beach Pier, which is approximately 0.2 mile from nearby residential uses. This fireworks display event currently occurs once a year on the Fourth of July, which is a day on which fireworks display events historically occur. Any residents living in proximity to the Imperial Beach Pier who are disturbed by fireworks know to plan for them by being away or keeping windows and curtains closed. In addition, the fireworks display event occurring at the end of the Grape Street Pier for the Our Lady of the Rosary Church annual procession is approximately 0.3 mile from the nearest residential uses. However, this fireworks display event occurs during the day. Fireworks are detonated intermittently during the 80-minute procession as opposed to a concentrated period of time. Several fireworks display events are held at the U.S.S. Midway Museum throughout the year, which is approximately 0.2 mile from the nearest residential uses. These fireworks display events are generally associated with private events and take place either from the flight deck or off a barge within the North Embarcadero area. Additionally, two existing fireworks display events also occur at the NASSCO ship repair. Flashes of light produced by the fireworks are relatively infrequent and diminished by the already-bright ambient light of daylight. Finally, although light and glare produced by the existing fireworks display events are noticeable along nearby roadways, they are not so substantial that they impair driving or creates unsafe conditions.

4.1.3 Applicable Laws and Regulations

4.1.3.1 State

California Scenic Highway Program

The California Department of Transportation manages the California Scenic Highway Program, which was created in 1963 by the California legislature to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to highways. The program includes a list of highways that are eligible for designation as scenic highways or that have been designated as such. The designation of a highway as scenic is based on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes on the travelers' enjoyment of the view. State laws governing the Scenic Highway Program are found in the Streets and Highways Code, Sections 260 through 263.

4.1.3.2 Local

Port Master Plan

Section II of the PMP sets forth planning goals and related policies for development and operation of land within the District's jurisdiction. The goals and related policies pertinent to the aesthetic resources of the proposed project are presented below.

Goal II. The Port District, as trustee for the people of the State of California, will administer the tidelands so as to provide the greatest economic, social, and aesthetic benefits to present and future generations.

Goal VIII. The Port District will enhance and maintain the bay and tidelands as an attractive physical and biological entity.

- Each activity, development, and construction should be designed to best facilitate its particular function, which function should be integrated with and related to the site and surroundings of that activity.
- Views should be enhanced through view corridors, the preservation of panoramas, accentuation of vistas, and shielding of the incongruous and inconsistent.
- Establish guidelines and standards facilitating the retention and development of an aesthetically pleasing tideland environment free of noxious odors, excessive noise, and hazards to the health and welfare of the people of California.

Precise Plans

Section IV of the PMP provides specific guidance for land development within 10 geographic planning districts. These 10 precise plans include maps for each district, tables showing the acreages of various uses within the districts, and lists of projects planned within the districts. The precise plans also identify vista areas within each planning district that indicate points of natural visual beauty, photo vantage points, and other panoramas to be preserved and enhanced by the arrangement of development. Fireworks display events currently occur or are proposed within and/or adjacent to Planning District 1, Shelter Island/La Playa; Planning District 2, Harbor Island/Lindbergh Field; Planning District 3, Centre City Embarcadero; Planning District 4, Tenth Avenue Marine Terminal; Planning District 5, National City Bayfront; Planning District 6, Coronado Bayfront; Planning District 7, Chula Vista Bayfront; and Planning District 10, Imperial Beach Oceanfront. The PMP identifies multiple vista areas that have views of the existing and proposed fireworks display events within each of these planning districts, with the exception of the National City Bayfront, for which there is only one vista area.

4.1.4 Project Impact Analysis

4.1.4.1 Thresholds of Significance

The following significance criteria are based on Appendix G of the State CEQA Guidelines and provide the basis for determining the significance of impacts associated with aesthetics and visual quality resulting from implementation of the proposed project. The determination of whether an

aesthetics and visual quality impact would be significant is based on the thresholds described below and the professional judgment of the District as lead agency, supported by the recommendations of qualified personnel at ICF, all of which are based on the evidence in the administrative record.

Impacts are considered significant if the proposed project would result in any of the following:

1. Have a substantial adverse effect on a scenic vista, including, but not limited to, the vista areas designated by the District in the PMP.
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
3. Substantially degrade the existing visual character or quality of the site and its surroundings.
4. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

As discussed in the Initial Study/Environmental Checklist (Appendix A of this Draft EIR), implementation of the proposed project would have less-than-significant impacts on scenic vistas and the visual character and quality of the sites and no impacts on scenic resources within a state scenic highway. Those conclusions and the rationale that supports them are summarized in Chapter 6, Section 6.4, *Effects Not Found to Be Significant*. Therefore, only Threshold 4 is discussed in the impact analysis that follows.

4.1.4.2 Project Impacts and Mitigation Measures

Threshold 4: Implementation of the proposed project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Impact Discussion

The following impact analysis describes the specific impacts from new sources of substantial light or glare, associated with the proposed new fireworks display events, that would adversely affect day or nighttime views in the area.

Proposed New Fireworks Display Events

The proposed project includes the addition of up to four new fireworks display events per year along the National City and Chula Vista Bayfronts within south San Diego Bay. These proposed new fireworks display events would occur for approximately 3 to 20 minutes each, depending on the display. These proposed new fireworks display events would occur only at night, in highly urbanized areas along San Diego Bay where the ambient nighttime lighting levels are considered high. Generally, the fireworks would be launched to a height where their light would exceed the normal ambient lighting levels and create brief but very bright flashes of light for the duration of the show, particularly during the finales when higher concentrations of fireworks are set off at one time. As such, the proposed new fireworks display events would result in new sources of substantial light in the project areas for a very short period of time.

Although the proposed new fireworks display events would be visible from sensitive land uses, such as public parks and open space, roadways, and residences, in the vicinity of the displays, the light

generated by the fireworks would not result in substantial spillover light onto nearby uses such that those uses would be adversely affected (for impacts on biological resources, see Section 4.3, *Biological Resources*, of this Draft EIR).

As discussed in Section 4.1.2.4, above, park users are considered sensitive receptors to increases in light and glare because increased light and glare can interfere with recreational activities. However, as with the existing fireworks display events, the proposed new fireworks display events that would occur near National City and Chula Vista would intentionally be located near public parks and open spaces, such as Pepper Park in National City or Bayside Park in Chula Vista, in order to maximize the viewing area of the fireworks display events. The vast majority of park visitors who are present during nighttime fireworks display events are there to view the displays, especially during Fourth of July fireworks display events. Therefore, they would not be adversely affected by the proposed new Fourth of July fireworks display events. For the proposed new non-Fourth of July fireworks display events that would occur along the Chula Vista Bayfront, the displays would constitute a brief (approximately 5-minute) increase in light and glare in the immediate vicinity of the display, which would not result in a substantial disruption to recreational users of the park. As such, impacts on users of parks and open space during the proposed new fireworks display events would be less than significant.

Regarding effects on residential uses, the proposed new fireworks display event that would occur along the National City Bayfront would be at least 1 mile from the nearest residential uses, while the proposed new fireworks display events that would occur along the Chula Vista Bayfront would be approximately 0.75 mile from the nearest residential uses (east of Interstate 5). Although the proposed new National City and Chula Vista Bayfront fireworks display events would most likely be visible from the yards, rooftops, or windows of nearby residential uses, the light and glare would not be so intense as to intrude into the structures to the point that typical nighttime activities would be disturbed (such as sleeping, watching television, etc.). Overall, the proposed new fireworks display events would result in less-than-significant impacts on residential uses associated with light and glare.

Similarly, although the light and glare produced by the fireworks display events would be noticeable along nearby roadways, such as Interstate 5 in both National City and Chula Vista, they would not be so substantial that they would impair driving or create unsafe conditions.

Finally, the proposed new fireworks display events would not result in adverse effects on views in the area. Light generated by the fireworks would diminish almost immediately, and any momentary interruption of nighttime views would be almost immediately restored. Therefore, the proposed project would not result in an adverse impact on day or nighttime views related to the creation of a new source of light or glare. Impacts would be less than significant, and no mitigation measures are required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events that create a new source of substantial light or glare. Therefore, the proposed ordinance would not result in any change to the existing condition. As such, the effects of the proposed ordinance on existing fireworks display events would not create a new source of substantial light or glare that would adversely affect day or nighttime views. No significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events would not result in an adverse impact on day or nighttime views related to the creation of a new source of light. Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not create a new source of substantial light or glare that would adversely affect day or nighttime views. Therefore, no significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

No mitigation is required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation

Proposed New Fireworks Display Events

Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impacts would occur.

4.2.1 Overview

This section describes the existing conditions and applicable laws and regulations for air quality and health risk. The section also discusses the proposed project's potential to increase air pollutant emissions in the region. Impacts on air quality are considered significant if the proposed project were to (1) conflict with or obstruct implementation of the applicable air quality plan, (2) violate any air quality standard or contribute substantially to an existing or projected air quality violation, (3) result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard, (4) expose sensitive receptors to substantial pollutant concentrations, or (5) create objectionable odors affecting a substantial number of people.

Table 4.2-1 summarizes the significant impacts and mitigation measures discussed in this section.

Table 4.2-1. Summary of Significant Impacts and Mitigation Measures

Summary of Potentially Significant Impact(s)	Summary of Mitigation Measure(s)	Level of Significance After Mitigation	Rationale for Finding After Mitigation
Impact-AQ-1: Emissions in Excess of PM2.5 Thresholds During Combined National City Bayfront and Chula Vista Bayfront Fourth of July Fireworks Display Events	<p>MM-AQ-1: Limit the Size of Overlapping New Fireworks Display Events with Compliance with the Conditions of the Proposed Ordinance, which require the new Fourth of July fireworks display events to not exceed 400 pounds each.</p> <p>MM-AQ-2: Implementation of Air Quality-Related Conditions of the Proposed Ordinance, which require truck delivery to not exceed 3 minutes of idling.</p>	Less than Significant	<p>The proposed ordinance contains conditions of approval intended to reduce and minimize air quality impacts associated with fireworks display events.</p> <p>The conditions would require limiting the size of overlapping Fourth of July fireworks display events to 400 pounds each, which reduces PM2.5 emissions below significance.</p> <p>In addition, the proposed ordinance includes air quality-related conditions such as requiring delivery trucks to not exceed 3 minutes of idling and using alternative fireworks that would burn cleaner and produce less smoke, which would provide some reduction in emissions.</p>

Summary of Potentially Significant Impact(s)	Summary of Mitigation Measure(s)	Level of Significance After Mitigation	Rationale for Finding After Mitigation
Impact-AQ-2: Cumulative Emissions in Excess of PM2.5 Thresholds During Combined New Fourth of July Fireworks Display Events	Implement MM-AQ-1 and MM-AQ-2 .	Less than Significant	The proposed ordinance contains conditions of approval intended to reduce and minimize air quality impacts associated with fireworks display events. The conditions would require limiting the size of overlapping Fourth of July fireworks display events to 400 pounds each, which reduces PM2.5 emissions below significance.

4.2.2 Existing Conditions

4.2.2.1 Climate and Atmospheric Conditions

Regional

San Diego Bay and the Imperial Beach Oceanfront are within the San Diego Air Basin (SDAB), which covers all of San Diego County. The SDAB is bordered by the Pacific Ocean to the west, the South Coast Air Basin (SCAB) to the north, the Salton Sea Air Basin to the east, and the U.S.–Mexico border to the south.

The climate in Southern California, including the SDAB, is controlled largely by the strength and position of a subtropical high-pressure cell over the Pacific Ocean. Areas within 3–5 miles of the coast, including the project site, experience moderate temperatures and comfortable humidity (SDAPCD 2010a). Precipitation is mostly limited to a few storms during the winter season. Winds in the vicinity of the project site usually are driven by the dominant land/sea breeze circulation system. During the day, regional wind patterns are dominated by onshore sea breezes. At night, wind generally slows, remains still, or reverses direction, traveling toward the sea.

The atmospheric conditions of the SDAB contribute to the region's air quality conditions. Because of its climate, the SDAB experiences frequent temperature inversions. Typically, temperature decreases with height. However, under inversion conditions, temperature increases as altitude increases. Temperature inversions prevent the air close to the ground from mixing with the air at higher elevations. As a result, air pollutants are trapped near the ground. During the summer, the

interaction between the ocean surface and the lower layer of the atmosphere creates a moist marine layer. An upper layer of warm air mass forms over the cool marine layer, preventing air pollutants from dispersing upward. Additionally, hydrocarbons (HC) and nitrogen oxides (NO_x) react under strong sunlight and temperature, creating smog. Light and daytime winds, primarily from the northwest, further aggravate this condition by driving the air pollutants inland toward the warmer foothills. During the fall and winter, elevated carbon monoxide (CO) and NO_x levels usually occur on days with summer-like conditions (SDAPCD 2010b).

High air pollution levels in coastal communities of San Diego can often occur when polluted air from the SCAB, particularly from Los Angeles, travels southwest over the ocean at night and is brought on shore into San Diego by the sea breeze during the day. Smog transported from the SCAB is a key factor on more than 50 of the days San Diego exceeds clean air standards. Ozone (O₃) and its precursor emissions (HC and NO_x) are transported to San Diego during relatively mild Santa Ana weather conditions. During strong Santa Ana weather conditions, however, pollutants are pushed away from San Diego far out to sea. When smog is blown in from the SCAB at ground level, the highest O₃ concentrations are measured at coastal and near-coastal monitoring stations. When the transported smog is elevated, coastal sites may be passed over, and the transported ozone is measured farther inland and on the mountain slopes (SDAPCD 2010b).

Local

The proposed ordinance will apply to existing and proposed new fireworks display events in the northern portion of San Diego Bay, portions of southern San Diego Bay, and the Imperial Beach Oceanfront. In establishing background conditions, information from nearby meteorological and pollution monitoring stations is used to define climatic and air quality conditions in the project area. Pollution monitoring stations are discussed in Section 4.2.2.2 below.

The weather station closest to northern San Diego Bay is the San Diego/Lindbergh Field Station. High and low temperatures in summer average 74°F and 64°F and in winter average 65°F and 49°F, respectively (WRCC 2016a). Total annual precipitation at Lindbergh Field averages 10.13 inches (WRCC 2016b). Eighty-five percent of the rainfall occurs from November through March, with wide variations taking place in monthly and seasonal totals (NOAA 2004). Precipitation is rare in the summer months, as summer rainfall averages only 0.13 inch per year (WRCC 2016b).

The project proposes four new fireworks display events: three displays along the Chula Vista Bayfront and one Fourth of July display along the National City Bayfront. These fireworks display events are along the southern portion of San Diego Bay. The weather station closest to these fireworks display events is the Chula Vista station, which is approximately 4.5 miles to the southeast of the anticipated barge location for the National City fireworks display event, approximately 3.7 miles east of the anticipated barge location for the Chula Vista fireworks display event, and approximately 5.5 miles northeast of the existing Fourth of July Imperial Beach Show. The prevailing climatic conditions at Chula Vista are similar to San Diego/Lindbergh Field, as high and low temperatures in summer average 72°F and 62°F and in winter average 65°F and 45°F (WRCC 2016c), and total annual precipitation at averages 9.73 inches (WRCC 2016d).

Existing fireworks display events within the northern San Diego Bay portion of the project area are in the vicinity of two wind monitoring stations operated by the San Diego Air Pollution Control District (SDAPCD): Perkins Elementary School and San Diego/Lindbergh Field. Wind monitoring data recorded at the San Diego/Lindbergh Field Station indicate the predominant wind direction is

out of the west-northwest prominence at 6.33 miles per hour (mph) (2.83 meters per second [m/s]) with calm winds present approximately 0.84 percent of the time. During the most active fireworks display events season (June 1 through September 30), winds trend more west by northwest with periodic southern and northern winds, averaging 6.71 mph (3.00 m/s) with calm winds present approximately 0.55 percent of the time (Reeve pers. comm.). Winds at night (8 p.m.–10 p.m.) during the most active fireworks display events season are similar to the daily average—trending out of the west-northwest with periodic southern and northern winds—but at lower speeds (5.68 mph, or 2.54 m/s) than the daily average (Reeve pers. comm.). Wind monitoring data recorded at Perkins Elementary School indicate a prominence of westerly winds with periodic southwest winds that average 3.85 mph (1.72 m/s), with calm winds present approximately 13.3 percent of the time. During the most active fireworks display event season (June 1 through September 30), winds trend similar to the average over the year but are slightly stronger (4.81 mph, or 2.15 m/s) with calm winds present approximately 10.13 percent of the time. Winds at night (8 p.m.–10 p.m.) during the most active display season trend more west-northwest with periodic southwest winds, but winds tend to be lighter (3.80 mph, or 1.70 meters per second) than the daily average (Reeve pers. comm.). Wind velocity and direction varies over short distances, varies seasonally, and varies temporally throughout the day.

Fireworks display events within the southern ports of San Diego Bay, including the Fourth of July Imperial Beach Fireworks Show, are in the vicinity of the Chula Vista wind monitoring station, which is also operated by SDAPCD. Wind monitoring data recorded at Chula Vista indicate a prominence of westerly and southwesterly winds that average 3.85 mph (1.72 m/s), with calm winds present approximately 13.30 percent of the time. During the most active fireworks display event season (June 1 through September 30), winds trend similar to the average over the year but are slightly stronger (4.00 mph, or 1.79 m/s) with calm winds present approximately 10.13 percent of the time. Winds at night (8 p.m.–10 p.m.) during the most active display season trend west and southwest, but winds tend to be lighter (2.68 mph, or 1.20 meters per second) than the daily average (Reeve pers. comm.). While the Chula Vista station displays a more southwesterly pattern than the Lindbergh Field and Perkins School stations, each wind monitoring station displays a similar pattern; nighttime winds during the most active fireworks display events season tend to be calmer, which can affect how particulate emissions generated during fireworks display events disperse through the region. A more detailed description of meteorology and how winds affect particle dispersion in the Health Risk Assessment (HRA) is provided in Appendix E of this Draft EIR. Wind roses depicting wind directions, speeds, and frequency for the above-mentioned stations and time periods are also shown in Appendix E.

4.2.2.2 Air Quality Conditions

Regional

The Clean Air Act (CAA) requires the U.S. Environmental Protection Agency (EPA) to designate areas within the country as either attainment or nonattainment for each criteria pollutant based on whether the national ambient air quality standards (NAAQS) have been achieved. Similarly, the California CAA requires the California Air Resources Board (ARB) to designate areas within California as either attainment or nonattainment for each criteria pollutant based on whether the California Ambient Air Quality Standards (CAAQS) have been achieved. If a pollutant concentration is lower than the state or federal standard, the area is classified as being in attainment for that

pollutant. If a pollutant concentration is higher than the state or federal standard, the area is considered a nonattainment area. If data are insufficient to determine whether a pollutant is violating the standard, the area is designated unclassified. Under the California CAA, areas are designated as nonattainment for a pollutant if air quality data show that a state standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a state standard and are not used as a basis for designating areas as nonattainment. The attainment status of San Diego County is summarized in Table 4.2-2.

Table 4.2-2. Federal and State Attainment Status for San Diego County

Criteria Pollutant	Federal Designation	State Designation
Ozone (O ₃) (8-hour)	Nonattainment – Marginal	Nonattainment
Carbon Monoxide (CO)	Attainment/Maintenance	Attainment
Respirable Particulate Matter (PM ₁₀)	Attainment	Nonattainment
Fine Particulate Matter (PM _{2.5})	Unclassifiable/Attainment	Nonattainment
Nitrogen Dioxide (NO ₂)	Attainment	Attainment
Sulfur Dioxide (SO ₂)	Attainment	Attainment
Lead (Pb)	Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen Sulfide	(No federal standard)	Unclassified ¹
Visibility	(No federal standard)	Unclassified

Sources: ARB 2014, 2015; SDAPCD 2016a.

¹ At the time of designation, if the available data do not support a designation of attainment or nonattainment, the area is designated as unclassifiable.

Local

SDAPCD maintains and operates a network of ambient air monitoring stations throughout the county. The purpose of the monitoring stations is to measure ambient concentrations of the pollutants and determine whether the ambient air quality meets the CAAQS and NAAQS. Similar to the discussion of local climate and atmospheric conditions in Section 4.2.2.1 above, multiple monitoring stations are used to define background conditions for displays that occur in those areas. The ambient monitoring station closest to the northern and central San Diego Bay, where almost all of the existing firework display events occur, is the San Diego–Beardsley Street station (ARB 80142), which is adjacent the Perkins Elementary School in the Barrio Logan neighborhood.

The ambient monitoring station closest to the existing fireworks display event along the Imperial Beach Oceanfront and proposed new displays along the National City and Chula Vista Bayfronts is the Chula Vista station (ARB 80114). However, because attainment status is assigned for the entirety of San Diego County, and the largest fireworks display events occur in the San Diego Bay portion of the project area, ambient monitoring information from the San Diego–Beardsley Street station is considered representative of the fireworks display events in the northern and central parts of San Diego Bay, while the Chula Vista–East J Street station is considered representative of the proposed new fireworks display events in the southern parts of San Diego Bay.

Concentrations of pollutants from the nearby monitoring stations over the last 3 years (2013–2015) of complete data are presented in Table 4.2-3. Over the previous 3 years of available data, monitoring has shown the following pollutant concentrations trends at the San Diego–Beardsley Street station: the 8-hour O₃ CAAQS was exceeded twice in 2014, but did not exceed the NAAQS; 24-hour particulate matter (PM) less than or equal to 10 microns in diameter (PM₁₀) CAAQS was exceeded once in 2013, but did not exceed the NAAQS; and 24-hour PM less than or equal to 2.5 microns in diameter (PM_{2.5}) NAAQS was exceeded once in 2013. No violations of the CO CAAQS or NAAQS or the nitrogen dioxide (NO₂) CAAQS or NAAQS were recorded. Over the same period of record, monitoring has shown the following pollutant concentration trends at the Chula Vista station: the 8-hour O₃ CAAQS and NAAQS were exceeded once in 2014, while no other violations were recorded.

Table 4.2-3. Ambient Background Concentrations from the San Diego–Beardsley Street Monitoring Station

Pollutant Standards	2013	2014	2015	2013	2014	2015
1-Hour Ozone (O₃)						
Maximum Concentration (ppm)	0.063	0.093 ¹	0.089	0.073	0.093	0.088
<i>Number of Days Standard Exceeded</i>						
CAAQS 1-hour (>0.09 ppm)	0	0	0	0	0	0
8-Hour Ozone (O₃)						
State Maximum Concentration (ppm)	0.053	0.073	0.067	0.062	0.072	0.066
National Maximum Concentration (ppm)	0.053	0.072	0.067	0.062	0.072	0.066
National 4 th Highest Concentration (ppm)	0.052	0.068	0.061	0.059	0.063	0.061
<i>Number of days standard exceeded</i>						
CAAQS 8-hour (>0.070 ppm)	0	2	0	0	1	0
NAAQS 8-hour (> 0.075 ppm)	0	0	0	0	1	0
Carbon Monoxide (CO)						
Maximum Concentration 8-hour Period (ppm)	2.1	1.9	1.9	-	-	-
Maximum Concentration 1-hour Period (ppm)	3.0	2.7	2.6	-	-	-
<i>Number of days standard exceeded</i>						
NAAQS 8-hour (≥9 ppm)	0	0	0	-	-	-
CAAQS 8-hour (≥9.0 ppm)	0	0	0	-	-	-
NAAQS 1-hour (≥35 ppm)	0	0	0	-	-	-
CAAQS 1-hour (≥20 ppm)	0	0	0	-	-	-
Nitrogen Dioxide (NO₂)						
Maximum 1-hour Concentration (ppm)	0.072	0.075	0.062	0.057	0.055	0.049
Annual Average Concentration (ppm)	14	13	14	11	11	10
<i>Number of Days Standard Exceeded</i>						
CAAQS 1-Hour (0.18 ppm)	0	0	0	0	0	0
NAAQS 1-Hour (0.100 ppm)	0	0	0			

Pollutant Standards	2013	2014	2015	2013	2014	2015
Suspended Particulates (PM10)						
State Maximum 24-hour Concentration ($\mu\text{g}/\text{m}^3$)	92.0	41.0	54.0	40.0	39.0	45.0
National Maximum 24-hour Concentration ($\mu\text{g}/\text{m}^3$)	90.0	40.0	53.0	38.0	38.0	46.0
State Annual Average Concentration (CAAQS = $20 \mu\text{g}/\text{m}^3$)	25.4	23.8	23.2	22.7	22.9	19.7
<i>Number of Days Standard Exceeded</i>						
CAAQS 24-hour ($>50 \mu\text{g}/\text{m}^3$)	1	0	1	0	0	0
NAAQS 24-hour ($>150 \mu\text{g}/\text{m}^3$) - <i>Expected Days</i>	0.0	0.0	0.0	0.0	0.0	0.0
Suspended Particulates (PM2.5)						
National Maximum 24-hour Concentration ($\mu\text{g}/\text{m}^3$)	37.4	36.7	44.9	21.9	26.5	33.5
24-hour Standard 98 th Percentile ($\mu\text{g}/\text{m}^3$)	19.6	24.8	19.6	18.0	19.3	18.9
National Annual Average Concentration (NAAQS = $12.0 \mu\text{g}/\text{m}^3$)	10.3	10.1	9.3	9.4	9.2	8.3
State Annual Average Concentration (CAAQS = $12 \mu\text{g}/\text{m}^3$)	10.4	10.2	10.2	9.5	9.3	8.4
<i>Number of Days Standard Exceeded</i>						
NAAQS 24-Hour ($>35 \mu\text{g}/\text{m}^3$)	1	1	0	0	0	0

Source: ARB 2015; EPA 2015. Data compiled by ICF.

ppm = parts per million; $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

¹ An exceedance is not necessarily a violation. The precision or given number of decimal places varies for each state standard and depends on how the level of the standard is specified. In this case, ozone concentrations are rounded to 2 decimal places, so 0.093 rounds to 0.09, which is does not exceed the CAAQS of 0.09.

Pollutants of Concern

Criteria Pollutants

As discussed above, the federal and state governments have established NAAQS and CAAQS, respectively, for six criteria pollutants: O₃, lead, CO, NO₂, sulfur dioxide (SO₂), and PM₁₀ and PM_{2.5}. Ozone and NO₂ are considered regional pollutants because they (or their precursors) affect air quality on a regional scale. Pollutants such as PM₁₀, PM_{2.5}, CO, SO₂, and lead are considered local pollutants that tend to accumulate in the air locally.

The primary pollutants of concern within San Diego Bay and the Imperial Beach Oceanfront are O₃ (including NO_x and reactive organic gases [ROGs]), CO, and PM. Principal characteristics surrounding these pollutants and the hazards they present to human health are discussed below.

- **Ozone**, or smog, is a photochemical oxidant that is formed when ROG and NO_x (both by-products of the internal combustion engine) react with sunlight. O₃ poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Additionally, O₃ has been tied to crop damage, typically in the form of stunted growth and premature death. O₃ can also act as a corrosive, resulting in property damage such as the degradation of rubber products. Meteorology and terrain play major roles in O₃ formation. Ideal conditions occur during summer and early autumn, on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. O₃ is considered a regional pollutant; high levels often occur downwind of the emission source because of the length of time between when the ROG form and when they react with light to change to O₃.
- **Organic Gases—Precursors to Ozone** include ROGs and volatile organic compounds (VOCs). HC are organic gases that are formed solely of hydrogen and carbon. ROGs include all HC except those exempted by ARB. Therefore, ROGs are a set of organic gases based on state rules and regulations. VOCs are similar to ROGs in that they include all organic gases except those exempted by federal law. Both VOCs and ROGs are emitted from incomplete combustion of HC or other carbon-based fuels. Combustion engine exhaust, oil refineries, and oil-fueled power plants are the primary sources of HC. Another source of HC is evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint. Generally speaking, and in this analysis, ROGs and VOCs are used interchangeably to refer to the HC that are a precursor to O₃ formation.

The primary health effects of HC result from the formation of O₃ and its related health effects. High levels of HC in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. There are no separate ambient air quality standards for ROGs. Carcinogenic forms of ROG are considered to be toxic air contaminants (TACs), which are described below. An example is benzene, which is a carcinogen.

- **Nitrogen Oxides** serve as integral participants in the process of photochemical smog production. The two major forms of NO_x are nitric oxide (NO) and NO₂. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO₂ is a reddish-brown irritating gas formed by the combination of NO and oxygen. NO_x acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens. NO_x is a precursor to O₃ formation.

- **Carbon Monoxide** is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation.
- **Particulate Matter** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized—inhalable coarse particles, or PM₁₀, and inhalable fine particles, or PM_{2.5}. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind on arid landscapes also contributes substantially to local particulate loading. Both PM₁₀ and PM_{2.5} may adversely affect the human respiratory system, especially in those people who are naturally sensitive or susceptible to breathing problems.
- **Sulfur Dioxide** is a product of high-sulfur fuel combustion. Main sources of SO₂ are coal and oil used in power stations, in industries, and for domestic heating. Industrial chemical manufacturing is another source of SO₂, which is an irritant gas that attacks the throat and lungs. It can cause acute respiratory symptoms and diminished ventilator function in children. SO₂ also can cause plant leaves to turn yellow and can erode iron and steel. In recent years, SO₂ concentrations have been reduced by the increasingly stringent controls placed on stationary-source emissions of SO₂ and limits on the sulfur content of fuels.

Health Effects of Criteria Air Pollutants

Criteria air pollutants are recognized to have a variety of health effects on humans. Research by ARB shows that exposure to high concentrations of air pollutants can trigger respiratory diseases, such as asthma, bronchitis, and other respiratory ailments; and cardiovascular diseases. A healthy person exposed to high concentrations of air pollutants may become nauseated or dizzy, may develop a headache or cough, or may experience eye irritation and/or a burning sensation in the chest. O₃ is a powerful irritant that attacks the respiratory system, leading to the damage of lung tissue. Inhaled particulate matter, NO₂, and SO₂ can directly irritate the respiratory tract, constrict airways, and interfere with the mucous lining of the airways. Exposure to CO, when absorbed into the bloodstream, can endanger the hemoglobin, the oxygen-carrying protein in blood, by reducing the amount of oxygen that reaches the heart, brain, and other body tissues. PM₁₀ can bypass the body's natural filtration system more easily than larger particles and can lodge deep in the lungs, while PM_{2.5} particles can deposit deep in the lungs and contain substances that are particularly harmful to human health. When air pollutant levels are high, children, the elderly, and people with respiratory problems are advised to remain indoors. Outdoor exercise also is discouraged because strenuous activity may cause shortness of breath and chest pains. A brief discussion of the criteria pollutants and their effects on human health and the environment is provided in Table 4.2-4.

Table 4.2-4. Health Effects Summary of the Major Criteria Air Pollutants

Pollutants	Sources	Primary Effects
Ozone (O ₃)	<ul style="list-style-type: none"> Atmospheric reaction of organic gases with NO₂ in sunlight 	<ul style="list-style-type: none"> Aggravation of respiratory and cardiovascular diseases Irritation of eyes Impairment of cardiopulmonary function Plant leaf injury
Nitrogen Dioxide (NO ₂)	<ul style="list-style-type: none"> Motor vehicle exhaust High temperature stationary combustion Atmospheric reactions 	<ul style="list-style-type: none"> Aggravation of respiratory illness Reduced visibility Reduced plant growth Formation of acid rain
Carbon Monoxide (CO)	<ul style="list-style-type: none"> Incomplete combustion of fuels and other carbon containing substances, such as motor exhaust Natural events, such as decomposition of organic matter 	<ul style="list-style-type: none"> Reduced tolerance for exercise Impairment of mental function Impairment of fetal development Death at high levels of exposure Aggravation of some heart diseases (angina)
Particulate Matter (PM _{2.5} and PM ₁₀)	<ul style="list-style-type: none"> Stationary combustion of solid fuels Construction activities Industrial processes Atmospheric chemical reactions 	<ul style="list-style-type: none"> Reduced lung function Aggravation of the effects of gaseous pollutants Aggravation of respiratory and cardio-respiratory diseases Increased cough and chest discomfort Soiling Reduced visibility
Sulfur Dioxide (SO ₂)	<ul style="list-style-type: none"> Combustion of sulfur-containing fossil fuels Smelting of sulfur-bearing metal ores Industrial processes 	<ul style="list-style-type: none"> Aggravation of respiratory diseases (asthma, emphysema) Reduced lung function Irritation of eyes Reduced visibility Plant injury Deterioration of metals, textiles, leather, finishes, coatings, etc.
Lead (Pb)	<ul style="list-style-type: none"> Contaminated soil 	<ul style="list-style-type: none"> Impairment of blood function and nerve construction Behavioral and hearing problems in children

Source: SCAQMD 2005

Toxic Air Contaminants

TACs are pollutants that have no ambient standard but pose the potential to increase the risk of developing cancer or acute or chronic health risks. The most relevant TAC associated with a typical port's activities (e.g., vessels, trucks), is diesel particulate matter (DPM). Fireworks display events, such as the existing and proposed new displays, also include other emitted TAC sources, including hexavalent chromium (Cr+6), lead (Pb), and copper (Cu), as well as certain species of VOC, including formaldehyde, acetaldehyde, and acrolein. For TACs that are known or suspected carcinogens, ARB has consistently found that there are no levels or thresholds below which exposure is risk-free.

Therefore, no NAAQS or CAAQS exist for TACs. Individual TACs vary greatly in the risks they present. At a given level of exposure, one TAC may pose a hazard that is many times greater than another. TACs are identified and their toxicity is studied by the California Office of Environmental Health Hazard Assessment (OEHHA). Adverse health effects of TACs can be carcinogenic (cancer-causing), short-term (acute) noncarcinogenic, and long-term (chronic) noncarcinogenic. Direct exposure to these pollutants has been shown to cause cancer, birth defects, damage to the brain and nervous system, and respiratory disorders.

Sensitive Receptors

The impact of air pollutant emissions on sensitive members of the population is a special concern. Sensitive receptors are defined as locations where pollutant-sensitive members of the population may reside or where the presence of air pollutant emissions could adversely affect use of the land. ARB has identified the following people as the most likely to be affected by air pollution: children younger than 14, the elderly older than 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors (ARB 2005a). Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder-care facilities, elementary schools, and parks.

The proposed ordinance would govern existing and proposed new firework display events that originate from piers, flight decks, and/or barges adjacent to land within San Diego Bay, including adjacent to Shelter Island, Harbor Island, and the Centre City Embarcadero; Glorietta Bay in Coronado; NASSCO ship repair facility; National City Bayfront; Chula Vista Bayfront; and the Imperial Beach Oceanfront. Land uses vary widely in each of these neighborhoods and include residential areas, hospitals, daycare facilities, elder-care facilities, elementary schools, and parks. Primary viewing locations for Fourth of July fireworks display events are from adjacent parks and public spaces along San Diego Bay and the Imperial Beach Oceanfront. Viewing areas for all other non-Fourth of July fireworks displays events are generally more limited, but could include any place that has a view of the fireworks display events.

4.2.2.3 Background Air Quality and Health Risk

Background Regional Criteria Pollutant Emissions

ARB periodically develops existing and future year emission inventories for the entire state and for individual regions for the major sources of emissions in its Almanac of Emissions, including stationary sources (e.g., electric utilities, manufacturing, landfills), mobile sources (e.g., passenger vehicles, transit, goods movement), and area-wide sources (e.g., farming, windblown dust, construction). While ARB does not include emissions from fireworks display events themselves, ancillary sources, including tugs and on-road motor vehicles, are included in ARB's inventory and future year forecasts. An inventory of the most recent inventory year (2012) and future year 2020 and 2035 countywide and statewide projections is presented in Table 4.2-5 (ARB 2013). As shown, emissions of some pollutants trend downward, as regulations that are currently in place will reduce combustion-related emissions even as population increases. PM10 and PM2.5 increase slightly because even though combustion-related emissions decrease, fugitive dust from activities to support population growth (e.g., construction and demolition, farming) and vehicle travel (e.g., unpaved and paved road dust) increase, offsetting the decrease in combustion-related emissions.

Table 4.2-5. Estimate of Countywide and Statewide Emissions by Year (tons per day)

Emissions by Year	VOC	NO_x	CO	SO_x	PM10	PM2.5
San Diego County						
2012	126	114	527	2	73	20
2020	114	68	391	1	74	19
2035	111	49	359	2	77	21
Statewide						
2012	1,739	2,106	7,372	105	1,460	418
2020	1,561	1,553	5,669	82	1,502	411
2035	1,574	1,200	5,289	101	1,567	438

Source: ARB Almanac of Emissions (ARB 2013).
Notes: Totals may not add exactly due to rounding

Background Regional Toxic Air Contaminants and Health Risk

ARB operates 17 monitoring stations to monitor air toxics within major urban areas. Various TACs that are present in fireworks display events are monitored, including species of VOC (including acetaldehyde, acrolein, and formaldehyde), polycyclic aromatic hydrocarbons, and metals (including Cr+6, Cu, and Pb). Of the 20 statewide stations, two are in the SDAB: Chula Vista and El Cajon. Although these stations are not near the northern or central parts of San Diego Bay, the Chula Vista station is near the southern portion of San Diego Bay. Because the Chula Vista station is the only station within proximity of San Diego Bay that monitors air toxics, data from the Chula Vista station are assumed to be representative of the background conditions for the proposed new fireworks display events. Toxics monitoring data from the Chula Vista station are summarized in Table 4.2-6. As shown in Table 4.2-6, background air toxics are small and are generally reduced between years 2000 and 2014. Note that the toxics monitoring values reported here are from Chula Vista, which is approximately 3 miles inland at the southern end of the Bay. Based on this information, ARB estimated the overall ambient risk from all air toxics in the SDAB at 607 chances per million in 2009, the majority of which (420 chances per million) were attributed to DPM (ARB 2009). Note that DPM is not directly monitored because an accepted measurement method does not currently exist, but ARB estimates concentrations based on monitored PM10 data and the results from several studies on chemical speciation of ambient data (e.g., ratio of DPM to monitored PM10).

Table 4.2-6. Air Toxics Monitoring Data from the Chula Vista Monitoring Station

Pollutant	Year 2014			Year 2000		
	Mean	Maximum	Cancer Risk	Mean	Maximum	Cancer Risk
Copper	0.023	0.052	<1	-	0.170	<1
Hexavalent Chromium	<0.001	<0.001	6	-	<0.001	16
Lead	0.012	0.063	0.1	-	0.170	-
Formaldehyde	0.002	0.004	13	0.002	0.005	16
Acetaldehyde	0.001	0.001	3	0.001	0.002	4
Acrolein	0.001	0.002	<1	-	-	-

Source: Compiled by ICF from the ARB Annual Toxics Summaries (ARB 2016a).

Notes:

Mean and maximum concentrations of copper, chromium, and lead are provided in $\mu\text{g}/\text{m}^3$; formaldehyde, acetaldehyde, and acrolein are provided in ppm.

Toxics samples are collected over a 24-hour period (midnight to midnight) every 12 days at 18 sites (20 sites before July 1995, 21 sites from July 1995 through July 2000) throughout California. There is usually a maximum of 31 values for a given toxics substance at a given site each year (<https://www.arb.ca.gov/adam/toxics/toxuses.html>).

- = value not available

Recently, the state released the California Communities Environmental Health Screening Tool (CalEnviroScreen), which provides a relative ranking of communities based on a selected group of environmental, health, demographic, and socioeconomic indicators. Neighborhoods near the project area, including those areas to the east of the middle portions of San Diego Bay, represent some of the highest rankings (e.g., worst air quality) in the state. For example, the Barrio Logan community just west/south (census tract 6073005000) and east/north of Interstate 5 (census tract 6073004900) is within the worst 96–100 percent in the state. In the South Bay, the community just southeast of the National City Bayfront and immediately east of Interstate 5 (census tract 6073012502) is within the worst 86–90 percent in the state, while the worst community near the Chula Vista Bayfront is the community just southeast of the Chula Vista Bayfront and immediately west and east of Interstate 5 (census tract 6073012600), which is within the worst 71–75 percent in the state. Twenty-six communities in the San Diego region have been identified as disadvantaged and will be the target of cap-and-trade investment to improve public health, quality of life, and economic opportunity (Cal/EPA 2014).

Note that while the results of CalEnviroScreen provide information on background pollution that allows the state to prioritize funding resources, the scoring results are not directly applicable to project-level or cumulative impact analyses required under CEQA. As such, the information provided by CalEnviroScreen cannot substitute for analyzing a specific project's cumulative impacts as required in a CEQA environmental review (Cal/EPA 2014). The information presented herein regarding CalEnviroScreen is for illustrative purposes only.

4.2.3 Applicable Laws and Regulations

The air quality management agencies of direct importance in the county are EPA, ARB, and SDAPCD. EPA has established federal air quality standards for which ARB and SDAPCD have primary implementation responsibility. ARB and SDAPCD are also responsible for ensuring that state air

quality standards are met. The following sections discuss federal, state, and local laws and regulations applicable to the proposed project.

4.2.3.1 Federal

Federal Clean Air Act

The CAA was first enacted in 1963 and has been amended numerous times in subsequent years (1967, 1970, 1977, and 1990). The CAA establishes the NAAQS and specifies future dates for achieving compliance. The CAA also mandates that each state submit and implement a State Implementation Plan (SIP) for local areas not meeting those standards. The plans must include pollution control measures that demonstrate how the standards will be met. Because the District is within the SDAB, it is in an area designated as nonattainment for certain pollutants that are regulated under the CAA.

The 1990 amendments to the CAA identify specific emission-reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones. The sections of the CAA that would most substantially affect the development of the proposed project include Title I (Nonattainment Provisions) and Title II (Mobile-Source Provisions).

Title I provisions were established with the goal of attaining the NAAQS for criteria pollutants. Table 4.2-7 shows the NAAQS currently in effect for each criteria pollutant. The NAAQS were amended in July 1997 to include an 8-hour standard for O₃ and adopt a standard for PM_{2.5}. The 8-hour O₃ NAAQS was further amended in October 2015. EPA will designate O₃ attainment and nonattainment areas in late 2017.

Exceptional Events Rule

Exceptional events are events for which the normal planning and regulatory process established by the CAA is not appropriate. An exceptional event is defined as an event that affects air quality, is not reasonably controllable or preventable, is caused by human activity that is unlikely to recur at a particular location or a natural event, and is determined by EPA through the process established in these regulations to be an exceptional event. The exceptional events rule grants EPA the authority to exclude air quality monitoring data from regulatory determinations related to exceedances or violations of NAAQS and avoid designating an area based on certain events if the state adequately demonstrates that an exceptional event has caused an exceedance or violation of an NAAQS. EPA requires states to take reasonable measures to mitigate the impacts of an exceptional event. Fireworks display events can qualify as an exceptional event provided the state adequately demonstrates that fireworks display events caused the exceedance and that fireworks display events are significantly integral to traditional national, ethnic, or other cultural events (e.g., Fourth of July celebrations, Chinese New Year celebrations, Diwali)(40 Code of Federal Regulations Parts 50 and 51).

Table 4.2-7. Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS¹	NAAQS²
Ozone (O ₃)	1 hour	0.09 ppm	--
	8 hour	0.070 ppm	0.070 ppm
Carbon Monoxide (CO)	1 hour	20 ppm (23,000 µg/m ³)	35 ppm (40,000 µg/m ³)
	8 hour	9.0 ppm	9 ppm
Nitrogen Dioxide (NO ₂)	1 hour	0.18 ppm (339 µg/m ³)	100 ppb (188 µg/m ³)
	Annual Arithmetic Mean	0.030 ppm	53 ppb
Sulfur Dioxide (SO ₂)	1 hour	0.25 ppm (655 µg/m ³)	75 ppb (196 µg/m ³)
	24 hour	0.04 ppm (105 µg/m ³)	0.14 ppm (368 µg/m ³)
Respirable Particulate Matter (PM ₁₀)	24 hour	50 µg/m ³	150 µg/m ³
	Annual Arithmetic Mean	20 µg/m ³	--
Fine Particulate Matter (PM _{2.5})	24 hour	--	35 µg/m ³
	Annual Arithmetic Mean	12 µg/m ³	12.0 µg/m ³
Sulfates	24 hour	25 µg/m ³	--
Lead (Pb)	30 day average	1.5 µg/m ³	--
	Calendar quarter	--	1.5 µg/m ³
	Rolling 3-Month Average	--	0.15 µg/m ³
Hydrogen Sulfide	1 hour	0.03 ppm	--
Vinyl Chloride	24 hour	0.01 ppm	--

Source: ARB 2016b

¹ The CAAQS for O₃, CO, SO₂ (1-hour and 24-hour), NO₂, PM₁₀, and PM_{2.5} are values not to be exceeded. All other California standards shown are values not to be equaled or exceeded.

² The NAAQS, other than O₃ and those based on annual averages, are not to be exceeded more than once a year. The O₃ standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than 1. For PM_{2.5}, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, is equal to or less than the standard.

ppm = parts per million by volume; ppb = parts per billion; µg/m³ = micrograms per cubic meter.

4.2.3.2 State

California Clean Air Act

The California CAA, signed into law in 1988, requires all areas of the state to achieve and maintain the CAAQS by the earliest practical date. The CAAQS incorporate additional standards for most of the criteria pollutants and set standards for other pollutants recognized by the state. In general, the California standards are more health protective than the corresponding NAAQS. California has also set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Table 4.2-7 shows the CAAQS currently in effect for each criteria pollutant.

ARB and local air districts bear responsibility for achieving California's air quality standards, which are to be achieved through district-level air quality management plans that would be incorporated into the SIP. In California, EPA has delegated authority to prepare SIPs to ARB, which, in turn, has

delegated that authority to individual air districts. ARB traditionally has established state air quality standards, maintaining oversight authority in air quality planning, developing programs for reducing emissions from motor vehicles, developing air emission inventories, collecting air quality and meteorological data, and approving SIPs.

The California CAA substantially adds to the authority and responsibilities of air districts. The California CAA designates air districts as lead air quality planning agencies, requires air districts to prepare air quality plans, and grants air districts authority to implement transportation control measures. The California CAA also emphasizes the control of “indirect and area-wide sources” of air pollutant emissions. The California CAA gives local air pollution control districts explicit authority to regulate indirect sources of air pollution and to establish traffic control measures.

Diesel Fuel Regulation

With this rule, ARB set sulfur limitations for diesel fuel sold in California for use in on- and off-road motor vehicles (13 California Code of Regulations [CCR] 2281–2285; 17 CCR 93114). Harbor craft and intrastate locomotives were originally excluded from the rule, but were later included by a 2004 rule amendment (ARB 2005b). Under this rule, diesel fuel used in motor vehicles has been limited to 500 parts per million (ppm) sulfur since 1993. The sulfur limit was reduced to 15 ppm on September 1, 2006. A federal diesel rule similarly limited sulfur content nationwide to 15 ppm by October 15, 2006.

Toxic Air Contaminant Regulations

California regulates TACs primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Toxic Air Contaminant Identification and Control Act (AB 1807) created California’s program to reduce exposure to air toxics. The Air Toxics “Hot Spots” Information and Assessment Act (AB 2588) supplements the AB 1807 program by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks. In August 1998, ARB identified particulate emissions from diesel-fueled engines as TACs. In September 2000, ARB approved a comprehensive diesel risk reduction plan to reduce emissions from both new and existing diesel-fueled engines and vehicles. As an ongoing process, ARB reviews air contaminants and identifies those that are classified as TACs. ARB also continues to establish new programs and regulations for the control of TACs, including DPM, as appropriate. Among the programs and strategies ARB has developed to reduce diesel emissions for various sources, many of these are applicable to sources within San Diego Bay, including harbor craft (tugs) for displays that have fireworks launched from barges. Other displays, such as the Fourth of July Imperial Beach Fireworks Show, Our Lady of Rosary Church Annual Procession, various U.S.S. Midway Museum displays, and the NASSCO displays, are not barge-based, so no tugs are assumed.

4.2.3.3 Local

Port of San Diego

The Port Master Plan (PMP) is the governing land use document for physical development within the District; however, there are also other District programs that apply to air quality. The District developed the Green Port Program to support the goals of the Green Port Policy, which was adopted

in 2008. The Green Port Program supports resource conservation, waste reduction, and pollution prevention. The Clean Air Program is one key area of the Green Port Program, with the primary goal of reducing air emissions from District operations at its three marine terminals: the Cruise Ship Terminal, Tenth Avenue Marine Terminal, and National City Marine Terminal. The Clean Air Program seeks to voluntarily reduce criteria pollutants and greenhouse gas (GHG) emissions from current and future District operations through the identification and evaluation of feasible and effective control measures for each category of District emissions. The District has developed various control measures geared toward reducing emissions from the greatest contributors of air pollution. The District has identified control measures to achieve a reduction of pollutants from the largest sources, including shore power (to enable ships to turn off their engines and plug into electric power while docked), truck replacement/retrofits, replacement/retrofits of cargo handling equipment, and voluntary vessel speed reductions. The Clean Air Program will continue to be refined and be adapted to future changes in District operations (District 2008).

Through efforts at the international, federal, state, and local levels, air emissions from goods movement sources at the District have been greatly reduced. For example, between the 2006 and 2012 Emission Inventories, NO_x emissions were reduced 50 percent, DPM emissions were reduced 75 percent, and SO₂ emissions were reduced 94 percent (District 2014).

San Diego Air Pollution Control District

Local air pollution control districts have the primary responsibility for the development and implementation of rules and regulations designed to attain the NAAQS and CAAQS, as well as the permitting of new or modified sources, development of air quality management plans, and adoption and enforcement of air pollution regulations. SDAPCD is the local agency responsible for the administration and enforcement of air quality regulations in San Diego County.

Regional Air Quality Strategy and State Implementation Plan

ARB, SDAPCD, and the San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The San Diego Regional Air Quality Strategy (RAQS) outlines SDAPCD's plans and control measures designed to attain and maintain the state standards while SDAPCD submits San Diego County's portion of the SIP, which is designed to attain and maintain federal standards. The RAQS was initially adopted in 1991 and is updated on a triennial basis. The RAQS was updated in 1995, 1998, 2001, 2004, 2009, and the Final 2016 RAQS Revision (for O₃ CAAQS) was adopted in December 2016. The RAQS does not currently address the state air quality standards for PM₁₀ or PM_{2.5}. SDAPCD has also developed the air basin's input to the SIP, which is required under the federal CAA for areas that are out of attainment of air quality standards. Both the RAQS and SIP demonstrate the effectiveness of ARB measures (mainly for mobile sources) and SDAPCD's plans and control measures (mainly for stationary and area-wide sources) for attaining the O₃ NAAQS. The SIP is also updated on a triennial basis. For the 8-hour O₃ standard, SDAPCD submitted its 8-hour O₃ Redesignation Request and Maintenance Plan in December of 2012 and adopted the Final 2016 O₃ Attainment Plan and the Reasonably Available Control Technology (RACT) Demonstration in December 2016. In addition, the *Measures to Reduce Particulate Matter in San Diego County* report (December 2005) proposes measures to reduce PM emissions and recommends measures for further detailed evaluation and, if appropriate, future rule development

(or non-regulatory development, if applicable), adoption, and implementation in San Diego County, in order to attain PM CAAQS.

ARB is currently working on an update to the SIP and recently released a *Proposed 2016 State Strategy* for the SIP. This strategy describes proposed state measures to achieve the reductions necessary from the mobile sector and consumer products to meet O₃ and PM_{2.5} NAAQS over the next 15 years. The 2016 SIP update will incorporate regional SIPs (to be developed) as well as the Scoping Plan Update, California's Sustainable Freight Action Plan, the Short-Lived Climate Pollutant Strategy, and implementation of Senate Bill 375. ARB notes that while existing programs have achieved tremendous success in reducing NO_x emissions, further reductions are required. Proposed SIP measures include various measures relevant to goods movement and maritime operations, including working with EPA on a low-NO_x standard and finalizing the Phase 2 GHG standard for heavy trucks; further deployments of cleaner on- and off-road technologies; working with EPA on more stringent locomotive emission standards; working with IMO on Tier 4 vessel standards; incentivizing low-emissions vessel calls; and extending at-berth requirements to all vessels (ARB 2016b).

SDAPCD Rules and Regulations

SDAPCD is responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws. SDAPCD develops control measures and rules for sources under SDAPCD authority, specifically stationary emission sources (including power plants, manufacturing and industrial facilities, stationary internal combustion engines, gas stations, landfills, and solvent-cleaning and surface-coating operations) and some area-wide sources (mostly residential sources, which are individually small and spread over a wide area, including water heaters, furnaces, architectural coatings, and consumer products). Typical projects that construct and operate sources under SDAPCD control are subject to the various SDAPCD rules and regulations. However, because the proposed project does not propose to construct or operate any source under the direct authority of SDAPCD, SDAPCD rules and regulations are not applicable to the proposed project. Nonetheless, some SDAPCD rules are relevant in that information presented therein is used in this analysis. For example, Regulation 2, Rule 20.2 established Air Quality Impact Analysis (AQIA) Trigger Levels, which set emission limits for non-major new or modified stationary sources, and Regulation 8, which establishes rules and procedures governing new, relocated, or modified emission units that may increase emissions of one or more TAC. While the proposed project is not necessarily subject to the requirements of either regulation, the AQIA Trigger Levels from Regulation 2, Rule 20.2, as well as the risk assessment guidelines and procedures from Regulation 8, are used in the analysis herein.

4.2.4 Project Impact Analysis

4.2.4.1 Methodology

Air quality impacts associated with the fireworks display events were assessed and quantified using industry standard methodology and peer-reviewed software tools, techniques, and emission factors. A summary of the methodology is provided below. A full list of assumptions and emission calculations can be found in Appendix E.

The analysis herein considers those sources that are directly or indirectly related to the fireworks display events. Direct effects are impacts that are a direct result of the fireworks display events and include the sources needed to operate the fireworks display events. Direct sources include the operation of the fireworks, the delivery of the fireworks and related materials, and tug and barge activity used to launch the fireworks. Indirect effects are effects that result from the proposed project but are not directly caused by project operation. Indirect sources include changes to the travel and circulation patterns on the regional roadway network from patrons accessing the fireworks display event viewing locations, usage of facilities at the fireworks display event viewing locations (e.g., water consumption, electricity consumption, and cleaning product use at bathrooms). The methodology used to estimate air quality-related impacts is discussed below and is similar to the methodology that was used to estimate GHG emissions and energy consumption, as described in Section 4.4, *Greenhouse Gas Emissions, Climate Change, and Energy*.

Background on Fireworks

Studies have found that the release of fireworks can be an important source category for atmospheric particulate matter (Vecchi et al. 2008). Research has found that fireworks can increase particulate matter (including PM₁₀ and PM_{2.5}) directly by emitting firework-related species and certain heavy metals, such as Cu and Pb, and other particles that include both light and heavy metals, elemental and organic carbon, and perchlorate compounds (Croteau et al. 2010). Additionally, the indirect effects of firework display events should be taken into consideration, which include re-suspended dust (if launched over land) and biomass combustion (fireworks made from paper, aerial shell, fuse, and other igniter material).

The fireworks emissions can be divided into those emissions that occur directly from the fireworks themselves and a biomass fraction, which is indirect emissions resulting from the incineration of materials made from paper and an igniter material. The direct fireworks mass fraction will be released at the top of the trajectory when the aerial shell explodes. This action is separated into a lift charge portion that occurs during initial lifting of the aerial firework followed by the release of the firework shell explosion near the top of the trajectory. The biomass (indirect) contribution is released near ground level. Each of these emission sources were explicitly modeled in estimating mass emissions and in the air dispersion model in estimating pollutant concentrations at nearby receptors.

Although firework-related emissions are relatively infrequent, they are highly concentrated and their influence can be seen in the national air quality observation network (Seidel and Birnbaum 2015). Both the direct and indirect influences of fireworks can contribute to PM₁₀, PM_{2.5}, and total metal emissions. In addition, fireworks can be an important source of perchlorate released into the environment, with potassium and ammonia perchlorate the most commonly used ingredient. The objective in this analysis is to quantify both the emissions and the resulting air concentrations, while fully documenting the important underlying assumptions and source of the emission factors used in the analysis. Furthermore, studies found that the sum of all gases comprise only 0.006 percent to 0.4 percent of the initial mass of fireworks (Croteau et al. 2010). Individual gaseous species, including VOC, would be even smaller. Based on this, VOC emissions from existing and future fireworks display events were assumed to be negligible and were not included in the analysis.

Fireworks Emission Sources and Source Strength Calculation

Direct Sources

Particle generation from the total combustion mass of an individual firework ranges from 5 to 13 percent of the total mass. Refined estimates of these emission factors for PM₁₀, PM_{2.5}, metals, criteria pollutants (VOC, NO_x, CO, and sulfur oxides [SO_x]), and VOC species (including formaldehyde, acetaldehyde, and acrolein) were available from the *Emission factors and exposures from ground-level pyrotechnics* scientific journal article from Croteau et al. (2010). The aerial shells from the largest existing fireworks display event, Big Bay Boom, are most similar in characteristics to the Roman Candle “B” projectile as measured following combustion testing performed in a burn room for this scientific journal article.

Indirect Sources

Tian et al. (2014) reported the fraction of the direct fireworks emissions, relative to the total PM₁₀ and PM_{2.5}, as 70.2 percent for PM₁₀ and 80.6 percent PM_{2.5}, with the remainder as biomass emissions. As such, the biomass emissions for PM₁₀ are 29.8 percent and for PM_{2.5} are 19.4 percent of the total for the size group. The net weight of pyrotechnic materials in aerial fireworks shells is typically about half their gross weight, and the amount of material available as biomass emissions was estimated as equal to the net explosive weight (or the weight of pyrotechnic materials) (Kosanke and Kosanke 1990). The biomass combustion profiles for PM₁₀ and PM_{2.5} were based on the values reported in Tian et al. (2014) and Akagi et al. (2011), respectively. Note that the “net explosive weight” shown in the Regional Water Quality Control Board permits is defined as the “the weight of all pyrotechnic compositions, explosives material, and fuse only” (22 CCR 67384.3). The “net explosive weight” does not include the paper, plastic, and inert substances that compose the shell and lifting charge. This assumption is consistent with the approach taken in Section 4.6, *Hydrology and Water Quality*.

Particle Size Distribution

The rate at which particulate matter is removed from the atmosphere and deposited to the ground is primarily a function of the particle sizes found following the explosion of the fireworks. The best information available on particle size distribution is available in a study by Khaparde et al. (2011) in which they measured the particles’ size mass distribution for eight size-bins ranging from a mean mass diameter size of 10 micrometers to 0.4 micrometer over multiple days. For purposes of this analysis, it was assumed that the particle size distribution information collected in the above-mentioned study by Khaparde et al. (2011) on October 28, 2008 during the most active fireworks display event period of the Diwali festival best corresponds to the aerial explosion firework activities during the existing and anticipated in the proposed new fireworks display events. The particle size distribution was used to model both deposition of particulate matter to the Earth’s surface and also the removal from the atmospheric mass concentration.

Amount of Fireworks

A summary of activity associated with the proposed new fireworks display events is presented in Table 3-2, and a summary of activity associated with existing fireworks display events is presented in Table 2-2. Note that the majority of the background research was performed based on the known

information and shell sizes from the 2015 Big Bay Boom event, which is the largest existing fireworks display event that occurs within San Diego Bay. Emission factors for each of the pollutants of concern was generated for the existing Big Bay Boom event, and fireworks emissions for the other fireworks display events were estimated by scaling emissions from the Big Bay Boom event by the amount of fireworks for the specific fireworks display event. The amount of fireworks for the proposed new Fourth of July fireworks display events along the National City and Chula Vista Bayfronts is assumed to be the same as the Fourth of July Imperial Beach Fireworks Show. The amount of fireworks for the proposed new non-Fourth of July fireworks display events along the Chula Vista Bayfront is assumed to be approximately 25 percent of the total pounds of fireworks for the Fourth of July Imperial Beach Fireworks Show.

Tugs and Barges

Fireworks for the proposed new fireworks display events would be launched from barges in the waters of southern San Diego Bay. Barges would be moved by tug boats to their designated locations along the Chula Vista and National City Bayfronts. The barges themselves would result in no emissions, but the tugs that move the barges would. Tug activity to move barges into place was estimated based on the distance from the Pacific Tugboats offices to the various locations throughout the Bay assuming tugs travel 6 mph, similar to in-harbor tug activity presented in the District's Emissions Inventory (District 2014). It was assumed that the tug's propulsion/main and auxiliary engines are active while moving barges into place. Tug activity to hold barges in place was based on information from the District, organizers, operators, and/or District tenants of fireworks display events and assumed that barges are active for a total of 4 hours. While holding barges in place, it was assumed that only the tug's auxiliary engines are active, while the propulsion/main engines remain off. It was assumed that the same activity to move the barges in place occurs once the fireworks display event is complete, as the barges and tugs return to Pacific Tugboat offices.

A summary of proposed new fireworks display events that are anticipated to use tugs and barges is presented in Table 3-2. As with existing fireworks display events, the barges would use tugs that are in the 400–1,100 horsepower range. The District's Emissions Inventory (District 2014) was used to find the appropriate model year and engine size for tugs that fit this horsepower range. To estimate tug emission factors, it was assumed that the average tug in this range is a 2004 model year with an 804-horsepower main engine and a 101-horsepower auxiliary engine. Tug emission factors are based on the zero-hour emission factors for model year 2004 tug engines, engine deterioration factors, fuel correction factors, useful life, and load factors for main propulsion and auxiliary tug engines as well as auxiliary barge engines based on the calculation methodology from the Port of Long Beach Inventory (Port of Long Beach 2014). It was conservatively assumed that tugs used during fireworks display events are fully deteriorated (e.g., at the end of their useful life). It is assumed that the methodology used to estimate emissions from tug and barge activity is the same for existing and proposed new fireworks display events.

Firework Material Deliveries

The fireworks are primarily manufactured overseas and are transported to the fireworks display events by truck from the port of entry. For purposes of analysis, it was assumed that firework materials are trucked from the Ports of Los Angeles and/or Long Beach to the project sites prior to or on the fireworks display event day. Emissions associated with delivery truck travel were estimated assuming a single 236-mile round-trip (118 miles one way) heavy-duty truck delivery for

each fireworks display event on the event day to and from the Port of Los Angeles. Exhaust emissions were based on emission factors from ARB's EMFAC software for heavy-duty "T7 Single Construction" tractor-trailer trucks operating in San Diego County in year 2017. Fugitive road dust emissions were based on the re-entrained paved road dust methodology from EPA (2011) along with methodological guidance published by ARB (2014).

Visitor Traffic

As noted in the memorandum provided by Chen Ryan (Appendix J), a traditional analysis of regional traffic patterns related to the fireworks display events cannot be accurately calculated for the fireworks display events due to the limitations of traffic modeling and the uniqueness of the fireworks display events. Rather, the traffic analysis focuses on how the transportation and parking demand patterns changed around San Diego Bay during sample Fourth of July and other non-Fourth of July fireworks display events, including observed changes in vehicle, pedestrian, and bicycle volumes. These volumes were counted only on the roadways and intersections providing immediate access to the viewing locations for the sample fireworks display events. In order to calculate visitor-related vehicle miles traveled (VMT), data would need to be collected that assess the number of visitors, how visitors arrived at the event, how far patrons traveled, routes taken, where patrons parked, and whether or not patrons were at the viewing locations specifically for fireworks or there for other reasons. Moreover, because the proposed new fireworks display events along the National City and Chula Vista Bayfronts do not currently occur, this data could not be collected. In discussing the air quality effects of visitor-related vehicle traffic, the analysis below provides a qualitative evaluation of background monitoring on both event and non-event days.

Studies indicate that PM concentrations in most urban areas are generally attributed to vehicle traffic, and PM concentrations diminish with distance, particularly beyond 1,000 feet (ARB 2005). Background PM concentrations are collected at the following monitoring stations in the region: Alpine, Downtown (Beardsley Street), El Cajon, Escondido, Otay Mesa, Camp Pendleton, and San Ysidro (SDAPCD 2016b). Of these stations, the only station within proximity of the project area is the Downtown (Beardsley Street) station, which is near existing fireworks display events that occur in the northern parts of San Diego Bay, particularly the Big Bay Boom event. No monitoring stations are close to the existing Fourth of July Imperial Beach Show or near the proposed new National City and Chula Vista fireworks display events. Thus, the Fourth of July Imperial Beach Show, although it is similar in size to the proposed new National City and Chula Vista fireworks display events, cannot be used to estimate the effects of the proposed new shows. However, even though the existing Big Bay Boom event is much larger and takes place in a different part of the Bay, the event does take place in proximity to a PM monitoring station (Downtown-Beardsley Street), which can be used to qualitatively assess the potential impact of the proposed project's vehicle traffic based on hourly monitoring data near an existing fireworks display event.

Health Risk Assessment

Based on a literature review, it was determined by the District that because of the short-term but highly concentrated emissions during and after fireworks display events (Seidel and Birnbaum 2015), the potential effects of key toxic pollutants present in many fireworks displays on sensitive populations viewing the displays should be analyzed.

Fireworks contain a mixture of ingredients and metals that are used to project and detonate the fireworks and generate colors. Fireworks can influence the particulate matter directly by emitting firework-related species (such as certain heavy metals) and other particles that include both light and heavy metals, elemental and organic carbon, and perchlorate compounds. Additionally, the indirect effects caused by the activities of fireworks display events should be taken into consideration. This would include re-suspended dust (if launched over land) and biomass combustion (fireworks made from paper, aerial shell, fuse, and other igniter material).

An HRA was performed to analyze the short-term (acute) health effects of the fireworks display events. In particular, the analysis was performed by using the largest existing fireworks display event, which is the Big Bay Boom. The Big Bay Boom was used to provide a comparison for all proposed new fireworks display events because the Big Bay Boom is by far the largest and most visited of the fireworks display events. Impacts from proposed new fireworks display events were estimated by scaling the Big Bay Boom fireworks display event by the new fireworks display event sizes. A detailed description of the methods and model inputs used in the HRA is provided in Appendix E of this Draft EIR.

The air quality model needed to assess the impacts from aerial fireworks display events must be capable of modeling near-instantaneous releases, atmospheric dispersion processes, and transport of the firework emissions. The standard EPA air dispersion model, AERMOD, does not have the capability to model near-instantaneous releases (i.e., releases over much less than 1 hour), nor does AERMOD include the energy from the detonation of the firework material; however, EPA does list on its Support Center for Regulatory Application the use of an alternative model intended for use in evaluating the potential air quality impacts from open burning and open detonation (OBOD) from solid propellants. The Department of Defense, U.S. Army, developed the OBOD model (version 1.3.24) to specifically address the disposal of ammunition either by burning or detonation of the munitions. OBOD uses cloud/plume rise dispersion and deposition algorithms for modeling instantaneous and quasi-continuous sources to predict the downwind transport and dispersion of pollutants released from an open detonation. This model is directly applicable for modeling firework releases after specifying the burst height of the fireworks aerial shell. Moreover, as noted in other risk assessment studies, most notably the Disneyland Health Risk Assessment (York Engineering, LLC 2007) the OBOD model was identified as the more appropriate model for the modeling of pyrotechnic displays. Note that the Disneyland study included both acute and chronic effects because the Disneyland fireworks display events occur at the same location regularly throughout the year.

OBOD was used to calculate the concentration of directly emitted criteria and TAC pollutants from the identified sources. Dispersion models such as OBOD require local meteorological parameters such as wind speed, stability class, mixing height, and temperature. Hourly averaged meteorological data from the Beardsley Street monitoring station was used as input to the OBOD model for the hour-specific event. Meteorological data for 1 week before and 1 week after the Fourth of July for the past 10 years (2007–2016) for 9 p.m. local daylight time were used to represent typical meteorology during a typical Big Bay Boom display. Over this period of record, the hourly average wind speed was 4.8 mph, wind direction was from 280 degrees (west-northwest), and the temperature was 67.5°F over the 9 p.m. to 10 p.m. time period.

OEHHA has established guidelines for determining the impact of acutely toxic substances. Short-term exposure risks are characterized in terms of a hazard index (HI). OEHHA and SDAPCD

generally recognize that an HI greater than 1.0 means that expected exposure levels have the potential to pose adverse health effects. HI levels less than 1.0 are considered safe from any adverse health effects. OEHHA has developed Reference Exposure Levels (RELs) for numerous chemicals, including 53 acute RELs, 82 chronic RELs, and 10 eight-hour RELs. Exposure averaging time for acute RELs is 1 hour. For 8-hour RELs, the exposure averaging time is 8 hours, which may be repeated. Chronic RELs are designed to address continuous exposures for up to a lifetime: the exposure metric used is the annual average exposure. By definition, an acute REL is an exposure that is not likely to cause adverse health effects in a human population, including sensitive subgroups, exposed to that concentration (in units of micrograms per cubic meter [$\mu\text{g}/\text{m}^3$]) for the specified exposure duration on an intermittent basis (OEHHA 2015). Given the short-term and infrequent nature of the largest fireworks display events, assessing acute risk based on acute RELs is the most appropriate method of analysis. Acute RELs for chemicals released from firework activities are presented in Table 4.2-8. As noted, not every chemical or pollutant has an acute REL. For example, while Cr+6 is a known toxin, OEHHA has not developed an acute REL for Cr+6. Similarly, while DPM is a known carcinogen emission from sources, including project-related tugs, OEHHA has not developed an acute REL for tugs. Thus, while OEHHA, along with ARB and EPA, continues to examine the relationship between TAC exposure and short-term (acute) health effects, health studies to date have not provided sufficient exposure information to establish a short-term (acute) non-cancer health risk value for many chemicals, including Cr+6 and DPM. Short-term (acute) non-cancer health risk effects are only analyzed for pollutants that have been assigned risk values, as provided in Table 4.2-8.

When calculating acute risk, the maximum 1-hour ground level concentration (in $\mu\text{g}/\text{m}^3$) of a substance at a receptor is divided by the acute 1-hour REL (in $\mu\text{g}/\text{m}^3$) for the substance. For a single substance, this result of this calculation is called the Hazard Quotient. If a receptor is exposed to multiple substances that target the same organ system, then the Hazard Quotient for the individual substances are summed to obtain an HI for that target organ. Hazard Quotients for different target organs are not added.

Table 4.2-8. Acute Risk Factors for Fireworks-Related TACs

Pollutant	1-Hour Acute REL ($\mu\text{g}/\text{m}^3$)	Target Organ
Copper	100	Respiratory System
Sulfur Dioxide	196	Respiratory System
Nitrogen Dioxide	470	Respiratory System
Carbon Monoxide	23,800	Cardiovascular System
Formaldehyde	55	Eyes (sensory irritation)
Acetaldehyde	470	Eyes; Respiratory System (sensory irritation)
Acrolein	2.5	Eyes; Respiratory System (sensory irritation)
Diesel Particulate Matter	--	--
Hexavalent Chromium	--	--
Source: ARB and OEHHA 2016; OEHHA 2015		

4.2.4.2 Thresholds of Significance

The following significance criteria are based on Appendix G of the State CEQA Guidelines and provide the basis for determining significance of impacts associated with air quality resulting from the proposed project. The determination of whether an air quality impact would be significant is based on the applicable thresholds and the professional judgment of the District as Lead Agency, supported by the recommendations of qualified personnel at ICF, and relies wholly on the substantial evidence in the administrative record. Impacts would be considered significant if the project would do any of the following.

1. Conflict with or obstruct implementation of the applicable air quality plan.
2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
3. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).
4. Expose sensitive receptors to substantial pollutant concentrations.
5. Create objectionable odors affecting a substantial number of people.

Appendix G of the State CEQA Guidelines further indicates the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the significance determinations.

Supplemental Thresholds

An EIR should disclose and evaluate the public health consequences associated with increasing air pollutants. Consequently, the following section summarizes the thresholds established by the County of San Diego (County), presents substantial evidence regarding the basis upon which they were developed, and also describes how they are used to determine whether project construction and operational emissions would result in a significant impact within the context of (1) interfering with or impeding attainment of CAAQS and NAAQS, or (2) causing or contributing to increased risks to human health.

Regional Thresholds for SDAB Attainment of State and Federal Ambient Air Quality Standards

As previously indicated, the State CEQA Guidelines state that the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the significance determination of whether a project would violate or impede attainment of air quality standards. Attainment status for each pollutant is assigned for the entire air basin. In San Diego, the SDAB is defined as “all of San Diego County” (see 17 CCR 60110). Therefore, the current attainment status for the entire San Diego region, which includes nonattainment status for ozone NAAQS and ozone CAAQS, PM10 CAAQS, and PM2.5 CAAQS, applies to the entire county.

Neither the District nor the Cities of San Diego, Coronado, Chula Vista, National City, or Imperial Beach have developed CEQA thresholds of significance for air quality and health risk.¹ Although SDAPCD has not developed specific thresholds of significance to evaluate construction and operational impacts within CEQA documents, SDAPCD's Regulation II, Rules 20.2 and 20.3 (new source review for non-major and major stationary sources, respectively), outline AQIA Trigger Levels for criteria pollutants for new or modified sources. Based on SDAPCD's AQIA Trigger Levels, as well as EPA rulemaking and CEQA thresholds adopted by SCAQMD, San Diego County has established screening-level thresholds (SLTs) to assist lead agencies in determining the significance of project-level air quality impacts within the county (as shown in Table 4.2-9). Although SDAPCD does not have VOC or PM_{2.5} AQIA Trigger Levels, the County has adopted a PM_{2.5} SLT based on EPA's "Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards" published on September 8, 2005, which is also consistent with SCAQMD's Air Quality Significance Thresholds (SCAQMD 2015), and a VOC SLT based on the threshold of significance for VOCs from the SCAQMD for the Coachella Valley. Emissions in excess of San Diego County's SLTs, shown in Table 4.2-9, would be expected to have a significant impact on air quality because an exceedance of the SLTs is anticipated to contribute to CAAQS and NAAQS violations in the county.

The County's SLTs are based on SDAPCD AQIA Trigger Levels, and these AQIA Trigger Levels are based on emissions levels identified under the New Source Review (NSR) program, which is a permitting program established by Congress as part of the CAA Amendments of 1990 to ensure that air quality is not significantly degraded by new or modified sources of emissions. The NSR program requires that stationary sources receive permits before construction begins and/or the use of equipment. By permitting large stationary sources, the NSR program ensures that new emissions would not slow regional progress toward attaining the NAAQS. SDAPCD implements the NSR program through Rules 20.2 and 20.3, and has concluded that the stationary pollutants described under the NSR program are equally significant as those pollutants generated with land use projects. SDAPCD's Trigger Levels were set as the total emission thresholds associated with the NSR program to help attain and maintain the NAAQS from new and modified non-major stationary sources.² SDAPCD's Trigger Levels take into account the region's attainment status, emission profile, inventory, and projections, and represent levels above which project-generated emissions could affect SDAPCD's and SANDAG's commitment to attain the state and federal standards in the region. Consistent with Section 15064.7(c) of the State CEQA Guidelines,³ the evidence in support of the air quality thresholds shown in Table 4.2-9 is deemed appropriate for their use in this analysis and in this location within the greater SDAB.

¹ The District is currently in the process of drafting CEQA thresholds of significance for all resources, including air quality. Until these thresholds are adopted, the District will continue to rely on established regional thresholds, which are based on substantial evidence summarized herein.

² San Diego Air Pollution Control District, Rule 20.2, Table 20.2-1, hereby incorporated by reference: <http://www.sdapcd.org/rules/Reg2pdf/R20-2.pdf>

³ "When adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence."

Table 4.2-9. San Diego County Screening-Level Thresholds

Air Contaminant	Emission Rate		
	(pounds per hour)	(pounds per day) ¹	(tons per year)
Respirable Particulate Matter (PM ₁₀)	--	100	15
Fine Particulate Matter (PM _{2.5}) ²	--	55	10
Nitrogen Oxides (NO _x)	25	250	40
Sulfur Oxides (SO _x)	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead (Pb) ³	--	3.2	0.6
Volatile Organic Compounds (VOC) ⁴	--	75	13.7 ⁵

Source: SDAPCD Regulation II, Rule 20.2, County of San Diego 2007.

¹ According to San Diego County, the daily SLTs are most appropriate when assessing impacts from standard construction and operational emissions. Therefore, daily SLTs are used to evaluate project significance, while hourly and annual SLTs are provided for informational purposes only.

² Based on EPA's "Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards" published September 8, 2005, and also SCAQMD's Air Quality Significance Thresholds (SCAQMD 2015).

³ Lead and lead compounds.

⁴ County SLTs for VOCs were originally based on the threshold of significance for VOCs from SCAQMD for the Coachella Valley. The terms VOC and ROG are used interchangeably, although VOC is used in this table because the City and County use the term VOC.

⁵ 13.7 tons per year threshold is based on 75 pounds per day multiplied by 365 days per year and divided by 2,000 pounds per ton.

Health-Based Thresholds for Project-Generated Pollutants of Human Health Concern

An EIR should disclose and evaluate the public health consequences associated with increasing air pollutants. As discussed above, all criteria pollutants are associated with some form of health risk (e.g., asthma, asphyxiation). Adverse health effects associated with criteria pollutant emissions are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, and the number and character of exposed individuals [e.g., age, gender]). Moreover, O₃ precursors (ROG and NO_x) affect air quality on a regional scale. Health effects related to O₃ are therefore the product of emissions generated by numerous sources throughout a region. As part of the setting and updating of the NAAQS, EPA develops and considers quantitative characterizations of exposures and associated risks to human health or the environment, known as a Health Risk and Exposure Assessment (HREA), with recent air quality conditions and with air quality estimated to just meet the current or alternative standard(s) under consideration (EPA 2016). The HREA estimates population exposure to and resulting mortality and morbidity health risks associated with the full range of observed pollutant concentrations, as well as incremental changes in exposures and risks associated with ambient air quality adjusted to just meeting the existing NAAQS and just meeting potential alternative NAAQS under consideration (EPA 2014). However, existing models have limited sensitivity to small changes in criteria pollutant concentrations and, as such, translating project-generated criteria pollutants to specific health

effects would produce meaningless results. In other words, minor increases in regional air pollution from project-generated ROG and NO_x would have nominal or negligible impacts on human health.⁴

For this reason, an analysis of impacts on human health associated with project-generated regional emissions is not included in this analysis. Increased emissions of O₃ precursors (ROG and NO_x) generated by the proposed project could increase photochemical reactions and the formation of tropospheric O₃, which, at certain concentrations, could lead to respiratory symptoms (e.g., coughing), decreased lung function, and inflammation of airways. Although these health effects are associated with O₃, the impacts are a result of cumulative and regional ROG and NO_x emissions, and the incremental contribution of the proposed project to specific health outcomes from criteria pollutant emissions would be limited and cannot be solely traced to the proposed project. (See Threshold 3 and Chapter 5 for a discussion of regional cumulative impacts.)

Because localized pollutants generated by a project can directly affect adjacent sensitive receptors, the analysis of project-related impacts on human health focuses only on those localized pollutants with the greatest potential to result in a significant, material impact on human health. This is consistent with the current state-of-practice and published guidance by the California Air Pollution Control Officers Association (CAPCOA 2009), OEHHA (2015), SDAPCD (2006), and ARB (2000). These localized pollutants are (1) locally concentrated CO and (2) TACs. Locally adopted thresholds of significance for each pollutant are identified below. Note that a qualitative health-based analysis of criteria pollutants is briefly discussed under Threshold 4, but the health-based analysis focuses primarily on roadway CO and firework-related TACs, which are most often associated with adverse health outcomes (i.e., acute, chronic, and cancer risks) as opposed to the respiratory irritability outcomes typically seen from exposure to elevated concentrations of the criteria pollutants discussed above.

Local Micro-Scale Carbon Monoxide Concentration Standards

The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project are above or below state and federal CO standards. If ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a state or federal standard, project emissions are considered significant if they increase 1-hour CO concentrations by 1.0 ppm or more or 8-hour CO concentrations by 0.45 ppm or more (SCAQMD 1993). The following are applicable local emission concentration standards for CO.

- CAAQS and NAAQS 1-hour CO standards of 20 and 35 ppm, respectively
- CAAQS and NAAQS 8-hour CO standard of 9.0 and 9 ppm, respectively

As in most urban areas, high short-term concentrations of CO, known as “hot-spots,” can be a problem in San Diego County. Hot-spots typically occur in areas of high motor vehicle use, such as in parking lots, at congested intersections, and along highways. Because elevated CO concentrations typically occur at locations with high traffic volumes and congestion, elevated CO concentrations are

⁴ As an example, the Bay Area Air Quality Management District’s Multi-Pollutant Evaluation Method requires a 3 to 5 percent increase in regional ozone precursors to produce a material change in modeled human health impacts. Based on 2008 ROG and NO_x emissions in the Bay Area, a 3 to 5 percent increase equates to over 20,000 pounds per day of ROG and NO_x.

often correlated with level of service (LOS) at intersections. LOS expresses the congestion level for an intersection and is designated by a letter from A to F, with LOS A representing the best operating conditions and LOS F the worst. Significant concentrations of CO sometimes occur (depending on temperature, wind speed, and other variables) at intersections where LOS is rated at D or worse.

In order to assess the potential for CO hot-spots at nearby intersections, the analysis herein uses the County's CO hot-spot screening criteria, which indicate that any project that would place receptors within 500 feet of a signalized intersection with peak-hour trips exceeding 3,000 trips and operating at or below LOS E must conduct a hot-spot analysis for CO. Likewise, projects that will cause road intersections with intersection peak-hour trips exceeding 3,000 trips to operate at or below LOS E must also conduct a CO hot-spot analysis.

Localized Toxic Air Contaminant Concentrations

Various forms of TACs are recognized as causing adverse health effects. The most abundant TAC in urban settings is DPM, which is a form of localized PM (see above) that is generated by diesel equipment and vehicle exhaust. DPM has been identified as a TAC by ARB and is particularly concerning because long-term exposure can lead to cancer, birth defects, and damage to the brain and nervous system. Other TACs are emitted from various other combustion and industrial processes. Studies indicate that PM concentrations in most urban areas are generally attributed to vehicle traffic, and PM concentrations diminish with distance, particularly beyond 1,000 feet (ARB 2005). With respect to fireworks, studies have found that fireworks display events can result in atmospheric particulate matter and associated species, such as certain heavy metals and other particles, which includes both light and heavy metals, elemental and organic carbon, and perchlorate compounds. The County has adopted incremental cancer and hazard thresholds to evaluate receptor exposure to DPM emissions, which are adapted from SDAPCD Regulation XII, Rule 1200. Projects that would result in exposure to TACs resulting in a maximum incremental cancer risk (MICR) greater than 1 in 1 million without application of Toxics best available control technology (BACT),⁵ MICR greater than 10 in 1 million with application of Toxics BACT, or a chronic and acute non-cancer health hazard index greater than 1 would be deemed as having a potentially significant impact related to health risks from DPM exposure. Because various Toxics BACTs are in place at the District—including ARB rules on vessels, shore power, and drayage trucks—the MICR of 10 in 1 million is utilized herein.

Criteria for Cumulative Impacts

Potential cumulative air quality impacts would result when cumulative projects' pollutant emissions would combine to degrade air quality conditions to below acceptable levels. This could occur on a local level, such as through increases in vehicle emissions at congested intersections, or at sensitive receptor locations due to concurrent construction activities; at a regional level, such as the potential impact of multiple past, present, and reasonably foreseeable projects on O₃ within the SDAB; or globally, such as the potential impact of GHG emissions on global climate change.

⁵ BACT is the level of air contaminant emission control or reduction required by state law and District rules for new, modified, relocated, and replacement emission sources. Examples of Toxics BACT include diesel particulate filters, catalytic converters, and selective catalytic reduction technology.

Neither the District, nor the cities of San Diego, Coronado, National City, Chula Vista, or Imperial Beach, nor SDAPCD has established quantitative thresholds to determine whether a project would have a cumulatively considerable contribution to air quality. The County of San Diego thresholds (see below), set forth by SDAPCD and SCAQMD, for cumulative air quality impacts are utilized for the analysis of the impacts of proposed project operations related to emissions on air quality. There is no construction required for the implementation of the proposed project. As such, a construction emissions analysis is not applicable.

The following thresholds are used to determine the cumulatively considerable net increase in emissions during the operation phase:

- A project that does not conform to the RAQS or has a significant direct impact on air quality with regard to operational emissions of PM₁₀, PM_{2.5}, NO_x, and/or ROG_s (i.e., an exceedance of SLT values indicated in Table 4.2-9) would be considered to have a cumulatively considerable net increase.
- Projects that cause road intersections to operate at or below LOS E for intersections with total cumulative with project peak-hour trips in excess of 3,000 trips and create a CO hot-spot would create a cumulatively considerable net increase of CO. Note that because the infrequent and dispersed nature of the fireworks display events, the traffic analysis did not analyze conventional traffic impact metrics, which would include intersection and roadway LOS, both of which would allow for a CO hot-spot analysis to be performed. Instead, because the transportation assessment concentrates on the level of change in travel and parking demand during the largest fireworks display events, the discussion of traffic-related impacts analyzes the overall change in travel demand and patterns and not the localized effects at a given intersection or roadway (i.e., CO-hotspot analysis).

4.2.4.3 Project Impacts and Mitigation Measures

Threshold 1: Implementation of the proposed project would not conflict with or obstruct implementation of an applicable air quality plan.

Impact Discussion

SDAPCD is required, pursuant to the NAAQS and CAAQS, to reduce emissions of criteria pollutants for which the County and air basin are in nonattainment (i.e., O₃, PM₁₀, and PM_{2.5}). The most recent SDAPCD air quality attainment plans are the 2016 RAQS Revision and the 2016 O₃ attainment plan. The RAQS outlines SDAPCD's plans and control measures designed to attain the CAAQS for O₃, while the 2016 attainment plan include SDAPCD's plans and control measures for attaining the NAAQS for O₃. The 2009 RAQS projects future emissions and determines the strategies necessary for the reduction of stationary source emissions through regulatory controls. The RAQS relies on the emission projections and control measures outlined in the SIP. ARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the region's cities and by the County of San Diego. The 2016 O₃ attainment plan represents SDAPCD's portion of the SIP. The SIP is a comprehensive plan of previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls that describes how each nonattainment area in the state will meet NAAQS, as described 4.2.3.3, *Local*.

The test to assess project consistency is that if the project proposes development that is consistent with the growth anticipated by the relevant land use plans that were used in the formulation of the RAQS and SIP, the project would be consistent with the RAQS and SIP. Moreover, if the project is consistent with the overarching goals (i.e., to reduce emissions and attain NAAQS and CAAQS) and strategies (i.e., measures implemented to reduce emissions), then the project would be consistent with the RAQS and SIP. The PMP is the governing land use document for physical development under the jurisdiction of the District. No other land use plan or document exists that governs physical development within California State Lands Commission jurisdiction (Collins pers. comm.).

Proposed New Fireworks Display Events

The proposed project consists of an ordinance to govern existing and proposed new fireworks display events and includes four proposed new fireworks display events along the National City and Chula Vista Bayfronts. The proposed project does not propose any land or water use changes or any permanent structures to be erected. As shown in Table 4.2-10 below, fireworks display events result in minimal emissions of ozone precursors (VOC and NO_x) from the fireworks themselves. Moreover, emissions from the existing tug activity are already accounted for in the RAQS, SIP, Regional Transportation Plan, and the District's maritime inventory, and new tug activity would be minimal and limited to the four new fireworks display events throughout the year. No changes in land or water uses would occur as a result of the proposed project. The proposed project would not result in land or water use designations that would be incompatible with existing onsite PMP land or water use designations or with existing uses within California State Lands Commission jurisdiction, nor would it result in unanticipated growth. As described in Section 4.7, *Land Use and Planning*, the project would be consistent with the PMP and the Coastal Act, and would not conflict with applicable conservation plans within the Bay.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance requires fireworks display events to comply with all applicable laws and regulations and would not result in any change to the existing conditions in relation to applicable air quality plans. As such, the effects of the proposed ordinance on existing fireworks display events would not conflict with or obstruct implementation of an applicable air quality plan. No significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events would not conflict with or obstruct implementation of an applicable air quality plan. Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not conflict with or obstruct implementation of an applicable air quality plan. Therefore, no significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

No mitigation is required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance After Mitigation

Proposed New Fireworks Display Events

Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impact would occur.

Threshold 2: Implementation of the proposed project would violate an air quality standard or contribute substantially to an existing or projected air quality standard.

Impact Discussion

The proposed new fireworks displays events would result in criteria pollutant and air toxic emissions from sources that are directly or indirectly related to the fireworks display events (including fireworks detonation, tug and barge activity, and material deliveries), and indirectly related to visitation, including potential changes in motor vehicle travel as discussed below. Therefore, the proposed project has the potential to create air quality impacts by violating an air quality standard or contributing substantially to an existing or projected air quality violation.

For the purposes of this analysis, this impact discussion considers circumstances in which the proposed project would result in impacts on air quality on a regional scale. This discussion focuses on all pollutants and whether project emissions would exceed the regional thresholds shown in Table 4.2-9. These thresholds are used to assess the sum of all project-related criteria pollutant emissions that occur at either the daily or annual time scale, regardless of where these activities occur within the SDAB. For example, even though emissions from fireworks and tugs would occur within San Diego Bay and emissions from fireworks deliveries would occur throughout the entire delivery route, their collective emissions are summed and compared to the regional thresholds shown in Table 4.2-9. This discussion is to ensure that new emissions would not slow regional progress toward attaining the air quality standards. The analysis concentrating on the localized effects of project-related emissions is contained within Threshold 4 below. A detailed description of these thresholds is described above under *Regional Thresholds for SDAB Attainment of State and Federal Ambient Air Quality Standards*.

The environmental setting in the project area includes a number of existing fireworks display events that require a discretionary action by the District or are operated by the District's tenants and occur year-round. The greatest number of these fireworks display events occur in the summer months

from July to September. These fireworks displays events result in criteria pollutant emissions from sources that are directly or indirectly related to the displays, including fireworks detonation, tug and barge activity, and material deliveries, and indirectly related to visitor motor vehicle travel. A description of each of these sources and associated emissions modeling are provided in Section 4.2.4.1. Criteria pollutant emissions associated with existing activity at the daily time scale (pounds per day) are presented in Table 4.2-10 and criteria pollutant emissions associated with existing activity at the annual time scale (tons per year) are presented in Table 4.2-11. As discussed above, potential impacts associated with the four proposed new fireworks display events per year were determined by scaling emissions from the Big Bay Boom event by the amount of fireworks for each proposed new display.

As shown in Table 4.2-10, emissions associated with existing Fourth of July fireworks display events exceed San Diego County's daily SLTs for SO_x, PM₁₀, and PM_{2.5} but emissions associated with existing non-Fourth of July fireworks display events are below daily San Diego County's SLTs for all pollutants.

As shown in Table 4.2-11, emissions associated with all existing fireworks display events throughout the year result in emissions far below annual San Diego County's SLTs for all pollutants. While fireworks display events are intense and can result in short-term impacts on air quality on fireworks display event days, the displays themselves are infrequent and temporary, and only the largest displays, specifically those on the Fourth of July, currently result in adverse, short-term impacts on air quality. Over the course of the year, long-term effects from these fireworks display events result in emissions far below annual thresholds.

Moreover, as discussed in Section 4.2.4.1, an analysis of regional traffic patterns cannot be accurately calculated for the fireworks display events. However, it is unlikely that vehicle traffic related to the largest fireworks display events results in emissions that would exceed the fireworks themselves and it is unlikely that these emissions would contribute substantially to an existing or projected air quality standard. In order to demonstrate the minimal air quality effects visitor-related vehicle traffic has on event days, the analysis herein provides a qualitative evaluation of hourly background monitoring on both event and non-event days. The proposed new National City and Chula Vista fireworks display events are assumed to be similar in terms of size to the existing Fourth of July Imperial Beach event. Therefore, traffic conditions associated with the Fourth of July Imperial Beach event would provide the most appropriate comparison to the proposed new fireworks display events. However, there is no air monitoring station in Imperial Beach; the closest monitoring station is the Chula Vista monitoring station, which is approximately 5.5 miles from the Fourth of July Imperial Beach event. Given this distance, it stands to reason that any emissions from visitor-related vehicle traffic for the Imperial Beach event is not captured by the Chula Vista monitoring station on event days, as visitors to the event are unlikely to drive in proximity to the Chula Vista station. Therefore, the Fourth of July Imperial Beach event cannot be used to provide a comparison to the proposed new events.

However, another large event, the Big Bay Boom, has viewing areas that are close to the San Diego-Beardsley Street (Barrio Logan) station that can be used to qualitatively evaluate the air quality effects of visitor traffic during the Big Bay Boom. The effects of the Big Bay Boom can then be used to estimate the air quality effects of visitor traffic associated with other shows, such as the proposed new fireworks display events. Given the proximity of the Beardsley Street station to the Big Bay Boom event, monitoring data from the Beardsley Street station on event days likely capture

emissions from visitor-related vehicle traffic. Therefore, using Beardsley Street station during the Big Bay Boom as a comparison (as discussed in Section 4.2.4.1) to background air monitoring data both before and after the events is discussed here. Hourly PM_{2.5} concentrations for July 4, 2015 were obtained from SDAPCD's Beardsley Street (Barrio Logan) station. Those data show that the peak hour PM_{2.5} concentration coincided with the Big Bay Boom event, during the 9 p.m.–10 p.m. hour. That PM_{2.5} concentration was 25.8 µg/m³, dropping to 6.1 µg/m³ the following hour (10 p.m.–11 p.m.), and averaging 5.8 µg/m³ for the 24-hour period. Data from 2013 and 2014 and the 3-year average are also shown in Table 4.2-12. This trend is consistent with other studies that found that while particulate concentrations peaked during and immediately after fireworks display events, concentrations typically decline to background levels within a day (Tian et al. 2014). In this case, concentrations declined to background levels 2 hours after the fireworks display event (4.9 µg/m³) on this day in 2015. PM_{2.5} concentrations on this holiday are most likely dominated by mobile source exhaust and road dust sources. For comparison, as shown in Table 4.2-12, for the “control days” (2 days before and 2 days after the Fourth of July), the background average was 5.5 µg/m³ for the 24-hour period. Thus, concentrations on the display day, which include the fireworks display event, were only slightly higher over the 24-hour period on these control days. As such, because background on the display day is lower than the weekday control day, vehicular traffic on the display day is likely lower than a typical day and is therefore unlikely to violate an air quality standard or contribute substantially to an existing or projected air quality standard.

Fourth of July Fireworks Display Events

Fourth of July National City Bayfront Fireworks Display Event

For purposes of this analysis, the Fourth of July National City Bayfront Fireworks Display Event is anticipated to be an approximately 456-pound display that takes place on one barge placed off the National City Bayfront. As shown in Table 4.2-13, daily criteria pollutant emissions from the National City Bayfront fireworks display event by itself would not exceed thresholds. As shown in Table 4.2-14, annual criteria pollutant emissions from the National City Bayfront fireworks display event by itself would not exceed thresholds.

Fourth of July Chula Vista Bayfront Fireworks Display Event

For purposes of this analysis, the Fourth of July Chula Vista Bayfront Fireworks Display Event is anticipated to be an approximately 456-pound display that takes place on one barge placed off the Chula Vista Bayfront. As shown in Table 4.2-13, daily criteria pollutant emissions from the Chula Vista Bayfront fireworks display event by itself would not exceed thresholds. As shown in Table 4.2-14, annual criteria pollutant emissions from the Chula Vista Bayfront fireworks display event by itself would not exceed thresholds.

However, as shown in Table 4.2-13, emissions during the combined new Fourth of July National City and Chula Vista Bayfront displays would exceed relevant San Diego County's SLTs for PM_{2.5}. Therefore, the proposed project would violate an air quality standard or contribute substantially to an existing or projected air quality violation during the combined Fourth of July fireworks display events (**Impact AQ-1**), and mitigation is required.

Based on the information above, it is assumed that the level of emissions stemming directly from the fireworks display events themselves is directly correlated with the pounds per event. Therefore, limiting the combined number of pounds would act to reduce emissions. In this instance, the

combined PM_{2.5} emissions during the combined new fireworks display events are approximately 3 pounds, or 6 percent, above the thresholds of 55 pounds per day. Therefore, reducing the total pounds for these events from 912 pounds (456 pounds [x] two fireworks display events) to approximately 800 pounds (400 pounds [x] two fireworks display events) would reduce PM_{2.5} emissions during the combined new fireworks display events to a level below significance.

Other Non-Fourth of July Fireworks Display Events

It is anticipated that Chula Vista Bayfront would host two non-Fourth of July fireworks display events throughout the year. It is assumed that these displays would be 3 to 10 minutes in length. For purposes of analysis, it is assumed that each would be a 114-pound fireworks display event that takes place on one barge placed off the Chula Vista Bayfront. As shown in Table 4.2-13, criteria pollutant emissions from the non-Fourth of July Chula Vista Bayfront display would not exceed thresholds.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance includes several conditions pertaining to limiting emissions related to air quality. The proposed ordinance limits delivery truck idling to 3 minutes and encourages the use of alternative fireworks produced with pyrotechnic formulas that replace perchlorate with other oxidizers and propellants that burn cleaner and produce less smoke. Furthermore, the proposed ordinance requires a reduction in the total amount of copper allowed in fireworks used for the Big Bay Boom event. The conditions of the proposed ordinance would ensure that emissions from existing fireworks display events are effectively reduced. As such, compliance with the proposed ordinance would improve existing conditions. Therefore, the effect of the proposed ordinance on existing fireworks display events would not violate an air quality standard or contribute substantially to an existing or projected air quality standard. No significant adverse impacts would occur.

Table 4.2-10. Estimate of Daily Criteria Pollutant Emissions during Existing Fireworks Display Events (pounds per day and per event)

Emission Source	VOC	NO_x	CO	SO_x	PM10	PM2.5
Fourth of July						
<i>Fireworks</i>						
Big Bay Boom	-	9	1	158	477	329
Glorietta Bay	-	1	<1	12	35	24
Imperial Beach	-	1	<1	13	41	28
<i>Tugs</i>						
Big Bay Boom	7	59	20	<1	3	3
Glorietta Bay	1	9	4	<1	1	<1
Imperial Beach	-	-	-	-	-	-
<i>Deliveries</i>						
All Display Events (assumes 3 events)	<1	10	1	<1	1	<1
Maximum Daily Fourth of July	8	88	26	183	557	385
Non-Fourth of July						
<i>Fireworks</i>						
Symphony Summer Pops	-	<1	<1	3	8	6
Our Lady of Rosary Church	-	<1	<1	1	2	1
U.S.S. Midway	-	<1	<1	7	21	14
NASCCO	-	<1	<1	8	25	17
<i>Tugs</i>						
Symphony Summer Pops	1	12	4	<1	1	1
Our Lady of Rosary Church	-	-	-	-	-	-
U.S.S. Midway	2	13	5	<1	1	1
NASSCO	-	-	-	-	-	-
<i>Deliveries</i>						
Per Show	<1	3	<1	<1	<1	<1
All Display Events (assumes all 4 events)	<1	14	2	<1	1	<1
Maximum Daily Non-Fourth of July (if all overlap)	3	40	11	19	58	40
Maximum Daily Non-Fourth of July (if no events overlap)	2	17	5	8	25	17
<i>Significance Thresholds</i>	<i>75</i>	<i>250</i>	<i>550</i>	<i>150</i>	<i>100</i>	<i>55</i>
Source: Appendix E						
Note: Totals may not add exactly due to rounding.						

Table 4.2-11. Estimate of Annual Criteria Pollutant Emissions during Existing Fireworks Display Events (tons per year and per event)

Emission Source	VOC	NO_x	CO	SO_x	PM10	PM2.5
Fourth of July						
<i>Fireworks</i>						
Big Bay Boom	-	<0.01	<0.01	0.08	0.24	0.16
Glorietta Bay	-	<0.01	<0.01	0.01	0.02	0.01
Imperial Beach	-	<0.01	<0.01	0.01	0.02	0.01
<i>Tugs</i>						
Big Bay Boom	<0.01	0.03	0.01	<0.01	<0.01	<0.01
Glorietta Bay	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Imperial Beach	-	-	-	-	-	-
<i>Deliveries</i>						
All Shows	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
<i>Annual Fourth of July</i>	<i><0.01</i>	<i>0.04</i>	<i><0.01</i>	<i>0.09</i>	<i>0.28</i>	<i>0.19</i>
Non-Fourth of July						
<i>Fireworks</i>						
Symphony Summer Pops	-	<0.01	<0.01	0.02	0.07	0.05
Our Lady of Rosary Church	-	<0.01	<0.01	<0.01	<0.01	<0.01
U.S.S. Midway	-	<0.01	<0.01	0.03	0.08	0.05
NASSCO	-	<0.01	<0.01	0.01	0.02	0.01
<i>Tugs</i>						
Symphony Summer Pops	0.01	0.12	0.04	<0.01	0.01	0.01
Our Lady of Rosary Church	-	-	-	-	-	-
U.S.S. Midway	0.02	0.15	0.05	<0.01	0.01	0.01
NASSCO	-	-	-	-	-	-
<i>Deliveries</i>						
All Shows	<0.01	0.08	0.01	<0.01	0.01	<0.01
<i>Annual Non-Fourth of July</i>	<i>0.03</i>	<i>0.35</i>	<i>0.11</i>	<i>0.06</i>	<i>0.19</i>	<i>0.13</i>
<i>Annual All Events</i>	<i>0.04</i>	<i>0.40</i>	<i>0.12</i>	<i>0.15</i>	<i>0.46</i>	<i>0.32</i>
<i>Significance Thresholds</i>	<i>13.7</i>	<i>40</i>	<i>100</i>	<i>40</i>	<i>15</i>	<i>10</i>
Source: Appendix E						
Note: Totals may not add exactly due to rounding.						

Table 4.2-12. Ambient PM_{2.5} Background Concentrations from the San Diego–Beardsley Street Monitoring Station on the Fourth of July

Averaging Period	Monitored PM _{2.5} Concentrations (µg/m ³)			
	2015	2014	2013	3-Year Average
Fourth of July				
Peak Hour	25.8	36.2	14.0	25.3
Next Hour	6.1	21.6	11.0	12.9
24-Hour Average with Peak	5.8	14.1	7.5	9.2
24-Hour Average without Peak	4.9	13.2	7.3	8.5
Control Days				
Peak Hour	17.0	17.5	13.8	16.1
Next Hour	8.7	12.2	12.0	11.0
24-Hour Average	5.5	10.3	7.7	7.8

Source: SDAPCD 2016c

Table 4.2-13. Estimate of Peak Daily Criteria Pollutant Emissions during Proposed New Fireworks Display Events Prior to Mitigation (pounds per day and per event)

Emission Source	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Fourth of July						
<i>Fireworks</i>						
Chula Vista Bayfront	-	1	<1	13	41	28
National City Bayfront	-	1	<1	13	41	28
<i>Tugs</i>						
Chula Vista Bayfront	3	25	8	<1	1	1
National City Bayfront	2	19	6	<1	1	1
<i>Deliveries</i>						
Both Shows	<1	3	<1	<1	<1	<1
New Display Events - Fourth of July	5	50	15	27	84	58
Exceed Significant Threshold?	No	No	No	No	No	Yes
Non-Fourth of July						
<i>Fireworks</i>						
Chula Vista Bayfront	-	<1	<1	3	10	7
<i>Tugs</i>						
Chula Vista Bayfront	3	25	8	<1	1	1
<i>Deliveries</i>						
Chula Vista Bayfront	<1	3	<1	<1	<1	<1
New Display Events - Non-Fourth of July	3	29	9	3	12	8
Exceed Significant Threshold?	No	No	No	No	No	No
Significance Thresholds	75	250	550	150	100	55

Source: Appendix E

Note: Totals may not add exactly due to rounding. **Bold** indicates an exceedance.

Table 4.2-14. Estimate of Annual Criteria Pollutant Emissions during New Fireworks Display Events (tons per year)

Emission Source	VOC	NO_x	CO	SO_x	PM₁₀	PM_{2.5}
Fourth of July						
<i>Fireworks</i>						
Chula Vista Bayfront	-	<0.01	<0.01	0.01	0.02	0.01
National City Bayfront	-	<0.01	<0.01	0.01	0.02	0.01
<i>Tugs</i>						
Chula Vista Bayfront	<0.01	0.01	<0.01	<0.01	<0.01	<0.01
National City Bayfront	<0.01	0.01	<0.01	<0.01	<0.01	<0.01
<i>Deliveries</i>						
Both Shows	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
New Display Events - Fourth of July	<0.01	0.02	0.01	0.01	0.04	0.03
<i>Exceed Significant Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Non-Fourth of July						
<i>Fireworks</i>						
Chula Vista Bayfront	-	<0.01	<0.01	<0.01	0.01	<0.01
<i>Tugs</i>						
Chula Vista Bayfront	<0.01	0.03	0.01	<0.01	0.01	<0.01
<i>Deliveries</i>						
Chula Vista Bayfront	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
New Display Events - Non-Fourth of July	<0.01	0.03	0.01	<0.01	0.01	<0.01
<i>Exceed Significant Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Significance Thresholds	13.7	40	100	40	15	10
Source: Appendix E						
Note: Totals may not add exactly due to rounding. Bold indicates an exceedance.						

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

Implementation of the proposed new fireworks display events would violate an air quality standard or contribute substantially to an existing or projected air quality violation during the Fourth of July fireworks display events (**Impact-AQ-1**). Potentially significant impact(s) include:

Impact-AQ-1: Emissions in Excess of PM_{2.5} Thresholds During Combined National City Bayfront and Chula Vista Bayfront Fourth of July Fireworks Display Events. Project emissions generated when the new National City Bayfront and Chula Vista Bayfront Fourth of July fireworks display events occur at the same time, before mitigation, would exceed the daily San Diego County SLTs for PM_{2.5}. The contribution of project-related emissions is considered significant because the project emissions would exceed the daily threshold that has been set by SDAPCD to attain the PM_{2.5} NAAQS and CAAQS.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not violate an air quality standard or contribute substantially to an existing or projected air quality violation. Therefore, no significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

MM-AQ-1: Limit the Size of Overlapping New Fireworks Display Events with Compliance with the Conditions of the Proposed Ordinance. The fireworks organizer and operator are required to comply with the following air quality-related conditions of the proposed ordinance.

Section X.07 – Permits – Conditions of Approval

(c) Size of Fireworks Display Events.

D. National City Fourth of July, not to exceed 400 pounds of fireworks

E. Chula Vista Fourth of July, not to exceed 400 pounds of fireworks

MM-AQ-2: Implementation of Air Quality-Related Conditions of the Proposed Ordinance. The fireworks organizer and operator are required to comply with the following air quality-related conditions of the proposed ordinance.

Section X.07 – Permits – Conditions of Approval

(f) Best Management Practices. Fireworks display events shall implement the following BMPs for fireworks display event preparation, discharge and clean-up:

1. Fireworks display events on barges shall be set up at a loading facility in accordance with the requirements and under the supervision of the municipal fire department with jurisdiction over the event. Barges shall be inspected for leaks and other potential safety issues. Idling time for delivery trucks and loading equipment shall not exceed three (3) minutes and all such trucks and equipment shall be shut down when not in use.

(d) Fireworks Chemical Composition and Packaging.

1. Chemical Composition.
 - B. All fireworks display events shall use alternative fireworks produced with pyrotechnic formulas which replace perchlorate with other oxidizers and propellants that burn cleaner, produce less smoke and reduce pollutant waste loading to surface waters, unless the Applicant establishes in writing and to the satisfaction of the Executive Director that such alternative fireworks are not commercially available.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation

Proposed New Fireworks Display Events

The implementation of mitigation measure **MM-AQ-1** would require the limitation of the size of National City and Chula Vista Fourth of July fireworks display events to 400 pounds each, which will ensure that if the events overlapped the total pounds would not exceed 800 pounds. Therefore, when the new National City Bayfront and Chula Vista Bayfront Fourth of July fireworks display events occur at the same time they would not exceed the daily San Diego County SLTs for PM_{2.5}. Impacts would be reduced to a less-than-significant level.

Furthermore, the proposed ordinance contains several conditions of approval intended to limit impacts on air quality. Therefore, implementation of mitigation measure **MM-AQ-2** requires compliance with air quality-related conditions, such as limiting delivery truck idling to 3 minutes and shutting down trucks when not in use, and encourages the use of alternative fireworks produced with pyrotechnic formulas that replace perchlorate with other oxidizers and propellants that burn cleaner and produce less smoke. These conditions of the ordinance would provide some reduction in emissions. The exact amount of emissions reduction provided by these conditions cannot be quantified due to many variables (precise existing and future idling times, etc.) but the reductions would be modest and would further reduce the less-than-significant impact after the implementation of mitigation measure **MM-AQ-1**.

Table 4.2-15. Estimate of Peak Daily Criteria Pollutant Emissions during Proposed New Fireworks Display Events after Mitigation (pounds per day and per event)

Emission Source	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Fourth of July						
<i>Fireworks</i>						
Chula Vista Bayfront	-	1	<1	13	41	25
National City Bayfront	-	1	<1	13	41	25
<i>Tugs</i>						
Chula Vista Bayfront	3	25	8	<1	1	1
National City Bayfront	2	19	6	<1	1	1
<i>Deliveries</i>						
Both Shows	<1	3	<1	<1	<1	<1
New Display Events - Fourth of July	5	50	15	27	84	52
<i>Exceed Significant Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

Emission Source	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Non-Fourth of July						
<i>Fireworks</i>						
Chula Vista Bayfront	-	<1	<1	3	10	7
<i>Tugs</i>						
Chula Vista Bayfront	3	25	8	<1	1	1
<i>Deliveries</i>						
Chula Vista Bayfront	<1	3	<1	<1	<1	<1
New Display Events - Non-Fourth of July	3	29	9	3	12	8
<i>Exceed Significant Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Significance Thresholds	75	250	550	150	100	55
Source: Appendix E						
Note: Totals may not add exactly due to rounding.						

Effects of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impacts would occur.

Threshold 3: Implementation of the proposed project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.

Impact Discussion

Proposed New Fireworks Display Events

The SDAB is currently in nonattainment for O₃ under NAAQS and for O₃, PM₁₀, and PM_{2.5} under CAAQS, as a result of past and present projects, and will be further impeded by reasonably foreseeable future projects (see Chapter 5, *Cumulative Impacts*). As discussed above and shown in Tables 4.2-13 and 4.2-14, new Fourth of July fireworks display events associated with the proposed project would result in criteria pollutant emissions above thresholds for PM_{2.5} during the combined new Fourth of July fireworks display events, but would be below thresholds for all other criteria pollutants and precursors thereof (**Impact AQ-1**). Also, criteria pollutant emissions for the other proposed new non-Fourth of July fireworks display events would be below thresholds for all nonattainment criteria pollutants and precursors regardless if both non-Fourth of July fireworks display events were to occur on the same day or on separate days.

The related fireworks display events, development projects, and temporary special events identified by the District that would occur within vicinity of San Diego Bay and the Imperial Beach Oceanfront are presented in Tables 5-1 and 5-2 of this EIR. The District has identified 53 related fireworks

display events that took place in 2015.⁶ These fireworks display events are the most relevant from a cumulative perspective in that they could potentially result in impacts similar to those of the proposed project (e.g., short-term CAAQS and acute impacts), particularly for those displays that occur on the Fourth of July. Operation of one or more of these fireworks display events could potentially overlap with some fireworks display events that are part of the proposed project on both Fourth of July and non-Fourth of July fireworks display event days. The related cumulative fireworks display events range in length from 2 to 45 minutes, while the 45-minute (1,200-pound) event off Embarcadero Marina Park South was a special event that did not occur on the Fourth of July and is not expected to occur on an ongoing basis. Each cumulative fireworks display event is anticipated to be much smaller than the Big Bay Boom, and while the largest cumulative fireworks display events (e.g., the 1,200-pound event off Embarcadero Marina Park South) may exceed some threshold levels (e.g., PM₁₀ and PM_{2.5}), emissions from all other cumulative events are assumed to be far below threshold levels for all pollutants and precursors. However, because the project's new Fourth of July fireworks display events would result in emissions that exceed threshold levels for nonattainment pollutants (PM_{2.5}), and cumulative fireworks display events exceed threshold levels and ambient air quality standards for a nonattainment pollutant (PM_{2.5}), the project would result in a cumulatively considerable net increase of a criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (PM_{2.5}) (**Impact AQ-2**).

The other proposed new non-Fourth of July fireworks display events would be below thresholds for all nonattainment criteria pollutants and precursors regardless if both non-Fourth of July fireworks display events were to occur on the same day or on separate days. Therefore, the proposed non-Fourth of July events would not result in a cumulatively considerable net increase of any criteria pollutant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance includes several conditions intended to reduce adverse impacts on air quality. The proposed ordinance limits delivery truck idling to 3 minutes and encourages the use of alternative fireworks produced with pyrotechnic formulas that replace perchlorate with other oxidizers and propellants that burn cleaner and produce less smoke. Furthermore, the proposed ordinance requires a reduction in the total amount of copper allowed in fireworks used for the Big Bay Boom event. The conditions of the proposed ordinance would ensure that emissions from existing fireworks display events are effectively reduced. As such, compliance with the proposed ordinance would improve the existing condition. Therefore, the effect of the proposed ordinance on existing fireworks display events would not result in a cumulatively considerable net increase of a criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard. No significant adverse impacts would occur.

⁶ One barge-based fireworks display event associated with the Loew's Coronado Resort occurred in 2014. There were no events reported for 2015. However, this display was included because Loew's Coronado Resort historically has had fireworks display events in the past.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

Implementation of the proposed new fireworks display events would result in a cumulatively considerable net increase of PM_{2.5}, which is a nonattainment pollutant (**Impact-AQ-2**). Potentially significant impact(s) include:

Impact-AQ-2: Cumulative Emissions in Excess of PM_{2.5} Thresholds During Combined Fourth of July Fireworks Display Events. Project emissions during new Fourth of July fireworks display events, before mitigation, would exceed the threshold for PM_{2.5} and, when combined with other nearby past, present, and probable future projects, may result in a cumulatively considerable net increase of a criteria pollutant for which the region is in nonattainment under an applicable state ambient air quality standard. The contribution of project-related emissions is considered significant because the proposed project would exceed thresholds that have been set by SDAPCD to attain the CAAQS during Fourth of July fireworks display events.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effect of the proposed ordinance on existing fireworks display events would not result in a cumulatively considerable net increase in a nonattainment pollutant. Therefore, no significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

Implement **MM-AQ-1** and **MM-AQ-2** as described under Threshold 2.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation

Proposed New Fireworks Display Events

Impact-AQ-2 would be reduced to a level below significance after implementation of **MM-AQ-1** because mitigation would ensure that fireworks display event sizes would be limited to a level that would ensure the project-related PM_{2.5} emissions would be below thresholds. As shown in Table 4.2-15, after mitigation, the proposed project would not result in a cumulatively considerable net increase of a criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard due to project-related PM_{2.5} emissions. As such, impacts would be reduced to a less-than-significant level.

Implementation of mitigation measure **MM-AQ-2** requires compliance with air quality-related conditions, such as limiting delivery truck idling to 3 minutes and shutting down trucks when not in use, and encourages the use of alternative fireworks produced with pyrotechnic formulas that replace perchlorate with other oxidizers and propellants that burn cleaner and produce less smoke.

These conditions of the ordinance would provide some reduction in emissions. The exact amount of emissions reduction provided by these conditions cannot be quantified due to many variables (precise existing and future idling times, etc.) but the reductions would be modest and would further reduce the less-than-significant impact after the implementation of mitigation measure **MM-AQ-1**.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impacts would occur.

Threshold 4: Implementation of the proposed project would not expose sensitive receptors to substantial pollutant concentrations.

Impact Discussion

For the purposes of this analysis, this impact discussion considers circumstances in which the proposed project would result in impacts on air quality on a localized scale. This discussion focuses on pollutants of localized concern and whether the project would result in pollutant concentrations near project activities that exceed relevant pollution standards and/or whether pollutant concentrations would expose sensitive receptors to adverse health effects. Relevant state and federal pollutant standards are shown in Table 4.2-7. More simply, this discussion focuses on where geographically the emissions analyzed under Threshold 2 end up, and whether those emissions would create acute (short-term) or chronic (long-term) health effects at receptor locations. Acute (short-term) or chronic (long-term) health effects are discussed above under *Localized Toxic Air Contaminant Concentrations* in Section 4.2.4.2.

Toxic Air Contaminants

Proposed New Fireworks Display Events

The proposed new fireworks displays events would result in air toxic emissions from sources that are directly or indirectly related to the fireworks display events, particularly from fireworks detonation.

An HRA was performed to analyze the short-term (acute) health effects of the proposed new fireworks display events. The analysis is based on the Big Bay Boom, which was used as a comparison for all of the proposed new fireworks display events because the Big Bay Boom is by far the largest and most visited of the fireworks display events. The methodology used in the HRA was based on a literature review. The key toxic pollutants of most concern have acute health effects, the most prominent of which is Cu. Given the short-term and infrequent nature of the proposed fireworks display events, this analysis focuses solely on the short-term (acute) exposure and does not focus on the long-term (chronic) effects of the fireworks display events.

Acute exposures from all key toxic pollutants were considered to derive acute exposure assessment for the maximum exposed individual (MEI) receptor. Table 4.2-16 presents 1-hour air toxic pollutant concentrations and 1-hour acute hazard at the MEI associated with the 2015 Big Bay Boom event. As shown, the Big Bay Boom event currently results in acute risk in excess of the acute hazard threshold. Only elemental Cu along the respiratory pathway shows that a modeled concentration

exceeds the acute hazard index threshold of 1.0. None of the acute 1-hour concentration levels exceed the 1-hour CAAQS.

Fourth of July National City Bayfront Fireworks Display Event

The Fourth of July National City Bayfront fireworks display event would be a new approximately 456-pound display that would take place on one barge placed off the National City Bayfront. The risk levels shown in Table 4.2-16 provide a basis for estimating the anticipated emissions from the proposed project. As such, this 456-pound display is approximately 8.5 percent the size of the 2015 Big Bay Boom event. Assuming that concentrations of air toxics are scaled linearly by the size of the event, acute risk associated with the Fourth of July National City Bayfront fireworks display event would be far below the acute hazard threshold of 1.0 (1.4 acute risk for Big Bay Boom (x) 8.5 percent = 0.12 HI). Therefore, the Fourth of July National City Bayfront fireworks display event would not result in an acute risk at nearby receptors. The anticipated location for the Fourth of July National City Bayfront Fireworks Display Event is approximately 2.0 miles from the anticipated barge location associated with the proposed new Chula Vista fireworks display event along the Chula Vista Bayfront. In the event that the Fourth of July National City Bayfront fireworks display event and Chula Vista fireworks display event occurred concurrently at the same time, the events are far enough apart that a single receptor would not be exposed to emissions from both shows. Therefore, the proposed new Fourth of July fireworks display event at National City Bayfront would not expose sensitive receptors to substantial pollutant concentrations, including TACs. Impacts would be less than significant.

Fourth of July Chula Vista Bayfront Fireworks Display Event

Similar to the National City fireworks display event, the Fourth of July Chula Vista Bayfront fireworks display event would be a new 456-pound display that would take place on one barge placed off the Chula Vista Bayfront. Risk levels from this display would be similar that of the National City Fourth of July fireworks display event. Also, the events would take place approximately 7.0 miles south-southeast of the most southerly barge associated with the Big Bay Boom event along the South Embarcadero. Similarly, in the event that the proposed new Chula Vista and National City fireworks display events occur concurrently at the same time, the events are far enough apart that a single receptor would not be exposed to emissions from both fireworks display events in the future. Therefore, the proposed new Fourth of July fireworks display event at the Chula Vista Bayfront would not expose sensitive receptors to substantial pollutant concentrations, including TACs. Impacts would be less than significant.

Other Non-Fourth of July Fireworks Display Events

The two Chula Vista Bayfront non-Fourth of July fireworks display events would be small (approximately 114 pounds, or 2.1 percent of the Big Bay Boom, each) and the associated risk would be both small and at a far enough distance from other existing non-Fourth of July fireworks display events that a single receptor would not be exposed to emissions from multiple displays in the event that multiple displays occur concurrently in the future. Any acute exposure would be well below the acute hazard threshold of 1.0 (1.4 acute risk for Big Bay Boom (x) 2.1 percent = 0.03 HI). Therefore, the proposed new non-Fourth of July fireworks display events would not expose sensitive receptors to substantial pollutant concentrations, including TACs. Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance includes a condition pertaining to reducing copper content in the fireworks, which would help to reduce risk associated with the Big Bay Boom. Compliance with the proposed ordinance would improve the existing condition by reducing Cu in the fireworks, which would help to reduce the acute risk associated with the Big Bay Boom. Therefore, the effect of the proposed ordinance on existing fireworks display events would not expose sensitive receptors to substantial pollutant concentrations, such as TACs. No significant adverse impacts would occur.

Table 4.2-16. Acute 1-hour Exposure Levels in Comparison to Air Quality Standards and Hazard Index for the 2015 Big Bay Boom Fireworks Display Event

Pollutant	Maximum Modeled Concentration (µg/m³)	1-hour CAAQS/ NAAQS (µg/m³)¹	Exceed 1-hour CAAQS/ NAAQS?	Maximum Acute Hazard Index²	Exceed Acute Hazard Index?³
Copper	138	--	--	1.4	<i>Yes</i>
Sulfur Dioxide	15.2	655/196	<i>No/No</i>	0.06	<i>No</i>
Nitrogen Dioxide	0.056	339/188	<i>No/No</i>	<0.001	<i>No</i>
Carbon Monoxide	0.057	23,800/40,000	<i>No/No</i>	<0.001	<i>No</i>
Formaldehyde	0.022	--	--	<0.001	<i>No</i>
Acetaldehyde	0.062	--	--	<0.001	<i>No</i>
Acrolein	0.005	--	--	<0.003	<i>No</i>

Source: Appendix E

¹ CAAQS and NAAQS are presented in Table 4.2-7.

² OEHHHA has not published acute risk factors for hexavalent chromium.

³ The acute hazard index threshold is 1.0.

Carbon Monoxide Hot-spots

Elevated CO concentrations are typically found in areas with significant traffic congestion. CO is a public health concern because it combines readily with hemoglobin and reduces the amount of oxygen transported in the bloodstream, which can result in headaches, dizziness, fatigue, unconsciousness, and even death.

Proposed New Fireworks Display Events

The County recommends an analysis of localized CO concentrations associated with traffic congestion to ensure concentrations remain below CAAQS and NAAQS based on certain screening criteria (see Section 3.1.3.1 of the HRA in Appendix E).

The transportation assessment (Appendix J) analyzed the potential travel- and parking-related changes associated with fireworks display events in and around San Diego Bay and the Imperial Beach Oceanfront as a basis for estimating whether the proposed new fireworks display events along the National City and Chula Vista Bayfronts would result in traffic- or parking-related impacts.

Because it is most similar in size to the proposed new Fourth of July fireworks display events, the analysis looked at the Fourth of July Imperial Beach Fireworks Show, finding that changes in vehicular traffic at key intersections on the fireworks display event day was moderate in most locations, with an average increase of 46 percent, but bicycle and pedestrian activity were significantly increased by 578 percent and 1,993 percent, respectively. For roadway segments, changes in traffic volumes ranged between 14 percent and 92 percent, with an average increase of 37 percent.

The roadway segment that showed the greatest percentage increase in the sample Fourth of July fireworks display event day traffic volumes relative to non-event day conditions was Seacoast Drive between Elkwood Avenue and Daisy Avenue (92 percent increase relative to non-event day conditions), while the roadway segment with the highest volumes during the sample Fourth of July fireworks display event day was the Palm Avenue segment between 7th Street and Rainbow Drive (14 percent increase relative to non-event day conditions; 16,800 event day average daily traffic). However, the intersection with the highest peak hour volumes was the Imperial Beach Boulevard and Seacoast Drive intersection, which showed 2,228 vehicles during the peak 7:00 p.m.–11:00 p.m. period on the sample Fourth of July fireworks display event day. This intersection is the worst-case intersection on the sample Fourth of July fireworks display event day in terms of peak hour traffic volumes. To provide a conservative analysis of the worst-case CO concentrations that bicyclists, pedestrians, and the general public may be exposed to while viewing the fireworks display events or while exiting the viewing areas, CO concentrations were modeled at the Imperial Beach Boulevard and Seacoast Drive intersection assuming that the traffic volumes during this 4-hour window all occur during a single hour and the receptors are in the vicinity of the intersection (e.g., on the sidewalk) during this entire duration. Emissions factors were generated in EMFAC for the San Diego County fleet average operating in 2016. Emissions were based on a conservative assumption that all vehicles travel at 5 mph. Emission factors vary by meteorological conditions, and emissions were generated for a typical summertime minimum temperature (64°F) and humidity (70 percent).

Table 4.2-17 presents the results of the CO hot-spot modeling and indicates that implementation of the proposed project would not result in violations of the state or federal 1- or 8-hour CO standards. Consequently, the impact of traffic conditions from the proposed project on ambient CO levels is considered less than significant.

Note that while the analysis above to demonstrate the minimal effects of visitor VMT could not be based on traffic conditions associated with the Fourth of July Imperial Beach Fireworks Show given the distance to the monitoring station, the CO hot-spot analysis herein can use Imperial Beach as a comparison to determine hot-spot-related impacts because effects are localized and at the intersection in question, and not regional in nature like the VMT analysis.

Table 4.2-17. Modeled CO Levels Measured at Receptors in the Vicinity of the Affected Intersection

Intersection	Peak Event Day ^a	
	1-Hr	8-Hr
Imperial Beach Boulevard and Seacoast Drive	4.4	3.1
<i>Ambient Air Quality Standards (NAAQS/CAAQS)</i>	<i>35/20</i>	<i>9/9.0</i>
<i>Exceed Threshold?</i>	<i>No</i>	<i>No</i>
Source: Appendix E		
^a Background concentrations of 3.0 and 2.4 ppm were added to the modeling 1- and 8-hour results, respectively.		

Fourth of July Fireworks Display Events

The proposed new Fourth of July National City and Chula Vista Bayfronts fireworks display events are anticipated to have similar traffic volumes as the Fourth of July Imperial Beach Fireworks Show discussed above due to the similar size of the proposed new displays (approximately 456 pounds each) and singular fireworks launch site. Because the worst-performing intersection during the Fourth of July Imperial Beach Fireworks Show results in CO concentrations far below NAAQS and CAAQS, CO concentrations associated with the Fourth of July National City and Chula Vista Bayfronts fireworks display events would also be far below NAAQS and CAAQS. Therefore, the proposed new Fourth of July fireworks display events would not expose sensitive receptors to substantial pollutant concentrations, including CO. Impacts would be less than significant.

Other Non-Fourth of July Fireworks Display Events

Similarly, the two Chula Vista Bayfront non-Fourth of July fireworks display events are anticipated to have lower traffic volumes than the Fourth of July Imperial Beach Fireworks Show because the displays would be much smaller (approximately 114 pounds each) and because fewer public viewing areas are available along the Chula Vista Bayfront. Because the worst-performing intersection during the Fourth of July Imperial Beach Fireworks Show event results in CO concentrations far below NAAQS and CAAQS, CO concentrations associated with the two non-Fourth of July Chula Vista Bayfront fireworks display events would also be far below NAAQS and CAAQS. Therefore, the proposed new non-Fourth of July fireworks display events would not expose sensitive receptors to substantial pollutant concentrations, including CO. Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance includes a condition of approval requiring implementation of an Event Transportation and Parking Management Plan, which would help to improve roadway conditions by reducing congestion and would act to reduce pollutant concentrations at nearby receptor locations. Compliance with the proposed ordinance would improve the existing condition by improving roadway conditions under the Event Transportation and Parking Management Plan, which would help to reduce CO concentrations associated with the fireworks display events. Therefore, the effects of the proposed ordinance on existing fireworks display events would not expose sensitive

receptors to substantial pollutant concentrations, such as CO. No significant adverse impacts would occur.

Criteria Air Pollutants

Proposed New Fireworks Display Events

High levels of criteria pollutants are associated with some form of health risk (e.g., asthma, asphyxiation). Adverse health effects associated with criteria pollutant emissions are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, the number and character of exposed individuals [e.g., age, gender]). Moreover, ozone precursors (VOC and NO_x) affect air quality on a regional scale. Health effects related to ozone are therefore the product of emissions generated by numerous sources throughout a region. As part of the setting and updating of the NAAQS, EPA develops and considers quantitative characterizations of exposures and associated risks to human health or the environment associated, known as an HREA, with recent air quality conditions and with air quality estimated to just meet the current or alternative standard(s) under consideration (EPA 2016). The HREA estimates population exposure to and resulting mortality and morbidity health risks associated with the full range of observed pollutant concentrations, as well as incremental changes in exposures and risks associated with ambient air quality adjusted to just meeting the existing NAAQS and just meeting potential alternative NAAQS under consideration (EPA 2014). However, existing models have limited sensitivity to small changes in criteria pollutant concentrations and, as such, translating proposed project-generated criteria pollutants to specific health effects would produce meaningless results. In other words, increases in regional air pollution from project-generated VOC and NO_x would have no effect on specific human health outcomes that could be attributed to specific project emissions. However, other criteria pollutant emissions, including CO, PM₁₀, and PM_{2.5}, generally affect air quality on a localized scale. Health effects related to localized pollutants are the product of localized sources and emissions generated by numerous sources throughout a region. Certain air quality models, particularly dispersion models, have the ability to translate project-generated localized pollutants to specific health effects.

Pollutant concentrations from existing fireworks display events, particularly the Big Bay Boom, were reviewed to determine whether the proposed new fireworks display events would result in impacts related to criteria pollutants. Similar to the health risk assessment (Table 4.2-16), the Big Bay Boom was used to provide a comparison for all proposed new fireworks display events because the Big Bay Boom is by far the largest and most visited of the fireworks display events. Table 4.2-18 presents 24-hour pollutant concentrations at the MEI for pollutants that have CAAQS or NAAQS. As shown, the Big Bay Boom currently results in PM_{2.5} concentrations that exceed both the 24-hour NAAQS (35 µg/m³) and CAAQS (30 µg/m³) and PM₁₀ concentration that exceed the 24-hour PM₁₀ CAAQS (50 µg/m³). As discussed in detail in Section 3.1.3 of the HRA in Appendix E, the OBOD model appears to exhibit an over-prediction bias, but without additional data points to make a more definitive modeled-to-monitored comparison, it is difficult to draw a clear conclusion as to the model's bias.

The projected increase in PM₁₀ and PM_{2.5} emissions is short term and limited only to the largest fireworks display event day. Moreover, PM_{2.5} NAAQS and CAAQS and PM₁₀ CAAQS exceedance only occur on the Fourth of July.

Table 4.2-18. 24-hour Exposure Levels in Comparison with State and Federal Air Quality Standards for the 2015 Big Bay Boom Fireworks Display Event

Pollutant	Maximum Modeled Concentration (µg/m³)	Background Concentration (µg/m³)	Modeled plus Background Concentration (µg/m³)	24-Hour NAAQS (µg/m³)	24-hour CAAQS (µg/m³)
PM _{2.5} ¹	79.1	14.1	93.2	35	30
PM ₁₀ ²	117.0	24.5	141.5	150	50
Sulfur Dioxide ³	0.63	0.8	1.4	---	105
Lead ⁴	0.055	0.4	0.43	---	---

Source: Appendix E

¹ Background concentrations are the maximum concentration at the Beardsley Street (Barrio Logan) station for Fourth of July 2013 through 2016.² PM₁₀ concentrations are not continuously monitored at Beardsley Street. Thus, background PM₁₀ concentrations are calculated based on the ratio of 24-hour PM_{2.5} and PM₁₀ concentrations from the Beardsley Street (Barrio Logan) station for each year shown in Table 4.2-3, and the maximum concentration over the 2013–2016 period was used (which occurred in 2013).³ Sulfur dioxide (in ppm) was obtained from the El Cajon monitoring station and converted to µg/m³ based on the 2.619 conversion factor from EPA.⁴ Lead concentrations are the maximum from the El Cajon and Carlsbad stations.**Bold** indicates an exceedance.*Fourth of July Fireworks Display Events*

The proposed new Fourth of July National City and Chula Vista Bayfronts fireworks display events would be smaller than the Big Bay Boom event used as a comparison for this analysis.

Concentrations from the quantitative analysis for the Big Bay Boom were scaled for the National City and Chula Vista Bayfronts fireworks display events and are compared to the CAAQS and NAAQS in Table 4.2-19. As shown, concentrations would be far below 24-hour PM₁₀ and PM_{2.5} CAAQS and NAAQS. Therefore, the proposed new Fourth of July fireworks display events would not expose sensitive receptors to substantial pollutant concentrations, including 24-hour PM₁₀ and PM_{2.5}. Impacts would be less than significant.

Table 4.2-19. 24-hour Exposure Levels in Comparison with State and Federal Air Quality Standards for the National City and Chula Vista Bayfront Fourth of July Fireworks Display Events

Pollutant	Maximum Modeled Concentration (µg/m³)	Background Concentration (µg/m³)	Modeled plus Background Concentration (µg/m³)	24-Hour NAAQS (µg/m³)	24-hour CAAQS (µg/m³)
PM _{2.5} ¹	6.8	14.1	20.9	35	30
PM ₁₀ ²	10.0	24.5	34.5	150	50
Sulfur Dioxide ³	0.1	0.8	0.8	---	105
Lead ⁴	0.005	0.4	0.4	---	---

Source: Appendix E

¹ Background concentrations are the maximum concentration at the Beardsley Street (Barrio Logan) station for Fourth of July 2013 through 2016.² PM₁₀ concentrations are not continuously monitored at Beardsley Street. Thus, background PM₁₀ concentrations are calculated based on the ratio of 24-hour PM_{2.5} and PM₁₀ concentrations from the Beardsley Street (Barrio Logan) station for each year shown in Table 4.2-3, and the maximum concentration over the 2013–2016 period was used (which occurred in 2013).³ Sulfur Dioxide (in ppm) was obtained from the El Cajon monitoring station and converted to µg/m³ based on the 2.619 conversion factor from EPA.⁴ Lead concentrations are the maximum from the El Cajon and Carlsbad stations.**Bold** indicates an exceedance.

The proposed project would not significantly increase emissions of ozone precursors (VOC and NO_x), as fireworks-related emissions mainly include particulate matter, and fuel-related emissions from the tugs would be minimal. Regardless, project-generated ozone precursors could increase photochemical reactions and the formation of tropospheric ozone, which, at certain concentrations, could lead to respiratory symptoms (e.g., coughing), decreased lung function, and inflammation of airways. Although these health effects are associated with ozone, the impacts are a result of cumulative and regional VOC and NO_x emissions. However, the incremental contribution of the project to specific health outcomes related to criteria pollutant emissions would be limited and any effects thereof would be below any health-based significance threshold (e.g., NAAQS and CAAQS). Furthermore, while the incremental contribution could not be traced solely to the proposed project, the contribution of emissions attributable to the proposed project is considered less than significant after mitigation because the proposed project would result in emissions below thresholds that have been set by SDAPCD, which are designed to provide public health protection. The proposed project's contribution of emissions, including PM_{2.5}, would be less than significant and operation of the proposed project would not result in adverse health effects associated with criteria pollutant emissions.

Other Non-Fourth of July Fireworks Display Events

The two non-Fourth of July Chula Vista Bayfront fireworks display events would be smaller than the Fourth of July fireworks display events modeled in Table 4.2-19 above (approximately 114 pounds each compared to approximately 456 pounds each); therefore, PM_{2.5} and PM₁₀ concentrations would be less than those shown in Table 4.2-19 and far below PM₁₀ and PM_{2.5} CAAQS and NAAQS. As such, the proposed new non-Fourth of July fireworks display events would not expose sensitive receptors to substantial pollutant concentrations, including 24-hour PM₁₀ and PM_{2.5}. Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance includes conditions intended to reduce adverse impacts on air quality. The proposed ordinance would require all fireworks display events to use alternative fireworks technologies that replace perchlorate with other oxidizers and propellants that burn cleaner, produce less smoke, and reduce pollutant waste loading, which would reduce PM10 and PM2.5 emissions. However, the feasibility and availability of these alternative fireworks is not yet known. As such, compliance with the proposed ordinance could improve the existing condition by ensuring that all fireworks display events implement the latest and greatest technologies. Therefore, the effects of the proposed ordinance on existing fireworks display events would not expose sensitive receptors to substantial pollutant concentrations, such as PM10 and PM2.5. No significant adverse impacts would occur.

Level of Significance Prior to Mitigation**Proposed New Fireworks Display Events**

The proposed new fireworks display events would not expose sensitive receptors to substantial pollutant concentrations. Therefore, impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not expose sensitive receptors to substantial pollutant concentrations. Therefore, no significant adverse impacts would occur.

Mitigation Measures**Proposed New Fireworks Display Events**

No mitigation is required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation**Proposed New Fireworks Display Events**

Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impacts would occur.

Threshold 5: Implementation of the proposed project would not create objectionable odors affecting a substantial number of people.

Impact Discussion

Proposed New Fireworks Display Events

Although offensive odors rarely cause any physical harm, they can be unpleasant and lead to considerable distress among the public. This distress may often generate citizen complaints to local governments and air districts. Any project with the potential to expose the public to objectionable odors would be deemed as having a significant impact.

According to ARB's *Air Quality and Land Use Handbook*, land uses associated with odor complaints typically include sewage treatment plants, landfills, recycling facilities, and manufacturing (ARB 2005a). Odor impacts on residential areas and other sensitive receptors, such as hospitals, daycare centers, and schools, warrant the closest scrutiny, but consideration should also be given to other land uses where people may congregate, such as recreational facilities, work sites, and commercial areas.

Odor emitters include diesel exhaust from tug and barge activity, material deliveries, and any fumes generated during the fireworks themselves. However, odor impacts are limited to the vicinity immediately adjacent to tug activity, which is assumed to be a great enough distance from viewing locations not to result in objectionable odors that would affect a substantial number of people. Any odors would be infrequent and brief, and viewers of the proposed new fireworks display events would likely expect to experience these temporary odors. Thus, odor-related impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance does not include conditions pertaining to odor sources, and therefore would not result in any change to the existing condition in terms of odors. As such, the effects of the proposed ordinance on existing fireworks display events would not create objectionable odors affecting a substantial number of people. No significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events would not create objectionable odors affecting a substantial number of people. Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not create objectionable odors affecting a substantial number of people. No significant adverse impact would occur.

Mitigation Measures

Proposed New Fireworks Display Events

No mitigation is required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance After Mitigation

Proposed New Fireworks Display Events

Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impact would occur.

Section 4.3

Biological Resources

4.3.1 Overview

This section describes the existing conditions and applicable laws and regulations for biological resources, and analyzes the potential effect of the proposed project on candidate, sensitive, or special-status species, riparian habitat or other sensitive natural communities, federally protected wetlands, wildlife corridors and movement, and local policies, ordinances, and habitat conservation plans protecting biological resources.

The information contained in this section is based on the *Biological Technical Study for the San Diego Bay and Imperial Beach Oceanfront Fireworks Display Events Project* prepared by Merkel & Associates (February 2017) found in Appendix F.

Table 4.3-1 summarizes the potentially significant impacts and mitigation measures discussed in detail in Section 4.3.4, *Project Impact Analysis*.

Table 4.3-1. Summary of Significant Biological Resources Impacts and Mitigation Measures

Summary of Potentially Significant Impact(s)	Summary of Mitigation Measure(s)	Level of Significance After Mitigation	Rationale for Finding After Mitigation
Impact-BIO-1: Potential Direct Impact on Marine Reptiles from Fireworks-Generated Trash and Debris.	MM-BIO-1: Implementation of the Biological Resources-Related Conditions of the Proposed Ordinance for Direct Impacts, which require Specific Packaging Material, Best Management Practices, Compliance with San Diego Water Board General Permit, and Compliance with Other Required Permits.	Less than Significant	Implementation of these conditions of approval would ensure that fireworks-generated trash and debris are collected and disposed of, which would reduce this potential direct impact on green sea turtles to a less-than-significant level.
Impact-BIO-2: Potential Indirect Impacts on Marine Reptiles from Increased Human and Boating Human Activity.	MM-BIO-2: Implementation of the Biological Resources-Related Conditions of the Proposed Ordinance for Indirect Impacts, which require Cleanup, Security, Signage, and Education Measures.	Less than Significant	Implementation of the cleanup, security, signage, and education conditions of approval would reduce indirect impacts related to increased boat traffic, foot traffic, and human-generated trash and debris in the vicinity of green sea turtle habitat to less-than-significant levels.

Summary of Potentially Significant Impact(s)	Summary of Mitigation Measure(s)	Level of Significance After Mitigation	Rationale for Finding After Mitigation
Impact-BIO-3: Potential Direct Impact on Avian Species from Fireworks-Generated Trash and Debris.	Implement MM-BIO-1.	Less than Significant	Implementation of these conditions of approval would ensure that fireworks-generated trash and debris are collected and disposed of, which would reduce this potential direct impact on avian species to a less-than-significant level.
Impact-BIO-4: Potential Indirect Impacts on Special-Status Avian Species from Increased Human and Boating Human Activity.	Implement MM-BIO-2.	Less than Significant	Implementation of the cleanup, security, signage, and education conditions of approval would reduce indirect impacts related to increased boat traffic, foot traffic, and human-generated trash and debris in the vicinity of nesting and roosting areas to less-than-significant levels.
Impact-BIO-5: Potential Direct Impact on Sensitive Habitat and Wetlands from Fireworks-Generated Trash and Debris.	Implement MM-BIO-1.	Less than Significant	Implementation of these conditions of approval would ensure that fireworks-generated trash and debris are collected and disposed of, which would reduce this potential direct impact on sensitive habitat and wetlands to a less-than-significant level.
Impact-BIO-6: Potential Direct Impact on Eelgrass from Fireworks Barges and Tugboat Activity.	MM-BIO-3: Implementation of the Biological Resources-Related Conditions of the Proposed Ordinance for Eelgrass Impacts, which require Completion of Pre- and Post-Event Eelgrass Surveys, Conducting Tug Operator Training, and Controlling Thrust Rate and Angle to Minimize Propeller Wash.	Less than Significant	Implementation of this condition of approval would include requirements for fireworks barges and tugboats in the vicinity of eelgrass habitat, which would reduce this potential indirect impact to less-than-significant levels.

Summary of Potentially Significant Impact(s)	Summary of Mitigation Measure(s)	Level of Significance After Mitigation	Rationale for Finding After Mitigation
Impact-BIO-7: Potential Indirect Impact on Sensitive Habitat and Wetlands from Increased Human and Boating Activity.	Implement MM-BIO-2 .	Less than Significant	Implementation of the cleanup, security, signage, and education conditions of approval would reduce indirect impacts related to increased boat traffic, foot traffic, and human-generated trash and debris in the vicinity of sensitive habitat and wetlands to less-than-significant levels.
Impact-BIO-8: Potential Indirect Impact on Usage of Nursery Sites from Increased Human Activity.	Implement MM-BIO-2 .	Less than Significant	Implementation of the cleanup, security, signage, and education conditions of approval would reduce indirect impacts related to increased boat traffic, foot traffic, and human-generated trash and debris on nesting birds to less-than-significant levels.
Impact-BIO-9: Potential Conflict with the City of San Diego and Chula Vista MSCP Subarea Plans.	Implement MM-BIO-1 and MM-BIO-2 .	Less than Significant	Implementation of these conditions of approval would ensure that fireworks-generated trash and debris are collected and disposed of, which would reduce this potential direct impact on sensitive habitat and wetlands within the City of San Diego and City of Chula Vista planning subareas to a less-than-significant level. In addition, implementation of the cleanup, security, signage, and education measures would reduce indirect impacts related to increased boat traffic, foot traffic, and

Summary of Potentially Significant Impact(s)	Summary of Mitigation Measure(s)	Level of Significance After Mitigation	Rationale for Finding After Mitigation
			human-generated trash and debris in the vicinity of sensitive habitat and wetlands to less-than-significant levels.
Impact-BIO-10: Potential Conflict with the San Diego Bay National Wildlife Refuge Comprehensive Conservation Plan.	Implement MM-BIO-1 and MM-BIO-2 .	Less than Significant	Implementation of these conditions of approval would ensure that fireworks-generated trash and debris are collected and disposed of, which would reduce this potential direct impact on sensitive habitat and wetlands within the San Diego Bay National Wildlife Refuge to a less-than-significant level. In addition, implementation of the cleanup, security, signage, and education measures would reduce indirect impacts related to increased boat traffic, foot traffic, and human-generated trash and debris in the vicinity of sensitive habitat and wetlands to less-than-significant levels.

4.3.2 Existing Conditions

Existing fireworks display events that require a discretionary action by the District or that are operated by the District's tenants occur within and/or adjacent to the District's jurisdiction, particularly in and around the waters of San Diego Bay and the Pacific Ocean near Imperial Beach. Within San Diego Bay, these displays generally occur on barges, flight decks, and/or piers off of Shelter Island, Harbor Island, North Embarcadero, Central Embarcadero, South Embarcadero, within the Glorietta Bay inlet, and within the NASSCO ship repair facility. Within the Pacific Ocean, an existing fireworks display event occurs on the Imperial Beach Pier just off the coast of Imperial

Beach. The environmental setting for the entire San Diego Bay and coastal Imperial Beach has been included in the existing conditions to provide context for the following impact analysis. The impact analysis then focuses on the portions of the Bay (e.g., the south Bay) likely to be affected by the proposed new fireworks displays.

The sites for the proposed new fireworks display events are within and/or adjacent to the District's jurisdiction within San Diego Bay along the National City and Chula Vista Bayfronts. These proposed new displays are anticipated to occur on barges and/or piers within these locations. The biological impact analysis focuses on the various habitats, wildlife corridors, and wildlife present within San Diego Bay adjacent to and in the vicinity of the National City and Chula Vista Bayfront areas.

The analysis below makes use of existing biological information for San Diego Bay, including the San Diego Bay Integrated Natural Resources Management Plan (INRMP) prepared by the U.S. Navy in conjunction with the District (U.S. Navy 2013). Additionally, general information was drawn from surveys of the nearshore environment near Imperial Beach Pier, particularly from the 2011–2012 benthic habitat mapping for the U.S. Navy's Silver Strand Training Complex Boat Lanes (Merkel & Associates, Inc. 2011a, 2012), surveys performed offshore of the Imperial Beach Pier for nearshore beach nourishment (Merkel & Associates, Inc. 2011b), nearshore habitat mapping performed by San Diego Association of Governments (SANDAG 2002; Merkel & Associates, Inc. et al. 2004), studies completed for the Naval Base Coronado Naval Outlying Field in Imperial Beach (Tierra Data 2011; Merkel & Associates, Inc. 2014a), and beach monitoring performed in association with the regional beach nourishment program (Merkel & Associates, Inc. 2014b).

In addition, focused field investigations for marine mammals were conducted for this analysis during existing fireworks display events (Appendix F). Furthermore, prior observations of California least terns during existing fireworks display events in San Diego Bay and the Imperial Beach Oceanfront were used as a reference source for this analysis. Finally, a literature review was completed with a focus on effects of fireworks in coastal areas outside of the San Diego region, and the effects of pyrotechnics and loud sounds, in general, on marine resources. These additional references have been included in this analysis to supplement existing data sources for the proposed project.

4.3.2.1 Fireworks Display Events Setting

San Diego Bay Setting

San Diego Bay is a nearly enclosed, naturally formed embayment (Figure 4.3-1). The Bay was formed from the alluvial floodplains of the Otay, Sweetwater, and San Diego Rivers, and was historically shallow. The re-direction and channelization of the San Diego River beginning in the 1940s along with multiple dredging and channel-deepening projects have resulted in deep waters in the northern and central portions of the Bay (with deepest waters of 59 feet occurring at the mouth of the Bay), transitioning to shallow waters (less than 3 feet) at the southern end of the Bay (U.S. Navy 2013). The INRMP divides the Bay into multiple depth categories including: deep (> -20 feet mean lower-low water [MLLW]), moderately deep (-12 to -20 feet MLLW), shallow (-2.2 to -12 feet MLLW), and intertidal (-2.2 to +7.8 feet MLLW) (Figure 4.3-1). Currently, deep and moderately deep waters account for more than 50 percent of total Bay surface area (U.S. Navy 2013). In contrast, shallow subtidal habitat accounts for approximately 28 percent of Bay surface area, primarily in south San Diego Bay. Intertidal habitat currently accounts for only 7 percent of the Bay surface area.

The habitats of San Diego Bay are reflective of water depth and presence or absence of shoreline structures. More than 70 percent of the shoreline (45.4 miles out of a total 64.4 miles) of San Diego Bay is currently armored (U.S. Navy 2013). Armoring is primarily rock rip rap, but also includes vertical bulkhead walls, boat launch ramps, earthen dikes, and wharves. Additionally, there are over 130 acres of surface structures (e.g., piers, docks) within the Bay that currently shade intertidal and subtidal waters. The majority of the lands in the northern and central portions of the Bay are developed with a mix of commercial, recreational, and military uses.

The largest unarmored areas occur in the southern portion of the Bay. As such, the majority of undeveloped habitat also occurs in the southern portion of the Bay. Habitats in the southern portion of the Bay include southern coastal salt marsh, intertidal sand and mudflats, salt flats, and southern coastal foredune (Figure 4.3-1). The dominant vegetated subtidal habitat in San Diego Bay is eelgrass (*Zostera marina*); the most recent baywide eelgrass survey, completed in 2014, found 1,996 acres of eelgrass (Merkel & Associates, Inc. 2014c). This accounts for approximately 10.5 percent of the Bay surface area, with a majority of the total occurring in the shallow waters of the southern portion of the Bay. Salt marshes currently cover approximately 800 acres of the Bay, with a majority of this habitat composed of a network of marshes that form a non-contiguous patchwork in the south Bay (Figure 4.3-1). The marine habitats of San Diego Bay currently support several sensitive avian species, marine mammals, and reptiles. Habitats and sensitive species of San Diego Bay are described further below.

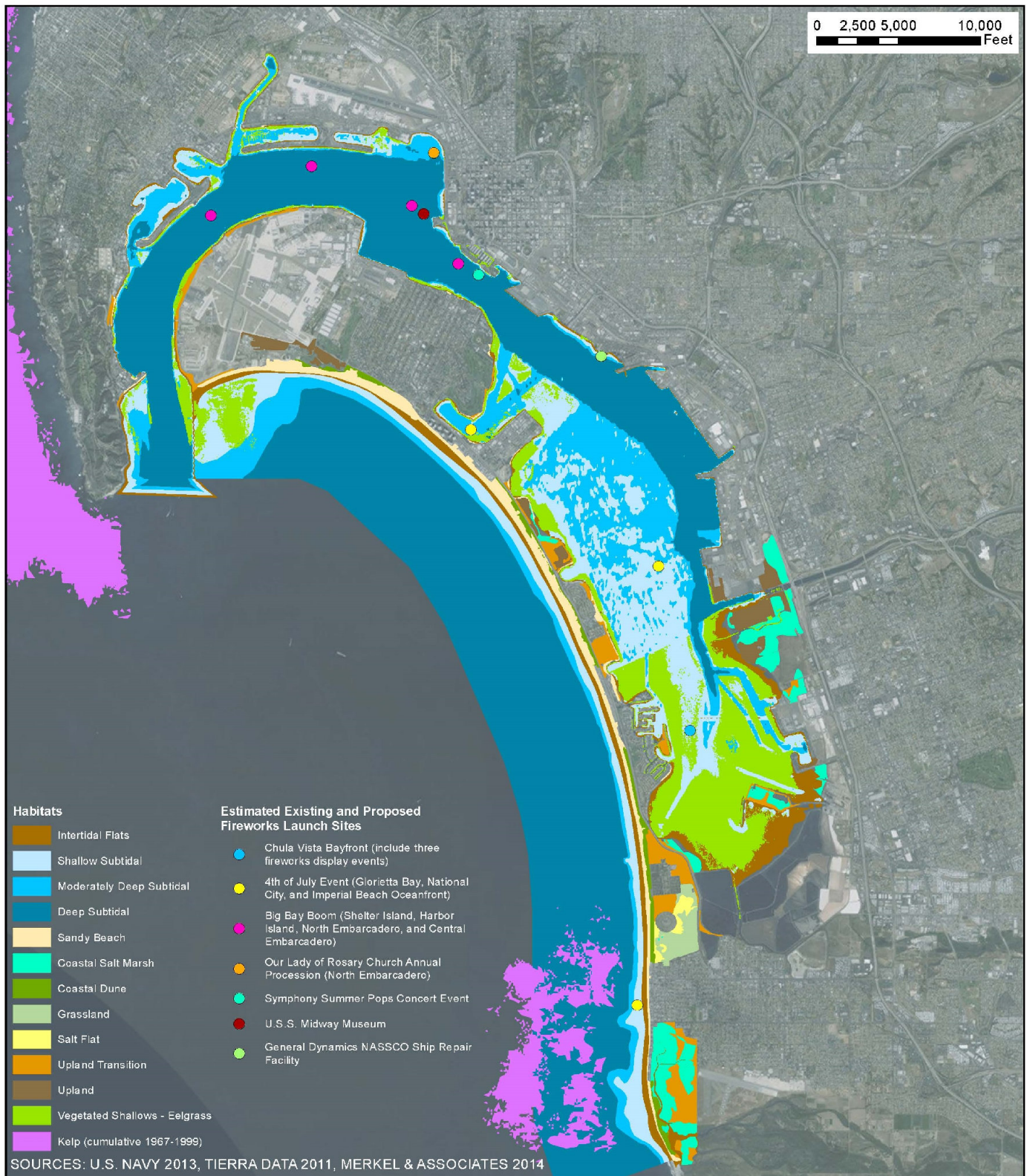
Coastal Imperial Beach Setting

The coastal Imperial Beach setting encompasses the beach and nearshore coastal waters adjacent to and surrounding Imperial Beach Pier. Within this area, the open coastal shoreline consists of a sand beach from north to south. Inland of the shoreline, approximately 0.6 mile to the north of the Pier, the uplands consist of ruderal, shrub, and grassland uplands within the U.S. Navy's Silver Strand Training Complex (Figure 4.3-1). Approximately 0.5 mile to the south of the Pier end and inland from the shore is the northern Oneonta Slough portion of the Tijuana River Estuary. This portion of the estuary is inland of a linear residential neighborhood along Seacoast Drive. The remaining environment away from the shoreline is urban developed lands. Finally, offshore of the Pier is a coastal environment supporting non-persistent kelp beds, sand, and cobble-bottom environments (Merkel & Associates, Inc. et al. 2004; Merkel & Associates, Inc. 2011b; SANDAG 2002).

4.3.2.2 Habitats

Subtidal Unvegetated Soft Bottom

The INRMP differentiates between shallow and deep subtidal habitat based on the biological values of these habitats (U.S. Navy 2013). Deep and moderately deep habitats maintain similar biological functions, while shallow habitat has the potential to support greater primary productivity and overall greater diversity of habitats and ecological communities. Within the Bay, unvegetated soft-bottom habitat consists of soft muds and silt, often overlying loose rubble along the edge of the hard shoreline revetments. Typical invertebrate species that inhabit these areas include burrowing bivalves (*Chione* spp., *Macoma nasuta*), the amphipod (*Grandidierella japonica*), bay ghost shrimp (*Neotrypaea* spp.), burrowing anemones (*Harenactis attenuata*), sabellid worms (Family Sabellidae), and tube-dwelling anemones. Other species typical of other non-vegetated areas of Southern California bays and harbors include sponges (*Phylum porifera*), nudibranchs and nautanax (*Navanax*



inermis), sea hare (*Aplysia californica*), and bivalves including the invasive, nonnative Asian mussel (*Musculista senhousia*). Fish species typical of soft-bottom habitat include round stingray (*Urobatis halleri*), yellowfin goby (*Acanthogobius flavimanus*), and additional goby species (Family Gobiidae), barred sand bass and spotted sand bass (*Paralabrax nebulifer* and *Paralabrax maculatofasciatus*), specklefin midshipman (*Porichthys myriaster*), diamond turbot (*Pleuronichthys guttulatus*), and Pacific staghorn sculpin (*Leptocottus armatus*).

The majority of the nearshore environment off the Imperial Beach Pier supports unvegetated soft-bottom habitat of a principally sandy nature. Cobble beds occur near the Pier and are intermittently sanded over, unvegetated, or support poorly developed kelp canopy as described below. In addition, the soft-bottom habitat in this area supports chutes of shell hash and gravels.

Subtidal Vegetated Habitat

The vegetated, shallow subtidal habitat of San Diego Bay is dominated by eelgrass. Additionally, small amounts of widgeon grass (*Ruppia maritima*) occur in the warmer, shallow flats of south San Diego Bay. The baywide survey completed in 2014 indicated 1,996 acres of eelgrass is present within the Bay (Merkel & Associates, Inc. 2014c). Vegetated subtidal habitats are an essential component of Southern California's coastal marine environment. Eelgrass beds function as important habitat for a variety of invertebrate, fish, and avian species. For many species, eelgrass beds are an essential biological habitat component for at least a portion of their life cycles, providing resting and feeding sites along the Pacific Flyway for avian species, and nursery sites for numerous species of fish. Seagrass beds may be interspersed with red algae such as *Gracilaria verrucosa* and green algae, such as *Ulva* spp. Typical fish species associated with seagrass include pipefish (*Syngnathus* spp.), kelpfish (Family Clinidae), and surfperch (Family Embiotocidae) as well as schooling fish such as topsmelt (*Atherinops affinis*) and anchovy (*Anchoa* spp.).

Offshore of San Diego Bay, Pacific eelgrass (*Z. pacifica*) occurs near the entrance to San Diego Bay (Merkel & Associates, Inc. 2014c). To the southern end of the study area, kelp occurs intermittently on the cobble beds that are occasionally not sanded over and stable enough to support canopy kelp development. These beds are non-persistent and, over a 32-year period from 1967 to 1999, small fractions of the maximum extent of the beds had a maximum frequency of occurrence of only 19 percent of the survey years. The majority of the beds were represented less than 4 percent of the time (Merkel & Associates, Inc. et al. 2004; SANDAG 2002).

Open Water

The water column represents the largest habitat of San Diego Bay and the nearshore coastal area. This habitat is dominated by schooling fish species including topsmelt, northern anchovy (*Engraulis mordax*), and deepbody anchovy (*Anchoa compressa*). The occurrence of these species in open water is important to several species of piscivorous birds including pelicans, terns, loons, grebes, cormorants, and mergansers. These fish also provide an important forage base for numerous species of marine mammals.

Intertidal/Shallow Subtidal Riprap

As previously stated, an estimated 70 percent of the shoreline of San Diego Bay is armored, primarily with rock rip rap. The shoreline within the majority of the Bay is armored with rip rap to form a sloped revetment. Typical species observed along rip rap include native oyster (*Ostrea*

lurida), nonnative Pacific oyster (*Crassostrea gigas*), barnacles (*Balanus* spp.), mussels (*Mytilus* spp.), and tunicates such as *Styela plicata*. Tube-dwelling anemones (*Pachycerianthus* sp.) and tubed serpulid worms (Family Serpulidae) are also common. Crevices support spiny lobster (*Panulirus interruptus*). Rip rap supports a variety of algal species including *Eggregia menziesii*, *Sargassum* spp., *Ulva* spp., *Ceramium* spp., *Dictyota* spp., *Laurencia* spp., and *Enteromorpha* spp. (Davis et al. 2002). Fish species typically found along subtidal portions of rip rap are abundant and vary from the mouth of the Bay, which has more oceanic conditions, to protected marinas in the central and southern portions of the Bay. Species include opaleye (*Girella nigricans*), senoritas (*Oxyjulus californica*), garibaldi (*Hypsypops rubicundus*), rockfish (*Sebastes* spp.), spotted sand bass, and giant kelpfish (*Heterostichus rostratus*). Other structure-associated fish species likely to occur along this habitat include salema (*Xenistius californiensis*), juvenile black croaker (*Cheilotrema saturnum*), sargo (*Anisotremus davidsonii*), barred sand bass, and black surfperch (*Embiotoca jacksoni*) (U.S. Navy 2013).

Intertidal Flats

This habitat includes mudflats, sand flats, and salt flats that occur intertidally, typically along the unarmored shorelines of south San Diego Bay. Intertidal flats also occur in narrow bands along rip rap shorelines in quiescent coves and marinas of the Bay. This habitat provides an interface with open waters of the Bay, bringing tidal exchange to adjacent marshlands, and serving as outlets for stormwater runoff, nutrients, and sediment supply to the Bay. Intertidal flats are dominated by invertebrates that inhabit the sediments, providing an ample low-tide foraging area for shorebirds. As tides rise the flats become forage habitat for fish, dabbling waterfowl, and piscivorous birds. Common avian species along intertidal flats include sandpipers (*Calidris* spp.), willet (*Tringa semipalmata*), marbled godwit (*Limosa fedoa*), dowitchers (*Limnodromus* spp.), plovers (Family Charadriidae), eared grebe (*Podiceps nigricollis*), scaup (*Aythya* spp.), and surf scoter (*Melanitta perspicillata*). Fish species that forage on tidal flats during high tides include mullet (*Mugil cephalus*), California halibut (*Paralichthys californicus*), bat ray (*Myliobatis californica*), and gray smoothhound (*Mustelus californicus*).

Sandy Beach

This habitat includes coastal and bay sand beach environments that are located along narrow fringes between subtidal and supratidal habitats within areas of higher wave energy. The sand beach is best developed along the Silver Strand and Imperial Beach shoreline. The beach environments are generally heavily utilized by the public in areas that are publicly accessible and receive a much lower degree of use in areas that are found within non-recreational use Naval installations. Closed beach environments contain some southern coastal foredunes and are, in some instances, used as nesting and roosting environments for sensitive avian species and shorebirds.

Marshes

Coastal salt marsh habitat primarily occurs in south San Diego Bay and in the Tijuana Estuary as a series of noncontiguous remnants of once broader estuarine environments and restored wetlands. This fragmentation, along with channelization and redirection of rivers and creeks that historically drained into marshlands, and the threat of sea level rise, puts the remaining marshes at risk of decline. Many of the marshes in south San Diego Bay occur along unarmored shorelines, the largest of which is the E Street and Sweetwater Marsh complex south of the Sweetwater River Channel along the southeastern shoreline of the Bay within the San Diego Bay National Wildlife Refuge

(NWR). Other large marsh areas along unarmored shorelines include the D Street Fill, J Street Marsh, and Emory Cove. Finally, other marshes, including the Chula Vista Wildlife Reserve and within the South Bay Salt Ponds, have been restored and are currently protected from erosion by permeable dikes.

Marsh habitat provides important biological, water quality, and shoreline protection functions. Coastal salt marsh habitat is dominated by salt-tolerant vegetation including pickleweed (*Sarcocornia* and *Salicornia* spp.) and cordgrass (*Spartina foliosa*) that provides foraging habitat for numerous birds and nesting habitat for several sensitive avian species, particularly the federally and state-listed light-footed Ridgway's rail (*Rallus obsoletus levipes*) and the state-listed Belding's Savannah sparrow (*Passerculus sandwichensis beldingi*).

Upland Transition and Upland Areas

As mentioned previously, the majority of shoreline within San Diego Bay is armored. However, upland transition areas, particularly along unarmored shorelines, provide important foraging, roosting, and nesting habitat for birds. Among the most important upland transition areas are supratidal sand dunes and beaches adjacent to, and protected by, intertidal flats and marshes. These areas provide nesting habitat for additional sensitive avian species. Other transitional habitats adjacent to baylands include coastal scrub (maritime succulent scrub and sage scrub), created bay fills, and river mouths (where coastal salt marsh transitions to brackish, and riparian habitats). Ruderal lands supporting grasslands and saline flats are also present along the coastal strand environment. This is particularly true in the area of the Naval Outlying Field antenna array north of Imperial Beach Pier.

4.3.2.3 Wetlands and Sensitive Habitats

Wetlands, as defined by the U.S. Army Corps of Engineers (USACE), are present as coastal salt marshes, the largest of which are along the unarmored shorelines of south San Diego Bay. A small amount of freshwater and brackish marsh, as well as riparian scrub, occurs along the mouths of the creeks and rivers that enter the Bay and the wetlands of the Tijuana Estuary. The largest of the San Diego Bay wetlands include the Sweetwater River, Otay River, Chula Vista Wildlife Reserve, South San Diego Bay NWR, and Telegraph Creek. The brackish marsh and riparian scrub within the Bay and Imperial Beach Oceanfront are considered to have low functions and values based on a substantial alteration from historic conditions that has resulted from the channelization of river mouths into concrete-lined channels, and the highly urban setting through which the rivers flow to the Bay. The larger coastal salt marsh habitats represent a combination of remnants of historic wetlands and recently restored areas. This habitat is considered to have high biological, physical, and chemical functions and values. The marshes perform a high level of nutrient transformation, as rivers and creeks of the Bay drain into marsh vegetation. Coastal salt marshes within the Bay support complex biological communities and provide breeding habitat for several sensitive avian species.

Eelgrass is a rooted aquatic plant that inhabits shallow, soft-bottom habitats in quiet waters of bays and estuaries as well as sheltered coastal areas. It can form dense beds that provide substrate, food, and shelter for a variety of marine organisms. The majority of eelgrass beds in the Bay are found in water less than 20 feet deep, with light availability being the primary limiting factor for distribution and growth. Eelgrass beds are considered "special aquatic sites" under the Clean Water Act (CWA). Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act, eelgrass is

designated as Essential Fish Habitat for various federally managed fish species within the Pacific Coast Groundfish and Pacific Coast Salmon Fisheries Management Plans (PFMC 2008). Eelgrass is also considered a habitat area of particular concern for various species within the Pacific Coast Groundfish Fisheries Management Plan.

4.3.2.4 Wildlife Corridors

The study area does not provide any terrestrial movement corridors, and no marine mammal, reptile, or fish migratory corridors occur within it. However, some marine fish species, such as anchovy, sardine, and topsmelt, likely move into and out of the Bay for spawning, nursery, and foraging. The southern portions of the Bay, including the South San Diego Bay Unit of the San Diego Bay NWR and South Bay Salt Ponds, provide stopover habitat for migrating waterfowl and shorebirds. San Diego Bay and the Imperial Beach shoreline, like all of California, is located within the Pacific Flyway. Several whale species migrate along the coast of California, including the California gray whale (*Eschrichtius robustus*). The peak northward migration of male gray whales occurs in mid-March, followed 2 months later by the second migration wave, which is composed of cows and calves. Whales typically do not occur within the immediate nearshore coastal waters of Imperial Beach or the adjacent Bay environment.

4.3.2.5 Candidate, Sensitive, and Special-Status Species

Special-status species are those plants or animals that have been officially listed, proposed for listing, or are candidates for listing as threatened or endangered under provisions of the Endangered Species Act (ESA) and the California Endangered Species Act (CESA), protected under the Marine Mammal Protection Act (MMPA), any animal species listed as a species of special concern or fully protected by the state, and plants listed on the California Rare Plant Ranking. Sensitive species also include those listed by local or regional jurisdictions. Species identified as protected, rare, sensitive, threatened, or endangered by the U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), or California Department of Fish and Wildlife (CDFW) that are expected to be present in San Diego Bay and the Imperial Beach Oceanfront include multiple species of marine mammals, birds, and marine reptiles. The study area does not support any special-status or sensitive plant species. A list of the candidate, sensitive, and special-status wildlife species with a potential to occur within San Diego Bay and the Imperial Beach Oceanfront is provided in Table 4.3-2.

Terrestrial Wildlife

Birds

Four avian species listed by USFWS and/or CDFW as federally or state-listed as endangered or threatened have a high potential to occur within San Diego Bay and the Imperial Beach Oceanfront. These include California least tern (*Sternula antillarum browni*), western snowy plover (*Charadrius alexandrinus nivosus*), light-footed Ridgway's rail, and Belding's Savannah sparrow.

The California least terns nests along the west coast of North America, from Baja California, Mexico, north to the San Francisco Bay area. California least terns are seasonal residents of San Diego Bay, typically arriving in mid- to late-April to nest at several colonies adjacent to San Diego Bay, and are generally present through August with September 15 marking the end of the season. California least terns can have two waves of nesting during this time period (CDFW 2016). California least terns

establish nesting colonies on sandy soils with little vegetation. Along the shores of San Diego Bay and south of the Imperial Beach Oceanfront, California least terns nest at multiple sites (Figure 4.3-2), including the runway ovals at San Diego International Airport; the airfield tarmac at Naval Air Station (NAS) North Island; on Delta and Echo Beaches at Naval Amphibious Base Coronado (NAB Coronado), which are managed by the U.S. Navy; on the D Street Fill; at the Chula Vista Wildlife Reserve; along the South Bay Salt Works levees and in Pond 11, which are managed by the District and USFWS; and along the beach of the Tijuana River National Estuarine Research Reserve south of the Imperial Beach Oceanfront. The most utilized nesting sites in 2015 were NAB Coronado (supporting between 707 and 779 nesting pairs), Tijuana River National Estuarine Research Reserve (supporting between 144 and 199 nesting pairs), the D Street Fill/Sweetwater Marsh NWR (supporting between 105 and 120 nesting pairs), and the San Diego International Airport (supporting between 8 and 18 nesting pairs) (Frost 2016). California least terns actively forage for fish in the waters adjacent to nesting colonies in San Diego Bay; foraging also occurs in open ocean waters and along the nearshore waters adjacent to beaches of Silver Strand and Imperial Beach.

The western snowy plover is a sparrow-sized, white and tan colored shorebird with dark patches on either side of the neck, behind the eyes, and on the forehead. The coastal western snowy plover population is defined as those individuals that nest adjacent to or near tidal waters and includes all nesting colonies on the mainland coast, peninsulas, offshore islands, adjacent bays, and estuaries. The breeding range of the coastal population of the western snowy plover extends along coastal beaches from the southern portion of Washington state to southern Baja California, Mexico. The recognized breeding season of the western snowy plover normally extends from March 1 through September 15. However, within San Diego Bay, USFWS reports that the core breeding season for plovers is March 1 through mid-July (Vissman pers. comm.). Western snowy plover nest along similar sandy flats and dunes as California least tern. In San Diego Bay, nesting occurs along the beach at NAS North Island, at NAB Coronado, which includes the entire beachfront north of Imperial Beach, and farther south along the Silver Strand Training Complex and the beaches of the Tijuana River National Estuarine Research Reserve. This species has not nested at the D Street Fill/Sweetwater Marsh NWR since 2000. Increasing amounts of vegetation along the shoreline have likely discouraged nesting at this location (Patton 2013).

The light-footed Ridgway's rail is a resident in coastal wetlands in Southern California and northern Baja California, Mexico. The species is threatened primarily by loss and degradation of the freshwater, brackish, and salt marsh habitat in which it breeds. The largest population of this species occurs in the Tijuana River National Estuarine Research Reserve. This location has typically supported greater than 100 breeding pairs, although estimates for the 2015 breeding season were 75 pairs (Zemba et al. 2014). Much smaller populations (fewer than five pairs) have been observed at other marsh locations in San Diego Bay including E, F&G, and J Street Marshes and the Sweetwater Marsh within the Chula Vista Bayfront region, and at the Otay River Mouth. The core breeding season for Ridgway's rails in San Diego Bay has been reported to be mid-February through mid-June and into July (Vissman pers. comm.).

Belding's Savannah sparrow ranges along the southern California coast from Santa Barbara County (Goleta Slough) in the north into Baja California, Mexico (near El Rosario) in the south. The species is unique in that it is a year-round resident of salt marshes and is reliant upon this habitat to meet all of its life cycle requirements. The species is threatened by loss and degradation of the salt marsh habitat in which it lives and breeds. In San Diego Bay, the largest population of Belding's Savannah sparrow is found at the Tijuana River National Estuarine Research Reserve (318 territories surveyed in 2015), the Sweetwater Marsh NWR (222 territories surveyed in 2015), and the south

San Diego Bay unit of the San Diego Bay NWR (158 pairs at the South Bay Salt Works and Otay River) (Zemba et al. 2015). Smaller populations are located in Paradise Marsh, F&G Street Marsh, and Chula Vista Wildlife Reserve.

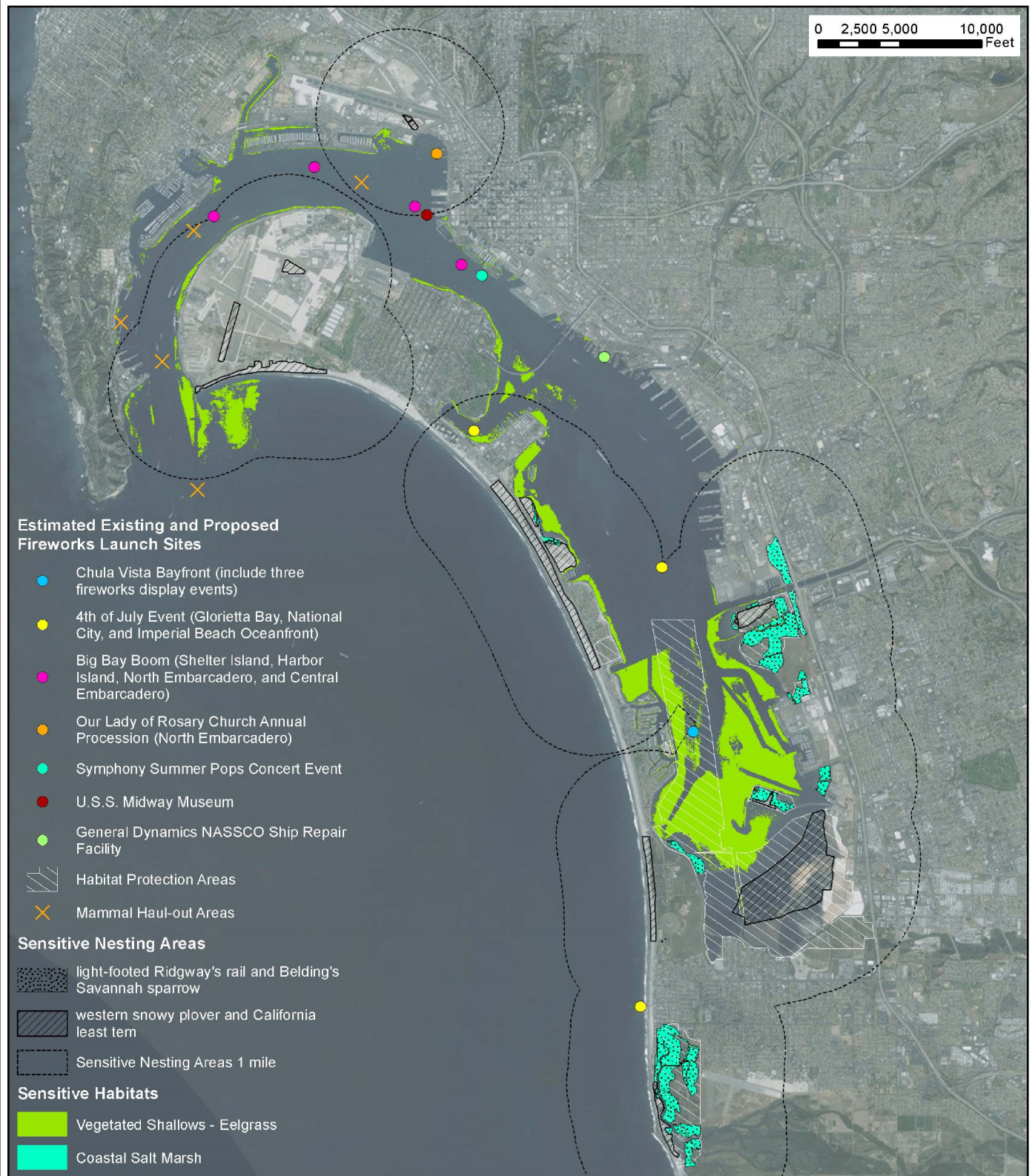
Other sensitive avian species with high potential to occur in the study area include California brown pelican (*Pelecanus occidentalis californicus*) and double-crested cormorant (*Phalacrocorax auritus*), both of which are protected at nesting colonies and at communal roosting areas. California brown pelicans roost in small groups throughout the Bay, particularly along Zuniga jetty, rip rap shorelines, and docks and piers in the northern portion of the Bay. Double-crested cormorants nest within San Diego Bay at the South Bay Salt Works. They roost and forage throughout the Bay. Other sensitive avian species known to nest on the South Bay Salt Works levees include elegant tern (*Thalasseus elegans*), Caspian tern (*Hydroprogne caspia*), and black skimmer (*Rynchops niger*) (Unitt 2004), all of which are protected at nesting colonies. These species nest on the ground in similar unvegetated sandy habitat as the California least tern. Sensitive raptors include osprey (*Pandion haliaetus*), northern harrier (*Circus cyaneus*), and American peregrine falcon (*Falco peregrinus anatum*), all of which are protected at nesting locations. Osprey is known to nest within San Diego Bay, with recent nests located at NAS North Island, the National City shoreline, and at the Chula Vista Wildlife Reserve. Northern harrier nests on the ground, within marshes and grasslands. This species has been known to nest in south San Diego Bay, within the Tijuana River National Estuarine Research Reserve and the Sweetwater Marsh NWR (Unitt 2004). Peregrine falcon has historically nested in Point Loma, on downtown San Diego buildings, and on the Coronado Bridge.

Marine Wildlife

Mammals

All marine mammals are protected under the MMPA of 1972, and some are also protected by the ESA of 1973. Marine mammal species may forage in the Bay but do not breed there (U.S. Navy 2013). Occurrences and probability of marine mammals within the Bay can be categorized into three levels, as follows (U.S. Navy 2013):

- Species known to regularly occur within San Diego Bay
 - California sea lion (*Zalophus californianus californianus*)
 - Coastal bottlenose dolphin (*Tursiops truncatus*)
- Species that are occasional to frequent visitors to San Diego Bay
 - Pacific harbor seal (*Phoca vitulina richardsi*)
 - Gray whale (*Eschrichtius robustus*)
- Species that have potential for isolated occurrences in San Diego Bay
 - Northern elephant seal (*Mirounga angustirostris*)
 - Long-beaked common dolphin (*Delphinus capensis*)
 - Pacific white-sided dolphin (*Lagenorhynchus obliquidens*)
 - Short-finned pilot whale (*Globicephala macrorhynchus*)
 - Minke whale (*Balaenoptera acutorostrata*)
 - Finback whale (*Balaenoptera physalus*)



California sea lion and, to a lesser extent, Pacific harbor seal are the two most common species of marine mammals that occur in San Diego Bay and adjacent coastal waters. Neither species breeds within San Diego Bay, but both spend time foraging and loafing in the waters of the Bay. California sea lions inhabit the entire western coast of North America from central Mexico through the Canadian coastline. The majority of the West Coast population is in the Bight because most sea lions breed at the Channel Islands (U.S. Navy 2013). California sea lions are highly sexually dimorphic. Males are larger, averaging 2.4 meters and 390 kilograms, while females only reach 2.0 meters and average 110 kilograms. Pronounced sagittal crests easily identify adult males. The coat color varies from sandy brown to dark brown. They feed on squid and a variety of schooling fish. Sea lions are frequently observed loafing on buoys, and foraging around bait barges and fishing piers (U.S. Navy 2013). California sea lions are year-round residents of San Diego Bay and are more common in the northern portion of the Bay. Individuals are rarely observed in the south Bay region, due to lack of haul out areas and minimal fishing activity (e.g., fishing piers and bait barges).

Harbor seals range from Alaska to Baja California, with a majority of the population occurring in northern waters (U.S. Navy 2013). Harbor seals prefer to loaf and forage in protected inlets and embayments. They eat multiple fish species as well as invertebrates such as octopus. The nearest breeding colony for this species is at the Children's Pool in La Jolla. While harbor seals will occasionally haul out and loaf on intertidal rip rap, they prefer to haul out on protected sandy and rocky beaches, and no large haul-out areas for this species occur in San Diego Bay. Harbor seals are less frequently encountered in San Diego Bay and nearshore waters, but they are not rare in the area. They are generally less social in the water than sea lions and are naturally less obvious or abundant in their presence. Similar to California sea lions, harbor seals are rarely observed in south San Diego Bay.

California gray whales are seasonal migrants, traveling up and down the coastline in offshore waters of the Pacific Ocean. They are the object of most of the whale watching in the area. They pass through the area twice during their yearly migrations. The peak northward migration of male gray whales occurs in mid-March, followed 2 months later by the second migration wave, which is composed of cows and calves. These whales migrate from wintering grounds in Baja California, Mexico, northward to Alaska. The southbound migration occurs in late December and January, from Alaska to Mexico. The gray whale does not breed in San Diego Bay or the immediate vicinity, and individuals enter the waters of San Diego Bay only on rare occasions. Individuals that do enter the Bay typically remain close to the entrance channel or in the northern portion of the Bay. Grey whales would not be present during the existing fireworks display events that occur during the summer months, nor do they travel to the southern portion of the Bay.

Coastal bottlenose dolphins are distributed world-wide in tropical and warm-temperate waters, including California, where separate coastal and offshore populations are known to exist (Caretta et al. 2004). California coastal bottlenose dolphins are found within about 1 kilometer of shore primarily from Point Conception south into Mexican waters. They are commonly observed traveling and foraging just outside of the surf zone along San Diego beaches. Bottlenose dolphins are regularly observed in the northern portion of San Diego Bay, particularly in the northern channels (U.S. Navy 2013). This species tends to stay within these relatively deep channels where prey is most abundant. However, bottlenose dolphins are rare visitors to southern portions of San Diego Bay. Other dolphin species, including Pacific white-sided dolphin and common dolphin, have been observed in the waters of San Diego Bay; however, these species are considered rare visitors within the Bay (U.S. Navy 2013).

Marine Reptiles

South San Diego Bay supports a population of eastern Pacific green sea turtles (*Chelonia mydas*) of between 16 and 61 individuals that primarily remain in the warm waters of south San Diego Bay, though some are known to leave the Bay to nest on the beaches of offshore islands of Mexico (Eguchi et al. 2010). Long-term acoustic tagging and satellite tracking studies by NMFS indicate that the population has historically congregated in the warm waters of the cooling water discharge channel at the now-closed South Bay Power Plant in south San Diego Bay. The shutdown of the South Bay Power Plant has made movements of turtles harder to predict. Recent tracking studies have noted turtles utilizing areas of the Bay much farther north than their historically recognized foraging areas, but are still primarily south of the Sweetwater River Channel (Bredvik et al. 2015). However, it is unlikely that green sea turtles extensively utilize the northern end of the Bay due to the cooler water temperatures relative to south San Diego Bay, a lack of eelgrass, and a paucity of alternative forage such as the red algae (*Gracilaria* sp.). Tracking data from 2016 indicate that the turtles' home range is south of the Sweetwater Channel, where they spend 95 percent of their time (District 2016). Regardless, very rare occurrences of the turtle in the north Bay cannot be ruled out given how little is known about turtle activities.

Table 4.3-2. Sensitive Wildlife Species with Potential to Occur within San Diego Bay and Imperial Beach Oceanfront

Common Name (<i>Scientific Name</i>)	Sensitivity Code & Status	Potential to Occur
Marine Reptiles		
Green Sea Turtle (<i>Chelonia mydas</i>)	FT	Low Potential
Birds		
Brant (<i>Branta bernicla</i>)	CDFW SSC	High Potential: Winters in south Bay along Chula Vista Bayfront
California Brown Pelican (<i>Pelecanus occidentalis californicus</i>)	CDFW FP	Moderate Potential: No nesting, roosts on rip rap, docks, pilings, etc.
Double-crested Cormorant (<i>Phalacrocorax auritus</i>)	CDFW WL	High Potential: Nests in South Bay Salt Works
Northern harrier (<i>Circus cyaneus</i>)	CDFW SSC	Moderate Potential: Nests in marshes in south Bay
Osprey (<i>Pandion haliaetus</i>)	CDFW WL	High Potential: Nests at NAS North Island and the Chula Vista Wildlife Reserve
American peregrine falcon (<i>Falco peregrinus anatum</i>)	CDFW FP, FWS BCC	Low Potential: May nest along Bayfront
Light-footed Ridgway's rail (<i>Rallus obsoletus levipes</i>)	CDFW FP, FWS BCC, FE, SE	High Potential: Nests in marshes of south Bay
Western snowy plover (<i>Charadrius alexandrinus nivosus</i>)	FT	High Potential: Nests on sand flats of Bay
California Least tern (<i>Sternula antillarum browni</i>)*	FE, SE	High Potential: Nests on sand flats of Bay
Caspian tern (<i>Hydroprogne caspia</i>)	FWS BCC	High Potential: Nests in South Bay Salt Works
Black skimmer (<i>Rynchops niger</i>)	CDFW SSC	High Potential: Nests in South Bay Salt Works
Elegant tern (<i>Thalasseus elegans</i>)	CDFW WL	High Potential: Nests in South Bay Salt Works
Belding's Savannah sparrow (<i>Passerculus sandwichensis beldingi</i>)	SE	High Potential: Nests in marshes of south Bay and Tijuana Estuary
Mammals		
Pacific harbor seal (<i>Phoca vitulina richardsi</i>)	MMPA	Moderate Potential: Forages in north Bay and is uncommon in the south Bay
California sea lion (<i>Zalophus californianus californianus</i>)	MMPA	High Potential: Forages and loafs in the north Bay with uncommon occurrences in the south Bay
Coastal bottlenose dolphin (<i>Tursiops truncatus</i>)	MMPA	Moderate Potential: Uncommon forager in deep channels of the north Bay
California gray whale (<i>Eschrichtius robustus</i>)	MMPA	Very Low Potential: Regular migrant in offshore waters, but uncommon in Bay and nearshore waters

Source: Appendix F

SE = state-listed as endangered; **FE** = federally listed as endangered; **FT** = federally listed as threatened; **CDFW SSC** = CDFW Species of Special Concern; **CDFW-FP** = CDFW Fully Protected Species; **CDFW-WL** = CDFW Watch List; FWS-BCC = USFWS Bird of Conservation Concern; **MMPA** = species protected by the Marine Mammal Protection Act

*Least terns are a migratory species found in the area from approximately April 1 through September 15 of each year.

4.3.3 Applicable Laws and Regulations

4.3.3.1 Federal

Coastal Zone Management Act of 1972

The U.S. Congress recognized the importance of meeting the challenge of continued growth in the coastal zone by passing the Coastal Zone Management Act in 1972. The act, administered by the National Oceanic and Atmospheric Administration's (NOAA) Office of Ocean and Coastal Resource Management, provides for management of the nation's coastal resources and balances economic development with environmental conservation.

The Coastal Zone Management Act outlines two national programs. The National Coastal Zone Management Program includes 34 coastal programs that aim to balance competing land and water issues in the coastal zone. The National Estuarine Research Reserve System creates field laboratories that provide a greater understanding of estuaries and how humans affect them. The overall program objectives of the act are to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone."

The Coastal Zone Management Act ensures that development projects in coastal areas are designed and sited in a manner that is consistent with coastal zone land uses, maximizes public health and safety, and ensures that biological resources (e.g., wetlands, estuaries, beaches, and fish and wildlife and their habitat) within the coastal zone are protected. The enforceable policies of that document are Chapter 3 of the California Coastal Act of 1976 (as amended). The California Coastal Commission enforces the Coastal Zone Management Act by certifying that the proposed project is consistent with the California Coastal Act.

Rivers and Harbors Act (Section 10)

Pursuant to Section 10 of the Rivers and Harbors Act, USACE is authorized to regulate structures within or over any navigable water of the United States (WoUS). The Rivers and Harbors Act Section 10 jurisdiction is defined as "those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use, to transport interstate or foreign commerce" (33 Code of Federal Regulations [CFR] 322). The San Diego Bay is considered a traditional navigable water regulated under Section 10 of the Rivers and Harbors Act. Static positioning of any fireworks barges using a temporary mooring is not proposed.

Endangered Species Act of 1973

Species listed as endangered and/or threatened by USFWS are protected under Section 9 of the federal ESA, which forbids any person to "take" an endangered or threatened species. *Take* is defined in Section 3 of the act as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." The term *harm* is defined as an "act which actually kills or injures wildlife," including through "significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife." The term *harass* means an act or omission that creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns, including breeding, feeding, or sheltering. (50 CFR 17.3). Sections 7 and 10 of the act may authorize "incidental take" for an otherwise lawful activity (a development project, for example) if it is determined that the activity would not jeopardize survival

or recovery of the species. Section 7 applies to projects where a federally listed species is present and there is a federal nexus, such as a federal CWA Section 404 permit (e.g., impacts on WoUS) that is required. Section 10 applies when a federally listed species is present but no federal nexus is present.

Marine Mammal Protection Act of 1972

The MMPA prohibits, with certain exceptions, the take of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the United States. Under the MMPA, *take* is defined as “to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal” (16 United States Code [USC] 1362) and further defined by regulation (50 CFR 216.3) as “to harass, hunt, capture, collect, or kill, or attempt to harass, hunt, capture, collect, or kill any marine mammal.” Congress passed the MMPA based on the following findings and policies: (1) some marine mammal species or stocks may be in danger of extinction or depletion as a result of human activities, (2) these species of stocks must not be permitted to fall below their optimum sustainable population level (depleted), (3) measures should be taken to replenish these species or stocks, (4) there is inadequate knowledge of the ecology and population dynamics, and (5) marine mammals have proven to be resources of great international significance.

The MMPA was amended substantially in 1994 to provide for: (1) certain exceptions to the take prohibitions, such as for Alaska Native subsistence, and for permits and authorizations for scientific research; (2) a program to authorize and control the taking of marine mammals incidental to commercial fishing operations; (3) preparation of stock assessments for all marine mammal stocks in waters under U.S. jurisdiction; and (4) studies of pinniped-fishery interactions. NMFS and USFWS administer the MMPA. Under the 1994 amendments to the MMPA, harassment was separated into two categories and is statutorily defined as any act of pursuit, torment, or annoyance that:

- Has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or
- Has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering but that does not have the potential to injure a marine mammal or marine mammal stock in the wild (Level B harassment).

Proposed projects must be analyzed to ensure that marine mammals protected under the MMPA would not be harassed or injured as a result of project activities. Any project activities that may result in Level A or B harassment or mortality would require consultation with NMFS under the MMPA.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) was enacted in 1918 to prohibit the killing or transport of native migratory birds, or any part, nest, or egg of any such bird, unless allowed by another regulation adopted in accordance with the MBTA. A list of migratory bird species that are protected by the MBTA is maintained by USFWS, which regulates most aspects of the taking, possession, transportation, sale, purchase, barter, exportation, and importation of migratory birds. Under the MBTA, *take* means to kill, directly harm, or destroy individuals, eggs, or nests or to otherwise cause failure of an ongoing nesting effort. Permits are available under the MBTA through USFWS, and

authorization for potential take under the MBTA is addressed as part of the ESA Section 7 consultation process. The proposed project must be analyzed to ensure consistency with the MBTA, including avoidance of take of nesting birds, their eggs, or activities that may cause nest failure. This applies for both terrestrial and marine migratory species protected under the MBTA that may be directly or indirectly affected by the proposed project. Any potential take must be either permitted through consultation with USFWS or avoided and minimized through mitigation measures.

Clean Water Act

The Federal Water Pollution Control Act Amendments of 1972, commonly known as the CWA (33 USC 1251–1376), as amended by the Water Quality Act of 1987, is the major federal legislation governing water quality. The purpose of the CWA is to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” Discharges into WoUS are regulated under CWA Section 404. WoUS include: (1) all navigable waters (including all waters subject to the ebb and flow of the tide); (2) all interstate waters and wetlands; (3) all other waters, such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, or natural ponds; (4) all impoundments of waters mentioned above; (5) all tributaries to waters mentioned above; (6) the territorial seas; and (7) all wetlands adjacent to waters mentioned above. Important applicable sections of the CWA are discussed below.

- **Section 303** requires states to develop water quality standards for inland surface and ocean waters and submit them to the U.S. Environmental Protection Agency for approval. Under Section 303(d), the states are required to list waters that do not meet water quality standards and to develop action plans, called total maximum daily loads, to improve water quality.
- **Section 304** provides 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 WoUS to obtain certification from the state that the discharge will comply with other provisions of the CWA. Certification is provided by the respective Regional Water Quality Control Board (RWQCB). A Section 401 certification from the San Diego RWQCB (SDRWQCB) would be required for the proposed project if a Section 404 permit and Rivers and Harbor Act (Section 10) permit are required.
- **Section 402** establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredge or fill material) into WoUS. The NPDES program is administered by SDRWQCB. Conformance with Section 402 is typically addressed in conjunction with water quality certification under Section 401. All construction activities must be consistent with Section 402 of the CWA and avoid significant water quality-related impacts. See Section 4.6, *Hydrology and Water Quality*, for an analysis related to the proposed project’s impacts on water quality.
- **Section 404** provides for issuance of dredge/fill permits by USACE. Permits typically include conditions to minimize impacts on water quality. Common conditions include: (1) USACE review and approval of sediment quality before dredging; (2) a detailed pre- and post-construction monitoring plan that includes disposal site monitoring; and (3) requiring compensation for loss of WoUS. The project does not propose any fill or dredge.

National Wildlife Refuge System Administration Act of 1966

The National Wildlife Refuge System Administration Act of 1966 consolidated the various categories of lands, administered by the Secretary of the Interior through USFWS, into a single National Wildlife Refuge System. The act establishes a unifying mission for the Refuge System, a process for determining compatible uses of refuges, and a requirement for preparing comprehensive conservation plans. The act states, first and foremost, that the mission of the National Wildlife Refuge System be focused singularly on wildlife conservation. In addition, the Refuge Administration Act identifies six priority wildlife-dependent recreation uses, clarifies the Secretary's authority to accept donations of money for land acquisition, and place restrictions on the transfer, exchange, or other disposal of lands within the Refuge System (NOAA 2012).

San Diego Bay National Wildlife Refuge Final Comprehensive Conservation Plan and Environmental Impact Statement

The San Diego Bay National Wildlife Refuge is managed by USFWS as part of the National Wildlife Refuge System. A Comprehensive Conservation Plan is prepared pursuant to the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997. USFWS manages the Sweetwater Marsh and South San Diego Bay Units of the San Diego Bay NWR in accordance with the approved August 2006 Comprehensive Conservation Plan. The Comprehensive Conservation Plan provides long-range guidance on refuge management through its vision, goals, objectives, and strategies. The Comprehensive Conservation Plan also provides a basis for a long-term adaptive management process including implementation, monitoring progress, evaluating and adjusting, and revising plans accordingly (USFWS 2006).

4.3.3.2 State

California Coastal Act of 1976

The California Coastal Act of 1976 recognizes California ports, harbors, and coastline beaches as primary economic and coastal resources and as essential elements of the national maritime industry. Decisions to undertake specific development projects, where feasible, are to be based on consideration of alternative locations and designs in order to minimize any adverse environmental impacts. The California Coastal Act is implemented by District for the land and water within its jurisdiction, subject to oversight by the Coastal Commission.

California Endangered Species Act

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

California Fish and Game Code

The Fish and Game Code establishes the Fish and Game Commission, as authorized by Article IV, Section 20, of the Constitution of the State of California. The Fish and Game Commission is responsible, under the provisions of Sections 200–221, for regulating the take of fish and game, not including the taking, processing, or use of fish, mollusks, crustaceans, kelp, or other aquatic plants for commercial purposes. However, the Fish and Game Commission does regulate aspects of commercial fishing, including fish reduction; shellfish cultivation; take of herring, lobster, sea urchins, and abalone; kelp leases; leases of state water bottoms for oyster allotments; aquaculture operations; and other activities. These resource protection responsibilities involve the setting of seasons, bag and size limits, and methods and areas of take, as well as prescribe the terms and conditions under which permits or licenses may be issued or revoked by CDFW. The Fish and Game Commission also oversees the establishment of wildlife areas and ecological reserves and regulates their use, as well as setting policy for CDFW.

Sections 3503, 3503.5, 3505, 3800, and 3801.6 of the Fish and Game Code protect all native birds, birds of prey, and all nongame birds, including their eggs and nests, that are not already listed as fully protected and that occur naturally within the state. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (e.g., hawks, owls, eagles, falcons), including their nests or eggs. As defined in the Fish and Game Code, *take* means to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill (Fish and Game Code Section 86).

CDFW is a lead state agency that manages native fish, wildlife, plant species, and natural communities for their ecological value and their benefits to people. CDFW oversees the management of marine species through several programs, some in coordination with NMFS and other agencies.

The California Eelgrass Mitigation Policy is administered by NMFS. The effects of the proposed project on any surrounding eelgrass beds and any compensatory mitigation would be addressed under the Southern California Eelgrass Mitigation Policy. In addition, CDFW jointly manages (with NMFS) the implementation of the Caulerpa Control Protocol, which requires a survey for Caulerpa be conducted before any bottom-disturbing activities.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act is the California equivalent of the federal CWA. It provides for statewide coordination of water quality regulations through the establishment of the State Water Resources Control Board (SWRCB) and nine separate RWQCBs that oversee water quality on a day-to-day basis at the regional/local level. The RWQCBs regulate actions that would involve “discharging waste, or proposing to discharge waste, within any region that could affect the water of the state” (Water Code Section 13260(a)), pursuant to provisions of the Porter-Cologne Act. Waters of the state (WoS) are defined as “any surface water or groundwater, including saline waters, within the boundaries of the state” (Water Code Section 13050 (e)).

The RWQCB also regulates WoS under Section 401 of the CWA. A Water Quality Certification or a waiver must be obtained from the RWQCB if an action would potentially result in any impacts on jurisdictional WoS. The proposed project must be analyzed to determine if it will result in any impacts on WoS, and any potential impacts would require an application for an RWQCB Water Quality Certification (or waiver), consultation with the RWQCB, and compensatory mitigation.

On June 1, 2011, SDRWQCB issued a General NPDES Permit for Residual Firework Pollutant Waste Discharges to Waters of the United States in the San Diego Region from the Public Display of Fireworks (No. R9-2011-0022) (General Permit) for residual firework pollutant waste discharges to WoUS in the San Diego region from the public display of fireworks. All fireworks displays conducted in San Diego Bay are required to comply with the General Permit.

4.3.3.3 Local

Port Master Plan

Through implementation of the Port Master Plan (PMP), the District maintains authority over tidelands and submerged lands conveyed in trust to the District by the California legislature. Any amendments to the PMP must be adopted by the Board of Port Commissioners and then certified by the California Coastal Commission. Under the certified PMP, the District has the authority to issue coastal development permits for projects within its jurisdiction. The PMP provides for the protection of biological resources and states that the District will remain sensitive to the needs of, and will cooperate with, other communities and other agencies in Bay and tideland development.

San Diego Unified Port District Code, Ordinance 19

Sections 55 and 56 of the San Diego Unified Port District Act require the Board of Port Commissioners to make and enforce necessary rules and regulations governing the use and control of all navigable waters, tidelands, and submerged lands within the District and to make and enforce certain local police and sanitary regulations relating to the District. As such, the adoption of Ordinance 19 established a system for the codification of District ordinances.

Ordinance 19 covers topics such as watercraft speed regulations, aquatic activities, anchoring or mooring in the Bay, regulations in the parks, diving activities, alcohol use, stormwater control, and fishing, among others. Specific to the proposed project, Sections 4.30, 4.35, 4.36, and 4.40 of Ordinance 19 establish restrictions for anchoring and mooring of vessels, such as fireworks barges, in the Bay, including identification of allowable anchoring activities and areas.

Chula Vista Bayfront Master Plan Natural Resources Management Plan

The Chula Vista Bayfront Master Plan Natural Resources Management Plan (NRMP) was prepared by the District and the City of Chula Vista and was adopted in May 2016. It contains goals, objectives, and strategies for promoting and enhancing natural resources within the 535-acre Chula Vista Bayfront area. It serves as an important environmental guidance and implementation document, applicable to all development within the Chula Vista Bayfront area. All projects, both public and private, will be evaluated by the District and City of Chula Vista relative to furthering the goals, objectives, standards, and strategies contained therein. The Chula Vista Bayfront Master Plan NRMP allows a maximum of three fireworks events to occur per year, all outside of California least tern nesting season (March 15 through August 31) except on the Fourth of July, which may be allowed if in full regulatory compliance and if nesting colonies are monitored during the event with any impacts reported to the Wildlife Advisory Committee, so they can be addressed.

San Diego Bay Integrated Natural Resources Management Plan

The District and U.S. Navy jointly implement the INRMP. This long-term strategy document provides direction and planning guidance for good stewardship of the natural resources within San Diego Bay. The INRMP does not carry regulatory authority, but rather includes objectives and policy recommendations to guide planning, management, conservation, restoration, and enhancement of the Bay ecosystem. The core strategies of the plan are to: (1) manage and restore habitats, populations, and ecosystem processes; (2) plan and coordinate projects and activities so that they are compatible with natural resources; (3) improve information sharing, coordination, and dissemination; (4) conduct research and long-term monitoring that supports decision-making; and (5) put in place a Stakeholder's Committee and Focus Subcommittees for collaborative, ecosystem-based problem-solving in pursuit of the goal and objectives.

City of San Diego Multiple Species Conservation Program Subarea Plan

In the City of San Diego, local habitat, species, and biological resources are protected under the City of San Diego Multiple Species Conservation Program (MSCP), which is implemented through the MSCP Subarea Plan (City of San Diego 1997). The City of San Diego MSCP Subarea Plan was developed to meet the requirements of the California Natural Communities Conservation Planning Act of 1992, and as such serves as the City of San Diego's approved local natural community conservation plan. To implement its portion of the MSCP preserve, the City of San Diego developed the Multi-Habitat Planning Area (MHPA), which is considered an urban preserve that delineates core biological resource areas and corridors targeted for conservation. MHPA lands are typically constrained by existing or approved development, and comprise linkages connecting several large areas of habitat. The closest designated MHPA is approximately 1.25 miles south of the proposed barge location for the fireworks display events along the Chula Vista Bayfront, and encompasses the southeastern portion of the South San Diego Bay Unit of the San Diego Bay NWR (USFWS 2006). The proposed project is not located within the City of San Diego MSCP; however, due to the close proximity of the MHPA to the proposed new fireworks display events, the proposed project's potential to result in indirect impacts on habitat within the City of San Diego MSCP is discussed in the impact analysis below.

City of Chula Vista Multiple Species Conservation Program Subarea Plan

The City of Chula Vista MSCP Subarea Plan was developed in February 2003 pursuant to the general outline developed by USFWS and CDFW to meet the requirements of the California Natural Communities Conservation Planning Act of 1992. The Subarea Plan is also consistent with the County of San Diego MSCP Subregional Plan and qualifies as a Subarea Plan document to implement the MSCP Subregional Preserve within the City of Chula Vista. The proposed project is not located within the City of Chula Vista MSCP Subarea Plan; however, due to the close proximity of the MSCP Preserve to the proposed new fireworks display events, the proposed project's potential to result in indirect impacts on habitat within the City of Chula Vista MSCP is discussed in the impact analysis below.

4.3.4 Project Impact Analysis

4.3.4.1 Methodology

The analysis below makes use of existing data sources discussed above for San Diego Bay and the Imperial Beach Oceanfront. In addition, focused field investigations that address the potential impacts of fireworks display events on marine mammals were conducted during the 2015 and 2016 Big Bay Boom (Appendix F). Furthermore, prior observations of the California least tern response to existing fireworks display events in San Diego Bay were used as a reference source for assessment of potential effects of the proposed new fireworks display events on this species. Finally, a literature review was completed with a focus on the effects of fireworks display events on coastal areas outside of the San Diego region, and the effects of pyrotechnics and loud sounds, in general, on marine resources.

Impacts on habitats and wildlife can be measured as direct and/or indirect. Direct impacts are those that have a direct impact on habitats or wildlife and occur contemporaneously with the action. Direct impacts of fireworks display events on wildlife have previously been defined by the fireworks analysis for the Monterey Bay National Marine Sanctuary (NMFS and MBNMS 2002) as immediate physical and physiological impacts such as abrupt changes in behavior, flight response, diving, evading, flushing, cessation of feeding, and physical impairment or mortality of wildlife. For the proposed project, direct impacts on wildlife and habitats can result from sound waves, light, and debris produced by the proposed new fireworks display events. These effects are evident at the time of or shortly after detonation of the fireworks display events. Debris produced by the proposed new fireworks display events also has a potential to result in direct effects on wildlife and habitats by littering and contaminating the surrounding environment. Finally, if chemical residue from detonated fireworks adversely affects water quality and sediment, it may directly affect habitats and wildlife. The direct chemical effects of the proposed new fireworks display events on water quality are analyzed in Section 4.6, *Hydrology and Water Quality*; however, the effects of water quality on habitats and species are analyzed below. The extent and direction of the direct impacts are dependent on the size and type of aerial fireworks shell being used, wind direction, relative humidity, cloud cover, temperature, and topography of the surrounding landscape.

Indirect impacts are effects that are caused by or will result from the proposed project at a later time, but are still reasonably certain to occur. For the proposed project, indirect impacts on habitats and wildlife can result from increased boat traffic, increased foot traffic in or adjacent to sensitive areas and wetlands, and human-generated debris associated with the public viewing fireworks display events.

4.3.4.2 Thresholds of Significance

The following significance criteria are based on Appendix G of the State CEQA Guidelines and provide the basis for determining significance of impacts associated with biological resources resulting from the implementation of the proposed project. The determination of whether a biological resource impact would be significant is based on the professional judgment of the District as Lead Agency supported by the recommendations of qualified personnel at ICF and Merkel and Associates, all of which is based wholly on the substantial evidence in the administrative record.

Impacts are considered significant if the project would result in any of the following:

1. 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 CDFW and USFWS.
2. 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 CDFW, NMFS, or USFWS.
3. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means.
4. 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.
5. Conflict with any applicable local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
6. Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

4.3.4.3 Project Impacts and Mitigation Measures

Threshold 1: Implementation of the proposed project would have a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW and USFWS.

Impact Discussion

The primary direct impacts from fireworks display events on wildlife could include disturbance or alteration of behavior due to sound waves, light, or fireworks-generated debris. If chemical residue from fireworks adversely affects water quality, chemical residues introduced into the water from fireworks may also directly affect wildlife. The primary indirect impacts on wildlife could include disturbance or alteration of behavior due to increased boat traffic or human-generated trash and debris, including encroachment into sensitive nesting areas.

Marine Reptiles

San Diego Bay supports a small number of green sea turtles. A satellite tagging study of green sea turtles in San Diego Bay has been ongoing since 2008. Results indicate that habitat usage has shifted since the closure of the South Bay Power Plant. Turtles tagged and tracked before the closure of the power plant were most commonly found seasonally in the warm waters of the South Bay Power Plant cooling water discharge channel, on the south side of the Chula Vista Wildlife Reserve (Bredvik et al. 2015; Graham and Saunders 2014). In the years following closure of the power plant, tracking results indicate that the turtle activities may have shifted to the northern side of the Chula Vista Wildlife Reserve (the old cooling water intake), as well as more northerly areas in south San Diego Bay. Occasional observations from northern San Diego Bay and in nearshore coastal waters outside of the Bay have also been made as individuals travel north to exit and re-enter the Bay. Despite the change in home range and the increase in observations in the central and northern portions of the Bay, the resident population of green sea turtles remains predominantly in the far southern end of

San Diego Bay. Tracking data from 2016 indicate that the turtles' home range is south San Diego Bay, where they spend 95 percent of their time (District 2016). Therefore, the following discussion focuses on the population of green sea turtles known to occur in San Diego Bay.

Direct Impacts

Proposed New Fireworks Display Events

As described above, the majority of turtles in San Diego Bay occur in the southern end of the Bay. There are no fireworks display events that currently occur in south San Diego Bay. The proposed new fireworks display events would include up to three fireworks display events along the Chula Vista Bayfront, as allowed by the Chula Vista Bayfront Master Plan Settlement Agreement and Natural Resources Management Plan, and one Fourth of July fireworks display event along the National City Bayfront. Direct impacts on green sea turtles from the proposed new fireworks display events could include disturbance or alteration of behavior due to sound waves, light, or debris. Also, the introduction of fireworks-generated trash and debris could cause injury to turtles because the green sea turtles may mistakenly consume the waste, which could cause suffocation, starvation, or debilitation.

Merkel & Associates, Inc. (Appendix F) found no peer-reviewed literature that evaluates the direct response of marine reptiles to commercial fireworks display events. However, Zhang (2002) found that sound pressures in the range produced by fireworks generally decouple at the air-water interface. This suggests that increased noise from fireworks display events would minimally affect turtles in the water as the sound dissipates through water. Additionally, increased light levels would only be apparent to turtles surfacing to breathe at the time of the fireworks detonation. Based on the small number of proposed new fireworks display events in the southern portion of the Bay where green sea turtles are known to congregate, a decoupling of aerial detonation sound and light, limited number of turtles, and the limited time turtles spend above the surface of the water, direct impacts on green sea turtles due to sound waves and light would be less than significant.

Fireworks-generated trash and debris could cause injury to green sea turtles because the turtles may mistakenly consume the waste, which could cause suffocation, starvation, or debilitation. This is a potentially significant impact (**Impact-BIO-1**). Mitigation measure **MM-BIO-1** requires implementation of the biological resources-related conditions of the proposed ordinance for direct impacts associated with fireworks-generated trash and debris. These conditions of approval require the fireworks operator to remove and properly dispose of all packaging, a reduction in the amount of non-biodegradable fireworks components that can be used, implementation of best management practices, and compliance with SDRWQCB's General Permit, including post-fireworks display event cleanup of debris and solid waste. **MM-BIO-1** also requires the fireworks organizer, with the assistance of the fireworks operator, to prepare and implement a comprehensive Fireworks Best Management Practices Plan pursuant to SDRWQCB's General Permit. Implementation of **MM-BIO-1** would ensure that fireworks-generated trash and debris are collected and disposed of and that the use of non-biodegradable fireworks components is limited, which would reduce this potential direct impact on green sea turtles to a less-than-significant level.

Other potential direct impacts on marine reptiles may occur if chemical residues that might fall into surface waters adversely affect water quality during and after the fireworks display events. These chemicals and metals, when present in large enough concentrations, have potential to accumulate in sediments, leach into groundwater, and negatively affect the health of humans and other organisms (Appendix F). However, results of water quality testing following the Big Bay Boom, as well as the

more extensive and long-term SeaWorld fireworks display events, have shown no or limited temporal or spatial relationships in chemical levels, with the majority of constituents tested occurring at concentrations below detectable levels. Perchlorate is the only chemical of concern that has consistently been measured in post-fireworks display event water quality testing. Perchlorate, used as an oxidizer in propellants for fireworks, is recognized as an environmental contaminant that can harm fish and humans. Concentrations of perchlorate found in post-fireworks water quality samples for the Big Bay Boom and SeaWorld fireworks display events have been substantially less than 10 microgram per liter ($\mu\text{g/L}$) (i.e., less than 0.01 milligram per liter [mg/L]) and were generally in the 1–2 $\mu\text{g/L}$ range, which is several orders of magnitude below the 10- to 100- mg/L range found to cause toxicity in fish and aquatic organisms in laboratory studies (Appendix F). Further toxicity testing and benthic community studies completed following SeaWorld fireworks display events indicate that the SeaWorld fireworks fallout zone is not degraded in comparison with adjacent reference sites (Appendix F). For these reasons, potential direct impacts on marine reptiles associated with reduced water quality from the proposed new displays would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance contains several conditions of approval that would reduce potential impacts on the biological resources of San Diego Bay and the Imperial Beach Oceanfront. The proposed ordinance requires implementation of post-display cleanup practices consistent with the requirements of SDRWQCB's General Permit, removal of fireworks packaging, implementation of best management practices, and a reduction in the amount of non-biodegradable fireworks components that can be used. The proposed ordinance also includes a condition of approval that would require the fireworks organizer, with the assistance of the fireworks operator, to prepare and implement a comprehensive Fireworks Best Management Practices Plan for each fireworks display event consistent with the requirements of SDRWQCB's General Permit. These conditions would require additional clean-up of fireworks-generated trash and debris from existing fireworks display events and that the use of non-biodegradable fireworks components is limited, thereby ensuring that green sea turtles are not injured by mistakenly consuming waste. The proposed ordinance would not result in any other changes to the existing fireworks display events that would adversely affect green sea turtles. Therefore, the effects of the proposed ordinance on existing fireworks display events would not have a substantial adverse direct effect on marine reptiles. No significant adverse impacts would occur.

Indirect Impacts

Proposed New Fireworks Display Events

Marine reptiles in south San Diego Bay may also be indirectly affected by increased boat traffic and human-generated trash entering the marine environment associated with the proposed new fireworks display events. Although the speed limit for vessels south of the Sweetwater Channel is 5 miles per hour, the potential increase in boat traffic, particularly nighttime and out-of-channel traffic, would increase the potential for propeller strikes, which may cause injury to or death of green sea turtles. Increased boating activities could cause the animals to temporarily depart the project area before, during, and after the time of the fireworks display events to avoid higher vessel

traffic. The increase in activity may also affect the turtles' foraging habits in that individuals may spend more time underwater, swim at greater speeds, and alter other life history traits leading to greater energy expenditure. The introduction of human-generated trash could also cause injury to turtles because the turtles may mistakenly consume the waste, which could cause suffocation, starvation, or debilitation. These potential indirect impacts on marine reptiles may be significant (**Impact-BIO-2**). During fireworks display events, the Harbor Police Department currently assigns units to major patrol areas and deploys additional units on tidelands including bicycle and vessel units (Brick pers. comm.). The landside patrols provide law enforcement within the landside viewing areas, while the special patrol vessels provide law enforcement on the water. Consistent with its current operational practices, the Harbor Police Department would continue to deploy special patrol vessels and conduct in-water law enforcement during fireworks display events. These existing procedures ensure that boating laws are properly enforced in the Bay. In addition, the proposed ordinance contains several conditions of approval to reduce potential impacts on the biological resources of San Diego Bay. Implementation of **MM-BIO-2** requires implementation of the biological resources-related conditions of the proposed ordinance for indirect impacts, which include the implementation of cleanup, security, signage and education measures. Implementation of **MM-BIO-2** would ensure that significant indirect impacts on green sea turtles from increased boat traffic and human-generated trash and debris would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance contains several conditions of approval to reduce potential impacts on the biological resources of San Diego Bay and the Imperial Beach Oceanfront, including the implementation of cleanup, security, and education measures. Compliance with the proposed ordinance would improve the existing condition by ensuring that boat traffic and human-generated trash during existing fireworks display events would not have any indirect effects on marine reptiles. Therefore, the effects of the proposed ordinance on existing fireworks display events would not have a substantial adverse indirect effect on marine reptiles. No significant adverse impacts would occur.

Birds

Several studies have observed the behavioral changes of sensitive avian species during fireworks display events. A literature review of these existing studies and research was conducted, with the results summarized below. Four avian species that are federally or state-listed as endangered or threatened by USFWS and/or CDFW have a high potential to occur within and adjacent to San Diego Bay. These include California least tern, western snowy plover, light-footed Ridgway's rail, and Belding's Savannah sparrow. The nesting sites of these four species are within audible and visual range of the proposed new fireworks display events and have the potential to be affected. Nesting areas for listed species are illustrated in Figure 4.3-2. Other avian species that are potentially affected include California brown pelican and double-crested cormorant, as these species nest and/or roost in the Bay. Several additional species of terns and black skimmer nest at sites that also support California least tern. As such, these species may be similarly affected by the proposed new fireworks display events.

A review of relevant literature shows that several studies have observed the behavioral changes of sensitive avian species during existing fireworks display events. The impact analysis below relies on

the results of the existing studies to draw conclusions of the potential effects on avian species from the proposed new fireworks display events along the National City and Chula Vista Bayfronts.

Direct Impacts

Proposed New Fireworks Display Events

Direct impacts on sensitive avian species within the project area could include disturbance or alteration of behavior due to sound and light from fireworks display events. The flash and noise from the proposed new fireworks display events are expected to generate a physiologic response of stress within birds. This response would be particularly notable in birds that are night roosting (e.g., California least terns, and to a lesser extent western snowy plovers), as the normal physiological state of birds at rest is low anxiety. For nest-tending or roosting birds, especially at night, stress and alarm levels could be heightened by unanticipated noise and light displays. This stress can result in increased vocalizations, shifting on nests, and movement off nests, including running or flight, and larger-scale colony alarm. Additionally, the introduction of fireworks-generated trash and debris could cause injury to sensitive avian species because the birds may mistakenly consume the waste, which could cause suffocation, starvation, or debilitation. Sensitive bird species within San Diego Bay and along the Silver Strand could be affected by the proposed new fireworks display events in the Bay along the National City Bayfront and Chula Vista Bayfront.

Due to only a small quantity of published research on the effects of fireworks display events directly relating to California least tern and other sensitive avian species present within the Bay, the literature review was expanded to include potential effects of fireworks display events on marine bird and shorebird species in general.

Within San Diego Bay, an unpublished report produced by the San Diego Zoo's Institute for Conservation Research studied the California least tern population at NAB Coronado both before (July 3, 2014) and during the Fireworks Show Over Glorietta Bay on July 4, 2014 (Boylan and Nordstrom 2014). The study looked at sections of two colonies (one closest to and one farthest from the fireworks display event) on July 3 and 4, 2014. The colony at Delta Beach North was located approximately 1 mile from the detonation site, and the colony at the southern portion of the NAB Coronado was located approximately 3 miles from the detonation site. An analysis of flying and calling behavior and routine monitoring data did not identify any adverse effects on the terns from the Fireworks Show Over Glorietta Bay. The study did find, however, that the indirect effects of the Fourth of July activities, such as vehicular activities, foot traffic, and illegal fireworks on the nearby Silver Strand State Beach, caused the majority of the disturbance.

A similar result was reported by Robert Patton, a consulting biologist with the San Diego Zoological Society, as a result of monitoring commissioned in 2009 by the District and San Diego Regional Airport Authority over several recent large-scale fireworks display events, such as the Big Bay Boom. The monitoring was started due to concerns raised by USFWS and CDFW. Informal emails from Mr. Patton (dated 2009 through 2011) detail a notable response to disturbances from fireworks display event noise and light by a habituated California least tern colony at San Diego International Airport. Mr. Patton noted over several years of monitoring that, during the Big Bay Boom fireworks display, roosting terns shifted to higher activity levels in response to the fireworks display events. Some terns initiated running or flying in response to fireworks display events, while birds also increased alarm call vocalizations. However, during each monitoring year, the majority of the flock (≥ 75 percent of total birds) remained in place for the duration of the fireworks display event and the remainder returned and settled within 30 to 60 minutes of completion of the display.

Mr. Patton indicated that fireworks display events could pose a threat, particularly for disturbed chicks and fledglings that could run into roadways or traffic. However, Mr. Patton specified that there is “no observed clear evidence of lasting negative effects [of fireworks display events].” Finally, Mr. Patton indicated that the habituation of the San Diego International Airport least tern colony to loud noises from aircraft make applicability of monitoring results across colonies difficult, and that “colonies elsewhere with less habituation to noises would be expected to react more than those at the airport.” Neither study completed in San Diego Bay detected a direct link of fireworks display events to mortality of adults or chicks or to a decrease in productivity of nesting pairs.

Additional studies have been conducted outside San Diego Bay. A document produced by USFWS titled *Guidelines for Managing Fireworks in the Vicinity of Piping Plovers at Sea Beach Amaranth on the U.S. Atlantic Coast* (1997) states that there have been several situations where fireworks discharged on the beach close to the nesting least terns (*Sterna antillarum*) caused the birds to abandon nests. An August 1993 fireworks display event in New Jersey caused permanent abandonment of a least tern colony approximately 0.15 mile away, and a 1994 New Jersey fireworks display event caused temporary abandonment and displays of distress by terns within a colony approximately 0.75 mile away. These studies, while cited by USFWS, are unpublished and information regarding the size and duration of the fireworks displays and the proximity of displays to nesting colonies is not available. As a result, correlations cannot be drawn between New Jersey and San Diego Bay fireworks display events.

Another study by the Bureau of Land Management, CDFW, USFWS, and NMFS (Weigand and McChesney 2008) focused on populations of breeding seabirds on Gualala Point Island, Sonoma County, California. The study focused on Brandt’s cormorant (*Phalacrocorax penicillatus*) and examined potential responses and effects on reproductive success from a July 6 fireworks display event. Observations documented a visible response by nesting seabirds on Gualala Point Island, located approximately 1.1 miles from the fireworks detonation site. Surveys during the fireworks display event showed that Brandt’s cormorants quickly changed from resting to erect postures at the first fireworks, followed by birds moving about or departing from the island. Western gulls in the study area also flushed, circled, and called during the fireworks display event. During the study period, 90 Brandt’s cormorant nests were documented on Gualala Point Island. Of these, seven nests (35 percent of nest failures) were abandoned in the 2 days between July 5 and July 7, and another seven nests were abandoned between July 7 and July 12. These losses contrasted with the abandonment of only six nests (30 percent of nest failures) for the 30-day period from June 5 to July 5. Two of the nine nests monitored from the adjacent mainland were abandoned between July 6 and July 8. The high rate of Brandt’s cormorant nest abandonment between July 5 and July 7, and possibly nest abandonment from July 7 to July 12, were reported to likely be the result of fireworks disturbance. However, the Gualala seabirds that were studied roost and nest in an offshore island that does not receive the same level of ongoing human disturbance as the San Diego Bay and Silver Strand populations of sensitive avian species.

Finally, a study by Shamoun-Baranes et al. (2011) in the Netherlands used weather radar to study the flight response of birds during New Year’s Eve fireworks display events. The study observed hot spots of activity over lakes, wetlands, and river floodplains. Flight altitudes increased rapidly during the first 15 to 20 minutes after the beginning of the fireworks display event (at midnight), and then slowly decreased, with the main disturbance period lasting about 45 minutes. The study did not identify the size and duration of fireworks displays, and did not quantify the distances of nature reserves and lakes (where waterfowl concentrate) from fireworks displays. Rather, the study focused on a broad area near DeBilt, Netherlands, which is adjacent to multiple Natura 2000

designated lakes and wetlands. The study also noted that fireworks are available for consumer purchase in the Netherlands around New Year's Eve, and may be legally lit for a small period of time between December 31 and January 1 each year, with the largest concentration lit at midnight on New Year's Eve. Therefore, it can be assumed that the fireworks included both large public displays as well as abundant small-scale personal displays deployed over a small time period. The study did not expect fireworks display events to be directly lethal to birds; however, confounding factors, such as disorientation or flying in inclement weather, could potentially result in harm.

Monitoring studies completed at California least tern nesting colonies in San Diego Bay note some limited response of California least terns to noise and light from existing fireworks display events; however, these studies indicate that the majority of birds in the colonies remain in place or return shortly after the fireworks display events. No incidence of death or injury of birds has been reported during any of the monitoring studies completed. The evidence presented from studies within the Bay, the urbanized setting of nesting colonies and roosting locations within the Bay, and the distance of these sites from the existing fireworks display events indicate that sensitive and non-sensitive avian species experience a moderate level of temporary disturbance from noise and light associated with fireworks display events.

Based on results from these multiple studies and surveys, it is apparent that seabirds and shorebirds show some direct physiological stress response, such as increased vocalizations, change in body position, running, and flushing, to the loud noises and increased light associated with fireworks display events. The studies indicated that the response is likely greater for birds that are not habituated to human noise and disturbance. As such, it can be assumed that the close proximity of nesting and roosting sensitive birds to urban locations in San Diego Bay and along the Silver Strand (that include a commercial airport and multiple naval facilities) likely habituates them to higher levels of noise and light patterns. None of the studies indicated direct mortality of birds or a decrease in productivity associated with fireworks display events, and no study indicated long-term changes in behavior (e.g., colony abandonment) related to fireworks display events.

The San Diego Bay and/or Silver Strand nesting and roosting locations for sensitive avian species, including California least tern, western snowy plover, California brown pelican, double-crested cormorant, Caspian and elegant terns, and black skimmers in San Diego Bay and along the Silver Strand adjacent to the Imperial Beach Oceanfront, are in moderately to highly urbanized settings. The proposed new fireworks display events along the National City and Chula Vista Bayfronts would occur approximately 1 mile from California least tern and western snowy plover nesting colonies. Additionally, the proposed new fireworks display events would occur approximately 1.5 miles from other nesting sites in south San Diego Bay at the South Bay Salt Works (which support double-crested cormorant and multiple other tern species) and adjacent coastal salt marshes (which support Belding's Savannah sparrow and light-footed Ridgway's rail, as well as multiple sensitive raptor species). The proposed new Fourth of July fireworks display events would occur during the avian breeding season, while the smaller two proposed new non-Fourth of July fireworks display events would occur during periods when these avian species are not nesting and the California least terns are not present in the region (mid-September through March).

The ESA defines the term *harm* to include "any act which actually kills or injures fish or wildlife," and emphasizes that "such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife." *Harassment* is defined as "an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not

limited to, breeding, feeding, or sheltering” (50 CFR 17.3). Under these definitions, it does not appear that the levels of disturbance or stress generated from the fireworks display events translate to a level of harm or harassment for avian species. There is no evidence from the studies completed to date that fireworks displays harm or harass sensitive avian species (e.g., they are unlikely to result in direct mortality of birds, a decrease in productivity, or long-term changes in behavior such as colony abandonment), and, therefore, it does not appear that the proposed new fireworks display events along the National City and Chula Vista Bayfronts would result in take of federally listed avian species as defined in the ESA.

While it does not appear that fireworks display events result in harm or harassment to sensitive avian species as defined under the ESA, the results from studies and surveys do indicate these species experience temporary disturbance from fireworks. Disturbance exists when a stimulus induces physiologic stress or behavioral response in an organism. In particular, disturbance may affect nesting or roosting birds in response to both noise and light stressors. As described in Section 4.3.4.2, *Thresholds of Significance*, biological resources impacts would be considered significant if the proposed project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species, including sensitive avian species. Based on the information presented above, the proposed new fireworks display events may result in short-term and infrequent changes in behavior in sensitive avian species as a result of disturbance from fireworks. However, the proposed new fireworks display events are not anticipated to result in any long-term or permanent substantial adverse effects on avian species because temporary disturbance from noise and light would be short term and infrequent and would not result in direct mortality of birds, a decrease in productivity, or long-term changes in behavior (e.g., colony abandonment). As such, any temporary disturbance would not be considered a substantial adverse effect on a sensitive species. Therefore, impacts would be less than significant.

In addition, the proposed ordinance includes a noise and light reduction requirements for fireworks display events that would occur during the breeding season, which would further reduce the temporary disturbance experienced by avian species. Furthermore, in accordance with the Chula Vista Bayfront Settlement Agreement and Natural Resources Management Plan (May 2016), Fourth of July fireworks display events that would occur within the Chula Vista Bayfront area during the least tern nesting season are required to monitor the nesting colonies and be in full regulatory compliance with all applicable water quality and species protection regulations. This further supports the conclusion above that, with the implementation of the specific noise and light reduction requirements included in the proposed ordinance, temporary disturbances to avian species would be less than significant.

Additionally, the introduction of fireworks-generated trash and debris is also considered a potential direct impact of fireworks display events. Direct impacts on avian species from fireworks-generated trash and debris that enter the water may be significant because the birds may mistakenly consume the waste, which could cause suffocation, starvation, or debilitation (**Impact-BIO-3**). Mitigation measure **MM-BIO-1** requires implementation of the biological resources-related conditions of the proposed ordinance for direct impacts associated with fireworks-generated trash and debris. These conditions of approval require the fireworks operator to remove and properly dispose of all packaging, a reduction in the amount of non-biodegradable fireworks components that can be used, implementation of best management practices, and compliance with SDRWQCB’s General Permit, including post-fireworks display event cleanup of debris and solid waste. **MM-BIO-1** also requires the fireworks organizer, with the assistance of the fireworks operator, to prepare and implement a

comprehensive Fireworks Best Management Practices Plan pursuant to SDRWQCB's General Permit. Implementation of **MM-BIO-1** would ensure that fireworks-generated trash and debris are collected and disposed of and that the use of non-biodegradable fireworks components is limited, which would reduce this potential direct impact on avian species to a less-than-significant level.

Other potential direct impacts on birds may occur if chemical residues that might fall into surface waters adversely affect water quality during and after the fireworks display events. These chemicals and metals, when present in large enough concentrations, have potential to accumulate in sediments, leach into groundwater, and negatively affect the health of humans and other organisms (Appendix F). However, results of water quality testing following the Big Bay Boom, as well as the more extensive and long-term SeaWorld fireworks display events, have shown no or limited temporal or spatial relationships in chemical levels, with the majority of constituents tested occurring at concentrations below detectable levels. Concentrations of perchlorate found in post-fireworks water quality samples for the Big Bay Boom and SeaWorld fireworks display events have been substantially less than 10 µg/L (i.e., less than 0.01 mg/L) and were generally in the 1-2 µg/L range, which is several orders of magnitude below the 10- to 100-mg/L range found to cause toxicity in fish and aquatic organisms in laboratory studies (Appendix F). Further toxicity testing and benthic community studies completed following SeaWorld fireworks displays indicate that the SeaWorld fireworks fallout zone is not degraded in comparison with adjacent reference sites (Appendix F). For these reasons, as well as the fact that birds spend less time in the water as compared to fish and other aquatic organisms, potential direct impacts on birds associated with reduced water quality from the proposed new displays would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance contains several conditions of approval to reduce potential impacts on the biological resources of San Diego Bay and the Imperial Beach Oceanfront. The proposed ordinance requires implementation of post-display cleanup practices consistent with the requirements of SDRWQCB's General Permit, removal of fireworks packaging, implementation of best management practices, and a reduction in the amount of non-biodegradable fireworks components that can be used. The proposed ordinance also includes a condition of approval that would require the fireworks organizer, with the assistance of the fireworks operator, to prepare and implement a comprehensive Fireworks Best Management Practices Plan for each fireworks display event consistent with the requirements of SDRWQCB's General Permit. These conditions would require additional cleanup of fireworks-generated trash and debris from existing fireworks display events and that the use of non-biodegradable fireworks components is limited, thereby ensuring that avian species are not injured by mistakenly consuming waste. Additionally, the proposed ordinance includes a number of noise and light reduction requirements for fireworks display events, including existing displays that would occur during the breeding season. Compliance with the proposed ordinance would improve the existing condition by minimizing the disturbance experienced by avian species during existing fireworks display events and ensuring that noise and light from existing displays would not have any substantial adverse direct effects on avian species within San Diego Bay and the Imperial Beach Oceanfront. Therefore, the effects of the proposed ordinance on existing fireworks display events would not result in a direct significant adverse impact on avian species. No significant adverse impacts would occur.

Indirect Impacts

Proposed New Fireworks Display Events

Indirect impacts on sensitive avian species can include disturbance associated with increased boat and foot traffic in the vicinity of nesting and roosting locations, as well as human-generated trash. Fireworks spectators may trespass onto closed avian nest sites or roosting areas in order to obtain private viewing locations. This presently occurs at a low level during intensive Bay use periods such as summer holidays and weekends. However, under typical evenings, the trespass onto colony nesting sites by the public is low, particularly at night. During the proposed new fireworks display events, however, the likelihood of trespass would increase.

The study on NAB Coronado (Boylan and Nordstrom 2014) suggests that increased boat and foot traffic, trespass, and human-generated trash and debris during fireworks display events were possibly a greater threat to sensitive avian species than those associated with temporary noise and light disturbances from the fireworks themselves. Boylan and Nordstrom noted that illegal fireworks ignited immediately adjacent to nesting colonies, as well as increased foot traffic on sand dunes and beaches, caused the majority of disturbance to nesting California least tern during and immediately after fireworks display events. Additional indirect impacts could include increased trash associated with human use and noise associated with boating activity adjacent to nesting sites. The introduction of human-generated trash could also cause injury to sensitive birds because the birds may mistakenly consume the waste, which could cause suffocation, starvation, or debilitation. While many nesting sites for California least tern and western snowy plover in and around San Diego Bay are behind fences or in secured areas, others are not, and even fenced sites are accessible by water. Therefore, indirect impacts related to increased boat traffic, foot traffic, and human-generated trash and debris in the vicinity of nesting and roosting areas may be significant (**Impact-BIO-4**). During fireworks display events, the Harbor Police Department currently assigns units to major patrol areas and deploys additional units on tidelands including bicycle and vessel units (Brick pers. comm.). The landside patrols provide law enforcement within the landside viewing areas, while the special patrol vessels provide law enforcement on the water. Consistent with its current operational practices, the Harbor Police Department would continue to deploy special patrol vessels and conduct in-water law enforcement during fireworks display events. These existing procedures ensure that boating laws are properly enforced in the Bay. In addition, the proposed ordinance contains several requirements that would reduce potential impacts on the biological resources of San Diego Bay. Implementation of **MM-BIO-2** requires implementation of the biological resources-related conditions of the proposed ordinance for indirect impacts, which include the implementation of cleanup, security, signage, and education measures. Implementation of **MM-BIO-2** would reduce potentially significant indirect impacts on avian species from human trespass, increased boat traffic, and human-generated trash and debris to less-than-significant levels.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance contains several conditions of approval to reduce potential impacts on the biological resources of San Diego Bay and the Imperial Beach Oceanfront, including the implementation of cleanup, security, signage, and education measures. Compliance with the proposed ordinance would improve the existing condition by reducing the indirect effects of trespass, increased boat traffic, and

human-generated trash on avian species during existing fireworks display events. Therefore, the effects of the proposed ordinance on existing fireworks display events would not result in any indirect significant adverse impacts on avian species. No significant adverse impacts would occur.

Marine Mammals

As with avian species, several studies have been completed to observe the potential for behavioral changes of marine mammals during fireworks display events. The impact analysis below relies on the results of the literature review of existing studies and surveys to draw conclusions regarding the potential effects on marine mammals from the proposed new fireworks display events along the National City and Chula Vista Bayfronts.

Direct Impacts

Proposed New Fireworks Display Events

Pacific harbor seals and California sea lions are very likely to occur within San Diego Bay. Neither species breeds within San Diego Bay, but both spend time foraging and loafing in the waters of the Bay. They are most common in the northern portion of the Bay, substantially decreasing in occurrence in the south Bay region where large schools of pelagic fish and opportunistic foraging and haul-out locations are reduced. California sea lions are rarely observed in the south Bay region. Similarly, while harbor seals occasionally haul out and loaf on intertidal rip rap, they prefer to haul out on protected sandy and rocky beaches, and no large haul-out areas for this species occur in San Diego Bay. This species is rarely observed in the south Bay region. Furthermore, several species of cetaceans, such as whales and dolphins, have low potential to occur in northern San Diego Bay, but have little likelihood of occurring in the south Bay in the vicinity of the proposed new fireworks display events along the National City and Chula Vista Bayfronts.

There are a number of reports that detail the responses of Californian sea lions and harbor seals to fireworks display events, and some peer-reviewed literature that describes the effects of non-pyrotechnic sources of sound and light on marine mammals. In order to provide a comprehensive review of this issue, a literature search was expanded to include non-pyrotechnic noise and light sources.

An observational study was performed before, during, and after the Big Bay Boom fireworks display event on July 4, 2015, to evaluate the behavior of hauled-out sea lions in response to the fireworks display event. The investigation was performed at the San Diego Bay Bait Barge in north San Diego Bay offshore of the Point Loma Naval installation, approximately 1.6 miles from the closest fireworks barge. Results indicated that sea lions experienced a moderate level of disturbance in response to the noise and light of the Big Bay Boom. This disturbance was indicated by increased vocalizations, head lifting, shifting position, and, in some cases, departing from the bait barge to adjacent waters. However, the study noted that this response was less than or commensurate to the response of the sea lions to ordinary boat traffic and people walking on the bait barge, and much less than intraspecific harassment of subordinate animals by large bull sea lions. A large percentage of vocalizations was due to aggressive bull sea lions challenging each other noisily, and several animals were observed diving into the water in response to challenges from large bulls. Disturbance associated with the 2015 Big Bay Boom was most noticeable following the initial detonations of fireworks; however, sea lions remaining on the bait barge settled into resting position for the duration of the fireworks display event. While focused studies have not been completed at other sites within the Bay, it is likely that fireworks display events that are generally shorter in duration

and/or are farther from marine mammal haul-out areas result in a smaller and less apparent disturbance response in marine mammals.

On July 4, 2016, another observational marine mammal monitoring study was conducted before, during, and after the existing Big Bay Boom fireworks display event. Similar to the 2015 Big Bay Boom observational study, the California sea lion response to the 2016 existing Big Bay Boom event was monitored. The 2016 monitoring also occurred at the San Diego Bay Bait Barge in north San Diego Bay. During the 2016 monitoring, California sea lions were constantly alerted by the public from boats approaching close to and stopping by the resting California sea lions, people in boats yelling at the sea lions, and aircraft flying in the vicinity. In the minute prior to the beginning of the survey, a fishing vessel docked at the northern end of the eastern bait barge to watch the Big Bay Boom fireworks. As they tied up to the dock, they yelled, raised their arms, and lunged at the 17 California sea lions that were hauled out and resting. This caused all 17 of the California sea lions to alert and flush into the water. No California sea lions returned to this location during the study. Disturbances to California sea lions from the Big Bay Boom fireworks caused all California sea lions within the study area to immediately alert and flush into the water. California sea lions did not return to the study area for the remainder of the observation period (40 minutes after the fireworks). It was also noted that all the California sea lions flushed from the west barge (outside of the study), as well. In contrast to the east bait barge, a small number of California sea lions (seven) returned to the northern end of that bait receiver approximately 10 minutes after the fireworks display ended. In contrast to the 2016 Big Bay Boom, the 2015 study for the Big Bay Boom fireworks display reported the majority of California sea lions remaining on the bait barge (Merkel & Associates 2015). Additionally, the 2015 study used vocalizations as an indicator for disturbance to California sea lions. This indicator was not used in the 2016 study because prior to the fireworks display the two study groups of California sea lions were sleeping or resting with only a few vocalizations recorded from only two adult males when shifting their resting position. The inconsistent response of California sea lions to the existing Big Bay Boom fireworks display at the bait barge from 2015 and 2016 indicates a variability in tolerance levels of disturbance from fireworks by California sea lions. Despite continuous disturbances to California sea lions at the bait barges—including natural, public, daily bait barge operations, and annual fireworks display events—California sea lions continue to return to and haul out in large numbers at the bait barges, including since the inception of the Big Bay Boom fireworks display in 2001.

It should be noted that the marine mammal observational studies at the San Diego Bay Bait Barge focused on animals in a very urban setting. The San Diego Bay Bait Barge is in an area of the Bay that receives a high level of boating and human activity. Recreational boats of all sizes regularly tie up at the bait barge and people walk along the bait barge to purchase bait and to fish. As such, the sea lion population at the bait barge is accustomed to human presence and noises from boat engines and people. While the recent studies did not involve long-term monitoring of the sea lion haul-out at the bait barge, they do provide a good insight into the response of the local population of sea lions to fireworks display events. Other smaller haul-out areas occur on channel marker buoys and Zuniga Jetty, with a few small intermittent haul-outs also being within marina environments. No established haul-out areas are located in south San Diego Bay, and sea lions have a very low likelihood of occurrence in the vicinity of the proposed Chula Vista and National City Bayfront fireworks displays.

Results from the San Diego Bay studies are comparable to those of other studies including ongoing work in the Monterey Bay National Marine Sanctuary (MBNMS). In Monterey, the fireworks are detonated from a barge approximately 0.5 mile from the breakwater, where birds and marine mammals regularly haul out and/or rest. The barge in Monterey Bay is nearly 1 mile closer to

marine mammals than the bait barge observed in San Diego Bay during the Big Bay Boom event. Studies completed within the MBNMS (NMFS and MBNMS 2002) and the subsequent Environmental Assessment and proposed federal ruling (NMFS and MBNMS 2006; NMFS 2012) indicate that disturbance resulting from fireworks display events would be, at most, short-term flushing and evacuation of non-breeding haul-out sites by California sea lions and harbor seals in Monterey Bay. In the nearly two decades of observing sea lions at the City of Monterey's Fourth of July celebration, the following general observations were made: (1) sea lions become quiet and watchful as soon as fireworks commence; (2) juveniles begin leaving the breakwater as soon as the fireworks begin; (3) large bulls and the remaining adults depart to the water after an aerial salute or quick succession of loud effects; (4) individuals usually begin to return to the breakwater haul-out within a few hours of the end of the fireworks display event; and (5) sea lions are present on the breakwater at pre-fireworks display event numbers by the following morning (NMFS 2012). None of the studies within the MBNMS that directly observed California sea lions and/or harbor seals during fireworks display events found substantial long-term effects on these marine mammals. Studies at Vandenberg Air Force Base similarly indicate that the percentage of seals leaving the haul-out increases with noise levels up to approximately 100 A-weighted decibels (dBA), after which almost all seals enter the water; however, during many launches, marine mammals are not disturbed (U.S. Air Force 2013). Noise in the Vandenberg Air Force Base studies was generated from missile launches and not fireworks.

Studies completed in other marine areas have been inconclusive. Weigand and McChesney (2008) studied the effects of fireworks display events on harbor seals on Gualala Island, Sonoma County, California. The study did not find conclusive evidence of the effects of fireworks display events on the seals. Low-tide census counts were completed once per day during a 12-day study period. The study found that, in general, counts declined through the study period, with the lowest count found on the day of the fireworks display event. Furthermore, just before the Gualala fireworks display event began and while the island was still visible, observers did not locate any harbor seals from either vantage point on Gualala Point Island. Therefore, a link between a decline in numbers over the study period and the fireworks display event was not determined.

Recently, NMFS ruled on a request for an incidental harassment authorization from the St. George Reef Lighthouse Preservation Society (NMFS 2015). The Society proposes to conduct aircraft operations, lighthouse renovation, and light maintenance activities on the St. George Reef Light Station on Northwest Seal Rock off the coast of Northern California in the Pacific Ocean. The station currently supports populations of marine mammals including California sea lion and Pacific harbor seal, among other species. NMFS ruled that small evidence of disturbance to marine mammals, including alertness, head turning, or movement of less than 1 meter, in response to noise and activity was not considered to be harassment. Rather, NMFS ruled that only pinnipeds that move greater than 1 meter (3.3 feet) or change the speed or direction of their movement in response to the presence of humans or human-related noise and activity are considered behaviorally harassed.

In addition to direct behavioral disturbance, there has been concern that loud noises (such as from explosive detonations) could affect the physiology (e.g., hearing) of marine mammals (Weilgart 2007, 2011). A study published by Koper and Plön (2012) suggested high-intensity underwater sound can affect marine mammals by causing stress, perceptual interference, behavioral changes, and chronic responses, and indirect effects on predator species as a consequence of a change in prey distribution or abundance due to direct effects of sound on the prey. However, unlike underwater detonations or pile driving, fireworks display events are aerial. Zhang (2002) modeled the transmission of sound from air to water and found that sound pressures in the range produced by

fireworks display events generally decouple at the air-water interface. Studies completed at Vandenberg Air Force Base indicated no physiological response on the hearing of harbor seals following rocket launches with A-weighted Sound Exposure Levels between 96 and 104 dBA (NMFS 2002). Based on an analysis of existing data, NMFS adopted a conservative estimate of an A-weighted airborne sound intensity level of 128 dBA to elicit physiological damage to marine mammals within the MBNMS. Studies in the MBNMS and the recent studies in San Diego Bay associated with the 2015 Big Bay Boom indicate that the sound level of fireworks display events at haul-outs were in the range between 70 and 85 dBA (Merkel & Associates, Inc. 2015; NMFS 2012). Additional noise monitoring near haul outs in San Diego Bay during the 2016 Big Bay Boom fireworks display indicated 1-minute average (Leq) sound levels ranging from 57 to 76 dBA and maximum (Lmax) levels ranging from 62 to 89 dBA (ICF and MTS 2016). These data suggest that, for the current duration and configuration of the Big Bay Boom, the sounds generated by fireworks display events were not great enough to damage hearing of marine mammals at the habitual haul-out locations in the northern portion of the Bay. Notably, the peak sound levels at the San Diego Bait Barge during the course of monitoring were not generated by the 2015 fireworks display event, but by intraspecific aggression by vocalizing bull sea lions (Merkel & Associates, Inc. 2015). This indicates that noise generated by larger fireworks display events such as the Big Bay Boom does not likely result in long-term or permanent effects on cetaceans or pinnipeds in the water. It is reasonable to extrapolate downward and conclude that smaller scale fireworks display vents would have a lesser effect.

Results from the recent marine mammal study completed in San Diego Bay, along with the body of literature pertaining to the effects of fireworks display events and other loud noises on marine mammals, indicate that marine mammals experience a moderate level of temporary disturbance from noise and light associated with fireworks display events close to marine mammal haul-out areas. Based on the information above, fireworks display events do not appear to result in any long-term or permanent substantial adverse effects on marine mammals because temporary disturbance from noise and light is short term and infrequent and does not result in direct mortality, permanent behavioral changes, or physiological effects. However, as discussed above, this level of disturbance results in temporary disruption of behavioral patterns; nonetheless, in most instances, this disturbance is not considered harassment according to the recent NMFS ruling (NMFS 2015). The level of disturbance is likely to be lower for fireworks display events that are shorter in duration and/or located farther from known marine mammal haul-out areas. There is no evidence that long-term harm comes to disturbed sea lions or seals from such fireworks display events.

Implementation of the proposed new fireworks display events could result in potential direct impacts on marine mammals primarily from fireworks-generated debris, light, and noise. Similar to those for avian species, potential direct impacts on marine mammals could include increased noise and light from the proposed new displays, which could result in elevated stress response. In addition, the introduction of fireworks-generated trash and debris could cause injury to marine mammals because the marine mammals may mistakenly consume the waste, which could cause suffocation, starvation, or debilitation. As discussed above, Pacific harbor seals and California sea lions are very likely to occur within San Diego Bay. Neither species breeds within San Diego Bay, but both spend time foraging and loafing in the waters of the Bay. However, as described above, both species are most common in the northern portion of the Bay, substantially decreasing in occurrence in the south Bay region. Additionally, due to the lack of haul-out areas in south San Diego Bay, increased light levels would only be apparent to marine mammals surfacing to breathe at the time of the fireworks detonation, further reducing the likelihood for disturbances to marine mammals.

Furthermore, several species of cetaceans, such as whales and dolphins, have a very low potential to occur in south San Diego Bay, especially in the vicinity of the proposed new fireworks display events along the National City and Chula Vista Bayfronts. Therefore, based on the limited presence of marine mammals and lack of haul-out areas in the southern portion of the Bay, the proposed new fireworks display events are not expected to result in disturbances to these species from increased noise and light associated with the displays. Consequently, the noise and light generated by the proposed new fireworks display events would not result in a significant direct impact on marine mammals.

Additionally, although marine mammals have a low potential to occur in the south Bay, marine mammals, if present, may inadvertently consume fireworks-generated trash and debris that enter the water, which could cause suffocation, starvation, or debilitation. Compared to other marine wildlife, marine mammals are less likely to consume trash and debris. Instead, the majority of injury to marine mammals from trash and debris is from entanglement (in fishing lines, nets, plastic bags, etc.) as marine mammals are curious and explore new items in their environment (Sea Lion Center 2017). Impacts on marine mammals from fireworks-generated trash and debris is unlikely due to low potential for occurrence of these species in the area, the relatively discriminating forage behavior of marine mammals, and the fact that the type of debris produced by fireworks (e.g., cardboard, paper, plastic casings) is not likely to cause entanglement. Therefore, direct impacts on marine mammals from fireworks-generated trash and debris would be less than significant.

Additionally, **MM-BIO-1** requires implementation of the biological resources-related conditions of the proposed ordinance for direct impacts associated with fireworks-generated trash and debris. These conditions of approval require the fireworks operator to remove and properly dispose of all packaging, a reduction in the amount of non-biodegradable fireworks components that can be used, implementation of best management practices, and compliance with SDRWQCB's General Permit, including post-fireworks display event cleanup of debris and solid waste. **MM-BIO-1** also requires the fireworks organizer, with the assistance of the fireworks operator, to prepare and implement a comprehensive Fireworks Best Management Practices Plan pursuant to SDRWQCB's General Permit. Implementation of **MM-BIO-1** would further reduce the potential for marine mammals to inadvertently consume fireworks-generated trash and debris.

Other direct potential impacts on marine mammals may occur if chemical residues that might fall into surface waters adversely affect water quality during and after the fireworks display events. These chemicals and metals, when present in large enough concentrations, have the potential to accumulate in sediments, leach into groundwater, and negatively affect the health of humans and other organisms (Appendix F). However, results of water quality testing following the Big Bay Boom, as well as the more extensive and long-term SeaWorld fireworks display events, have shown no or limited temporal or spatial relationships in chemical levels, with the majority of constituents tested occurring at concentrations below detectable levels. Concentrations of perchlorate found in post-fireworks water quality samples for the Big Bay Boom and SeaWorld displays have been substantially less than 10 µg/L (i.e., less than 0.01 mg/L) and were generally in the 1-2 µg/L range, which is several orders of magnitude below the 10- to 100-mg/L range found to cause toxicity in fish and aquatic organisms in laboratory studies (Appendix F). Further toxicity testing and benthic community studies completed following SeaWorld fireworks displays indicate that the SeaWorld fireworks fallout zone is not degraded in comparison with adjacent reference sites (Appendix F). For these reasons, potential direct impacts on marine mammals associated with reduced water quality from the proposed new displays would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance contains several conditions of approval that would reduce potential impacts on the biological resources of San Diego Bay and the Imperial Beach Oceanfront. The proposed ordinance requires specific packaging materials, best management practices, and implementation of post-display cleanup practices consistent with the requirements of the General Permit, as well as a reduction in the amount of non-biodegradable fireworks components that can be used. These measures would ensure that fireworks-generated trash and debris from existing fireworks display events are collected and disposed of and that the use of non-biodegradable fireworks components is limited, thereby ensuring that marine mammals are not injured by mistakenly consuming waste. Additionally, the proposed ordinance includes a number of noise and light reduction requirements for fireworks display events. Furthermore, the proposed ordinance requires all fireworks organizers to obtain all necessary permits from the appropriate regulatory agencies. Compliance with the proposed ordinance would improve the existing condition by minimizing the disturbance experienced by marine mammals during existing fireworks display events and ensuring that noise and light from existing displays would not have any substantial adverse direct effects on marine mammals within San Diego Bay and the Imperial Beach Oceanfront. Therefore, the effects of the proposed ordinance on existing fireworks display events would not result in a direct significant adverse impact on marine mammals. No significant adverse impacts would occur.

Indirect Impacts

Proposed New Fireworks Display Events

Indirect impacts on marine mammals from proposed new fireworks display events could include disturbance associated with increased boat and foot traffic and increased human-generated trash and debris. A study by Wells and Scott (1997) linked the increase of boating activities over holidays and in particular the Fourth of July weekend to an increase in the number of injuries to marine mammals (dolphins and manatees). While the species in that study differ from those present in San Diego Bay, the proposed new nighttime fireworks display events in San Diego Bay are anticipated to result in an increase in vessel activities on the four nights when the proposed new fireworks display events occur. Consequently, the potential for collisions to occur increases. The Wells and Scott (1997) study did not link injuries directly to fireworks display events, but to increased boat traffic over the summer holiday weekend. Other studies (Janik and Thompson 1996; Mattson et al. 2005; Nowacek et al. 2001) have described pronounced behavioral response of dolphins (increased swimming speed, diving, and evasive maneuvers) to the presence of personal watercraft. None of these studies focused specifically on the effects of increased nighttime boating traffic from fireworks display events; however, the potential increased use of water craft associated with the proposed new fireworks display events is considered a potential indirect effect.

Conversely, observations at the MBNMS found that increased human usage (e.g., boating, kayaking, fishing, diving, swimming, surfing, picnicking, beach combing and tidepooling) of waters adjacent to fireworks display events increased gradually over the hours leading to fireworks display events (NMFS 2012). This human usage occurred in areas of the MBNMS with the highest levels of human activity. Marine mammals in the area were observed to temporarily depart the area during the hours immediately prior to the beginning of the fireworks display event. However, NMFS noted that

boaters traveled slowly and followed boating regulations, and that marine mammals returned to haul-out areas following fireworks display events. No direct observations of disturbance or injury from human activity were noted.

In San Diego Bay, similar to the MBNMS, the proposed new fireworks display events are located in areas of relatively high existing boating and human use associated with recreational, commercial, and military activities. However, after dark, recreational boating activity is much less common and nighttime boating speeds are typically much slower than daytime boating speeds. Boating activity generally increases during holidays and weekends, which consequently results in a higher risk of animal collision that is not associated with fireworks display events.

As discussed above, Pacific harbor seals and California sea lions are most common in the northern portion of the Bay where a majority of the haul-out areas are located, substantially decreasing in occurrence in the south Bay due to the lack of haul-out areas. Additionally, cetaceans such as whales and dolphins have a very low potential to occur in the vicinity of the proposed new fireworks display events. Therefore, based on the limited presence of marine mammals and lack of haul-out areas in the southern portion of the Bay, the proposed new fireworks display events are not expected to result in disturbances to these species from increased boating and human activity. In addition, although marine mammals have a low potential to occur in the south Bay, marine mammals, if present, may mistakenly consume human-generated trash and debris, which could cause suffocation, starvation, or debilitation. This is unlikely due to the low potential for occurrence of these species, the relatively discriminating forage behavior of marine mammals, and the fact that the type of human-generated debris (e.g., bottles, cans, food wrappers) is not likely to cause entanglement. Therefore, the proposed new fireworks display events would not result in a significant indirect impact on marine mammals.

Additionally, **MM-BIO-2** requires implementation of the biological resources-related conditions of the proposed ordinance for indirect impacts, which include the implementation of cleanup and education measures. Implementation of **MM-BIO-2** would further reduce the potential for the proposed new fireworks display events to result in indirect effects on marine mammals.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance contains several conditions of approval that would reduce potential impacts on the biological resources of San Diego Bay and the Imperial Beach Oceanfront, including the implementation of cleanup and education measures. Compliance with the proposed ordinance would improve the existing condition by reducing potential indirect effects on marine mammals associated with increased boating and human activity and increased human-generated trash during existing fireworks display events. Therefore, the effects of the proposed ordinance on existing fireworks display events would not result in a significant adverse indirect impact on marine mammals. No significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Implementation of the proposed project would have a substantial adverse effect, either directly or through habitat modifications, on a species identified as a candidate, sensitive, or special-status

species in local or regional plans, policies, or regulations, or by CDFW and USFWS. Potentially significant impact(s) include:

Impact-BIO-1: Potential Direct Impact on Marine Reptiles from Fireworks-Generated Trash and Debris. The introduction of fireworks-generated trash and debris could cause injury to green sea turtles because the turtles may mistakenly consume the waste, which could cause suffocation, starvation, or debilitation. Direct impacts on green sea turtles from fireworks-generated trash and debris that enter the water may be significant.

Impact-BIO-2: Potential Indirect Impacts on Marine Reptiles from Increased Human and Boating Activity. The increase in boat traffic, particularly nighttime and out-of-channel traffic, would increase the potential for propeller strikes, which may cause injury to or death of green sea turtles. Increased boating activities could cause the animals to temporarily depart the project area before, during, and after the time of the proposed new fireworks display events to avoid higher vessel traffic. The increase in activity may also affect the turtles' foraging habits in that individuals may spend more time underwater, swim at greater speeds, and alter other life history traits leading to greater energy expenditure. The introduction of human-generated trash could also cause injury to turtles if they mistakenly consume the waste, causing suffocation, starvation, or debilitation. These potential indirect impacts on marine reptiles may be significant.

Impact-BIO-3: Potential Direct Impact on Avian Species from Fireworks-Generated Trash and Debris. The introduction of fireworks-generated trash and debris could cause injury to avian species because the birds may mistakenly consume the waste, which could cause suffocation, starvation, or debilitation. Direct impacts on avian species from fireworks-generated trash and debris that enter the water may be significant.

Impact-BIO-4: Potential Indirect Impacts on Special-Status Avian Species from Increased Human and Boating Activity. The proposed new fireworks display events have the potential to result in indirect impacts on special-status avian species, particularly California least tern and western snowy plover, as a result of increased foot traffic on sand dunes and beaches that can cause disturbance to nesting sites during and immediately after the proposed new fireworks display events. Additional indirect impacts potentially include increased trash associated with human use and noise associated with boating activity adjacent to nesting sites. The introduction of human-generated trash could also cause injury to special-status birds because the birds may mistakenly consume the waste, which could cause suffocation, starvation, or debilitation. While many nesting sites for California least tern and western snowy plover in San Diego Bay are behind fences or in secured areas, others are not, and even fenced sites are accessible by water. Therefore, indirect impacts related to increased boat traffic, foot traffic, and human-generated trash and debris in the vicinity of nesting and roosting areas may be significant.

Mitigation Measures

Proposed New Fireworks Display Events

MM-BIO-1: Implementation of Biological Resources-Related Conditions of the Proposed Ordinance for Direct Impacts. The fireworks organizer and operator are required to comply with the following biological resources-related conditions of the proposed ordinance.

Section X.07 – Permits – Conditions of Approval

(d) Fireworks Chemical Composition and Packaging.

2. Packaging.

- A. Prior to commencement of a fireworks display event, the fireworks operator shall remove and properly dispose of all packaging, wrapping and labels from all fireworks to be used in the event.
- B. Fireworks that include a plastic outer casing or non-biodegradable inner components that make up more than five (5) percent of the mass of the shell or device are prohibited.

(f) Best Management Practices (BMPs). Fireworks display events shall implement the following BMPs for fireworks display event preparation, discharge and clean-up:

- 1. Fireworks display events on barges shall be set up at a loading facility in accordance with the requirements and under the supervision of the municipal fire department with jurisdiction over the event. Barges shall be inspected for leaks and other potential safety issues. Idling time for delivery trucks and loading equipment shall not exceed three (3) minutes and all such trucks and equipment shall be shut down when not in use.
- 2. Fireworks shall be brought to the barge and loaded in their California Department of Transportation (DOT)-approved shipping cartons. Fireworks shall be encased in paper to prevent spillage of loose compounds. All packaging material and debris, including fuses, wires, shipping cartons and other wrapping, shall be properly disposed of in trash receptacles as the fireworks display event is set up. Unless prohibited by the municipal fire marshal with jurisdiction over the fireworks display event, barges shall be equipped with a fire-retardant debris barrier that extends six feet (6') in height, with openings no larger than ¼ inch, around the perimeter of the Fireworks launch area to contain debris.
- 3. Wires from the electric match placed in the fireworks fuse shall be wrapped around nails that are installed on the racks to prevent wires from being pulled out and falling into the water. Wire cables connected to computer firing equipment modules shall also be properly secured to ensure they remain on the barge during the fireworks display event.
- 4. Once the fireworks are prepared for launch, all trash and debris shall be removed from the barge while it is at the loading facility and prior to the barge being moved into position. No loose material shall be allowed on the barges during the fireworks display event.
- 5. Following the fireworks display event and upon expiration of any safety period required by the municipal fire marshal with jurisdiction over the fireworks display event, the fireworks operator shall pick up all loose material on the barge, including all trash and debris resulting from the discharge of the fireworks, to prevent it from being discharged into the water while the barge is underway.
- 6. Upon return to the loading facility, the fireworks operator shall clean the barge of all fireworks related material and shall photograph and properly dispose of all fireworks trash and debris. Unexploded fireworks and related components shall be collected and disposed of by the fireworks operator in accordance with all applicable regulations. fireworks operators shall photograph the barge prior to and after cleaning.

7. Following the fireworks display event and upon expiration of any safety period required by the municipal fire marshal with jurisdiction over the event, the fireworks organizer shall provide cleanup crews and boats to conduct sweeps of the fireworks detonation zone to gather any floating debris from spent fireworks using hand held fishnets, pool skimmers, or other similar equipment.
8. The morning after the fireworks display event, the fireworks organizer shall conduct another sweep of the fireworks detonation zone and quays, piers and docks adjacent to the fireworks detonation zone to remove fireworks trash and debris. The fireworks organizer shall collect, bag, weigh and photograph all trash and debris collected prior to its disposal.
9. The morning after the fireworks display event, the fireworks organizer shall perform a cleanup of the shoreline using crews of not fewer than five persons per barge on the shoreline adjacent to each barge location. Each crew member shall be equipped with trash bags and a trash grabber. The fireworks organizer shall collect, bag, weigh, and photograph all trash and debris collected prior to its disposal.
10. Within five (5) business days after a fireworks display event, the fireworks organizer shall provide the Executive Director with the photographs and written evidence of the weight of the fireworks trash and debris collected pursuant to subdivisions (5) through (9) above. If the weight of the fireworks trash and debris collected is less than fifty percent (50%) of the net weight of fireworks launched during the fireworks display event, the fireworks organizer shall offset the remaining amount by providing a crew of not fewer than two (2) persons for each barge or other launch site used in the fireworks display event to participate in the next scheduled "Operation Clean Sweep" or other District-sponsored clean-up event prior to the end of the calendar year to recover trash and debris from San Diego Bay and/or the Imperial Beach Oceanfront.

(h) Compliance with San Diego Water Board General Permit.

1. Prior to the Executive Director's issuance of a permit pursuant to this article, the Applicant shall demonstrate that it has applied for coverage and has been enrolled under the San Diego Water Board General Permit.
2. The Applicant shall comply with all applicable terms, conditions and Best Management Practices required by the San Diego Water Board General Permit, which shall be incorporated into and considered in the terms, conditions and Best Management Practices of any permit issued by the Executive Director pursuant to this article.
3. The Applicant shall submit to the District copies of all applications, plans, reports and other documentation required by the San Diego Water Board General Permit, including without limitation the Notice of Intent, Fireworks Best Management Practices Plan, Public Fireworks Display Log and the Public Display of Fireworks Post Event Report, within the time required for the submission of such reports to the San Diego Water Board.

(i) Compliance with Other Required Permits: Prior to the Executive Director's issuance of a Permit pursuant to this article, the Applicant shall demonstrate that it has obtained and shall comply with all other permits and approvals required by federal, state and local laws and regulations including, without limitation, such permits and approvals as are required by

the United States Coast Guard, California Coastal Act, the District Code, including Article 10 (Stormwater Management and Discharge Control), and the fire marshal of any city which has jurisdiction over all or any part of the activity allowed under said Permit.

- (j) **Compliance with Laws:** The Applicant shall comply with any and all applicable rules and regulations promulgated by the District, including without limitation the District Code, the Chula Vista Bayfront Master Plan Settlement Agreement and Natural Resources Management Plan, and with the laws, rules and regulations of the United States of America and the State of California, and of any department or agency thereof, and with the applicable ordinances, rules and regulations of any city which has jurisdiction over all or any part of the activity allowed under said Permit. The Applicant's failure to comply with any applicable law, ordinance, rule or regulation shall be cause for immediate revocation of said permit and for the denial of applications for future Permits.

MM-BIO-2: Implementation of Biological Resources–Related Conditions of the Proposed Ordinance for Indirect Impacts. The fireworks organizer and operator are required to comply with the following biological resources–related condition of the proposed ordinance.

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- (e) **Protection of Species and Habitat.** The following conditions shall apply to fireworks display events that occur between February 15 and September 15 (i.e., avian breeding season) and are located less than one (1) mile from any federally or state-listed avian species nesting colonies:
 - 3. **Security.** For fireworks display events with public viewing areas (i.e., parks, promenades, publicly accessible piers, and other similar facilities) that occur within one-half mile of unprotected (i.e., unfenced) federally or state-listed nesting colonies or habitat areas, the fireworks organizer shall provide a minimum of two professional security guards to direct persons away from and to discourage trespass into sensitive nesting areas or habitat during such displays.
 - 4. **Signage.** For fireworks display events with public viewing areas (i.e., parks, promenades, publicly accessible piers, and other similar facilities) that occur within one half-mile of nesting colonies or habitat areas for federally or state-listed species, the fireworks organizer, in cooperation with the District, shall post temporary signage along primary access points to sensitive nesting colonies and habitat areas to identify safe viewing locations, to educate visitors on locations of sensitive wildlife habitats, to prevent viewers from trespassing into sensitive areas and to encourage appropriate viewing behavior.
 - 5. **Education.** Beginning not less than seven (7) days before fireworks display events with public viewing areas (i.e., parks, promenades, publicly accessible piers, and other similar facilities) located within one-half mile of federally or state-listed nesting colonies or habitat areas, the fireworks organizer shall implement a public education program using social media, press releases, and information posted at parks, boat launch facilities, marinas, yacht clubs and other viewing locations, to educate potential viewers regarding appropriate viewing and boat docking areas, to discourage trespass into sensitive wildlife habitat, and to reminds viewers of appropriate viewing behavior in and near

sensitive nesting colonies and habitat areas (e.g., appropriate disposal of trash, prevention of illegal fireworks, and safe boating procedures).

- (f) Best Management Practices. Fireworks display events shall implement the following BMPs for fireworks display event preparation, discharge and clean-up:

11. For all Fourth of July fireworks display events and for Non-Fourth of July fireworks display events which are advertised to the public, the fireworks operator shall double the number of trash receptacles at major viewing areas prior to each fireworks display event; trashcans shall be emptied and parks and viewing areas shall be cleaned following the event.

Level of Significance after Mitigation

Proposed New Fireworks Display Events

Direct impacts on marine reptiles and avian species could occur from the introduction of fireworks-generated trash and debris that may enter the water, which could cause injury to these species because they may mistakenly consume the waste, potentially causing suffocation, starvation, or debilitation (**Impact-BIO-1** and **Impact-BIO-3**). However, **MM-BIO-1** requires implementation of the biological resources-related conditions of the proposed ordinance for direct impacts. These conditions of approval require the fireworks operator to remove and properly dispose of all packaging, a reduction in the amount of non-biodegradable fireworks components that can be used, implementation of best management practices, and compliance with SDRWQCB's General Permit, including post-fireworks display event cleanup of debris and solid waste. **MM-BIO-1** also requires the fireworks organizer, with the assistance of the fireworks operator, to prepare and implement a comprehensive Fireworks Best Management Practices Plan pursuant to SDRWQCB's General Permit. Implementation of **MM-BIO-1** would ensure that fireworks-generated trash and debris are collected and disposed of, which would reduce this potential direct impact on green sea turtles and avian species to a less-than-significant level.

Indirect impacts on marine reptiles could occur as a result of increased boat traffic and human-generated trash entering the marine environment (**Impact-BIO-2**). Additionally, indirect impacts on sensitive avian species include disturbance associated with increased human activity in the vicinity of nesting colonies, as well as human-generated trash and debris (**Impact-BIO-4**). However, **MM-BIO-2** requires implementation of the biological resources-related conditions of the proposed ordinance for indirect impacts, including the implementation of cleanup, security, signage, and education measures. Implementation of **MM-BIO-2** would ensure that significant indirect impacts on green sea turtles and avian species from increased boat traffic, trespass, and human-generated trash and debris would be less than significant.

Furthermore, in accordance with the Chula Vista Bayfront Settlement Agreement and Natural Resources Management Plan (May 2016), proposed new fireworks display events that would occur within the Chula Vista Bayfront area during the least tern nesting season, which would include a Fourth of July event, are required to monitor the nesting colonies and be in full regulatory compliance with all applicable water quality and species protection regulations.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impacts would occur.

Threshold 2: Implementation of the proposed project would 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 CDFW, NMFS, or USFWS.

Threshold 3: Implementation of the proposed project would have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means.

Impact Discussion

The primary direct impacts from the proposed new fireworks display events on habitat of San Diego Bay could include increased trash from discharged shells, including paper and cardboard waste and the remains of fuses, as well as reduced water quality. Additionally, fireworks barges and tugboats that maneuver and hold the barges into place could damage eelgrass. The primary indirect impacts on habitats and wetlands of San Diego Bay could include increased boat traffic, increased foot traffic in sensitive areas, and human-generated debris.

Direct Impacts

Proposed New Fireworks Display Events

Fireworks-Generated Trash and Debris

Fireworks display events can result in a substantial amount of paper, cardboard, and some cotton, metal, and plastic waste. In San Diego Bay, fireworks for the proposed new displays would be launched from barges, and the waste resulting from exploded shells could fall primarily into the waters of the Bay. It is anticipated that some of this debris would sink to the bottom, and a smaller amount would wash onto adjacent shorelines. The exact total volume of trash and debris that would be generated by the proposed new fireworks display events in south San Diego Bay is unknown; however, it is estimated that the net weight of pyrotechnic materials in an aerial fireworks shell (Class B) is typically about half (i.e., 50 percent) the total weight (Appendix F). According to the Water Quality Technical Report prepared for the proposed project (Appendix G), the weight of the debris recovered from the detonation barges combined with the dry weight of the debris collected from the surrounding waters should equal approximately one-half of the total display weight. Therefore, if the total weight of recovered debris is less than this, it can be assumed that this unaccounted portion remains in the water and surrounding habitat.

Furthermore, the fallout area for the aerial debris is determined by local wind conditions. While this area is variable between sites and events, long-term studies performed within the MBNMS indicate that the bulk of the debris will fall to the surface within a 0.5-mile (0.8-kilometer) radius of the launch site (NMFS 2012). NMFS noted that heavier trash, such as cardboard casings, land closer to the launch site, while lighter trash, such as cotton and plastic waste, travel farther propelled by winds. The MBNMS conducted surveys of solid debris on surface waters, beaches, and subtidal habitat and found no visual evidence of acute or chronic impacts on the environment or wildlife (NMFS and MBNMS 2006). However, cleanup activities immediately following fireworks display

events did collect debris in some instances (including cardboard cylinders, disks, and shell case fragments; paper strips and wadding; plastic wadding, disks, and tubes; aluminum foil; cotton string; and even whole unexploded shells) from waters and beaches of Monterey Bay.

The majority of wetlands and sensitive habitats (e.g., eelgrass beds) within San Diego Bay occur in the southern portion of the Bay. The largest of the San Diego Bay wetlands include the Sweetwater River, Otay River, Chula Vista Wildlife Reserve, South San Diego Bay NWR, and Telegraph Creek. Eelgrass coverage varies annually, and represents approximately 10 percent of the habitat within the Bay. Salt marshes occur over approximately 800 acres of the Bay, or approximately 4 percent of the habitat within the Bay (U.S. Navy 2013). The proposed new fireworks display events are anticipated to take place off barges that would be moved to their locations and held in place by a tugboat. Based on the trash generation percentages described above, it can be assumed that approximately 228 pounds of debris would be generated by each of the proposed new Fourth of July fireworks display events and approximately 57 pounds of debris would be generated by each of the proposed new non-Fourth of July fireworks display events, some of which may remain in the water following the display and potentially degrade sensitive habitats or wetlands within the south Bay.

Fireworks-generated trash and debris could degrade sensitive habitats and wetlands. Direct impacts on sensitive habitats and federally protected wetlands of south San Diego Bay from fireworks-generated trash and debris that enter the water may be significant (**Impact-BIO-5**). Mitigation measure **MM-BIO-1** requires implementation of the biological resources-related conditions of the proposed ordinance for direct impacts associated with fireworks-generated trash and debris. These conditions of approval require the fireworks operator to remove and properly dispose of all packaging, a reduction in the amount of non-biodegradable fireworks components that can be used, implementation of best management practices, and compliance with SDRWQCB's General Permit, including post-fireworks display event cleanup of debris and solid waste. **MM-BIO-1** also requires the fireworks organizer, with the assistance of the fireworks operator, to prepare and implement a comprehensive Fireworks Best Management Practices Plan pursuant to SDRWQCB's General Permit. Implementation of **MM-BIO-1** would reduce the amount of fireworks-generated trash and debris that enters or remains in the Bay and would limit the use of non-biodegradable fireworks components. Furthermore, the anticipated wide dispersal of any remaining amount of largely cellulose-based trash and debris generated from the proposed new fireworks display events is not anticipated to result in a reduction in the amount or quality of sensitive habitats or wetlands within the Bay. Accordingly, direct impacts on sensitive habitats and federally protected wetlands in San Diego Bay due to fireworks-generated trash and debris would be less than significant with implementation of the conditions of approval contained in the proposed ordinance (**MM-BIO-1**).

Reduced Water Quality

Potential impacts on marine waters, habitats, and wetlands could also occur as a result of chemical residues that might fall into surface waters and affect water quality during and after the fireworks display events. Results of water quality testing following the Big Bay Boom, as well as the more extensive and long-term SeaWorld fireworks display events, have shown no or limited temporal or spatial relationships in chemical levels, with the majority of constituents tested occurring at concentrations below detectable levels. Perchlorate is the only chemical of concern that has consistently been measured in post-fireworks display water quality testing. Perchlorate, used as an oxidizer in propellants for fireworks, is recognized as an environmental contaminant that can harm fish and humans. However, concentrations of perchlorate found in post-fireworks water quality samples for the Big Bay Boom and SeaWorld displays have been substantially less than 10 µg/L (i.e.,

less than 0.01 mg/L) and were generally in the 1-2 µg/L range, which is several orders of magnitude below the 10- to 100-mg/L range found to cause toxicity in laboratory studies (Appendix F). Further toxicity testing and benthic community studies completed following SeaWorld fireworks display events indicate that the SeaWorld fireworks fallout zone is not degraded in comparison with adjacent reference sites (Appendix F). For these reasons, direct impacts of reduced water quality on habitats and wetlands of San Diego Bay from the proposed new fireworks display events would be less than significant.

Eelgrass

The subtidal waters of south San Diego Bay are typically shallow (ranging between -2.2 and -12 feet MLLW) (U.S. Navy 2013). An unvegetated moderately deep water channel provides safe navigation from the central portion of the Bay to the Chula Vista Marina. Two westerly branches to the Chula Vista Marina channel also occur; one extends to Emory Cove on the west side of the Bay and the other dead-ends into the shallow subtidal flats of the south Bay. An additional unvegetated channel occurs at the former South Bay Power Plant intake channel. Outside of these channels, the shallow flats of the south Bay support extensive eelgrass beds in very shallow to moderately shallow waters. In addition, eelgrass habitat provides important nursery habitat functions for fish and invertebrates and also provides substrate supporting eggs for various invertebrate species.

The positioning of fireworks barges over the shallow flats could result in direct impacts on eelgrass habitat and its nursery habitat functions, particularly at low tides. Impacts could occur as a result of temporary grounding or settling of barges and tugboats on the bottom at low tide. Additional impacts could occur from propeller wash or propeller drag from tugboats during barge maneuvering. Tugboats have large propellers and high thrust capacity that could dredge up eelgrass in shallow waters, even if grounding does not occur. This could result in temporary and/or permanent losses of eelgrass habitat. The potential for direct impacts on eelgrass is considered to be significant (**Impact-BIO-6**). Mitigation measure **MM-BIO-3** requires implementation of a biological resources-related condition of approval of the proposed ordinance that requires measures to avoid direct eelgrass impacts, as well as to monitor for and mitigate any unanticipated eelgrass impacts that do occur. This condition of approval requires completion of pre- and post-event eelgrass surveys where shallow water eelgrass occurs in areas at or near the fireworks launch sites; conducting tug operator training to ensure that the operators are advised of the eelgrass concern and take prudent steps to minimize risks such as remaining outside of eelgrass areas to the extent practicable; and controlling thrust rate and angle to minimize propeller wash. **MM-BIO-3** would reduce potential direct impacts on sensitive eelgrass habitat to less-than-significant levels.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance contains several requirements that would reduce potential impacts on the biological resources of San Diego Bay and the Imperial Beach Oceanfront. The proposed ordinance requires specific packaging materials, best management practices, and implementation of post-display cleanup practices consistent with the requirements of the General Permit, as well as a reduction in the amount of non-biodegradable fireworks components that can be used. These measures would ensure that fireworks-generated trash and debris from existing fireworks display events are collected and disposed of and that the use of non-biodegradable fireworks components is limited. In

addition, the proposed ordinance includes a condition of approval that would require completion of pre- and post-event eelgrass surveys, conducting tug operator training to ensure that the operators are advised of the eelgrass concern, and controlling thrust rate and angle to minimize propeller wash. Therefore, the effects of the proposed ordinance on existing fireworks display events would not result in any direct significant adverse impacts on sensitive habitats or wetlands. No significant adverse impacts would occur.

Indirect Impacts

Proposed New Fireworks Display Events

San Diego Bay is an active military, commercial, and recreational port located in an urban setting. The majority of the shoreline of the Bay is developed. The proposed new fireworks display events could draw a large number of visitors and to the Bay, and the majority of visitors would view fireworks display events from the developed shorelines and parklands along the National City and Chula Vista Bayfronts. The potential increased number of visitors would likely result in increased amounts of human-generated trash and debris from picnics and parties along the shoreline, some of which could wash into adjacent Bay waters.

As mentioned, shallow vegetated habitat (e.g., eelgrass) occurs in the vicinity of the proposed new fireworks display events along the National City and Chula Vista Bayfronts. Increased boat traffic could result in minor damage to eelgrass beds through unauthorized anchoring and/or propeller dragging. The proposed new fireworks display events in south San Diego Bay are not anticipated to occur immediately adjacent to salt marshes; however, visitors that view the fireworks display events from kayaks or personal watercraft could drag watercraft onto shorelines adjacent to coastal salt marshes and inadvertently damage eelgrass or marsh habitat. Additionally, the proposed new fireworks display events could potentially attract crowds to the Silver Strand State Beach, some of whom may trespass into restricted beach areas that are utilized by sensitive avian species. Potential impacts on habitats may include trampling of vegetation and an increase of human-generated trash and litter.

Indirect impacts on habitats of San Diego Bay, including Silver Strand State Beach, from increased human-generated trash and debris, as well as inadvertent damage of sensitive habitats and wetlands (e.g., eelgrass and coastal salt marshes) caused by boat or foot traffic into these areas, may be significant (**Impact-BIO-7**). The proposed ordinance contains several requirements that would reduce potential impacts on the biological resources of San Diego Bay. Implementation of **MM-BIO-2** requires implementation of the biological resources-related conditions of the proposed ordinance for indirect impacts, which include the implementation of cleanup, security, signage, and education measures. Implementation of **MM-BIO-2** would reduce potentially significant indirect impacts on wetlands and sensitive habitat from human trespass, increased boat traffic, and human generated trash and debris to less-than-significant levels.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance contains several conditions of approval to reduce potential impacts on the biological resources of San Diego Bay and the Imperial Beach Oceanfront, including the implementation of cleanup, security, signage, and education measures. Compliance with the proposed ordinance would

improve the existing condition by reducing the potential indirect effects of trespass, increased boat traffic, and human-generated trash and debris during existing fireworks display events on sensitive habitat or wetlands. Therefore, the effects of the proposed ordinance on existing fireworks display events would not result in any significant adverse indirect impacts on sensitive habitats or wetlands. No significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events would have a substantial adverse effect on riparian habitat and/or other sensitive natural communities identified in local or regional plans, policies, or regulations, or by CDFW, NMFS, or USFWS. The proposed new fireworks display events would also have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means. Potentially significant impact(s) include:

Impact-BIO-5: Potential Direct Impact on Sensitive Habitat and Wetlands from Fireworks-Generated Trash and Debris. The waste resulting from exploded fireworks shells could fall primarily into the waters of San Diego Bay. It is anticipated that some of this debris could sink to the bottom, and a smaller amount could wash onto adjacent beaches and shorelines. Direct impacts on sensitive habitats and federally protected wetlands of south San Diego Bay from fireworks-generated trash and debris that enter the water are considered significant.

Impact-BIO-6: Potential Direct Impact on Eelgrass Habitat from Fireworks Barges and Tugboat Activity. The positioning of fireworks barges along the Chula Vista Bayfront over the shallow flats could result in direct impacts on eelgrass habitat and its nursery habitat functions, particularly at low tides. Impacts could occur as a result of temporary grounding or settling of barges and tugboats on the bottom at low tide. Additional impacts could occur from propeller wash or propeller drag from tugboats during barge maneuvering. Tugboats have large propellers and high thrust capacity that could dredge up eelgrass in shallow waters, even if grounding does not occur. Potential direct impacts on eelgrass habitat are considered significant.

Impact-BIO-7: Potential Indirect Impact on Sensitive Habitat and Wetlands from Increased Human and Boating Activity. Increased boat traffic could result in minor damage to eelgrass beds through unauthorized anchoring and/or propeller dragging. Additionally, visitors that view the proposed new fireworks display events from kayaks or personal watercraft could drag these watercraft onto shorelines adjacent to coastal salt marshes and inadvertently damage eelgrass or marsh habitat. The proposed new fireworks display events could attract crowds to the Silver Strand State Beach, some of whom may trespass into restricted beach areas that are utilized by sensitive avian species. Potential impacts on habitats include trampling of vegetation and an increase of human-generated trash and litter. Indirect impacts on sensitive habitat and wetlands of south San Diego Bay would be significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not have a substantial adverse effect on riparian habitat and/or other sensitive natural communities identified in local or regional plans, policies, or regulations, or by CDFW, NMFS, or USFWS. In addition, the

effects of the proposed ordinance on existing fireworks display events would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means. No significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

Implement **MM-BIO-1** and **MM-BIO-2** as described under Threshold 1.

MM-BIO-3: Implementation of the Biological Resources-Related Conditions of the Proposed Ordinance for Direct Eelgrass Impacts. The fireworks organizer and operator are required to comply with the following biological resources-related conditions of the proposed ordinance.

Section X.07 – Permits – Conditions of Approval

- (g) Eelgrass Avoidance and Mitigation. For fireworks display events with launching sites located in shallow water with the potential for eelgrass to occur, fireworks barges shall be held in place by tugboats and shall not require temporary moorings. To the extent practicable, barges shall be located in unvegetated deep water channels outside of eelgrass beds. Pre-event and post-event eelgrass surveys shall be completed to identify the distribution of eelgrass to assist tug operators and to assess any impacts to eelgrass that may occur. Through a pre-event training, tug operators shall be made aware of shallow eelgrass and instructed not to use high thrust in the vicinity of eelgrass beds. If an unanticipated impact to eelgrass occurs, this impact shall be mitigated by replacing the eelgrass at a ratio determined by the California Eelgrass Mitigation Policy.

Level of Significance after Mitigation

Potential direct impacts on marine habitats, sensitive habitats, and wetlands include increased trash from discharged shells, including paper and cardboard waste, and the remains of fuses (**Impact-BIO-5**). In addition, direct impacts on eelgrass could potentially occur as a result of temporary grounding or settling of barges and tugboats on the bottom at low tide, as well as from propeller wash or propeller drag from tugboats during barge maneuvering (**Impact-BIO-6**). Potential indirect impacts on sensitive habitat and wetlands include physical damage, boat traffic, and trash and debris from increased human activity during the proposed new fireworks display events (**Impact-BIO-7**). These potential indirect impacts could occur at eelgrass beds and salt marshes primarily in south San Diego Bay, as well as restricted beach areas that are utilized by sensitive avian species at Silver Strand State Beach. The proposed ordinance contains several conditions of approval that would ensure the protection of the biological resources of San Diego Bay. Mitigation measures **MM-BIO-1** and **MM-BIO-2** require implementation of the biological resources-related conditions of the proposed ordinance, which include cleanup measures, education, signage, and security patrols employed to encourage visitors to remain in designated viewing areas and to employ safe boating procedures. In addition, **MM-BIO-3** requires completion of pre- and post-event eelgrass surveys, conducting tug operator training to ensure that the operators are advised of the eelgrass concern, and controlling thrust rate and angle to minimize propeller wash for potential direct impacts on eelgrass habitat. Implementation of **MM-BIO-1** through **MM-BIO-3** would ensure that significant

direct and indirect impacts on these sensitive habitats would be reduced to less-than-significant levels.

Threshold 4: Implementation of the proposed project would 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.

Impact Discussion

Potential physiological and behavioral responses to proposed new fireworks display events by resident and migrating avian, marine mammal, and marine reptile species within the project area are analyzed under Threshold 1 above. The analysis under Threshold 1 focused on impacts on specific wildlife, including marine mammals, marine reptiles, and birds. The following analysis focuses on whether the proposed new fireworks display events would interfere substantially with the movement of native resident or migratory fish or wildlife species or established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. In addition, eelgrass habitat provides important nursery habitat functions for fish and invertebrates and also provides substrate supporting eggs for various invertebrate species.

Direct Impacts

Proposed New Fireworks Display Events

San Diego Bay does not provide any terrestrial movement corridors, and no marine mammal, reptile, or fish migratory corridors occur within it. However, the southern portions of the Bay, including the South San Diego Bay Unit of the San Diego Bay NWR, provide stopover habitat for migrating waterfowl and shorebirds. Additionally, the south San Diego Bay also provides nesting habitat for migratory avian species, and green sea turtles swim in and out of the Bay, as well. There are no existing fireworks display events requiring a discretionary action by the District or operated by the District's tenants occurring in south San Diego Bay. The proposed new fireworks display events would be close to sensitive wetland habitats within San Diego Bay that provide stopover habitat for migrating waterfowl and shorebirds and nesting habitat for sensitive avian species.

As discussed above, the evidence presented from the studies and surveys evaluated in the literature review and described under Threshold 1 above indicates that noise and light produced by fireworks display events do disturb California least terns at their nesting colonies. Studies have not shown birds to abandon nests; however, increases in running, flying, and alarm calls in response to fireworks display events have been observed, indicating a moderate level of temporary disturbance. As described in Section 4.3.4.2, *Thresholds of Significance*, biological resources impacts would be considered significant if the proposed project would 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. Based on the information presented under Threshold 1 above, the proposed new fireworks display events are not anticipated to interfere substantially with the movement of any avian species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites (i.e., nesting colonies) because temporary disturbance from noise and light would be short term and infrequent and would not result in direct mortality of birds, a decrease in productivity, or long-term

changes in behavior (e.g., colony abandonment). Additionally, the proposed ordinance includes a number of noise and light reduction requirements for fireworks display events that would occur during the breeding season, which would further reduce the temporary disturbance experienced by migrating avian species.

As discussed above and in Appendix F, sound pressures in the range produced by fireworks display events generally decouple at the air-water interface. This suggests that increased noise from fireworks display events would minimally affect marine mammals and marine reptiles in the water that would potentially be migrating through San Diego Bay. Additionally, increased light levels would only be apparent to marine mammals and marine reptiles surfacing to breathe at the time of the fireworks display events as they pass along the National City and Chula Vista Bayfronts. As mentioned, based on the limited presence of marine mammals and lack of haul-out areas in the southern portion of the Bay, potential disturbances to these species from increased noise and light associated with the proposed new fireworks display events is further reduced. As such, the proposed new fireworks display events would not interfere substantially with the movement of any marine species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

It is not anticipated that fireworks-generated trash and debris would result in a change in migration patterns or abandonment of migration corridors. Overall, due to a lack of defined movement corridors within the study area and the short duration of fireworks display events, they are unlikely to result in long-term alteration of migratory patterns or abandonment of nesting sites. Consequently, it is not anticipated that fireworks-generated debris, light, and noise would alter the migratory patterns of any species or render nesting sites inhospitable. Therefore, direct impacts of the proposed new fireworks display events on wildlife corridors, movement of resident and migratory species, and usage of nursery sites would be less than significant.

Furthermore, the proposed ordinance requires the removal and proper disposal of all fireworks packaging materials, best management practices, and implementation of post-display cleanup practices consistent with the requirements of the General Permit, as well as a reduction in the amount of non-biodegradable fireworks components that can be used. The proposed ordinance also includes a number of noise and light reduction requirements for fireworks display events that occur during the nesting season. Compliance with the proposed ordinance would reduce the potential effects of fireworks noise and light on migrating and nesting species and ensure that fireworks-generated trash and debris are collected and disposed of and that the use of non-biodegradable fireworks components is limited, which would further reduce the potential for the proposed new fireworks display events to result in changes in migration patterns or abandonment of migration corridors. As discussed under Thresholds 2 and 3 above, impacts on eelgrass beds and its nursery habitat functions from potential propeller wash or launch barge grounding at the Chula Vista Bayfront launch site located over or near eelgrass would be considered a significant effect (**Impact-BIO-6**). This could result in temporary and/or permanent losses of eelgrass. However, implementation of **MM-BIO-3**, which requires implementation of the biological resources-related conditions of the proposed ordinance related to eelgrass, includes pre- and post-event eelgrass surveys, tug operator training to ensure that the operators are advised of eelgrass concerns, and thrust rate and angle requirements to minimize propeller wash for potential direct impacts on eelgrass habitat and its nursery functions. Impacts would be reduced to less-than-significant levels.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance contains several conditions of approval that would reduce potential impacts on the biological resources of San Diego Bay and the Imperial Beach Oceanfront. The proposed ordinance requires implementation of post-display cleanup practices consistent with the requirements of SDRWQCB's General Permit, as well as a reduction in the amount of non-biodegradable fireworks components that can be used. The proposed ordinance also includes a condition of approval that would require the fireworks organizer, with the assistance of the fireworks operator, to prepare and implement a comprehensive Fireworks Best Management Practices Plan for each fireworks display event consistent with the requirements of SDRWQCB's General Permit. These conditions would require additional cleanup of fireworks-generated trash and debris from existing fireworks display events and that the use of non-biodegradable fireworks components is limited, thereby reducing the potential for migrating marine reptiles, avian species, and marine mammals to be injured by mistakenly consuming waste. Additionally, the proposed ordinance includes a number of noise and light reduction requirements for fireworks display events, including existing displays that would occur during the breeding season. Compliance with the proposed ordinance would improve the existing condition by minimizing the disturbance experienced by avian species, marine mammals, and marine reptiles during existing fireworks display events and ensuring that noise and light from existing fireworks display events would not alter the migratory patterns of any species or render nesting sites inhospitable within San Diego Bay and the Imperial Beach Oceanfront. Therefore, the effects of the proposed ordinance on existing fireworks display events would not result in any significant adverse direct impacts on wildlife corridors, movement of resident and migratory species, or usage of nursery sites. No significant adverse impacts would occur.

Indirect Impacts***Proposed New Fireworks Display Events***

As stated above, San Diego Bay does not provide any terrestrial movement corridors, nor any marine mammal, reptile, or fish migratory corridors. However, the southern portions of the Bay, including the South San Diego Bay Unit of the San Diego Bay NWR, provide stopover habitat for migrating waterfowl and shorebirds. Additionally, the south San Diego Bay also provides nesting habitat for migratory avian species. Marine mammals only rarely occur in the south Bay region, but green sea turtles occasionally migrate in and out of the Bay. The proposed new fireworks display events would be closer to sensitive wetland habitats within the Bay that provide stopover habitat for migrating waterfowl and shorebirds and nesting habitat (e.g., wildlife nursery sites) for sensitive avian species.

Indirect impacts from human-generated debris, increased boat traffic, and human disturbance during and immediately after the proposed new fireworks display events could affect movement of resident or migrating species or use of nursery sites. As discussed under Threshold 1 above, indirect impacts on sensitive avian species from proposed new fireworks display events, such as increased foot traffic in or adjacent to nesting sites, increased human-generated trash, and noise associated with boating activity are potentially a greater threat to avian species than direct impacts. While many nesting sites for California least tern and western snowy plover in San Diego Bay are located behind fences or in secured areas, others are not, and even fenced sites are accessible by water.

Therefore, indirect impacts of the proposed new fireworks display events on wildlife corridors and movement of resident and migratory species are considered less than significant due to the short-term disturbance and would not result in changes in migratory movement or abandonment of stopover areas along migratory routes. However, indirect impacts on usage of nursery sites are considered potentially significant due to disturbance noted in nesting birds (**Impact-BIO-8**).

Mitigation measure **MM-BIO-2** requires implementation of the biological resources-related conditions of the proposed ordinance for indirect impacts, which include the implementation of cleanup, security, signage, and education measures. Implementation of **MM-BIO-2** would reduce potentially significant indirect impacts on the usage of nursery sites by avian species to less-than-significant levels.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance contains several conditions of approval to reduce potential impacts on the biological resources of San Diego Bay and the Imperial Beach Oceanfront, including the implementation of cleanup, security, signage, and education measures. Compliance with the proposed ordinance would improve the existing condition by reducing the indirect effects of human trespass, increased boat traffic, and human-generated trash and debris during existing fireworks display events on wildlife corridors, movement of resident and migratory species, and usage of nursery sites. Therefore, the effects of the proposed ordinance on existing fireworks display events would not result in any significant adverse indirect impacts on wildlife corridors, movement of resident and migratory species, or usage of nursery sites. No significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events would interfere substantially with the movement of 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. Potentially significant impact(s) include:

Please see the discussion regarding **Impact-BIO-1** through **Impact-BIO-4**.

Impact-BIO-8: Potential Indirect Impact on Usage of Nursery Sites from Increased Human Activity. Indirect impacts on protected avian species from proposed new fireworks display events, such as increased foot traffic in or adjacent to nesting sites, increased human-generated trash, and noise associated with boating activity, are potentially a greater threat than direct impacts. While many nesting sites for California least tern and western snowy plover in San Diego Bay are located behind fences or in secured areas, others are not, and even fenced sites are accessible by water. Therefore, indirect impacts of proposed new fireworks display events on usage of nursery sites are considered potentially significant due to disturbance noted in nesting birds.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not interfere substantially with the movement of 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.

Mitigation Measures**Proposed New Fireworks Display Events**

Implement **MM-BIO-1** and **MM-BIO-2** as described under Threshold 1.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation**Proposed New Fireworks Display Events**

There is the potential for indirect impacts on sensitive avian species from proposed new fireworks display events, such as increased foot traffic in or adjacent to nesting sites, increased human-generated trash, and noise associated with boating activity. Indirect impacts of proposed new fireworks display events on usage of nursery sites are considered potentially significant due to disturbance noted in nesting birds (**Impact-BIO-8**). Mitigation measure **MM-BIO-2** requires implementation of the biological resources-related conditions of the proposed ordinance for indirect impacts, which include the implementation of cleanup, security, signage, and education measures. Implementation of **MM-BIO-2** would reduce potentially significant indirect impacts on the usage of nursery sites by avian species to less-than-significant levels.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impacts would occur.

Threshold 5: Implementation of the proposed project would conflict with any applicable local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Threshold 6: Implementation of the proposed project would conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

Impact Discussion

Proposed New Fireworks Display Events

The applicable local land use plans, policies, ordinances, or regulations of the District, adopted for the purpose of protecting biological resources, are the PMP, San Diego Unified Port District Code, Chula Vista Bayfront Master Plan NRMP, and INRMP. The District and the U.S. Navy Southwest Division maintain and implement the INRMP. The INRMP catalogues the plant and animal species around the Bay and identifies habitat types with the purpose of ensuring the long-term health, recovery, and protection of San Diego Bay's ecosystem in concert with economic, Naval, recreational, navigational, and fisheries needs. In addition, the District has established goals to protect, preserve, and enhance natural resources in San Diego Bay in Section II of the PMP, Planning Goals (Goal XI). The proposed new fireworks display events are within PMP Planning District 5 (National City Bayfront) and Planning District 7 (Chula Vista Bayfront).

In addition, while no fireworks display events are proposed within either Planning District 8 (Silver Strand South) or Planning District 9 (South Bay Salt Lands), the proposed new fireworks display events have the potential to result in indirect impacts on sensitive habitat within these Planning Districts. As discussed in Section 4.8, *Land Use and Planning*, the proposed project is consistent with the overarching goals of the PMP, including those pertaining to the protection of biological resources. Additionally, the proposed project is consistent with the Chula Vista Bayfront NRMP and the INRMP. Accordingly, the proposed project would not conflict with these local land use plans, policies, ordinances, or regulations protecting biological resources.

The District is not subject to the land use plans, regulations, or policies of the five member cities in which it has land under its jurisdiction, which include the cities of San Diego, Coronado, National City, Chula Vista, and Imperial Beach. For a single location development project, it is easy to isolate potential impacts and determine the applicable land use regulations binding on that project. In the case of a project that occurs entirely within the District's jurisdiction, the PMP would be the binding land use plan. However, because of the potential regional effects of the fireworks display events associated with the proposed project, potential direct and indirect impacts may extend beyond the location of the actual displays and affect biological resources in neighboring jurisdictions. For these reasons, the local policies and ordinances protecting biological resources for each of the five member cities should also be considered, as applicable.

San Diego and Chula Vista MSCPs

There are several other adopted habitat or natural community conservation plans that apply in the surrounding area. In the City of San Diego, local habitat, species, and biological resources are protected under the City's MSCP, which is implemented through the MSCP Subarea Plan (City of San Diego 1997). The City's MSCP Subarea Plan was developed to meet the requirements of the California Natural Communities Conservation Planning Act of 1992, and as such serves as the City's approved local natural community conservation plan. To implement its portion of the MSCP preserve, the City developed the MHPA, which is considered an urban preserve that delineates core biological resource areas and corridors targeted for conservation. The project sites are generally several miles outside the boundary of the nearest MHPA. The closest designated MHPA is approximately 1.25 miles south of the proposed barge location for the fireworks display events along the Chula Vista Bayfront, and encompasses the southeastern portion of the South San Diego Bay Unit of the San Diego Bay NWR (USFWS 2006). As discussed under Thresholds 3 and 4 above, the new fireworks display events proposed along the National City and Chula Vista Bayfronts in south San Diego Bay may result in direct impacts on this habitat from fireworks-generated trash and debris. Additionally, future fireworks display events proposed along the National City and Chula Vista Bayfronts may result in a number of indirect impacts, including minor damage to eelgrass beds as a result of unauthorized anchoring and/or propeller dragging associated with increased boat traffic, as well as from visitors who inadvertently enter eelgrass or salt marsh habitat while dragging their kayaks or other personal watercraft onto shorelines adjacent to coastal salt marshes. In addition, the proposed new fireworks display events may attract crowds to the Silver Strand State Beach, some of whom may trespass into sensitive beach areas that are utilized by sensitive avian species. Potential indirect impacts on habitats include trampling of vegetation and an increase of human-generated trash and litter. Other potential indirect impacts include inadvertent damage to sensitive habitats and wetlands (e.g., eelgrass and coastal salt marshes) caused by boat or foot traffic into these areas.

Additionally, portions of the Sweetwater Marsh Unit of the San Diego Bay NWR are within the Chula Vista MSCP planning subarea, particularly the eastern portion of the Otay River Valley (City of Chula Vista 2003). Similar to the City of San Diego MSCP Subarea Plan, the Chula Vista MSCP Subarea Plan was prepared to meet the requirements of the Natural Communities Conservation Planning Act of 1992 and serves as the City's approved local natural community conservation plan. The Chula Vista MSCP Subarea Plan identifies land targeted for conservation and designates that land for placement within their MSCP Preserve. As mentioned, the proposed new fireworks display events along the National City and Chula Vista Bayfronts may result in direct impacts on habitat within the Sweetwater Marsh Unit of the San Diego Bay NWR from fireworks-generated trash and debris. Additionally, these proposed new fireworks display events may potentially result in indirect impacts on habitat, particularly eelgrass beds, as a result of increased visitor and boat activity before, during, and after the fireworks display events. Any impacts on City of San Diego MHPA or City of Chula Vista MSCP Preserve lands, whether direct or indirect, would be significant. Consequently, the proposed project has the potential to conflict with the City of San Diego and City of Chula Vista MSCP Subarea Plans (**Impact-BIO-9**). As discussed above under Thresholds 2 and 3, **MM-BIO-1** requires implementation of the biological resources-related conditions of the proposed ordinance for direct impacts. These conditions of approval require the fireworks operator to remove and properly dispose of all packaging, a reduction in the amount of non-biodegradable fireworks components that can be used, implementation of best management practices, and compliance with SDRWQCB's General Permit, including post-fireworks display event cleanup of debris and solid waste. **MM-BIO-1**

also requires the fireworks organizer, with the assistance of the fireworks operator, to prepare and implement a comprehensive Fireworks Best Management Practices Plan pursuant to SDRWQCB's General Permit. Additionally, **MM-BIO-2** requires implementation of the biological resources-related conditions of the proposed ordinance that would reduce potential indirect impacts on biological resources, including the implementation of cleanup, security, signage, and education measures. Implementation of **MM-BIO-1** and **MM-BIO-2** would reduce potentially significant direct impacts on habitat from fireworks-generated trash and debris and indirect impacts on habitat from human trespass, increased boat traffic, and human-generated trash and debris to less-than-significant levels. Consequently, potential impacts on City of San Diego MHPA or City of Chula Vista MSCP Preserve lands would also be reduced to a less-than-significant level. As such, the proposed project would not conflict with these two natural community conservation plans.

San Diego Bay National Wildlife Refuge

Particular areas in south San Diego Bay are also designated national wildlife refuges and reserves. One of these refuges is the San Diego Bay NWR, which is managed by USFWS. Accordingly, the applicable conservation and management plan for this refuge is also considered in the analysis. The San Diego Bay NWR consists of the Sweetwater Marsh and South San Diego Bay Units, which are collectively managed by USFWS through the San Diego Bay National Wildlife Refuge Comprehensive Conservation Plan (2006). This plan was prepared jointly with an Environmental Impact Statement in compliance with the National Environmental Policy Act. As mentioned, proposed new fireworks display events along the National City and Chula Vista Bayfronts may result in significant direct impacts on sensitive habitat within the San Diego Bay NWR from fireworks-generated trash and debris. Additionally, the South San Diego Bay Unit of the San Diego Bay NWR provides stopover habitat for migrating waterfowl and shorebirds. The south San Diego Bay also provides nesting habitat for migratory avian species, and marine turtles swim in and out of the Bay, as well.

It is not anticipated that fireworks-generated debris, light, and noise will alter the migratory patterns of any species, nor render nesting sites inhospitable. However, as discussed under Threshold 1, the proposed National City and Chula Vista Bayfronts fireworks display events would potentially result in significant direct impacts on green sea turtles present within south San Diego Bay from the introduction of fireworks-generated trash and debris, which could cause suffocation, starvation, or debilitation if these species mistakenly consume the waste.

Additionally, these proposed new fireworks display events may also potentially result in significant indirect impacts on sensitive habitat within the San Diego Bay NWR due to increased visitor and boat activity. The large number of visitors is likely to result in increased amounts of human-generated trash and debris from picnics and parties along the shoreline, some of which could wash into adjacent Bay waters and degrade sensitive habitat. Increased boat traffic could result in minor damage to eelgrass beds through unauthorized anchoring and/or propeller dragging. Although these proposed new fireworks display events would not occur immediately adjacent to salt marshes, visitors that view the fireworks display events from kayaks or personal watercraft could drag watercraft onto shorelines adjacent to coastal salt marshes and inadvertently damage eelgrass or marsh habitat. The increase in boating activity, particularly nighttime and out-of-channel boat traffic, would also increase the potential for propeller strikes with green sea turtles. Increased boating activities could cause the animals to temporarily depart the project area before, during, and after the time of the proposed new fireworks display events to avoid higher vessel traffic. The increase in activity may also affect the turtles' foraging habits in that individuals may spend more time underwater, swim at greater speeds, and alter other life history traits leading to greater energy

expenditure. The introduction of human-generated trash could also cause injury to turtles if they mistakenly consume the waste, which could also cause suffocation, starvation, or debilitation. These potential direct and indirect impacts on sensitive habitat and green sea turtles present within the San Diego Bay NWR would be significant. Consequently, the proposed project would have the potential to conflict with the San Diego Bay National Wildlife Refuge Comprehensive Conservation Plan (**Impact-BIO-10**).

As discussed above under Thresholds 1, 2, and 3, **MM-BIO-1** requires implementation of the biological resources-related conditions of the proposed ordinance for direct impacts. These conditions of approval require the fireworks operator to remove and properly dispose of all packaging, a reduction in the amount of non-biodegradable fireworks components that can be used, implementation of best management practices, and compliance with SDRWQCB's General Permit, including post-fireworks display event cleanup of debris and solid waste. **MM-BIO-1** also requires the fireworks organizer, with the assistance of the fireworks operator, to prepare and implement a comprehensive Fireworks Best Management Practices Plan pursuant to SDRWQCB's General Permit. Additionally, **MM-BIO-2** requires implementation of the biological resources-related conditions of the proposed ordinance that would reduce potential indirect impacts on biological resources, including the implementation of cleanup, security, signage, and education measures. Implementation of **MM-BIO-1** and **MM-BIO-2** would reduce potentially significant direct impacts on green sea turtles and habitat from fireworks generated trash and debris and indirect impacts on green sea turtles and habitat from human trespass, increased boat traffic, and human-generated trash and debris to less-than-significant levels. Consequently, potential impacts on the San Diego Bay NWR would also be reduced to a less-than-significant level. As such, the proposed project would not conflict with this habitat conservation plan.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. Within San Diego Bay and the Imperial Beach Oceanfront, the City of San Diego and City of Chula Vista MSCP Subarea Plans and San Diego National Wildlife Refuge Comprehensive Conservation Plan apply to sensitive habitat and species present within the southern portion of the Bay. The proposed ordinance contains several requirements that would reduce potential impacts on biological resources. These include requirements for specific packaging materials, best management practices, and implementation of post-display cleanup practices consistent with the requirements of the General Permit, and a reduction in the amount of non-biodegradable fireworks components that can be used, as well as implementation of cleanup, security, signage, and education measures. Additionally, the proposed ordinance requires the fireworks organizer, with the assistance of the fireworks operator, to prepare and implement a comprehensive Fireworks Best Management Practices Plan. Consequently, the effects of the proposed ordinance on existing fireworks display events would not conflict with adopted habitat conservation plans, natural community conservation plans, or other approved local, regional, or state habitat conservation plans. As such, no significant adverse impact would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events would conflict with applicable local policies or ordinances protecting biological resources. Additionally, the proposed project would conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. Potentially significant impact(s) include:

Impact-BIO-9: Potential Conflict with the City of San Diego and Chula Vista MSCP Subarea Plans. The proposed new fireworks display events have the potential to result in significant direct and indirect impacts on habitat within the City of San Diego MHPA and City of Chula Vista MSCP Preserve. Any impacts, whether direct or indirect, would be significant. Consequently, the proposed project would have the potential to conflict with the City of San Diego and City of Chula Vista MSCP Subarea Plans.

Impact-BIO-10: Potential Conflict with the San Diego Bay National Wildlife Refuge Comprehensive Conservation Plan. The proposed new fireworks display events have the potential to result in direct and indirect impacts on sensitive habitat and green sea turtles present within the San Diego Bay NWR, which would be considered significant. Consequently, the proposed project would have the potential to conflict with the San Diego Bay National Wildlife Refuge Comprehensive Conservation Plan.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not conflict with applicable local policies or ordinances protecting biological resources or with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. No significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

Implement **MM-BIO-1** and **MM-BIO-2** as described under Threshold 1.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events may result in direct and indirect impacts on sensitive habitats and wildlife species within the City of San Diego MHPA, City of Chula Vista MSCP Preserve, and San Diego Bay NWR (**Impact-BIO-9** and **Impact-BIO-10**). Mitigation measure **MM-BIO-1** requires implementation of the biological resources-related conditions of the proposed ordinance for direct impacts. These conditions of approval require the fireworks operator to remove and properly dispose of all packaging, a reduction in the amount of non-biodegradable fireworks

components that can be used, implementation of best management practices, and compliance with SDRWQCB's General Permit, including post-fireworks display event cleanup of debris and solid waste. **MM-BIO-1** also requires the fireworks organizer, with the assistance of the fireworks operator, to prepare and implement a comprehensive Fireworks Best Management Practices Plan pursuant to SDRWQCB's General Permit. Additionally, **MM-BIO-2** requires implementation of the biological resources-related conditions of the proposed ordinance that would reduce potential indirect impacts on biological resources, including the implementation of cleanup, security, signage, and education measures. Implementation of **MM-BIO-1** and **MM-BIO-2** would reduce potential direct and indirect impacts on wildlife species and habitat within the City of San Diego MHPA, City of Chula Vista MSCP Preserve, and San Diego Bay NWR to less-than-significant levels. Compliance with the proposed ordinance, as required by **MM-BIO-1** and **MM-BIO-2**, would ensure that the proposed new fireworks display events would not conflict with applicable local policies or ordinances protecting biological resources or conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. Therefore, impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impacts would occur.

Greenhouse Gas Emissions, Climate Change, and Energy

4.4.1 Overview

This section describes the existing conditions and applicable laws and regulations for greenhouse gas (GHG) emissions, climate change, and energy use. It analyzes whether the proposed project would result in emissions that are (1) consistent with the District's Climate Action Plan (CAP) reduction targets and consistent with regulatory programs outlined in the Scoping Plan and adopted by the California Air Resources Board (ARB) or other California agencies to reduce GHG emissions in 2020; (2) consistent with the post-2020 reduction targets set forth through California Executive Order (EO) S-03-05 and EO B-30-15 and consistent with plans, policies, and regulations promulgated to reduce GHG emissions post-2020; and whether the project would (3) expose property and persons to the physical effects of climate change, including, but not limited to, flooding, public health risk, wildfire risk, or other impacts resulting from climate change. This section also quantifies operational energy consumption and evaluates whether the proposed project would result in the wasteful, inefficient, and unnecessary consumption of energy.

The proposed project would not result in any significant impacts related to GHG emissions, climate change, or energy use.

4.4.2 Existing Conditions

This section provides a discussion of the existing understanding of global climate change and GHG emissions. It also provides a discussion of energy resources as they relate to fireworks display events.

4.2.1.1 Climate Change and Greenhouse Gases

The proposed new fireworks display events would occur within San Diego Bay, which is within the San Diego Air Basin (SDAB). As discussed below, GHGs are global pollutants that contribute to global warming of the Earth's lower atmosphere.

Overview of Global Climate Change

The phenomenon known as the *greenhouse effect* keeps the atmosphere near the Earth's surface warm enough for the successful habitation of humans and other life forms. GHGs associated with the *greenhouse effect* include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), perfluorinated carbons (PFCs), sulfur hexafluoride (SF₆), and hydrofluorocarbons (HFCs), in addition to water vapor. These six gases are also identified as GHGs in Section 15364.5 of the State CEQA Guidelines.

Sunlight in the form of infrared, visible, and ultraviolet light passes through the atmosphere. Some of the sunlight striking the Earth is absorbed and converted to heat, which warms the surface. The

surface emits infrared radiation to the atmosphere where some of it is absorbed by GHGs and re-emitted toward the surface. Human activities that emit additional GHGs to the atmosphere increase the infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and amplifying the warming of the Earth (Center for Climate and Energy Solutions 2011).

Increases in fossil fuel combustion and deforestation have exponentially increased concentrations of GHGs in the atmosphere since the Industrial Revolution. Rising atmospheric concentrations of GHGs in excess of natural levels enhance the greenhouse effect, which contributes to global warming of the Earth's lower atmosphere. This warming induces large-scale changes in ocean circulation patterns, precipitation patterns, global ice cover, biological distributions, and other changes to the Earth system that are collectively referred to as *climate change*.

GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants (TACs). Criteria air pollutants and TACs occur locally or regionally, and local concentrations respond to locally implemented control measures. However, the long atmospheric lifetimes of GHGs allow them to be transported great distances from sources and become well mixed, unlike criteria air pollutants, which typically exhibit strong concentration gradients away from point sources. GHGs and global climate change represent cumulative impacts (i.e., GHG emissions contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change).

Principal Greenhouse Gases

The GHGs listed by the Intergovernmental Panel on Climate Change (IPCC) (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆) (2014) are discussed in this section in order of abundance in the atmosphere, and the principal characteristics surrounding these pollutants are discussed below. Note that PFCs are not discussed because those gases are generated primarily by industrial processes, which are not part of the proposed project. California law and the State CEQA Guidelines contain a similar definition of GHGs (Health and Safety Code Section 38505(g); 14 California Code of Regulations [CCR] Section 15364.5). Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic (human-made) sources. Consequently, the primary GHGs of concern associated with the project are CO₂, CH₄, N₂O, HFCs, and SF₆.

- **Carbon Dioxide (CO₂)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). CO₂ is also removed from the atmosphere (or “sequestered”) when it is absorbed by plants as part of the biological carbon cycle.
- **Methane (CH₄)** is emitted during the production and transport of coal, natural gas, and oil. CH₄ also results from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.
- **Nitrous Oxide (N₂O)** is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.
- **Hydrofluorocarbons (HFCs)** are anthropogenic chemicals used in commercial, industrial, and consumer products and have high global warming potential (GWP [see below]). HFCs are generally used as substitutes for ozone-depleting substances in automobile air-conditioners and refrigerants.

- **Sulfur hexafluoride (SF₆)**, a human-made chemical, is used as an electrical insulating fluid for power distribution equipment, in the magnesium industry, in semiconductor manufacturing, and also as a tracer chemical for the study of oceanic and atmospheric processes.

Methods have been set forth to describe emissions of GHGs in terms of a single gas to simplify reporting and analysis. The most commonly accepted method to compare GHG emissions is the GWP methodology defined in the IPCC reference documents. IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of carbon dioxide equivalent (CO₂e), which compares the gas in question to that of the same mass of CO₂ (which has a GWP of 1 by definition). The GWP values used in this report are based on the IPCC Fourth Assessment Report (AR4) and United Nations Framework Convention on Climate Change reporting guidelines and defined in Table 4.4-1 (IPCC 2007). The AR4 GWP values are used in ARB's California inventory and Assembly Bill (AB) 32 Scoping Plan estimate update as well as in the Port of San Diego's GHG emissions inventory (ARB 2016a; ARB 2014; District 2013).

Table 4.4-1 lists the GWP of CO₂, CH₄, N₂O, HFCs, and SF₆; their lifetimes; and abundance in the atmosphere.

Table 4.4-1. Lifetimes, GWPs, and Abundance of Significant GHGs

Gas	GWP (100 years)	Lifetime (years) ¹	Atmospheric Abundance
CO ₂	1	50–200	400 ppm
CH ₄	25	9–15	1,834 ppb
N ₂ O	298	121	328 ppb
HFC-23	14,800	222	18 ppt
HFC-134a	1,430	13.4	84 ppt
HFC-152a	124	1.5	3.9 ppt
SF ₆	22,800	3,200	8.6 ppt

Sources: Myhre et al. 2013; Blasing 2016; IPCC 2007.

¹ Defined as the half-life of the gas.

ppm = parts per million; ppb = parts per billion; ppt = parts per trillion.

Greenhouse Gas Inventories

A GHG inventory is a quantification of all GHG emissions and sinks¹ within a selected physical and/or economic boundary. GHG inventories can be performed on a large scale (e.g., for global and national entities) or on a small scale (e.g., for a particular building or person). Although many processes are difficult to evaluate, several agencies have developed tools to quantify emissions from certain sources.

Table 4.4-2 outlines the most recent global, national, statewide, and local GHG inventories to help contextualize the magnitude of potential project-related emissions.

¹ A GHG sink is a process, activity, or mechanism that removes a GHG from the atmosphere.

Table 4.4-2. Global, National, State, and Local GHG Emissions Inventories

Emissions Inventory	CO₂e (metric tons)
2010 IPCC Global GHG Emissions Inventory	52,000,000,000
2014 EPA National GHG Emissions Inventory	6,870,000,000
2014 ARB State GHG Emissions Inventory	441,500,000
2012 County of San Diego GHG Emissions Inventory	34,670,000
2010 City of San Diego GHG Emissions Inventory	13,091,591
2006 Port of San Diego GHG Emissions Inventory ¹	826,429
Sources: IPCC 2014; EPA 2016; ARB 2016a; Energy Policy Initiatives Center 2015; City of San Diego 2015; District 2013.	
¹ The Port of San Diego's GHG emissions inventory is based on the 2013 Climate Action Plan rather than the District's 2012 Maritime Air Emissions Inventory because the Climate Action Plan provides a more comprehensive inventory of the District's activities and GHG emissions profile.	
EPA = U.S. Environmental Protection Agency	

Impacts of Global Climate Change

Climate change is a complex phenomenon that has the potential to alter local climatic patterns and meteorology. Although modeling indicates that climate change will result in sea-level rise (SLR) (both globally and regionally) as well as changes in climate and rainfall, among other effects, there remains uncertainty with regard to characterizing precise *local* climate characteristics and predicting precisely how various ecological and social systems will react to any changes in the existing climate at the local level. Regardless of this uncertainty, it is widely understood that substantial climate change is expected to occur in the future, although the precise extent will take further research to define. Consequently, the entire San Diego region, including the project area, will be affected by changing climatic conditions.

Research efforts coordinated through ARB, the California Energy Commission (CEC), the California Environmental Protection Agency, the University of California system, and others are examining the specific changes to California's climate that will occur as the Earth's surface warms. Potential impacts include rising sea levels along the California coastline; extreme heat conditions; an increase in heat-related human deaths, infectious diseases, and respiratory problems caused by deteriorating air quality; reduced snow pack and streamflow in the Sierra Nevada, affecting winter recreation and water supplies; a potential increase in the severity of winter storms, affecting peak streamflows and flooding; changes in growing season conditions that could affect California agriculture, causing variations in crop quality and yield; and changes in the distribution of plant and wildlife species due to changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects.

With respect to the San Diego region, The San Diego Foundation's *A Regional Wake-Up Call* (2013), which summarizes the CEC's *Climate Change-Related Impacts in the San Diego Region by 2050* paper (CEC 2009), provides a summary of potential climate change impacts in the region (Ocean Protection Council 2013), which include the following:

- **Increased temperatures:** The San Diego region will see hotter and drier days and more frequent, prolonged heat waves. Average annual temperatures are expected to increase 1.5°F–4.5°F (CEC 2009; The San Diego Foundation 2013).

- **Reduction in air quality:** Hotter and drier days create more air pollution by raising ozone levels. This can exacerbate asthma and other respiratory and cardiovascular diseases (CEC 2009).
- **Introduction of new public health issues:** Warmer temperatures year-round could lead to growing mosquito populations, increasing the regional occurrence of West Nile virus and potentially introducing tropical diseases such as malaria and dengue fever (CEC 2009).
- **Reductions in fresh water:** Water and energy demand will increase, while extended and more frequent droughts will cause traditional sources of fresh water supplies to diminish. Reduced local and regional precipitation could shrink water supplies by 20 percent or more, while water demand is expected to increase 37 percent. There could be an 18 percent water shortage by 2050 (CEC 2009; The San Diego Foundation 2013).
- **Increased rate of wildfires:** Drier weather may increase the frequency and size of wildfires, with an estimated 20 percent increase in the number of days with ideal fire conditions (CEC 2009; The San Diego Foundation 2013).
- **Rising sea levels:** Projected SLR, coastal erosion, and increasing storm surges may collapse fragile sea cliffs, shrink beaches, and destroy coastal property and ecosystems. Sea levels are expected to rise 12 to 16 inches by 2020 (CEC 2009; The San Diego Foundation 2013), 24 inches by 2050, and 65.7 inches by 2100, relative to 2000 conditions (Ocean Protection Council 2013; Coastal and Ocean Working Group of the California Climate Action Team 2013).

Sea Level Rise

Projected SLR as an effect of climate change is expected to increase the number of areas that experience coastal flooding along San Diego Bay in the future. Coastal and low-lying areas, such as the project area, are particularly vulnerable to future SLR. More specifically, SLR is a concern for the future, particularly in combination with future storm events and coastal flooding. A scenario with 100-year flood flows that coincide with high tides, taking into account SLR over a 50- or 100-year horizon, would dramatically increase the risk of flooding in the project vicinity.

Specifically regarding SLR, the San Diego Bay Vulnerability Assessment conducted by ICLEI– Local Governments for Sustainability found that the greatest concern from SLR will be an increase in the kind of flooding that the region already experiences due to waves, storm surge, El Niño events, and very high tides. Furthermore, starting around mid-century, San Diego Bay may become more susceptible to regularly occurring inundation of certain locations and assets. The most vulnerable sectors in the community include stormwater management, wastewater collection, shoreline parks and public access, transportation facilities, commercial buildings, and ecosystems (ICLEI 2012). According to the map in the San Diego Bay Vulnerability Assessment report, various locations within San Diego Bay are within the SLR hazard zone for 2050.

The Coastal and Ocean Working Group of the California Climate Action Team developed the *State of California Sea-Level Rise Guidance Document* for state agencies to incorporate SLR into planning and decision-making for projects in California. The document was developed in response to Governor Schwarzenegger’s EO S-13-08, issued on November 14, 2008, which directed state agencies to plan for SLR and coastal impacts. That EO also requested the National Research Council (NRC) to issue a report on SLR to advise California on planning efforts. The final report from NRC, *Sea-Level Rise for the Coasts of California, Oregon, and Washington*, was released in June 2012. The *State of California Sea-Level Rise Guidance Document* was last updated in March 2013 with the scientific findings of the 2012 NRC report.

In the Coastal and Ocean Working Group of the California Climate Action Team SLR guidance document (Coastal and Ocean Working Group of the California Climate Action Team 2013), three SLR projections, based on time periods (2030, 2050, and 2100), were selected for south of Cape Mendocino using 2000 as the baseline. Table 4.4-9 provides a summary of the SLR projections relevant to the project area during the life of the proposed project, which, for purposes of this analysis, is assumed to be 2050.

4.2.1.2 State and Regional Energy Resources and Use

California has a diverse portfolio of energy resources that produced 2,335.5 trillion British thermal units² (BTUs) in 2012.³ Excluding offshore areas, the state ranked third in the nation in crude oil production in 2012, producing the equivalent of 1,143.8 trillion BTUs. The state also ranked fourth in the nation in conventional hydroelectric generation (23,755 megawatt hours [MWh]) and first in the nation for net electricity generation from renewable resources. Other energy sources in the state include natural gas (277.7 trillion BTUs), nuclear (193.9 trillion BTUs), and biofuels (24.3 trillion BTUs) (U.S. Energy Information Administration 2014).⁴

According to the U.S. Energy Information Administration (2014), California consumed approximately 7,612 trillion BTUs of energy in 2012. Per capita energy consumption (i.e., total energy consumption divided by the population) in California is among the lowest in the country, with 201 million BTU in 2012, which ranked 49th among all states. Natural gas accounted for the majority of energy consumption (32 percent), followed by motor gasoline (22 percent), distillate and jet fuel (14 percent), interstate electricity (11 percent), and nuclear and hydroelectric power (6 percent), with the remaining 15 percent coming from a variety of other sources (U.S. Energy Information Administration 2014). The transportation sector consumed the highest quantity of energy (38.5 percent), followed by the industrial and commercial sectors.

Per capita energy consumption, in general, is declining because of improvements in energy efficiency and design. However, despite this reduction in per capita energy use, the state's total overall energy consumption (i.e., non-per capita energy consumption) is expected to increase over the next several decades because of growth in population, jobs, and vehicle travel. For example, electricity usage is anticipated to grow about 9 to 15 percent over the next decade (2015–2025) (CEC 2014).

San Diego County is served by San Diego Gas and Electric (SDG&E), which provides energy service to more than 3.4 million customers (i.e., 1.4 million accounts) in the county and portions of southern Orange County. The utility has a diverse power production portfolio, composed of a variety of renewable and non-renewable sources. Energy production typically varies by season and by year. Regional electricity loads tend to be higher in the summer because the higher summer temperatures drive increased demand for air-conditioning. In contrast, natural gas loads are higher in the winter because the colder temperatures drive increased demand for natural gas heating.

² One BTU is the amount of energy required to heat 1 pound of water by 1°F at sea level. BTU is a standard unit of energy that is used in the United States and is on the English system of units (foot-pound-second system).

³ Note that 2012 data are the most recent available at the U.S. Energy Information Administration website, at http://www.eia.gov/state/seds/sep_prod/pdf/P5.pdf. Accessed July 25, 2015.

⁴ No coal production occurs in California.

In 2014 (most recent year for which California Renewables Portfolio Standard [RPS] data are available), more than 36 percent of the electricity SDG&E supplied was from renewable sources, compared to less than 1 percent in 2002 (California Public Utilities Commission 2016). Over the last 3 years, SDG&E customers have reduced their electricity use by more than 911 million kilowatt hours (kWh) and their gas usage by more than 1.8 million therms (Semptra Energy Company 2014).

4.4.3 Applicable Laws and Regulations

This section summarizes federal, state, and local laws and regulations related to GHG emissions, climate change, and energy resources that are applicable to the proposed project.

4.4.3.1 Federal

Climate change is widely recognized as an imminent threat to the global climate, economy, and population. The U.S. Environmental Protection Agency (EPA) has acknowledged potential threats imposed by climate change in a Cause or Contribute Finding, which found that GHG emissions contribute to pollution that threatens public health and welfare—a necessary finding prior to adopting new vehicle emissions standards to reduce GHG emissions. Federal climate change regulation under the federal Clean Air Act (CAA) is currently under development for both existing and new sources. Despite the actions discussed below, there is still no comprehensive, overarching federal law specifically related to the reduction of GHG emissions.

U.S. Environmental Protection Agency Mandatory Reporting Rule for GHGs (2009)

On September 22, 2009, EPA released its final Greenhouse Gas Reporting Rule (Reporting Rule). The Reporting Rule is a response to the fiscal year 2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110-161), which required EPA to develop “mandatory reporting of greenhouse gases above appropriate thresholds in all sectors of the economy.” The Reporting Rule applied to most entities that emit 25,000 metric tons of CO₂e or more per year. Starting in 2010, facility owners were required to submit an annual GHG emissions report with detailed calculations of facility GHG emissions. The Reporting Rule also mandates recordkeeping and administrative requirements in order for EPA to verify annual GHG emissions reports.

Greenhouse Gas and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles (2016)

In August 2016, EPA adopted a second round of standards for medium- and heavy-duty vehicles to cut carbon pollution and improve fuel efficiency from trucks. The Phase 2 program will reduce CO₂ emissions starting in model year 2018 and fuel consumption and GHG emissions from tractor trailers as much as 24 percent once fully implemented for certain truck types.

Energy Policy Act of 2005

The Energy Policy Act of 2005, implemented by the U.S. Department of Energy, establishes a comprehensive, long-term energy policy. The Energy Policy Act addresses energy production in the U.S., including oil, gas, coal, and alternative forms of energy, as well as energy efficiency and tax incentives. Energy efficiency and tax incentive programs include credits for the construction of new

energy-efficient homes, production or purchase of energy-efficient appliances, and loan guarantees for entities that develop or use innovative technologies that avoid the production of GHGs.

4.4.3.2 State

California has adopted statewide legislation to address various aspects of climate change, GHG mitigation, and energy efficiency. Much of this establishes a broad framework for the state's long-term GHG and energy reduction goals and climate change adaptation program. The former and current governors of California have also issued several EOs related to the state's evolving climate change policy. Summaries of key policies, EOs, regulations, and legislation at the state level that are relevant to the project are provided below in chronological order.

Assembly Bill 1493—Pavley Rules (2002, amendments 2009)/Advanced Clean Cars (2011)

Known as Pavley I, AB 1493 provided the nation's first GHG standards for automobiles. AB 1493 required ARB to adopt vehicle standards that will lower GHG emissions from new light-duty autos to the maximum extent feasible beginning in 2009. Additional strengthening of the Pavley standards (referred to previously as *Pavley II* and now referred to as the *Advanced Clean Cars* [ACC] measure) was adopted for vehicle model years 2017–2025 in 2012. Together, the two standards are expected to increase average fuel economy to roughly 54.5 miles per gallon in 2025.

Senate Bills 1078/107/X 1-2—Renewables Portfolio Standard and Renewable Energy Resources Act (2002, 2006, 2011)

Senate Bills (SBs) 1078 and 107, California's RPS, obligated investor-owned utilities, energy service providers, and Community Choice Aggregations to procure an additional 1 percent of retail sales per year from eligible renewable sources until 20 percent is reached by 2010. The California Public Utilities Commission and CEC are jointly responsible for implementing the program. SB X 1-2, called the California Renewable Energy Resources Act, obligates all California electricity providers to obtain at least 33 percent of their energy from renewable resources by 2020. As of 2015, SDG&E's renewable procurement was 35.2 percent. As noted below, SB 350 increased the RPS to 50 percent for 2030.

Senate Bill 350 (2015)

SB 350 (De Leon, also known as the "Clean Energy and Pollution Reduction Act of 2015") was approved by the California legislature in September 2015 and signed by Governor Brown in October 2015. Its key provisions are to require the following by 2030: (1) an RPS of 50 percent and (2) a doubling of efficiency for existing buildings.

Executive Order S-03-05 (2005) and Executive Order B-30-15 (2015)

EO S-03-05 is designed to reduce California's GHG emissions to (1) 2000 levels by 2010, (2) 1990 levels by 2020, and (3) 80 percent below 1990 levels by 2050. EO B-30-15 was signed in 2015 and is designed to reduce California's GHG emissions to 40 percent below 1990 levels by 2030.

Assembly Bill 32—California Global Warming Solutions Act (2006)

AB 32 codified the state's GHG emissions target by requiring California's global warming emissions to be reduced to 1990 levels by 2020. Since being adopted, ARB, CEC, the California Public Utilities Commission, and the California Building Standards Commission have been developing regulations that will help the state meet the goals of AB 32 and EO S-03-05. The Scoping Plan for AB 32 identifies specific measures to reduce GHG emissions to 1990 levels by 2020 and requires ARB and other state agencies to develop and enforce regulations and other initiatives to reduce GHG emissions. The AB 32 Scoping Plan, first adopted in 2008, comprises the state's roadmap for meeting AB 32's reduction target. Specifically, the Scoping Plan articulates a key role for local governments by recommending that they establish GHG emissions-reduction goals for both their municipal operations and the community that are consistent with those of the state (i.e., approximately 15 percent below current levels) (ARB 2008).

ARB re-evaluated its emissions forecast in light of the economic downturn and updated the projected 2020 emissions to 545 million metric tons of carbon dioxide equivalent (MTCO_{2e}). Two reduction measures (Pavley I and RPS [12 to 20 percent]) that were not previously included in the 2008 Scoping Plan baseline were incorporated into the updated baseline, further reducing the 2020 statewide emissions projection to 507 million MTCO_{2e}. The updated forecast of 507 million MTCO_{2e} is referred to as the AB 32 2020 baseline. An estimated reduction of 80 million MTCO_{2e} is necessary to lower statewide emissions to the AB 32 target of 427 million MTCO_{2e} by 2020 (ARB 2014).

ARB approved the *First Update to the Scoping Plan* on May 22, 2014 (ARB 2014). The first update includes both a 2020 element and a post-2020 element. The 2020 element focuses on the state, regional, and local initiatives that are being implemented now to help the state meet the 2020 goal. ARB is currently working on a second update to the Scoping Plan to reflect the 2030 target established in EO B-30-15, noting that "California has already made great progress in driving the development of clean technologies thanks to programs developed under AB 32 and other important legislation; the 2030 target will ensure that success continues beyond 2020" (ARB 2015).

Senate Bill 32, California Global Warming Solutions Act of 2006: Emissions Limit, and Assembly Bill 197, State Air Resources Board, Greenhouse Gases, Regulations (2016)

SB 32 (Pavley) requires ARB to ensure that statewide GHG emissions are reduced to at least 40 percent below the 1990 level by 2030, consistent with the target set forth in EO B-30-15. The bill specifies that SB 32 shall become operative only if AB 197 (Garcia) is enacted and becomes effective on or before January 1, 2017. AB 197 creates requirements to form the Joint Legislative Committee on Climate Change Policies; requires ARB to prioritize direct emission reductions from stationary sources, mobile sources, and other sources and consider social costs when adopting regulations to reduce GHG emissions beyond the 2020 statewide limit; requires ARB to prepare reports on sources of GHGs, criteria air pollutants, and toxic air contaminants; establishes 6-year terms for voting members of ARB; and adds two legislators as non-voting members of ARB. Both bills were signed by Governor Brown in September 2016.

ARB recently released its Draft 2017 Scoping Plan Update, which builds on the programs set in place as part of the previous Scoping Plan that was drafted to meet the 2020 reduction targets per AB 32. The Draft 2017 Scoping Plan Update proposed meeting the 2030 goal by accelerating the focus on zero and near-zero technologies for moving freight; continued investment in renewables; greater

use of low-carbon fuels, including electricity and hydrogen; stronger efforts to reduce emissions of short-lived climate pollutants (CH₄, black carbon, and fluorinated gases); further efforts to create walkable communities with expanded mass transit and other alternatives to traveling by car; continuing the cap-and-trade program; and ensuring that natural lands become carbon sinks to provide additional emissions reductions and flexibility in meeting the target. The Scoping Plan also recommends that local governments aim to achieve community-wide efficiency of 6 MTCO_{2e} per capita by 2030 and 2 MTCO_{2e} per capita by 2050 in local climate action planning. These efficiency targets would replace the “15 percent from 2008 levels by 2020” approach recommended in the initial Scoping Plan, which allowed local governments to grow in a sustainable manner (ARB 2016a). The Draft 2017 Scoping Plan Update is currently out for public review. ARB will hold various public meetings as part of the process.

Assembly Bill 1383 (2016), Short-Lived Climate Pollutants, Methane Emissions, Dairy and Livestock, Organic Waste, Landfills

AB 1383 requires ARB to approve and implement a plan to reduce CH₄ by 40 percent, fluorinated gases (F-gases) by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. AB 1383 establishes specific targets for reducing organic waste in landfills (50 percent by 2020 and 75 percent by 2025 compared to 2014). The legislation also adopted regulations to reduce CH₄ emissions from livestock manure management operations and dairy management operations, which would take effect in 2024.

Executive Order S-01-07—Low Carbon Fuel Standard (2007)

EO S-01-07, the Low-Carbon Fuel Standard (LCFS), mandates (1) that a statewide goal be established to reduce the carbon intensity of California’s transportation fuels by at least 10 percent by 2020. The EO initiates a research and regulatory process at ARB. The LCFS regulation does not apply to certain transportation applications, including locomotives and ocean-going vessels (OGVs). Note that the majority of the emissions benefits due to the LCFS come from the production cycle (upstream emissions) of the fuel rather than the combustion cycle (tailpipe). As a result, LCFS-related reductions are not included in this analysis of combustion-related emissions of CO₂.

Senate Bill 375—Sustainable Communities Strategy (2008)

SB 375 provides for a new planning process that coordinates land use planning, regional transportation plans, and funding priorities in order to help California meet the GHG reduction goals established in AB 32. SB 375 requires regional transportation plans (RTPs), developed by metropolitan planning organizations, to incorporate a “sustainable communities strategy” (SCS). The goal of the SCS is to reduce regional vehicle miles traveled (VMT) through land use planning and consequent transportation patterns. SB 375 also includes provisions for streamlined CEQA review for some infill projects such as transit-oriented development.

The final reduction targets from ARB require the San Diego Association of Governments (SANDAG) to identify strategies to reduce per capita GHG emissions from passenger vehicles by approximately 7 percent by 2020 and 13 percent by 2035 over base year 2005. SANDAG’s 2050 RTP and SCS, which detail steps the region will take to reduce GHG emissions to state-mandated levels, were originally adopted by SANDAG on October 28, 2011 (SANDAG 2011). However, because of a legal challenge to the CEQA document, the RTP and SCS were revised and adopted by SANDAG on October 9, 2015 (SANDAG 2015).

State CEQA Guidelines (2010)

The State CEQA Guidelines require lead agencies to describe, calculate, or estimate the amount of GHG emissions that would result from a project. Moreover, the State CEQA Guidelines emphasize the necessity to determine potential climate change effects of a project and propose mitigation as necessary. They do not prescribe or recommend a specific analysis methodology or provide quantitative criteria for determining the significance of GHG emissions. However, the State CEQA Guidelines do confirm the discretion of lead agencies to determine appropriate significance thresholds but require the preparation of an EIR if “there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with adopted regulations or requirements” (Section 15064.4).

State CEQA Guidelines Section 15126.4 includes considerations for lead agencies related to feasible mitigation measures to reduce GHG emissions, which may include, among others, measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency’s decision; implementation of project features, project design, or other measures that are incorporated into the project to substantially reduce energy consumption or GHG emissions; off-site measures, including offsets that are not otherwise required, to mitigate a project’s emissions; and measures that sequester carbon or carbon-equivalent emissions.

State CEQA Guideline Section 15183.5(a) provides that a lead agency may analyze and mitigate significant effects of GHG emissions at a programmatic level, such as in a plan targeted to reduce GHG emissions. Additionally, the section allows for tiering off and incorporating by reference the environmental analysis done for such plans.⁵ Subdivision (b) of Section 15183.5 also states that a plan to reduce GHG emissions may be used to find that a project’s incremental contribution to the cumulative effect of GHG emissions is not cumulatively considerable if the project complies with the adopted plan and mitigation program. Subdivision (b) of Section 15183.5 provides that such a plan should (1) quantify GHG emissions over a specific time period resulting from activities within a defined geographic area; (2) establish a level below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable; (3) identify and analyze GHG emissions resulting from specific actions or categories of actions within the defined geographic area; (4) specify measures or a group of measures, including performance standards, that if implemented on a project-by-project basis would collectively achieve the specified emissions level; (5) establish a mechanism to monitor the plan’s progress; and (6) be adopted in a public process following environmental review. Such plans may be used in the cumulative impact analysis of later projects, but such later project analysis must identify those requirements specified in the plan that apply to the project and, if those requirements are not otherwise binding and enforceable, incorporate them as mitigation measures.

Western Climate Initiative/California Cap-and-Trade Program (2010/2011)

On October 20, 2011, ARB adopted the final cap-and-trade program for California. The California cap-and-trade program is a market-based system with an overall emissions limit for affected sectors. Examples of affected entities include CO₂ suppliers, in-state electricity generators, hydrogen production, petroleum refining, and other large-scale manufacturers and fuel suppliers. The cap-and-trade program is currently regulating more than 85 percent of California’s emissions.

⁵ Note that this analysis does not tier off or rely on any previous CEQA analysis conducted for a GHG plan.

Compliance requirements began according to the following schedule: (1) electricity generation and large industrial sources by 2012 and (2) fuel combustion and transportation by 2015. Cap-and-trade allowance auction proceeds are used to fund a variety of investments. The first 3-year investment plan prioritizes (1) sustainable communities and clean transportation (including low-carbon freight equipment, with specific emphasis on efforts that would be beneficial for disadvantaged communities located near ports, railyards, freeways, and distribution centers), (2) energy efficiency and clean energy, and (3) natural resources and waste diversion (ARB 2013).

Tractor-Trailer Greenhouse Gas Regulation/ Phase 2 Heavy-Duty Greenhouse Gas Emission Standards (2013/2017 in progress)

ARB approved the Tractor-Trailer Greenhouse Gas Regulation to reduce GHG emissions by requiring the use of aerodynamic tractors and trailers that are also equipped with low rolling resistance tires. The regulation applies to certain Class 8 tractors manufactured for use in California and is harmonized with the parallel EPA and National Highway Traffic Safety Administration heavy-duty truck standards. This regulation could reduce fuel consumption and GHG emissions from new heavy-duty trucks between 4 and 5 percent per year between 2014 and 2018 (EPA 2015). Upon EPA and National Highway Traffic Safety Administration's adoption of Phase 2, ARB plans to approve the California Phase 2 program in late 2017.

Assembly Bill 2076, Reducing Dependence on Petroleum

CEC and ARB are directed by AB 2076 (passed in 2000) to develop and adopt recommendations for reducing dependence on petroleum. A performance-based goal is to reduce petroleum demand to 15 percent less than 2003 demand by 2020.

State CEQA Guidelines, Appendix F

Appendix F of the State CEQA Guidelines contains energy conservation measures that promote the efficient use of energy for projects. In order to ensure that energy impacts are considered in project decisions, CEQA requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. The analysis in this section considers the expected energy use of the proposed project as well as measures to reduce the project's energy consumption.

The goal outlined in Appendix F of the State CEQA Guidelines is to conserve energy through the wise and efficient use of energy. The means of achieving this goal include the following:

- Decreasing overall per capita energy consumption;
- Decreasing reliance on natural gas and oil; and
- Increasing reliance on renewable energy sources.

4.4.3.3 Local

The AB 32 Scoping Plan does not provide an explicit role for local air districts in implementing AB 32 but it does state that ARB will work actively with air districts in coordinating emissions reporting, encouraging and coordinating GHG reductions, and providing technical assistance in quantifying reductions. The ability of air districts to control emissions (both criteria pollutants and

GHGs) is provided primarily through permitting as well as through their role as the CEQA lead or commenting agency, the establishment of CEQA thresholds, and the development of analytical requirements for CEQA documents. To date, the San Diego Air Pollution Control District has not developed specific thresholds of significance with regard to the GHG emissions in CEQA documents. Additionally, as discussed in Section 4.4.3.2, under SB 375, SANDAG must prepare an SCS in conjunction with its RTP that reduces VMT and encourages more compact, complete, and efficient communities in the future.

Port of San Diego Clean Air Program

The District developed the Green Port Program to support the goals of the Green Port Policy, which was adopted in 2008. The Green Port Program supports resource conservation, waste reduction, and pollution prevention. The Clean Air Program is one key area of the Green Port Program, with the primary goal of reducing GHG emissions and other air emissions from District operations at its three marine terminals: the Cruise Ship Terminal, Tenth Avenue Marine Terminal, and National City Marine Terminal. The Clean Air Program seeks to voluntarily reduce emissions through the identification and evaluation of feasible and effective control measures. Through this program, the District has identified control measures to achieve a reduction of pollutants from the largest sources, including shore power (to enable ships to turn off their auxiliary engines and plug into electric power while docked), truck replacement/retrofits, replacement/retrofits of cargo-handling equipment (CHE), and voluntary vessel speed reductions (VSR). The Clean Air Program will continue to be refined and adapted to future changes in District operations.

Port of San Diego Climate Action Plan

As noted above, ARB encourages local governments to adopt a reduction goal for municipal operations emissions and move toward establishing similar goals for community emissions that parallel the state's commitment to reducing GHG emissions (ARB 2008). The District adopted a CAP in December 2013. The CAP includes an inventory of existing (2006) and projected emissions in 2020, 2035, and 2050 and identifies the District's GHG reduction goals and measures to be implemented to support meeting the statewide reduction goals set forth in AB 32 (i.e., 1990 levels by 2020). District-wide 1990 emissions were not quantified, given the activity data gaps; instead, a base year of 2006 was used to calculate reductions needed at the District to reach 1990 levels by 2020. Consistent with AB 32 targets, a 10 percent reduction target (471.3 million MTCO₂e in 2006 and estimated 426.6 million MTCO₂e in 1990 statewide) was used as the District-wide reduction target for 2020.⁶

The CAP's 2020 projections and reduction targets (1990 levels) for each activity are based on growth projections specific to each tenant and activity type. For example, the CAP assumes a 3 percent annual growth in maritime-related uses between 2006 and 2020. Thus, the CAP and its reduction targets are specific to the District's geography, type and intensity of uses, and future year projected conditions. Table 4.4-3 provides the CAP's 2006 baseline, projected future year (2020) GHG emissions, and future year GHG emission targets (1990 levels) by activity within the District's jurisdiction. As shown, District-wide emissions are expected to increase from 826,429 MTCO₂e in 2006 to 1,039,699 MTCO₂e in 2020 without implementation of any CAP or state measures.

⁶ The CAP also includes projected emissions and some reduction policies to achieve the reduction target of 25% less than 2006 baseline levels by 2035 but does not yet quantify those reductions.

Table 4.4-3. GHG Emissions (Metric Tons per Year) by Activity Shown in the CAP

Category	Activity	GHG Emissions By Category and District Activity Type			Percentage Reduction to Achieve 1990 Levels – Specific to the District	
		2006 Baseline	2020 BAU	1990 ¹ Levels	2006 Baseline	2020 BAU
Port Operations	Port Operations	37,164	38,930	33,533	10%	14%
Maritime	Ocean-going Vessels	55,162	72,786	49,773	10%	32%
	Recreational Boating	80,441	118,252	72,583	10%	39%
	Other Terminal Activity ²	89,242	109,859	80,524	10%	27%
	Total Maritime	224,845	300,897	202,880	10%	33%
Other	Industrial	137,426	138,258	124,001	10%	10%
	Shipbuilding	123,725	123,545	111,638	10%	10%
	Lodging	137,429	249,852	124,004	10%	50%
	Other	165,840	188,217	149,639	10%	20%
	Total Other	564,420	699,872	509,282	10%	27%
Total Port-wide		826,429	1,039,699	745,695	10%	28%

Source: Table ES-2 of the CAP (District 2013)

¹ The CAP presents only the 2020 target (1990 levels) for broad source types (electricity and natural gas, transportation, water, and waste) and does not clearly present the emissions target for each activity (OGVs, shipbuilding, etc.) in the main body of the CAP. However, these emission estimates are presented in the CAP appendices (Table ES-2).

² “Other Terminal Activity” includes cargo handling equipment, commercial harbor craft, locomotives, heavy-duty trucks (for transport of goods to/from OGVs), cruise terminal transportation, and terminal tenant operations.

In order to reach the CAP’s target of achieving 745,695 MTCO₂e by 2020 (1990 levels), District-wide emissions would need to be reduced by 10 percent below 2006 baseline levels and 28 percent below 2020 business-as-usual (BAU) levels. To achieve the requisite reductions, the CAP includes various reduction measures related to transportation and land use, alternative energy generation, energy conservation, waste reduction and recycling, and water conservation and recycling, a few of which are specific to the proposed project.

A critical aspect of having a CAP that fits the criteria within State CEQA Guidelines Section 15183.5 is to having reduction targets that align with statewide goals. The CAP’s reduction targets parallel the state’s commitment to reducing GHG emissions by 2020 in AB 32 and go even further by identifying targets for a specific location based on projected emissions specific to the District’s geographic location as well as specific activity types and their associated sources. Therefore, because the CAP targets align with statewide goals for 2020, the CAP is consistent with AB 32.

Port of San Diego Green Port Program and Green Port Policy (BPC Policy No. 736)

The Board of Port Commissioners adopted the Green Port Policy in 2007. This policy establishes guiding principles to achieve long-term environmental, societal, and economic benefits through resource conservation, waste reduction, and pollution prevention. The policy provides the overall framework for the Green Port Program. The Green Port Program is an umbrella program designed to achieve the District's environmental sustainability goals in six key areas: water, energy, air, waste management, sustainable development, and sustainable business practices. It was established in early 2008 to achieve the objectives outlined in the Port of San Diego's Green Port Policy. Policy objectives include the following:

- Minimize, to the extent practicable, environmental impacts directly attributable to operations on San Diego Bay and in the tidelands.
- Strengthen the District's financial position by maximizing the long-term benefits of energy and resource conservation.
- Prevent pollution and improve personal, community, and environmental health.
- When possible, exceed applicable environmental laws, regulations, and other industry standards.
- Ensure a balance of environmental, social, and economic concerns are considered during planning, development, and operational decisions.
- Define and establish performance-driven environmental sustainability objectives, targets, and programs.
- Monitor key environmental indicators and consistently improve performance.
- Foster socially and environmentally responsible behavior through communications with employees, tenants, stakeholders, and the community.
- Collaborate with tenants to develop an integrated, measurable, bay-wide environmental sustainability effort.

The Green Port Program focuses primarily on things the District can do to be more environmentally sustainable, such as using less water and being more energy efficient in its own operations. The District also works with its tenants (businesses that lease land from the District), local environmental groups, and others around San Diego Bay to identify ways they can support the Green Port Program.

4.4.4 Project Impact Analysis

4.4.4.1 Methodology

GHG- and energy-related impacts associated with the proposed new fireworks display events were assessed and quantified using industry-standard methodology and peer-reviewed software tools, techniques, and emission factors. A summary of the methodology is provided below. A full list of assumptions and emission calculations can be found in Appendix E.

The analysis herein considers those sources that are directly or indirectly related to the proposed new fireworks display events. Direct effects are impacts that are a direct result of the proposed new fireworks display events and include the sources needed to operate the fireworks display events. Direct sources include operation of the fireworks display events, the delivery of the fireworks and related materials, and tugboat and barge activity related to launching the fireworks. Indirect effects would result from changes that would not occur without the proposed project and would not be directly caused by project operations. Indirect sources include changes to travel and circulation patterns on the regional roadway network from patrons while accessing the fireworks display event viewing locations and usage of facilities at the fireworks display event viewing locations (e.g., sources related to water consumption, electricity consumption, and cleaning product use at bathrooms).

The methodology used to estimate GHG emissions discussed below is the same that was used to estimate criteria pollutant and TAC emissions, as described in Section 4.2, *Air Quality and Health Risk*. In addition to the potential direct and indirect GHG and energy-related impacts associated with the proposed new fireworks display events, the impact analysis describes the effect of the proposed ordinance on existing fireworks display events in relation to GHG emissions and energy usage.

Background on Fireworks

A detailed summary of firework science is provided in Section 4.2, *Air Quality and Health Risk*. The majority of the effects are related to particulate matter (e.g., particulate matter 10 microns in diameter or less [PM10] and particulate matter 2.5 microns in diameter or less [PM2.5]) and not gases (e.g., CO₂). To estimate GHG emissions, firework-related CO₂ emissions were estimated to be 37 percent of the number of pounds of fireworks, based on emission factors for the potassium perchlorate propellant oxidizer fuel category within the open-burning and open-detonation model that was used in the health risk assessment (see Section 4.2). Emissions of non-CO₂ GHGs (N₂O and CH₄) are likely to be minor. For instance, studies found that detonation favored particulate forms of nitrogen species over gaseous forms, suggesting that oxygen released during combustion was quickly consumed by fuels in the pyrotechnics (Croteau et al. 2010; Radojevic 2003). Moreover, studies found that the sum of all gases comprise only 0.006 to 0.4 percent of the initial mass of fireworks (Croteau et al. 2010). Thus, the individual gases that are most prevalent in the atmosphere, such as N₂O and CH₄, would be even smaller. Based on this, gaseous non-CO₂ compounds, including N₂O and CH₄, from proposed new fireworks display events were assumed to be negligible and were not included in the analysis.

Tugboats and Barges

The assumptions used in relation to tugboat and barge activity for the proposed new fireworks display events are based on available information for existing fireworks display events that currently occur in San Diego Bay. The proposed new fireworks display events would launch fireworks from barges adjacent to and/or in the waters of southern San Diego Bay. Barges would be moved by tugboats to their designated locations along the Chula Vista and National City Bayfronts. The barges themselves result in no emissions, but the tugboats that move the barges do. Estimates of tugboat activity related to moving barges into place were based on the distance from the Pacific Tugboat Service offices to various locations throughout the Bay, assuming tugboats travel 6 mph, similar to the in-harbor tugboat activity data presented in the District's Emissions Inventory (District 2014). It was assumed that the tugboat's propulsion/main and auxiliary engines would be

active while moving the barges into place. Tugboat activity information related to holding the barges in place was based on data from the District, organizers, operators, and/or District tenants associated with fireworks display events and assumed that the barges would be active for a total of 4 hours. While holding barges in place, it was assumed that only the tugboat's auxiliary engines would be active, and the propulsion/main engines would remain off. It was assumed that the same activity that occurred when the barges were moved into place would occur once the fireworks display event is complete and the barges and tugboats return to the Pacific Tugboat Service offices.

A summary of proposed new fireworks display events that are anticipated to use tugboats and barges is presented in Table 3-2. As with existing fireworks display events, the barges would use tugboats that are in the 400–1,100 horsepower range. The District's Emissions Inventory (District 2014) was used to find the appropriate model year and engine size for tugboats that fit that horsepower range. To estimate tugboat emissions factors, it was assumed that the average tugboat in that range would be a 2004 model with an 804-horsepower main engine and a 101-horsepower auxiliary engine. Tugboat emissions factors are based on zero-hour emissions factors for model year 2004 tugboat engines, engine deterioration factors, fuel correction factors, useful life, and load factors for main propulsion and auxiliary tugboat engines as well as auxiliary barge engines, based on the calculation methodology from the Port of Long Beach Inventory (Port of Long Beach 2014). It was conservatively assumed that tugboats used during the proposed new fireworks display events would be fully deteriorated (i.e., at the end of their useful life). It is assumed that the methodology used to estimate emissions from tugboat and barge activity would be the same for existing and proposed new fireworks display events.

Firework Material Deliveries

The fireworks are manufactured primarily overseas and transported to the fireworks display events by truck from the port of entry. For purposes of analysis, it was assumed that firework materials would be trucked from the Ports of Los Angeles and/or Long Beach to the project area prior to or on the day of the proposed new fireworks display events. Emissions associated with delivery truck travel were estimated by assuming a single 236-mile, round-trip (118 miles one way), heavy-duty truck delivery for each event on the event day to and from the Port of Los Angeles. Exhaust emissions were based on emissions factors from ARB's EMFAC software for heavy-duty "T7 Single Construction" tractor-trailer trucks operating in San Diego County in 2017.

Visitor Traffic

As noted in the Transportation Assessment provided by Chen Ryan (Appendix J), regional traffic patterns related to the fireworks display events cannot be accurately analyzed because of the limitations of traffic modeling and the uniqueness of the events. Rather, the traffic analysis focuses on how transportation and parking demand patterns changed around San Diego Bay and the Imperial Beach Oceanfront during existing fireworks display events, including observed changes in vehicle, pedestrian, and bicycle volumes. These volumes were counted only on roadways and intersections that provide immediate access to viewing locations for the sample existing fireworks display events. In order to calculate visitor-related VMT, data would need to be collected that assess the number of visitors, how visitors arrived at the event, how far patrons traveled, routes taken, where patrons parked, and whether or not patrons were at the viewing locations specifically for the fireworks or for other reasons. As discussed in Section 4.2, *Air Quality and Health Risk*, because the proposed new fireworks display events along the National City and Chula Vista Bayfronts do not

currently occur, VMT data could not be collected. In discussing the air quality effects of visitor-related vehicle traffic, the analysis below provides a qualitative evaluation of background monitoring on both event and non-event days.

Studies indicate that particulate matter (PM) concentrations in most urban areas are generally attributed to vehicle traffic, and PM concentrations diminish with distance, particularly beyond 1,000 feet (ARB 2005). Background PM concentrations are collected at the following monitoring stations in the region: Alpine, Downtown (Beardsley Street), El Cajon, Escondido, Otay Mesa, Camp Pendleton, and San Ysidro (San Diego Air Pollution Control District 2016). Of these stations, the only station within proximity of the project area is the Downtown (Beardsley Street) station, which is near existing fireworks display events that occur in the northern parts of San Diego Bay, particularly the Big Bay Boom event. No monitoring stations are near the existing Fourth of July Imperial Beach Fireworks Show or near the proposed new National City and Chula Vista fireworks display events. Thus, the Fourth of July Imperial Beach Fireworks Show, which is similar in size to the proposed new National City and Chula Vista fireworks display events, cannot be used to estimate the effects of the proposed new shows because no monitoring station is close to the Fourth of July Imperial Beach Fireworks Show. However, even though the existing Big Bay Boom event is much larger and takes place in a different part of the Bay, the event does take place in proximity to a PM monitoring station (Downtown [Beardsley Street]), which can be used to qualitatively assess the potential impact of the proposed project's vehicle traffic based on hourly monitoring data near an existing display event.

Energy Consumption

The energy analysis evaluates potential impacts on energy consumption associated with fuel consumption from tugboats and barges as well as material deliveries associated with the proposed new fireworks display events. Fuel consumption associated with visitor motor vehicle travel is discussed qualitatively. Energy use was calculated by converting the GHG emissions predicted by the GHG analysis, using the rate of CO₂ emissions per gallon of combusted diesel, which was assumed to be 10.21 kilograms per gallon consumed (Climate Registry 2015). The estimated fuel consumption was converted to BTUs, assuming an energy intensity of 129,488 BTUs per gallon of diesel (Argonne 2015).

GHG Emissions Scenarios

Given the recent adoption of SB 32, as well as the scientific evidence that additional GHG reductions are needed through 2050 to stabilize CO₂ concentrations, impacts associated with the proposed project for both 2020 (AB 32) and the post-2020 period (SB 32) are considered in the analysis.⁷

⁷ The Association of Environmental Professionals' Climate Change Committee recommended in the *Beyond 2020: The Challenge of Greenhouse Gas Reduction Planning by Local Governments in California* (Beyond 2020) white paper, incorporated herein by reference, that CEQA analyses for most land use development projects can continue to rely on current thresholds for the immediate future but that general plans and long-term projects should consider "post-2020 emissions consistent with 'substantial progress' along a post-2020 reduction trajectory toward meeting the 2050 target." *Beyond 2020* further recommends that the "significance determination...should be based on consistency with 'substantial progress' along a post-2020 trajectory." This point is further clarified in the more recent *Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California* white paper that stated "the best measure of whether an individual project is providing its fair share of GHG reductions or efficiency levels is whether that project is supporting 'substantial progress' toward the statewide reduction targets over time, not whether the project is meeting a milestone target many years in the future, such as for 2050."

4.4.4.2 Thresholds of Significance

Climate change is a global problem, and GHGs are global pollutants, unlike criteria air pollutants (such as ozone precursors), which are primarily pollutants of regional and local concern. Given their long atmospheric lifetimes, GHGs emitted by countless sources worldwide accumulate in the atmosphere. No single emitter of GHGs is large enough to trigger global climate change on its own. Rather, climate change is the result of the individual contributions of countless past, present, and future sources. Therefore, GHG impacts are inherently cumulative, and the analysis below is a cumulative impact analysis.

Greenhouse Gases

The State CEQA Guidelines do not indicate what amount of GHG emissions would constitute a significant impact on the environment. Instead, they authorize the lead agency to consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence (State CEQA Guidelines Sections 15064.4(a) and 15064.7(c)).

A number of agencies throughout the state, including multiple air districts (not including the San Diego Air Pollution Control District), have drafted and/or adopted varying threshold approaches and guidelines for analyzing GHG emissions and climate change in CEQA documents. However, none of these are binding; they are only recommendations for consideration by CEQA lead agencies. Some commonly used threshold approaches include (1) consistency with a qualified GHG reduction strategy, (2) performance-based reductions,⁸ (3) numeric “bright-line” thresholds, and (4) efficiency-based thresholds.

Summary of “Newhall Ranch” Supreme Court Decision

The recent California Supreme Court decision in the *Center for Biological Diversity et al. vs. California Department of Fish and Wildlife, the Newhall Land and Farming Company* (November 30, 2015, Case No. S217763) (hereafter *Newhall Ranch*), confirmed that the use of BAU analysis (i.e., 29 percent below business as usual), a performance-based approach, would be satisfactory. However, for a project-level analysis that uses ARB’s statewide BAU targets, substantial evidence must be presented to support the use of those targets for a particular project at a specific location. The court notes that this may require examination of the data behind the statewide model and adjustment to the levels of reduction from BAU used for project evaluation. To date, neither ARB nor any lead agencies have provided any guidance on how to adjust AB 32’s statewide BAU target for use at the project level.

The *Newhall Ranch* decision suggested several approaches for determining the significance of GHG emissions that may be appropriate as alternatives to the “percentage below BAU” approach but did not foreclose other methodologies that may be used by lead agencies. In any case, the decision affirmed that “thresholds only define the level at which an environmental effect ‘normally’ is considered significant; they do not relieve the lead agency of its duty to determine the significance of an impact independently.” Some of the court’s suggested approaches are introduced next and discussed more thoroughly in the context of the proposed project below.

⁸ Performance-based reductions include the “percentage below business-as-usual” threshold approach and are generally based solely on statewide targets, which have been used widely in the past. This approach was the subject of the *Newhall Ranch* case and presently is subject to uncertainty until the issues raised by the California Supreme Court ruling are resolved.

- **Consistency with a Qualified GHG Emissions Reduction Plan.** Use of a GHG emissions reduction plan, consistent with State CEQA Guidelines Section 15183.5, for a particular geographic area.
- **Quantitative Thresholds.** Use of a quantitative threshold (such as the Bay Area Air Quality Management District's (BAAQMD's) bright-line threshold).⁹
- **Compliance with Regulatory Programs.** This approach would include an assessment of the project's compliance with regulatory programs designed to reduce GHG emissions from particular activities (e.g., building efficiency, transportation, water usage). To the extent that a project's design features comply with or exceed the regulations outlined in the Scoping Plan and adopted by ARB or other state agencies, the lead agency could appropriately rely on their use to show that the project is reducing emissions consistent with AB 32 and, thus, that emissions are less than significant.
- **CEQA Streamlining.** Certain land use projects (such as residential, mixed-use, and transit priority projects) could use SB 375's expressed allowance for streamlining transportation impacts, based on the metropolitan regional SCS to streamline the analysis of emissions from cars and light trucks. Under any methodology, the *Newhall Ranch* case recognizes that if GHG emission impacts are still significant after adoption of all feasible mitigation measures and consideration of project alternatives, the lead agency may adopt a statement of overriding considerations with the appropriate findings.

Applicability of Available Thresholds

In light of the recent *Newhall Ranch* decision, the following section discusses each applicable approach and analyzes its specific applicability to the proposed project.

Performance-Based Reductions

Performance-based thresholds are based on a percentage reduction from a projected future condition. For example, reducing future BAU emissions by the AB 32 target of 29 percent (below 2020 BAU levels) through a combination of state measures, project design features (e.g., renewable energy), or mitigation is a performance-based threshold. The performance-based approach is based on the project's reduction in emissions from an unmitigated condition. Other lead agencies have adopted performance-based targets that are all tied to the AB 32 target of achieving 1990 levels by 2020, but the prescribed percentage reduction can vary, depending on the version of the Scoping Plan and targets therein that were used. For example, San Joaquin Valley Air Pollution Control District recommends a 29 percent reduction, which is based on the 2008 Scoping Plan, while Sacramento Metro Air Quality Management District previously recommended a 21.7 percent reduction from a projected no-action taken (NAT) scenario,¹⁰ which is based on the 2011 re-adopted Scoping Plan, whose emission targets vary slightly from 2008 to account for revised estimates for future fuel and energy demand. With the *Newhall Ranch* decision, relating a given project to the achievement of state reduction targets most likely requires adjustments to ARB's statewide BAU

⁹ Note that while *Newhall Ranch* did not explicitly discuss efficiency-based thresholds; they are a form of quantitative threshold and therefore are included in the *Applicability of Available Thresholds* discussion herein.

¹⁰ The NAT scenario does not include any state regulations designed to reduce GHG emissions, including improvements to the Title 24 standards, RPS, LCFS, or Pavley rules.

model, not only to isolate new development emissions but also to consider unique geographic conditions that would be required to use the BAU performance-based methodology for a specific project. To date, this type of adjustment to the statewide BAU target has not been formulated and, therefore, is not appropriate for the project's analysis. The primary value of a performance-based target, as indicated in *Newhall Ranch*, is that it can provide a scenario by which to evaluate the effectiveness of a project's efficiency and conservation measures to reduce GHG emissions. As such, future year targets can be used to benchmark performance, using either statewide or regional emission targets, to determine a project's fair share of mitigation.

Compliance with a Qualified GHG Reduction Plan

Under this approach, a qualified plan may be used in the cumulative impact analysis for later projects when the analysis "identifies those requirements specified in the plan that apply to the project." For a GHG reduction plan to be considered a qualified plan, it must meet certain criteria established under State CEQA Guidelines Section 15183.5 (b), also specified above. Consequently, if a project is consistent with a local CAP that was created to meet AB 32's GHG targets, then the project would be considered consistent with statewide GHG reduction goals for 2020. Additionally, if a CAP was adopted that was consistent with the state's overall goals for post-2020, including the downward trajectory, as clarified in EO B-30-15 and EO S-03-05, and a project is consistent with that CAP, it would be considered consistent with the state's post-2020 GHG emissions strategy. Section 15183.5 also specifies that the project's CEQA analysis "must identify those requirements specified in the plan that apply to the project and, if those requirements are not otherwise binding and enforceable, incorporate those requirements as mitigation measures applicable to the project." The District adopted a CAP in 2013 that sets forth GHG 2020 and 2035 reduction targets and reduction measures to achieve these targets.

For 2020, the CAP meets the requirements of State CEQA Guidelines Section 15183.5, as specified in Appendix A of the CAP. The CAP quantifies existing and projected GHG emissions by sector¹¹ and activity type¹² and identifies and analyzes GHG emissions reductions from the same time period within the District. The CAP establishes a 10 percent reduction goal for the District for 2020; below that goal, the contribution of GHG emissions from activities covered by the plan would not be cumulatively considerable. The GHG emissions reduction goal and measures also serve as the CAP's performance standards, with accompanying reduction targets or performance standards across six categories.¹³ The CAP also specifies measures that, if implemented on a project-by-project basis, collectively achieve the GHG emissions reduction goals for the District.¹⁴ The plan and its effectiveness are regularly monitored through a process known as *adaptive management* to ensure that it is achieving the GHG emissions reduction goals.¹⁵ The CAP was adopted through a lengthy public process, and a CEQA exemption was adopted by the District (with an initial study) prior to the

¹¹ Sectors include electricity, natural gas, on-road transportation, off-road equipment, water usage and wastewater, and waste.

¹² Activities include industrial, shipbuilding, lodging, ocean-going vessels, recreational boating, other terminal activities, port operations, the convention center, and other activities within the District.

¹³ Categories include energy efficiency, alternative energy, transportation and land use, water, waste, and miscellaneous.

¹⁴ Implementation of the measures and performance standards is specified in Appendices A and F of the CAP as well as Board of Port Commissioners Policy 750, which is incorporated herein by reference.

¹⁵ Board of Port Commissioners Policy 750.

CAP's adoption. For the proposed project, consistency with the CAP is appropriate for 2020 to determine whether significant GHG emissions impacts would result. However, because the CAP does not include post-2020 reduction quantification, consistency with the CAP is not an appropriate threshold of significance for post-2020 GHG emissions.

Quantitative Thresholds

Numerical Bright-Line

In general, numerical bright-line thresholds identify the point at which additional analysis and mitigation of project-related GHG emissions impacts is necessary. Currently, bright-line thresholds have been developed for commercial projects, residential projects, and stationary sources. Commercial and residential bright-line thresholds are typically based on a market capture rate or a gap analysis,¹⁶ which is tied back to AB 32 reduction targets (1990 levels by 2020).¹⁷ These bright-line thresholds reflect local or regional land use conditions, particularly residential and commercial density and access to transit. For example, the BAAQMD's bright-line threshold of 1,100 MTCO_{2e} captures land use conditions present in the Bay Area at the time of analysis and does not necessarily reflect conditions in other areas of the state, including within the District, that may display varying land use patterns and densities. A stationary source bright-line threshold of 10,000 MTCO_{2e} has been adopted by multiple air districts and other agencies as part of the permitting process, and the South Coast Air Quality Management District (SCAQMD) currently recommends use of the same threshold for permitted source projects when SCAQMD is the lead agency.

A numerical bright-line value, based solely on District-wide projects, does not yet exist. Moreover, no bright-line threshold has been formally adopted by an air district or other lead agencies for use in the San Diego region. Various bright-line numerical threshold have been drafted, proposed, or adopted throughout the state, and these vary greatly by agency and by purpose. For example, numerical thresholds range from the 900 MTCO_{2e} screening level referenced in the California Air Pollution Control Officers Association (CAPCOA) white paper (CAPCOA 2008), to the 1,100 MTCO_{2e} adopted by BAAQMD (BAAQMD 2011), to the 10,000 MTCO_{2e} stationary bright-line threshold adopted by BAAQMD (BAAQMD 2011) and Sacramento Metropolitan Air Quality Management District (SMAQMD) (SMAQMD 2016), to the 100,000-ton CO_{2e} level adopted by the Mojave Desert Air Quality Management District, based on the federal permit triggers (MDAQMD 2016). CAPCOA's 900 MTCO_{2e} screening level is the lowest numerical threshold drafted, recommended, or adopted in the state.

The 900 MTCO_{2e} screening level is used as a theoretical approach to identify projects that require further analysis and potential mitigation. The screening level identifies projects that would result in sufficiently low GHG emissions that would be less than cumulatively considerable without mitigation. This 900 MTCO_{2e} screening-level threshold was not devised to include emissions associated with larger goods movement projects or industrial processes that are typically associated with larger District projects but may be appropriate for small maritime projects or other land use types, including small visitor-serving commercial projects or intermittent uses. Furthermore, the

¹⁶ The gap analysis demonstrates the reductions needed at the residential and commercial land use levels to achieve state targets. Capture is the process of estimating the portion of projects that would result in emissions that would exceed a significance threshold and would be subject to mitigation.

¹⁷ The AB 32 Scoping Plan identifies specific measures to reduce GHG emissions to 1990 levels by 2020.

stationary bright-line threshold of 10,000 MTCO₂e is not appropriate for the proposed project because the project is not a typical industrial stationary source with a single point of emissions (e.g., a single exhaust pipe or release point) but may be appropriate for stationary-source activities (e.g., boilers). Because the proposed project is not an industrial stationary-source project, established industrial bright-line numerical thresholds are not appropriate and are not used in the analysis. However, the 900 MTCO₂e screening-level threshold is considered, as discussed below.

Efficiency-Based Threshold

Another type of quantitative threshold is an efficiency-based threshold. Efficiency-based thresholds represent the GHG efficiency needed for development to achieve California's GHG emissions target established under AB 32. Although the *Newhall Ranch* decision did not specifically recommend the efficiency-based approach, the ruling did note that numerical bright-line threshold approaches may be appropriate for determining significance of GHG emissions and emphasizing the consideration of GHG efficiency. Efficiency-based thresholds are typically calculated by dividing emissions associated with residential and commercial uses (also termed the "land use sector" in the Scoping Plan) within the state (or a certain geographic area) by the sum of jobs and residents within the same geography. The sum of jobs and residents is called the "service population." A project's service population is defined as the people who work and live within the project site. Because typical efficiency-based thresholds are based on the land use sector (residential and commercial uses) and account only for land use-related emissions and residential population and employment, they may be misleading to use for industrial uses, recreational projects, stationary-source projects,¹⁸ or marine terminal projects¹⁹ because these types of uses are specifically excluded from the land use sectors and typically do not directly propose housing or result in population growth. Therefore, no threshold has been adopted or proposed to date that would address recreational and intermittent types of projects. Therefore, the efficiency-based methodology is not used for the proposed project.

Compliance with Regulatory Programs

Another approach for determining whether a project would result in significant GHG emissions impacts is determining whether a proposed project is in compliance with regulatory programs designed to reduce GHG emissions from particular activities. To the extent a project complies with or exceeds those programs adopted by ARB or other state agencies, a lead agency could rely on this compliance to show less-than-significant impacts. However, such analysis is applicable only within the area governed by the regulations. For example, consistency with regulations that address building efficiency would not suffice when determining that the project would not have significant GHG emissions from transportation. The proposed project's compliance with regulatory programs adopted by ARB or other state agencies is used, in part, for the proposed project's GHG emissions analysis.

¹⁸ See the Bay Area Air Quality Management District's October 2009 Threshold Options and Justification Report for additional evidence: <http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines>.

¹⁹ An example of appropriate use of an efficiency-based threshold at the port would be for a large visitor-serving commercial project (i.e., has a jobs-based component consistent with the efficiency-based threshold) that accommodates population and employment growth in a way that is consistent with the emissions limit established under AB 32.

Newhall Ranch specifically mentions consistency with both SCS (per SB 375) and AB 32, which are discussed below. Also, other recent case law mentions the need to demonstrate consistency with the long-term targets in B-30-15 (2030) and S-03-05 (2050), which are also addressed below.

- **Compliance/Consistency with AB 32 (2020).** A lead agency could also assess a project's consistency with AB 32 in whole or part by looking to compliance with regulatory programs designed to implement AB 32. To the extent a project's design features comply with or exceed the regulations outlined in the Scoping Plan and adopted by ARB or other state agencies, a lead agency could appropriately rely on their use to show compliance with performance-based standards adopted to fulfill the statewide goal for reducing GHG emissions.
- **Consistency with EO B-30-15 (2030) and EO S-03-05 (2050) Targets and Planning.** A lead agency could also assess a project's consistency with the targets in the EOs and with current planning for the post-2020 period or substantial progress toward these goals over time. At present, the regulatory framework to achieve the 2030 target is in its infancy and is not sufficiently robust to support a consistency argument, but consistency with the targets is nevertheless a potential approach.

CEQA Streamlining

The *Newhall Ranch* ruling affirmed that CEQA expressly allows streamlining under SB 375 of certain residential, commercial, and mixed-use projects that are consistent with the limits and policies specified in an applicable SCS. The ruling pointed out that a qualifying project need not additionally analyze GHG emissions from cars and light trucks. In San Diego, the SCS is contained within SANDAG's recently adopted 2050 RTP/SCS (SANDAG 2015). Projects eligible for this streamlining can "tier" off the RTP/SCS EIR for CEQA purposes. However, the proposed project would not be eligible for streamlined review because it does not meet the qualifying criteria defined in SB 375.

Post-2020 Thresholds

Although the *Newhall Ranch* decision did not rule on whether a post-2020 climate change analysis is required for CEQA documents, the decision mentioned that consistency with 2020 goals will become a less definitive guide over time, and consistency with long-term emission reduction targets may be needed in the near future. The state recently adopted SB 32, which adopts the interim reduction target to reduce GHG emissions by 40 percent below 1990 levels by 2030 in EO B-30-15. Further, EO S-03-05 has set forth a long-term reduction target to reduce GHG emissions to 80 percent below 1990 levels by 2050. ARB released its Draft 2017 Scoping Plan Update and is working on the 2030 Scoping Plan, which outlines the state's proposed framework for meeting the 2030 target set by SB 32. The Draft 2017 Scoping Plan Update is currently out for public review and is therefore not yet adopted. Thus, there is no current adopted statewide GHG emissions reduction plan or framework thereof that extends beyond 2020.

The Draft 2017 Scoping Plan Update, along with previous work by the state and the District, has shown the District's and state's interest in adopting regulatory programs and frameworks designed to support meeting statewide post-2020 reduction goals. Meeting the ambitious targets in SB 32 and EO S-03-05 will require substantial effort at the state, regional, and local levels. Lacking an adopted post-2020 plan, the Association of Environmental Professionals (AEP) (2015, 2016) recommends that CEQA GHG analyses evaluate project emissions in light of the trajectory of state climate change legislation and assess their "substantial progress" toward achieving longer-term reduction targets identified in available plans (e.g., CAPs), legislation, or executive orders. The best measure is thus

substantial progress toward long-range targets and not necessarily meeting milestone targets many years in the future, such as for 2050. Moreover, although there are no proposed or adopted significance thresholds for analyzing post-2020 emissions for development projects in California, the updated Scoping Plan does recommend that local governments aim to achieve a community-wide goal of no more than 6 MTCO₂e per capita by 2030 and no more than 2 MTCO₂e per capita by 2050. Although these thresholds are neither adopted nor explicitly relevant to the proposed project, this does indicate ARB's overall intent of highlighting and promoting efficiency statewide. However, there are no thresholds that are explicitly applicable to fireworks display events or other intermittent and infrequent recreational events.

Threshold Approach

As discussed above, there are multiple potential thresholds and methodologies for evaluating project-level GHG emissions consistent with CEQA, depending on the circumstances of a given project. Although efforts at framing GHG significance issues have not yet coalesced into any widely accepted set of numerical significance thresholds across the state and within the region, a range of alternative approaches does exist.

The proposed new fireworks display events could occur as soon summer 2017. However, 2020 is an obvious GHG benchmark year that aligns with the timeline employed in development of the bright-line threshold levels and set forth in both AB 32 and the District's CAP. Use of 2020 as a target or milestone year for GHG emissions reductions per AB 32 as a significance criterion is widely employed and was further validated in *Newhall Ranch* for projects with 2020 or pre-2020 timelines (AEP 2016). Beyond 2020, the next statewide target or milestone year is 2030, as originally set by EO B-30-15, adopted in SB 32, and addressed in recent ARB movement on the Scoping Plan update (ARB 2016b). The proposed project would remain in operation well beyond 2020, and given the recent adoption of SB 32 and court direction regarding EO S-03-05, this analysis assumes that the post-2020 target or milestone year is 2050.

Based on the available threshold concepts recommended by air districts or other lead agencies and recent case law, the thresholds of significance that will be applied to the proposed project's GHG emissions for both the 2020 and post-2020 periods are as follows:

- For 2020, impacts from the proposed project's GHG emissions would be considered less than significant if the proposed project is found to be:
 - (1) Below relevant bright-line thresholds, including the 900 MTCO₂e screening level;
 - (2) Consistent with the District CAP (a qualified GHG reduction plan), including the reduction targets and reduction measures specified therein; and
 - (3) Consistent with regulatory programs outlined in the Scoping Plan and adopted by ARB or other California agencies.

The analysis for 2020 is both quantitative with respect to the bright-line threshold, CAP, and AB 32 consistency and qualitative with respect to compliance with the CAP's measures and regulatory programs outlined in the Scoping Plan and adopted by ARB or other California agencies. The analysis for consistency with regulatory programs applies only to the individual area addressed by the regulatory program. If the proposed project is determined to be (1) consistent with relevant bright-line threshold; (2) consistent with the District's CAP, including reduction targets therein (see Table 4.4-4); and (3) consistent with regulatory programs adopted by ARB or other agencies to

reduce GHG emissions, then the proposed project's cumulative contribution of GHG emissions would be considered less than significant for 2020. Conversely, if the proposed project is determined to be inconsistent with the relevant bright-line threshold or inconsistent with measures listed in the CAP, or is inconsistent with or will interfere with or obstruct implementation of regulatory programs adopted by ARB or other state agencies to reduce GHG emissions, then the proposed project's cumulative contribution of GHG emissions would be considered significant, and feasible mitigation measures would be required.

Table 4.4-4. Estimate of Annual Greenhouse Gas Emissions during Existing Fireworks Display Events (metric tons per year and per event)

Emission Source	Project MTCO₂e
Fourth of July	
<i>Fireworks</i>	
Big Bay Boom	0.90
Glorietta Bay	0.07
Imperial Beach	0.08
<i>Tugboats</i>	
Big Bay Boom	1.99
Glorietta Bay	0.31
Imperial Beach	—
<i>Deliveries</i>	
All Shows	1.20
Total Fourth of July	4.55
Non-Fourth of July	
<i>Fireworks</i>	
Symphony Summer Pops	0.25
Our Lady of Rosary Church	< 0.01
U.S.S. Midway	0.30
NASSCO	0.07
<i>Tugboats</i>	
Symphony Summer Pops	8.14
Our Lady of the Rosary Church	—
U.S.S. Midway	10.49
NASSCO	—
<i>Deliveries</i>	
All Shows	18.42
Total Non-Fourth of July	37.68
Total for all existing fireworks display events	42.22
<i>MTCO₂e – Fireworks</i>	1.66
<i>MTCO₂e – Tugboats</i>	20.93
<i>MTCO₂e – Deliveries</i>	19.63

Source: Appendix E.

“—” denotes that no tugboats are used during these shows. Totals may not add up exactly because of rounding.

As mentioned above, the 900 MTCO₂e screening level is lowest numerical threshold drafted, recommended, or adopted in the state and serves as a conservative screening criterion for determining which projects require further analysis and identification of project design features or potential mitigation measures with regard to GHG emissions. No threshold has been adopted specific to analyzing fireworks display events. This 900 MTCO₂e level was developed to provide a screening criterion for small land use development projects (e.g., residences, offices) that include

land use–related emissions sources (e.g., passenger vehicles, building energy). This screening criterion can be used to provide a tool for comparing proposed project-related emissions to the lowest and most conservative threshold currently recommended in the state for analyzing typical land use projects. Additionally, the mere fact that a project exceeds a bright-line significance criterion does not necessarily indicate that the project would generate a significant unavoidable impact. In the same sense, the mere fact that a project would not exceed a bright-line significance criterion does not necessarily indicate that the project would result in a less-than-significant impact.

These bright-line thresholds are screening criteria, and the analysis must be combined with further discussion in substantiating significance conclusions. As discussed above, use of the bright-line screening levels is the first step in discussing the significance of proposed project emissions.

The thresholds of significance that will be applied to the proposed project’s GHG emissions for the post-2020 period are as follows:

- For the post-2020 period, impacts from the proposed project’s GHG emissions would be less than significant if the proposed project is found to be:
 - (1) Below relevant bright-line thresholds, including the 900 MTCO_{2e} screening level;
 - (2) Consistent with the state’s overall reduction targets (including SB 32) for post-2020; and
 - (3) Consistent with regulatory programs adopted by ARB or other California agencies for post-2020 GHG emissions.²⁰

Based on the available threshold concepts recommended by expert agencies and the “substantial progress” approach, the analysis for the post-2020 time period is both quantitative with respect to consistency with bright-line threshold levels and long-term reduction targets and qualitative with respect to consistency with the measures and regulatory programs outlined, adopted, or proposed by ARB or other California agencies. Proposed project emissions are compared to relevant threshold levels and in the context of the state’s overall reduction targets for the post-2020 period. The analysis for consistency with regulatory programs applies only to the individual area addressed by the regulatory program. In keeping with the guidance provided in *Newhall Ranch* that the extent to which a project’s design features comply with or exceed the regulations outlined in the Scoping Plan or by state agencies, a lead agency could appropriately rely on showing compliance with performance-based standards (e.g., future reduction targets) adopted to fulfill a statewide plan for the reduction or mitigation of GHG emissions.

Note that the 900 MTCO_{2e} screening threshold discussed above is based on consistency with the AB 32 reduction target. Although the 900 MTCO_{2e} screening threshold is not intended to be used for determining the consistency of emissions with post-2020 reduction targets, including SB 32, it can serve as a proxy for providing a valuable quantitative screening level to determine whether project emissions would be low enough to make the possibility of generating a level of GHGs that would be cumulatively considerable highly unlikely.

Climate Change

Recent court cases have concluded that an EIR need not evaluate the environment’s effect on a

²⁰ Because the CAP does not yet quantify reductions for 2035, it is not relied on for the post-2020 analysis.

project, often referred to as “Reverse CEQA.”²¹ In one case that discussed the issue of SLR directly, the California Second District Court of Appeal held that, although an EIR must analyze the environmental effects that may result from a project, an EIR is not required to examine the effects of the environment, such as SLR, on a project (see *Ballona Wetlands Land Trust v. City of Los Angeles*, 201 Cal. App. 4th 455). In its decision, the court called into question the validity of portions of the State CEQA Guidelines that require consideration of impacts of the environment on a project. The *Ballona* decision potentially eliminates the need for lead agencies to consider the impacts of climate change on proposed projects. The *Ballona* decision did not, however, call into question the State CEQA Guidelines amendments enacted in 2010 that address the analysis and mitigation of the potential impacts on the environment associated with a project’s GHG emissions.

Although the California Supreme Court denied review of the *Ballona* decision,²² the issue of the environment’s effect on a project was raised once again in *California Building Industry Association v. Bay Area Quality Management District*, Supreme Court Case No. S213478. The California Supreme Court ruled on December 17, 2015, that CEQA does not direct agencies to analyze the environment’s effects on a project unless the project would exacerbate existing environmental hazards or certain specific exemptions apply. However, the project sites are within the Coastal Zone and, pursuant to EO S-13-08, the California Coastal Commission considers the potential impacts of SLR on a proposed project in determining consistency with the Coastal Act. Accordingly, the California Coastal Commission adopted SLR policy guidance in 2015 that provides an overview of the best available science on SLR and a recommended methodology for addressing SLR in California Coastal Commission planning and regulatory actions (California Coastal Commission 2015).

Specifically regarding SLR, the San Diego Bay Vulnerability Assessment conducted by ICLEI - Local Governments for Sustainability found that the greatest concern with respect to SLR will be an increase in the nature of flooding that a region already experiences from waves, storm surge, El Niño events, and exceptionally high tides. Furthermore, starting around mid-century, San Diego Bay may become more susceptible to regularly occurring inundation of certain locations and assets, some of which are being planned and built today. As a result, this longer-term risk of inundation should be a concern in today’s decision-making. The most vulnerable sectors in the community include stormwater management, wastewater collection, shoreline parks and public access, transportation facilities, commercial buildings, and ecosystems (ICLEI 2012).

Accordingly, a discussion of the issue has been provided below using the following criterion:

- Would the project place people or structures at substantial risk of harm due to predicted climate change effects, particularly SLR?

Energy Consumption

Based on State CEQA Guidelines Appendix F, environmental considerations may include those listed below.

²¹ See *South Orange County Wastewater Authority v. City of Dana Point* (2011), 196 Cal.App.4th 1604; *Ballona Wetlands Land Trust v. City of Los Angeles* (2011), 201 Cal.App.4th 455; *Baird v. County of Contra Costa* (1995), 32 Cal.App.4th 1464, 1468 (Baird); *City of Long Beach v. Los Angeles Unified School Dist.* (2009), 176 Cal.App.4th 889 (Long Beach).

²² On March 21, 2012, the California Supreme Court denied case review and depublication requests submitted by several environmental organizations.

- The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project, including construction, operation, maintenance, and/or removal. If appropriate, the energy intensiveness of materials may be discussed;
- The effects of the project on local and regional energy supplies and on requirements for additional capacity;
- The effects of the project on peak- and base-period demands for electricity and other forms of energy;
- The degree to which the project complies with existing energy standards;
- The effects of the project on energy resources; and
- The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

The State CEQA Guidelines recommend that the discussion of applicable energy impacts focus on whether the project would result in the wasteful, inefficient, or unnecessary consumption of energy because this may constitute an adverse effect on energy resources. Efficiency projects that incorporate conservation measures to avoid wasteful energy usage facilitate long-term energy planning and avoid the need for unplanned or additional energy capacity. Accordingly, based on the criteria outlined in State CEQA Guidelines Appendix F, the proposed project would cause significant impacts related to energy if it would lead to a wasteful, inefficient, and unnecessary usage of direct or indirect energy.

As discussed in Section 4.2.3, energy legislation, policies, and standards adopted by California and local governments were enacted and promulgated for the purpose of reducing energy consumption and improving efficiency (i.e., reducing wasteful and inefficient use of energy). Therefore, for the purposes of this analysis, *wasteful* and *inefficient* are defined as circumstances in which the project would conflict with applicable state or local energy legislation, policies, and standards. Accordingly, if the project were to conflict with legislation, policies, or standards designed to avoid wasteful and inefficient energy usage, it would result in a significant impact related to energy resources and conservation. Accordingly, a discussion of the issue has been provided below using the following criteria:

- Would the project result in the wasteful, inefficient, or unnecessary use of energy?
- Would the project require or result in the construction of new energy system infrastructure or the expansion of existing infrastructure, the construction of which could cause significant environmental effects?

4.4.4.3 Project Impacts and Mitigation Measures

Threshold 1: For the years up to and including 2020, the project (1) would be below the relevant bright-line threshold (2) would be consistent with the District CAP, and (3) would be in compliance with plans, policies, and regulatory programs outlined in the Scoping Plan and adopted by ARB or other California agencies for the purpose of reducing the emissions of GHGs.

Impact Discussion

The four proposed new fireworks display events have the potential to generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. The proposed new displays would result in GHG emissions associated with fireworks detonation, tugboat and barge activity, and material deliveries. Further, viewers accessing the Bayfronts may change motor vehicle travel patterns on fireworks display event days; this is discussed qualitatively below.

A number of existing fireworks display events that require a discretionary action by the District or are operated by the District's tenants occur year-round, with the greatest number of displays in the summer months from July to September. These existing fireworks display events result in GHG emissions from sources that are directly or indirectly related to the displays, including fireworks detonation, tugboat and barge activity, material deliveries and indirectly related to visitor motor vehicle travel. The estimate of existing fireworks emissions serves as the basis for estimating fireworks emissions associated with the proposed new displays; emissions are scaled by the number of pounds per display. The methodology for delivery trucks and tugboats is based on existing conditions; there is one tugboat per barge, and the tugboat is active for 4 hours per display. A detailed description of each of these sources and associated emissions modeling are provided in Section 4.4.4.1.

Because the sum of all GHG emissions is analyzed on an annual time scale, the exact timing of the displays is not of concern; instead, the GHG emissions and climate change analysis is most concerned with the sum of all emissions over the course of a year and how those emissions would comply with existing District-wide and statewide plans, policies, and programs adopted for the purpose of reducing the emissions of GHGs.

Table 4.4-4, above, presents annual GHG emissions (metric tons per year) associated with all existing fireworks display events over the course of a year. As shown in Table 4.4-4, the sum of all existing fireworks display events results in an estimated 42 MTCO_{2e}, most of which (21 MTCO_{2e} from tugboats, 20 MTCO_{2e} from trucks) is emitted from diesel-related sources. Emissions from the fireworks themselves are low because fireworks-related GHG emissions factors are low. The majority of fireworks-related emissions under existing conditions are therefore already accounted for in the District's CAP. For example, the tugboat annual operating hours shown in the District's Maritime Emissions Inventory (District 2014) and the CAP (District 2013) include tugboat and barge activity associated with the current fireworks display events because the tugboat activity is performed by Pacific Tugboat Service, which is an existing District tenant. Although the CAP does not include fireworks and delivery emissions, these emissions are small and amount to an estimated 1.66 and 19.63 MTCO_{2e} per year under existing conditions, respectively. Furthermore, as discussed in Section 4.4.4.1 and in detail in Section 4.2, *Air Quality and Health Risk*, regional traffic patterns

cannot be accurately analyzed for the fireworks display events. However, it is unlikely that vehicle traffic related to the proposed new Fourth of July and non-Fourth of July fireworks display events would result in more emissions than the actual fireworks display events, which themselves are minor. As discussed in Section 4.2, *Air Quality and Health Risk*, based on a comparison of background air monitoring data on both event and non-event days, vehicular traffic on the fireworks display event day would most likely be lower than on a typical non-event day. Thus, GHG emissions associated with vehicle traffic are expected to be far below relevant thresholds; consistent with the District CAP, including the reduction targets and reduction measures specified therein; and consistent with regulatory programs outlined in the Scoping Plan and adopted by ARB or other California agencies.

Proposed New Fireworks Display Events

The proposed project includes four new fireworks display events per year in San Diego Bay that would be governed by the proposed ordinance. It is anticipated that both the National City and Chula Vista Bayfronts would host a Fourth of July fireworks display event, while the Chula Vista Bayfront would host two other non-Fourth of July fireworks display events throughout the year.

Compliance with Bright-Line Threshold

Table 4.4-5 presents annual GHG emissions (metric tons per year) associated with the proposed new fireworks display events. As shown in Table 4.4-5, annual emissions from all proposed new fireworks display events would be minor (less than 7 MTCO_{2e}), and the magnitude would be below the relevant screening threshold, both individually and when summed over the entire year.

Similar to existing fireworks display events, emissions from the fireworks themselves would be low because the primary source of emissions would be the combustion of tugboat and truck fuel. As discussed under Threshold 2 in Section 4.2, *Air Quality and Health Risk*, background emissions on the display day would be lower than they would be on the weekday “control” day.” Thus, vehicular traffic on the display day would most likely be lower than it would be on a typical day and therefore unlikely to result in emissions that would not be in compliance with GHG reduction plans, policies, and regulations.

The proposed project would not propose any construction or permanent sources of emissions. The proposed new fireworks display events are expected to remain in operation through 2050. Fireworks-related emissions would be low and, most likely, would not change in the future. Tugboat-related emissions would also be low and, most likely, would not change over the short term, even as the tugboat population that services vessels and barges in the Bay is retrofitted or remanufactured. However, over the long term, the state and District will move toward zero and near-zero technologies such as biodiesel, hybrid-electric, and liquefied natural gas technologies, which would reduce emissions from project-related tugboat uses. Each of these technologies would reduce GHG emissions but, in the case of biodiesel, might increase nitrogen oxides (NO_x). Therefore, as zero and near-zero tugboat technologies reduce emissions, project-related GHG emissions would decline through the life of the project. GHG emissions would begin to trend downward, consistent with the need for deeper reductions post-2020, as promulgated in SB 32.

Table 4.4-5. Estimate of Annual Greenhouse Gas Emissions during Proposed New Fireworks Display Events (metric tons per year and per event)

Emission Source	Project MTCO₂e
Fourth of July	
<i>Fireworks</i>	
Chula Vista Bayfront	0.08
National City Bayfront	0.08
<i>Tugboats</i>	
Chula Vista Bayfront	0.86
National City Bayfront	0.66
<i>Deliveries</i>	
All Shows	0.80
Total Fourth of July	2.48
Non-Fourth of July	
<i>Fireworks</i>	
Chula Vista Bayfront	0.02
<i>Tugboats</i>	
Chula Vista Bayfront	1.73
<i>Deliveries</i>	
Both Shows	2.4
Total Non-Fourth of July	4.15
Total for all new fireworks display events	6.63
<i>MTCO₂e – Fireworks</i>	<i>0.17</i>
<i>MTCO₂e – Tugboats</i>	<i>3.25</i>
<i>MTCO₂e – Deliveries</i>	<i>3.20</i>

Source: Appendix E.

Totals may not add up exactly because of rounding.

Consistency with CAP

As mentioned above, the proposed project consists of adding four new fireworks display events per year within San Diego Bay. Emissions from the proposed new displays would benefit from actions already undertaken by the District to reduce emissions from maritime sources, including retrofitting tugboats with cleaner technologies that, although do not reduce GHG emissions, reduce criteria pollutant and TAC emissions. The District's CAP does include numerous measures to reduce GHG emissions from District operations, including both maritime and landside sources. The CAP takes into account growth in District-wide activity from all sectors over time. For example, cargo associated with the maritime sector, which includes tugboat activity, is assumed to increase 3 percent annually through 2020 and 3.2 percent annually between 2020 and 2030. As discussed below, the proposed ordinance would ensure that the project would be consistent with the CAP and the targets and measures therein. Moreover, emissions associated with the proposed new fireworks display events would be minor and substantially below the chosen bright-line threshold level and any bright-line threshold level drafted, adopted, or considered in this state. Thus, project emissions

would not alter current District trajectory toward meeting its 2020 GHG reduction targets. For perspective, the 6.63 MTCO₂e associated with the proposed new fireworks display events is equivalent to the emissions from about 1.4 passenger vehicles driven for 1 year or the electricity usage of 0.7 home for 1 year. Impacts associated with GHG emissions through 2020 would be less than significant.

The proposed project's consistency with applicable CAP measures is discussed in Table 4.4-6. As shown in Table 4.4-6, the proposed project would implement applicable measures in the CAP, which would be enforced through compliance with the proposed ordinance.

Table 4.4-6. Project Consistency with Applicable Port CAP Measures for 2020

No.	Measure Description	Project Consistency Analysis
TA3	Implement emissions reduction strategies at loading docks through electrification of docks or idling reduction systems for use while at loading docks.	Consistent. The proposed ordinance includes a condition of approval that requires all commercial delivery vehicles associated with existing and proposed new shows to limit idling times to 3 minutes, which is beyond that required by state law.
TR3	Vehicle Idling: Enforce state idling laws for commercial vehicles, including delivery and construction vehicles.	Consistent. The proposed ordinance includes a condition of approval that requires all commercial delivery vehicles associated with existing and proposed new shows to limit idling times to 3 minutes, which is beyond that required by state law.

Source: District 2013.

Notes:

TA: Transportation and Land Use CAP Measures – Alternative-Fuel Vehicles;; TR: Roadway System Management.

Consistency with Regulations and Regulatory Programs Adopted by ARB or Other State Agencies

As shown in Table 4.4-7, the proposed new fireworks display events would be consistent with several measures from the Scoping Plan as well as other measures being implemented by EPA and ARB (e.g., Phase 2 trucks).

Table 4.4-7. Project Consistency with AB 32 Scoping Plan and Other ARB Measures for 2020

No.	Measure Description	Project Consistency Analysis
Scoping Plan Measures		
T-1	Advanced Clean Cars	Consistent. State program that requires no action at the local or project level. Benefits related to visitation car travel will be realized.
T-2	Low-Carbon Fuel Standard	Consistent. State program that requires no action at the local or project level. Benefits will be realized.
T-4	Vehicle Efficiency Measures 1. Tire Pressure 2. Fuel Efficiency Tire Program 3. Low Friction Oil 4. Solar Reflective Automotive Paint and Window Glazing	Consistent. State program that requires no action at the local or project level. Benefits related to visitation car and delivery truck travel will be realized.
T-7	Heavy-Duty Vehicle GHG Emissions Reduction 1. Tractor-Trailer GHG Regulation 2. Heavy-Duty GHG Standards for New Vehicles and Engines (Phase I)	Consistent. State and federal programs that require no action at the local or project level. Benefits related to delivery truck travel will be realized.
-	Pavley (AB 1493)	Consistent. See T-1 and T-2. State program that requires no action at the local or project level. Benefits related to project-related visitation car travel will be realized.
-	Heavy-Duty (Tractor-Trailer) GHG Regulation and Phase 2 Truck Standards	Consistent. See T-7. State and federal programs that require no action at the local or project level. Benefits related to project-related delivery truck travel will be realized.
-	OGV Fuel Switch Regulation (to 0.1% sulfur fuel)	Consistent. See T-6. State program that requires 0.1% sulfur fuel use for all vessel activity within California's regulated waters (i.e., within 24 nautical miles of shore), including project-related tugboats. Implementation started January 1, 2014.
Source: ARB 2008; ARB 2014.		
Notes:		
T = Transportation Measures; E = Electricity Measures; W = Water Measures; H = High GWP Measures		

Consistency with Other Regulations

The Clean Air Program, one of six key areas addressed by the District's Green Port Program, focuses on initiatives to reduce air pollution from District operations and includes various strategies that the District is employing to reduce GHG emissions from its largest sources, including shore power, truck replacement/retrofits, replacement/retrofits of CHE, and the voluntary VSR program. The District, through its Green Port Program, will continue to implement actions to reduce GHG emissions in the future. The project would implement the relevant Green Port Program and Clean Air Program control measures, including drayage truck replacement and retrofits, replacement and retrofits of CHE, VSR, and shore power, as well as through implementation of the CAP. The proposed project would not involve goods movement and does not propose any permanent structures or emissions

sources. The proposed project is consistent with the District's Green Port and Clean Air Programs because the proposed new fireworks display events would comply with current and potential future ARB regulations developed and included as part of the Green Port Program and Clean Air Program and assumed in the CAP, as described above in Table 4.4-7. Therefore, the proposed project would be consistent with both the overarching Green Port Program and the more specific Clean Air Program as well as statewide actions and plans to reduce GHG emission from all sectors of the economy.

Impact Determination through 2020

The state is well on its way to reaching 2020 targets and expected to meet the AB 32 targets in 2020 with recently adopted state regulations. Although new projects may add emissions, overall District and California GHG emissions need to be on a downward trend. The proposed project would not involve goods movement and does not propose any permanent structures or emissions sources. The proposed project would comply with adopted regulations and regulatory programs and result in emissions that would be far below the lowest bright-line threshold used in the state. The proposed project would be consistent with, and would not impede progress toward meeting, District and statewide GHG reduction targets in 2020. Through compliance with the proposed ordinance, the proposed project would ensure that project-related GHG emissions would be consistent with the CAP and would comply with plans, policies, and regulatory programs outlined in the Scoping Plan and adopted by ARB or other California agencies for the purpose of reducing the emissions of GHGs. Therefore, impacts associated with GHG emissions through 2020 would be less than significant.

Effect of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. Furthermore, the proposed ordinance would include conditions of approval that would impose limits on delivery truck idling to ensure that both air quality and GHG emissions from existing fireworks display events would be effectively reduced. As such, compliance with the proposed ordinance would improve the existing condition by ensuring that GHG emissions would be limited. Therefore, the effect of the proposed ordinance on existing fireworks display events would be consistent with the applicable CAP measures (Table 4.4-6) and various ARB and EPA measures (Table 4.4-7). No significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

For the years up to and including 2020, the magnitude of emissions from the proposed new fireworks display events would be below the chosen screening level, would be consistent with the District CAP and reduction measures specified therein, and would comply with plans, policies, and regulatory programs outlined in the Scoping Plan and adopted by ARB or other California agencies for the purpose of reducing the emissions of GHGs. Therefore, impacts would be less than significant.

Effect of Proposed Ordinance on Existing Fireworks Display Events

For the years up to and including 2020, the effect of the proposed ordinance on existing fireworks display events would not result in GHG emissions that would exceed the chosen screening level, would be consistent with the District CAP and reduction measures specified therein, and would comply with plans, policies, and regulatory programs outlined in the Scoping Plan and adopted by ARB or other California agencies for the purpose of reducing the emissions of GHGs. Therefore, no significant adverse impacts would occur.

Mitigation Measures**Proposed New Fireworks Display Events**

No mitigation is required.

Effect of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation**Proposed New Fireworks Display Events**

Impacts would be less than significant.

Effect of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impacts would occur.

Threshold 2: Beyond 2020, the proposed project (1) would be below the relevant bright-line threshold, (2) would be consistent with the state's overall reduction targets identified in SB 32 and EO S-03-05, and (3) would be in compliance with plans, policies, and regulatory programs adopted by ARB or other California agencies for post-2020 for the purpose of reducing emissions of GHGs.

Impact Discussion

As discussed in Threshold 1, the proposed new fireworks display events have the potential to generate GHG emissions, either directly or indirectly. The proposed new fireworks displays events would result in GHG emissions associated with fireworks detonation, tugboat and barge activity, and material deliveries. Emissions from these shows would continue beyond the 2020 timeframe.

Proposed New Fireworks Display Events

The proposed project would include four new fireworks display events per year in San Diego Bay that would be governed by the proposed ordinance. It is anticipated that both the National City and Chula Vista Bayfronts would host a Fourth of July fireworks display event, while the Chula Vista Bayfront would host two other non-Fourth of July fireworks display events throughout the year.

Compliance with Bright Line Threshold

As shown in Table 4.4-5, above, the proposed new fireworks display events would emit an estimated 7 MTCO₂e per year, which, whether summed individually (by event) or over the entire year (sum of all events), is far below any bright-line threshold, including the 900 MTCO₂e screening level discussed above. Moreover, although the 900 MTCO₂e threshold level was devised to analyze the consistency of project emissions with AB 32's 2020 targets, adjustments to this 900 MTCO₂e level to account for the increased stringency required for the District and state to meet 2030 and 2050 reduction targets (i.e., adjusting the threshold down to capture more projects) would not change any conclusions herein given the low level of project-related GHG emissions. Therefore, the magnitude of the proposed new fireworks display events would be below the most relevant bright-line threshold.

Consistency with Post-2020 Reduction Targets and "Substantial Progress"

Although the District's CAP and ARB's Scoping Plan mention some potential post-2020 strategies, as of the date this analysis was prepared, emissions savings from these post-2020 strategies are not quantified. SB 32 establishes a statewide target for 2030 GHG emissions reduction levels consistent with EO B-30-15 (40 percent below 1990 levels by 2030). Although SB 32 established a statutory target for post-2020 analyses, there are currently no adopted plans or measures that specifically prescribe how the 2030 target will be reached. Various guidance and white paper documents are in circulation that discuss potential near- and long-term strategies to reduce emissions from all sources, including sources associated with the proposed new fireworks display events, such as tugboats. The District's CAP and ARB's Scoping Plan First Update are some recent examples that include proposed, recommended, or adopted actions to reduce emissions over the long term. The proposed project would not include goods movement activity. Therefore, unlike other maritime-related projects at the District, ARB's Sustainable Freight Strategy and Action Plan are not relevant to the analysis herein.

Post-2020 – Consistency with the District CAP

The District's CAP includes strategies and prescribes a 25 percent reduction goal (below 2006 levels) for 2035 but does not yet include prescribed reduction measures to achieve a post-2020 target. Because the CAP did not estimate reductions from these strategies beyond 2020, emphasis is placed on consistency with the overarching goals of the CAP (to reduce GHG emissions) rather than the specific reductions attached to each strategy. In this sense, it is not considered a qualifying plan for post-2020 purposes, as described in State CEQA Guidelines Section 15183.5; therefore, the post-2020 analysis does not rely on compliance with the CAP to determine whether the project's impacts would be cumulatively considerable for post-2020 GHG emissions. The CAP does include some post-2020 measures to develop renewable energy on the tidelands by both 2035 and 2050 and pursue off-site GHG reduction strategies, but none are directly applicable to the proposed project.

Post-2020 – Consistency with the State's Overall Reduction Targets, including SB 32 and EO S-03-05

A number of studies discuss potential mechanisms for limiting California's economy-wide emissions to the equivalent of 40 percent below the 1990 level by 2030 and 80 percent below the 1990 level by 2050. For instance, ARB and other state agencies are developing GHG emissions reduction scenarios for 2030 that would set the state on the course toward its 2050 GHG emissions reduction goal (CEC 2015). Other studies include a report by the California Center for Science and Technology (2012), a California Department of Transportation report that discusses GHG emissions reductions

from the transportation sector alone (California Department of Transportation 2016), and a study published in *Science* that analyzes the changes that will be required to reduce GHG emissions to 80 percent below 1990 levels by 2050 (*Science* 2012). In general, these studies reach similar conclusions. Deep reductions in GHG emissions can be achieved only with significant changes in electricity production, transportation fuels, and industrial processes (e.g., decarbonizing electricity production, electrifying transportation, implementing widespread adoption of low-carbon or no-carbon transportation fuels, electrifying non-transportation direct fuel uses, increasing energy efficiency, avoiding waste emissions, increasing carbon sequestration, replacing high GWP gases, and other measures).

The systemic changes that will be required to achieve the 2030 and 2050 GHG reduction goals set forth by SB 32 (2030) and EO S-03-05 (2050) will require significant policy, technical, and economic solutions. Decarbonization of the transportation fuel supply will require electric and plug-in hybrid electric vehicles to make up the vast majority of light-duty vehicles. Some changes, such as the use of biofuels to replace petroleum for aviation, cannot be accomplished without action by the federal government. Furthermore, achieving the 2050 GHG reduction goals will require California to increase the amount of electricity that is generated by renewable generation sources dramatically and, correspondingly, advance the deployment of energy storage technology and smart-grid strategies, such as price-responsive demand and the smart charging of vehicles. This would entail a significant redesign of California's electricity system.

In qualitatively evaluating the project-related emissions for consistency with EO S-03-05 and EO B-30-15, it is important to note that these broad-scale shifts in how energy is produced and used are outside of the control of the project and the District. The changes necessitated by the state's long-term climate policy will require additional policy and regulatory changes, which are unknown at this time. As a consequence, the extent to which the project-related emissions and resulting impacts will be mitigated through implementation of such changes is not known. Furthermore, implementation of such additional policy and regulatory changes is in the jurisdiction of state-level agencies (e.g., ARB), not the District or the project.

The four proposed new displays are expected to emit approximately 7 MTCO₂e per year. These proposed new fireworks display events would be infrequent and short term, resulting in low levels of emissions. Emissions from fossil fuel-related sources (e.g., tugboats and delivery trucks) would decline through the life of the project as new technologies are adopted and implemented District-wide and as existing and future regulations reduce fuel consumption and emissions over time. Therefore, the project would support progress toward, and not hinder achievement of, the 2030 and 2050 GHG reduction goals of EO S-03-05 and SB 32.

Post-2020 – Consistency with Regulations and Regulatory Programs Adopted by ARB or Other State Agencies

Specifically, at the state level, ARB's Scoping Plan provides insight into the strategies that will very likely be included and adopted into long-term planning documents in the near future. The Draft 2017 Scoping Plan Update builds on the programs set in place as part of the previous Scoping Plan that was drafted to meet the 2020 reduction targets per AB 32. The Draft 2017 Scoping Plan Update proposed meeting the 2030 goal by accelerating the focus on zero and near-zero technologies for moving freight; continuing investment in renewables; greater use of low-carbon fuels, including electricity and hydrogen; stronger efforts to reduce emissions of short-lived climate pollutants (CH₄,

black carbon, and fluorinated gases); further efforts to create walkable communities with expanded mass transit and other alternatives to traveling by car; continuing the cap-and-trade program; and ensuring that natural lands become carbon sinks to provide additional emissions reductions and flexibility in meeting the target (ARB 2016b).

For purposes of discussing post-2020 GHG emissions, the new emissions presented in Table 4.4-5 are minor and reflect only the state measures that are applicable at the time of analysis. Recently adopted regulations (e.g., Phase 2 trucks) will reduce emissions beyond the levels shown in Table 4.4-5. Project consistency with the Draft 2017 Scoping Plan strategies is discussed in Table 4.4-8. The proposed project would be consistent with ARB's strategies for post-2020 and impacts are considered less than significant.

Table 4.4-8. Project Consistency with 2017 Draft Scoping Plan Update for 2030

Policy	Project Consistency Analysis
RPS 50% and Doubling of Energy Efficiency Requirements per SB 350	This policy is not applicable.
Low-Carbon Fuel Standard	Consistent Prior to Mitigation. State program that requires no action at the local or project level. Benefits related to project-related visitation and delivery truck travel will be realized independently.
Mobile-Source Strategy (Cleaner Technology and Fuels [CTF])	Consistent Prior to Mitigation. State program that requires no action at the local or project level. Benefits related to project-related visitation and delivery truck travel will be realized independently.
Short-lived Climate Pollutants per AB 1383	This policy is not applicable.
California Sustainable Freight Action Plan	This policy is not applicable.
20% Refinery Sector	This policy is not applicable.
Post-2020 Cap-and-Trade Program	This policy is not applicable.
Source: ARB 2016b	

Impact Determination Beyond 2020

As discussed above, further implementation of major District-wide and statewide measures would reduce annual operational GHG emissions from the proposed new fireworks display events over the life of the project. For example, GHG emissions from truck deliveries would be reduced as the recently adopted Phase 2 truck fuel efficiency standards are phased in, beginning in model year 2021. Because project-related emissions would be minor and would trend downward over time, GHG emissions reductions associated with the proposed new fireworks display events would demonstrate substantial progress and a downward trajectory relative to BAU emissions. Through compliance with the proposed ordinance, the proposed project would ensure that project-related GHG emissions would be consistent with the CAP and would comply with post-2020 plans, policies, and regulatory programs drafted or adopted by ARB or other California agencies for the purpose of reducing emissions of GHGs. This downward trend over time would be consistent with the need for deeper reductions post-2020, consistent with long-term reduction targets promulgated in SB 32 and EO S-03-05. Therefore, because emissions from the proposed new fireworks display events would be below the chosen bright-line threshold and the proposed project would comply with plans,

policies, and regulations aimed at reducing GHG emissions beyond 2020 targets, impacts associated with GHG emissions beyond 2020 would be less than significant.

Effect of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. Furthermore, the proposed ordinance would include conditions of approval that would impose limits on delivery truck idling to ensure that both air quality and GHG emissions from existing fireworks display events would be effectively reduced. As such, compliance with the proposed ordinance would improve the existing condition by ensuring that GHG emissions would be limited. Therefore, the effect of the proposed ordinance on existing fireworks display events would support progress toward, and not hinder achievement of, the 2030 and 2050 GHG reduction goals of EO S-03-05 and SB 32 and be consistent with Draft 2017 Scoping Plan Update strategies, as discussed in Table 4.4-8. No significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

For the years beyond 2020, the magnitude of GHG emissions associated with the proposed new fireworks display events would be below the chosen screening level, would be consistent with the state's overall reduction targets identified in SB 32 and EO S-03-05, and would be in compliance with all plans, policies, and regulatory programs adopted by ARB or other California agencies for post-2020 for the purpose of reducing emissions of GHGs. Therefore, impacts would be less than significant.

Effect of Proposed Ordinance on Existing Fireworks Display Events

For the years beyond 2020, the effect of the proposed ordinance on existing fireworks display events would not result in GHG emissions that would exceed the chosen screening level, would be consistent with the state's overall reduction targets identified in SB 32 and EO S-03-05, and would be in compliance with all plans, policies, and regulatory programs adopted by ARB or other California agencies for post-2020 for the purpose of reducing emissions of GHGs. Therefore, no significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

No mitigation is required.

Effect of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation

Proposed New Fireworks Display Events

Impacts would be less than significant.

Effect of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impacts would occur.

Threshold 3: Implementation of the proposed project would not exacerbate any existing and/or projected damage to the environment, including existing structures and sensitive resources, due to predicted climate change effects, particularly sea level rise.

Impact Discussion

Proposed New Fireworks Display Events

CEQA does not require an analysis of how existing environmental conditions will affect a project's future users or residents (see *California Building Industry Assoc. v. Bay Area Air Quality Management District* [Dec. 17, 2015] Cal.4th). However, the proposed new fireworks display events would be within the Coastal Zone. Pursuant to EO S-13-08, the California Coastal Commission or the District will consider this issue in determining consistency with the Coastal Act (see Section 4.7, *Land Use and Planning*, for a detailed discussion of the proposed project's consistency with the Coastal Act). Therefore, the extent to which existing environmental conditions will affect a project's future users and infrastructure, particularly in terms of SLR, is discussed herein.

As discussed above, several impacts on the environment are expected throughout California as a result of global climate change. The extent of these effects is still being defined as climate modeling tools become more refined. Regardless of the uncertainty in precise predictions, it is widely understood that substantial climate change is expected to occur in the future. Potential climate change impacts in the area include, but are not limited to, SLR, extreme heat events, increased water and energy consumption, and changes in species distribution and range.

Projected SLR as an effect of climate change is expected increase the number of areas that experience coastal flooding along San Diego Bay in the future. Coastal and low-lying areas, such as the project sites, are particularly vulnerable to future SLR. More specifically, SLR is a concern for the future, particularly in combination with future storm events and coastal flooding. A scenario with 100-year floodflows that coincide with high tides, taking into account SLR over a 50- or 100-year horizon, would dramatically increase the risk of flooding in the project vicinity. The concern here is the impact on the project from SLR, as opposed to the impact of the project on SLR.

Historically, the mean sea-level trend in San Diego was 2.13 millimeters per year, with a 95 percent confidence interval of +/- 0.19 millimeter per year, based on monthly mean sea-level data from 1906 to 2015. This is equal to a change of 0.70 feet in 100 years.

SLR is anticipated to accelerate over the next century. The June 2012 National Research Council report *Sea-Level Rise for the Coasts of California, Oregon, and Washington*, which was used in the

California Coastal Commission's *Sea Level Rise Policy Guidance* (California Coastal Commission 2015), projects SLR south of Cape Mendocino to be 0.13 to 0.98 foot (4 to 30 centimeters) by 2030, 0.39 to 2.0 feet (12 to 61 centimeters) by 2050, and 1.38 to 5.48 feet (42 to 167 centimeters) by 2100, as shown in Table 4.4-9. Note that this report was updated in March 2013, but the projections did not change.

Table 4.4-9. Sea-Level Rise Elevation and Projections at National City and Chula Vista Bayfront Locations

Year	Existing Tidal Datum ¹		Sea-Level Rise Projection ²		Project Elevation Relative to Projection ³ – Permanent SLR		Project Elevation Relative to Projection ⁴ – plus Storm Surge	
	Elevation above MSL	MHHW Elevation above MSL	Lower End	Upper End	Lower End	Upper End	Lower End	Upper End
2030	9.32	2.76	0.13	0.98	6.43	5.58	4.03	3.18
2050	9.32	2.76	0.39	2.00	6.17	4.56	3.77	2.16
2100	9.32	2.76	1.38	5.48	5.18	1.08	2.78	-1.32

¹ MHHW elevation above MSL based on the difference between MHHW (5.64 feet) and MSL (2.89 feet). Obtained from: <https://www.portofsandiego.org/maritime/check-port-and-harbor-conditions/424-tides-and-currents.html>.

² Based on projections for south of Cape Mendocino. Obtained from: http://www.opc.ca.gov/webmaster/ftp/pdf/docs/2013_SLR_Guidance_Update_FINAL1.pdf.

³ Based on the difference between site elevation, mean high water elevation above MSL and SLR projects. For example, the lower end elevation at South Embarcadero for 2030 is calculated as follows: 9.32 – 2.76 – 0.13 = 6.43 feet.

⁴ Based on the difference between permanent SLR above MHHW and 100-year (1% return probability) surge events. For example, the lower-end elevation for 2030 is calculated as follows: 6.43 – 2.40 = 4.03 feet. Surge event obtained from: <http://tidesandcurrents.noaa.gov/est/curves.shtml?stnid=9410170>.

MSL = mean sea level; MHHW = mean higher high water

Based on the best available science, there is potential for San Diego Bay inundation near the end of the century if sea levels rise in pace with the “high” projections. Nevertheless, after mid-century, the projections of SLR become more uncertain. These projections vary with future projections, due in part to modeling uncertainties but primarily the uncertainties about future global GHG emissions and the modeling of land-ice melting rates. Therefore, for projects with timeframes beyond 2050, it is especially important to consider adaptive capacity, impacts, and risk tolerance to guide decisions about whether to use the low or high end of the ranges presented.

Although elevations in relation to San Diego Bay vary throughout the project area, the elevations assumed in recent District work near the National City Marine Terminal are used herein to represent the National City and Chula Vista Bayfront locations. The most recent data state that the lowest bulkheads near the National City Marine Terminal are approximately 9 feet above mean sea level.

Table 4.4-9 shows project site elevations and SLR projections for the 2030, 2050, and 2100 timeframes; however, for purposes of this analysis, the life of the proposed project is assumed to be 2050. The San Diego Bay portion of the project area is situated above sea level (approximately 9 feet above existing mean sea level), preventing any adverse effects from SLR until the upper end of the

2100 timeframe for storm-surge events (temporary inundation). This is well beyond the life of the project. Therefore, during the life of the proposed project (2050), the proposed locations for the new fireworks display events would remain well above sea level (approximately 4.56 to 6.43 feet above projection elevations by 2050 without storm surge).

No significant impacts would occur from SLR through the reasonably foreseeable life of the project. Note that the information presented in Table 4.4-9 and herein, particularly projected SLR beyond the life of the project in 2100, is for informational purposes only. Furthermore, the proposed project does not propose construction of any structures that would expose property to the effects of SLR through the life of the project. The fireworks display events would use barges that would be temporarily held in place by tugboats, which would not be affected by SLR. Viewing locations associated with the proposed project would be inhabited only temporarily. The fireworks display events would be temporary and infrequent in nature and could be cancelled, postponed, or moved if necessary. As such, given the temporary nature of the project and because no SLR impacts are identified through the life of the project (2050), the proposed project would not put people at substantial risk of harm due to predicted climate change effects.

In addition to SLR, a range of other potential climate change impacts may affect the proposed project, including increased temperatures, heat-stress days, and changing water supplies. However, implementation of the proposed project would not lead to an increase in wildfires, on-site flooding, or a direct increase in surrounding temperatures. The proposed project does not propose the construction of any structures that would redirect potential SLR floodflows in a manner that would affect the biological or built environment. Moreover, although regional water supplies are subject to potential future climate change effects, the proposed project does not propose any significant increase in water consumption, with consumption being limited to typical uses associated with spectators for the displays (restroom use, drinking). As such, the proposed project would not exacerbate any existing and/or projected damage to the environment, including existing structures and sensitive resources, due to predicted climate change effects, particularly SLR.

Effect of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. Furthermore, the proposed ordinance does not include conditions pertaining to climate change effects, including SLR, and therefore would not result in any change to the existing conditions. As such, the effect of the proposed ordinance on existing fireworks display events would not exacerbate any existing and/or projected damage to the environment, including existing structures and sensitive resources, due to predicted climate change effects, particularly SLR.

Threshold 4: Implementation of the proposed project a) would not result in the wasteful, inefficient, or unnecessary use of energy and b) would not require or result in the construction of new energy system infrastructure or the expansion of existing infrastructure, the construction of which could cause significant environmental effects.

Impact Discussion

Proposed New Fireworks Display Events

Wasteful, Inefficient, or Unnecessary Use of Energy

This impact analysis follows the guidance put forth by Appendix F of the State CEQA Guidelines. As noted in that appendix, the means for achieving the goal of conserving energy include the following:

1. Decreasing overall per capita energy consumption;
2. Decreasing reliance on fossil fuels such as coal, natural gas, and oil; and
3. Increasing reliance on renewable energy sources.

CEQA requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. The proposed new fireworks display events would consume primarily diesel fuel during tugboat activity associated with placing and holding the barges in position and delivering fireworks to the National City and Chula Vista Bayfronts. As indicated in Table 4.4-10, energy use associated with the proposed new displays is estimated to result in the short-term and periodic consumption of 81 million BTUs of fuel. This represents a small demand on local and regional fuel supplies, which would be easily accommodated with existing supplies, and only a fraction (0.000000003 percent) of statewide consumption (estimated to be 2,335.5 trillion BTU in 2012). Moreover, this demand for fuel would have no noticeable effect on peak or baseline demand for energy because it would occur only periodically during fireworks display evenings. Therefore, operation of the four proposed new fireworks display events would not result in a wasteful, inefficient, and unnecessary usage of direct or indirect energy and would not require or result in the construction of new energy system infrastructure or the expansion of existing infrastructure, the construction of which could cause significant environmental effects.

Table 4.4-10. Estimated Energy Consumption Associated with the Proposed New Display Events

Source	Million BTUs/year ^a
<i>Diesel</i>	
Tugboats	41
Deliveries	40
Total	81

Source: Appendix E

^a Energy is provided in million BTUs for comparison purposes.

BTUs can be converted to gallons of diesel using the following formula: 129,488 BTU/1 gallon of diesel.

As shown in Table 4.4-11, compliance with the proposed ordinance would ensure consistency with the District's CAP and related state GHG emissions-reduction regulations. For this reason, the proposed project would be consistent with the questions raised in Appendix F of the State CEQA Guidelines. Therefore, impacts would be less than significant.

Table 4.4.-11. Proposed Project Comparison to State CEQA Guidelines Appendix F

Project Impact Considerations from Appendix F	Project Applicability and Analysis
Energy requirements and energy use efficiencies by amount and fuel type for each stage of the project.	Applies. See Table 4.4-10, which breaks down diesel energy use. As indicated, the proposed project would increase the need for fossil fuels, such as diesel fuel, compared to existing conditions. However, this increase would be minor.
Effects on local and regional energy supplies and the need for additional capacity.	Applies. There would be no adverse effects on local or regional energy supplies. The proposed project would not result in any infrastructure or electricity needs. The only energy needs would come in the form of minor amounts of diesel.
Effects of the project on peak- and base-period demands for electricity and other forms of energy.	Applies. The proposed project would not result in any infrastructure or electricity needs. Because operations associated with the proposed new fireworks display events would be temporary and infrequent in nature, the proposed project would not involve a substantial amount of electricity or other energy demand that would affect peak- and base-period demand.
Degree to which the project complies with existing energy standards.	Applies. The proposed project does not propose the construction of any infrastructure or buildings that would be subject to efficiency standards. Phase 2 truck standards would reduce delivery-related fuel and energy consumption over time.
Effects of the project on energy resources.	Applies. The proposed project would not result in an adverse impact on energy resources. There are sufficient energy resources available to support the proposed project, including the minor amount of additional energy demand required to support the proposed new fireworks display events.
Projected transportation energy use requirements and overall use of efficient transportation alternatives.	Applies. The proposed project would increase the need for fossil fuels compared to baseline conditions because it would result in tugboat and delivery activity during four new barge-based fireworks display events; however, these energy sources currently exist, and their impact is negligible. The proposed project would not require new sources of fossil fuels.

Effect of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. Furthermore, the proposed ordinance includes conditions of approval that would impose limits on delivery truck idling to ensure that both air quality and GHG emissions from existing fireworks display events would be effectively reduced, which may also reduce energy-related emissions. As such, compliance with the proposed ordinance would improve the existing condition by ensuring that energy consumption would be limited. Therefore, the effect of the proposed ordinance on existing fireworks display events would not result in the wasteful, inefficient, or unnecessary use of energy and would not require or result in the construction of new energy system infrastructure or the expansion of

existing infrastructure, the construction of which could cause significant environmental effects. No significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

Operation of the proposed new fireworks display events would not result in the wasteful, inefficient, or unnecessary use of energy, nor would it result in the construction of new energy system infrastructure or the expansion of existing infrastructure, the construction of which could cause significant environmental effects. Impacts would be less than significant.

Effect of Proposed Ordinance on Existing Fireworks Display Events

The effect of the proposed ordinance on existing fireworks display events would not result in the wasteful, inefficient, or unnecessary use of energy, nor would it result in the construction of new energy system infrastructure or the expansion of existing infrastructure, the construction of which could cause significant environmental effects. No significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

No mitigation is required.

Proposed Ordinance Changes to Existing Fireworks Display Events

No mitigation is required.

Level of Significance After Mitigation

Proposed New Fireworks Display Events

Impacts would be less than significant.

Proposed Ordinance Changes to Existing Fireworks Display Events

No significant adverse impacts would occur.

Section 4.5

Hazards and Hazardous Materials

4.5.1 Overview

This section describes the existing conditions and applicable laws and regulations for hazards and hazardous materials, followed by an analysis of the proposed project's potential to (1) create a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials; (2) create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment; and (3) impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

All other potential hazards and hazardous materials impacts, including hazardous materials impacts on an existing or proposed school, being located on a hazardous materials site, safety hazards for people residing or working in the vicinity of an airport, and hazards associated with wildland fires, were analyzed in Section VIII of the Initial Study/Environmental Checklist (Appendix A), which is incorporated by reference. Potential impacts were determined to be less than significant. The analysis and conclusions regarding these impacts are included in Chapter 6, Section 6.4, *Effects Not Found to be Significant*. This section does not address surface water contaminants, air pollutants, or health risk assessment. Water contaminants are discussed in Section 4.6, *Hydrology and Water Quality*. Air pollutants and the health risk assessment are discussed in Section 4.2, *Air Quality and Health Risk*.

Based on the analysis that follows, all impacts related to hazards and hazardous materials would be less than significant. No mitigation is required.

4.5.2 Existing Conditions

The following section describes the existing hazards and hazardous materials conditions associated with fireworks as well as the emergency response plans and procedures of the District's member cities within the vicinity of existing and proposed new fireworks display events in San Diego Bay and the Imperial Beach Oceanfront.

4.5.2.1 Existing Hazards Related to Pyrotechnic Devices

All fireworks contain carbon and sulfur, which are necessary for burning. In addition, during the manufacture of fireworks, a range of substances are added, such as arsenic, manganese, sodium oxalate, aluminum, iron dust powder, potassium perchlorate, strontium nitrate, and barium nitrate, which act as stabilizers and oxidizers and add color. If not handled properly and in accordance with federal and state regulations, hazards related to pyrotechnic devices include structure, vehicle, and outdoor fires as well as fireworks-related injuries (National Fire Protection Association 2016). Additionally, the burning of fireworks releases air pollutants, particularly sulfur dioxide, carbon dioxide, carbon monoxide, and particulate matter, along with several metal salts (e.g., aluminum, manganese, cadmium) (Gouder and Montefort 2014). Criteria air pollutants are recognized to have a variety of hazardous health effects on humans.

An acute air toxics health risk assessment and ambient air quality assessment were prepared to evaluate the potential acute health risk impacts of toxic air contaminant emissions from the proposed new fireworks display events (see Appendix E). The results of the health risk assessment and air quality assessment are discussed in Section 4.2, *Air Quality and Health Risk*.

4.5.2.2 Emergency Response Plans

San Diego County

In San Diego County, the overall county response to disasters is coordinated through the Unified San Diego County Emergency Services Organization, Office of Emergency Services. The organization is composed of the 18 cities within the county and provides for a single operational area for coordination of disaster activities. The Office of Emergency Services and the Unified Disaster Council of the Unified San Diego County Emergency Services Organization produced the San Diego County Operational Area Emergency Operations Plan, which is used by the County of San Diego and all cities within the county to respond to major emergencies and disasters. This plan addresses such issues as hazardous materials management, bio-terrorism, and joint preparedness activities.

The police and fire departments for the cities of San Diego, Coronado, National City, Chula Vista, and Imperial Beach are encouraged to adopt the County's Operational Area Emergency Operations Plan, with modifications, as appropriate for their city.

San Diego Unified Port District

The District plans ahead for emergencies with its Emergency Operations Center (EOC) Guidebook, which outlines the management framework for the EOC Team, which is composed of designated District staff members. The District's EOC Team coordinates with on-scene incident managers and emergency response organizations to acquire, allocate, and track resources; manage and share information; establish response priorities among incidents; provide legal and financial support; and liaison with other jurisdictions and other levels of government.

The guidebook provides guidance for coordinating communications and deploying essential resources. Because of the support nature of the District's EOC Team, initial actions and EOC responsibilities are tailored to address the unique requirements and responsibilities of the District.

City of San Diego

The City of San Diego Fire-Rescue Department is responsible for the preparation, maintenance, and execution of Emergency Management Plans. The City of San Diego has a Multi-Hazard Functional Plan and an EOC to provide emergency response services throughout the City. The City makes regular modifications to the Emergency Management Plans as hazards, threats, population, land uses, or other factors change. The plan identifies resources available for emergency response and establishes coordinated action plans for specific emergency situations, including earthquake, fire, major rail and roadway accidents, flooding, hazardous materials incidents, terrorism, and civil disturbances. The City coordinates emergency response activities through its EOC. County, state, and federal emergency response resources are also located within San Diego and available to assist the EOC if a situation demands additional support. The EOC is staffed 24 hours a day by both public safety and other City personnel to coordinate emergency response activities.

City of Coronado

The City of Coronado Emergency Operations Plan provides a comprehensive emergency management system for the effective management of emergency incidents. The City of Coronado Emergency Information Guide, dated January 1994, designates the State Route 75 bridge and Silver Strand as the primary evacuation routes in the City and includes a map depicting how traffic on the City's other arterial and collector streets would access these evacuation routes. Pedestrians as well as passengers on ferry boats, water taxis, and private boats or aircraft from North Island Naval Air Station may evacuate across the Bay by using possible secondary routes.

City of National City

In the City of National City, the National City Fire Department provides fire control, emergency medical, rescue, fire protection, and educational services. National City integrated the federal National Incident Management System into the emergency management system by providing all EOC staff members with appropriate National Incident Management System training. EOC staff members may perform multiple functions when the EOC is activated. The EOC manages the Department Operations Centers when activated, which, in turn, manages the field operations. The EOC requests additional resources from the County EOC when necessary. National City adopted an updated Emergency Operations Plan in May 2010. The plan describes a comprehensive emergency management system that provides for a planned response to disasters (e.g., natural disasters, technological incidents, nuclear incidents). The plan describes the overall responsibilities for protecting life and property and ensuring the overall well-being of the population. The plan also identifies the sources of outside support that might be provided by other jurisdictions as well as the private sector (City of National City 2011).

City of Chula Vista

Emergency response services in the City of Chula Vista are provided by the Chula Vista Fire Department. In the event of a community disaster or emergency, the Chula Vista Fire Department operates an EOC. The EOC is staffed by emergency personnel and trained City of Chula Vista staff members, with the purpose of supporting residents during disasters by focusing on life safety, evacuation needs, and public utility and infrastructure maintenance. Services provided by the Chula Vista Fire Department include emergency medical services, hazardous materials response, and disaster preparedness, among others. The City of Chula Vista does not have an adopted Emergency Response Plan, but rather relies on the County's Operational Area Emergency Operations Plan.

City of Imperial Beach

The Imperial Beach Fire Department is responsible for protecting the lives and property of the citizens of Imperial Beach against hazards that are caused by fire, explosion, or natural disasters. The department responds to calls for various emergency services, including structure fires, wildland fires, vehicle fires, hazardous material incidents, traffic collisions, emergency medical aids, and public service requests. The City of Imperial Beach does not have an adopted Emergency Response Plan, but rather relies on the County's Operational Area Emergency Operations Plan.

4.5.3 Applicable Laws and Regulations

4.5.3.1 Federal

Resource Conservation and Recovery Act

Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act (RCRA) (42 United States Code [USC] 6901 et seq.). The RCRA was established in 1976 to protect human health and the environment, reduce waste, conserve energy and natural resources, and eliminate hazardous waste. Under the authority of the RCRA, the regulatory framework for managing hazardous waste, including requirements for entities that generate, store, transport, treat, or dispose of hazardous waste, is found in 40 Code of Federal Regulations (CFR) 260–299. Other applicable federal laws and regulations include the following:

- **49 CFR 172 and 173:** These regulations establish standards for the transport of hazardous materials and hazardous wastes. The standards include requirements for labeling, packaging, and shipping hazardous materials and hazardous wastes as well as training requirements for personnel who complete shipping papers and manifests.
- **40 CFR Subchapter I—Solid Wastes:** These regulations implement the provisions of the Solid Waste Act and RCRA. They also establish the criteria for the classification of solid waste disposal facilities (landfills), hazardous waste characteristic criteria and regulatory thresholds, hazardous waste generator requirements, and requirements for the management of used oil and universal wastes.

Department of Transportation Hazardous Materials Regulations (49 CFR 100–185)

U.S. Department of Transportation (DOT) Hazardous Materials Regulations cover all aspects of hazardous materials packaging, handling, and transportation. Parts 107 (Hazard Materials Program), 130 (Oil Spill Prevention and Response), 172 (Emergency Response), 173 (Packaging Requirements), 177 (Highway Transportation), 178 (Packaging Specifications), and 180 (Packaging Maintenance) would all apply to goods movement to and from the proposed project and/or surrounding uses.

Enforcement of these DOT regulations is shared by each of the following administrations under delegations from the Secretary of the DOT:

- **Research and Special Programs Administration** is responsible for container manufacturers, reconditioners, and retesters and shares authority over shippers of hazardous materials.
- **Federal Highway Administration** enforces all regulations pertaining to motor carriers.
- **Federal Railroad Administration** enforces all regulations pertaining to rail carriers.
- **Federal Aviation Administration** enforces all regulations pertaining to air carriers.
- **U.S. Coast Guard (USCG)** enforces all regulations pertaining to shipments by water.

U.S. Coast Guard Marine Safety Program

Pursuant to 33 CFR 100, USCG implements the Marine Safety Program, which is designed to ensure the safety of vessels and recreational boaters on navigable U.S. waters during fireworks display events. USCG issues marine event notifications to sponsors of public fireworks display events that

have the potential to endanger marine safety. An application for the marine event must be submitted to USCG no later than 135 days prior to the event if the applicant does not meet the criteria specified in 33 CFR 100.15(c) or 60 days prior to the event if the applicant does meet the criteria. After issuing a marine event notification for the fireworks display event, USCG is authorized to promulgate special local regulations as necessary to ensure public safety on navigable waters immediately prior to, during, and immediately after the approved fireworks display event. Such regulations may include a restriction on or control of the movement of vessels through a specified fireworks display event area.

Department of Homeland Security Chemical Facility Anti-Terrorism Standards

On October 4, 2006, the U.S. Department of Homeland Security (DHS) Appropriations Act of 2007 was signed into law. Under Section 550 of the Appropriations Act of 2007, DHS finalized chemical facility anti-terrorism standards on November 2, 2007. Facilities possessing any of the 335 chemicals of interest in quantities at or above screening threshold quantities must complete an electronic “top screen” questionnaire that determines whether further assessments and security plans should be developed to ensure safety. The information should allow DHS to determine the potential for and possible consequences of a terrorist attack and assess the possible risks if dangerous chemicals are stolen. Pyrotechnic technicians and businesses that use or store certain chemicals listed in Part 27 of the standards are subject to DHS review. Operators may not use dangerous or explosive chemicals that are not on the list without DHS review and consideration of safety.

4.5.3.2 State

California State Department of Toxic Substances Control

In light of the risks to public health and the environment posed by perchlorate releases, the California legislature adopted the Perchlorate Contamination Prevention Act of 2003, amending Chapter 6.5 of Division 20 of the Health and Safety Code and requiring the California Department of Toxic Substances Control to adopt regulations specifying best management practices for perchlorate and perchlorate-containing substances. The perchlorate best management practices regulations were adopted on December 31, 2005, and are contained in California Code of Regulations (CCR) Title 22, Social Security Division 4.5, Environmental Health Standards for the Management of Hazardous Waste Chapter 33, Best Management Practices for Perchlorate Materials Article 1, Sections 67384.1–67384.11. In Section 67384.8(c), Special Best Management Practices for Flares and Pyrotechnic Perchlorate Materials, the regulations provide that “Within twenty-four (24) hours of a public display of fireworks or the use of dangerous fireworks, the pyrotechnics operator, in addition to complying with CCR Title 19, Section 1003, shall, to the extent practical, collect any stars and un-ignited pyrotechnic material found during the required inspection of the entire firing range.”

Hazardous Waste Control Act (Health and Safety Code Section 25100 et seq.)

The Department of Toxic Substances Control is responsible for the enforcement of the Hazardous Waste Control Act (California Health and Safety Code Section 25100 et seq.), which creates the framework under which hazardous wastes are managed in California. The law provides for the development of a state hazardous waste program that administers and implements the provisions of the federal RCRA cradle-to-grave waste management system in California. It also provides for the

designation of California-only hazardous waste and development of standards that are equal to or, in some cases, more stringent than federal requirements. The regulations that follow help to enforce the Hazardous Waste Control Act.

Environmental Health Standards for the Management of Hazardous Waste (22 CCR Division 4.5, Section 66001 et seq.)

CCR Title 22, Division 4.5, Section 66001 et seq., establishes requirements for the management and disposal of hazardous waste in accordance with the provisions of the California Hazardous Waste Control Act and federal RCRA.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (California Health and Safety Code, Chapter 6.11, Sections 25404–25404.9)

This program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of the environmental and emergency response programs and provides authority to the Certified Unified Program Agency (CUPA). The CUPA for San Diego County is the San Diego County Department of Environmental Health's Hazardous Materials Division (HMD). HMD has the responsibility and authority to implement and enforce the requirements listed in Chapter 6.5 (commencing with Section 25100), Chapter 6.67 (commencing with Section 25270), Chapter 6.7 (commencing with Section 25280), Chapter 6.95 (commencing with Section 25500), and Sections 25404.1 and 25404.2, including the following programs, which are applicable to the proposed project:

- **California Accidental Release Prevention Program.** This program requires any business that handles more than threshold quantities of an extremely hazardous substance to develop a Risk Management Plan. The Risk Management Plan is implemented by the business to prevent or mitigate releases of regulated substances that could have offsite consequences through hazard identification, planning, source reduction, maintenance, training, and engineering controls.
- **Hazardous Waste Generator Program.** This program regulates businesses that generate any amount of a hazardous waste. Proper handling, recycling, treating, storing, and disposing of hazardous waste are key elements to this program.

Workplace Safety (California Labor Code, Division 5, Parts 1, 6, 7, and 7.5)

The California Labor Code regulates the workplace to ensure appropriate training on the use and handling of hazardous materials and the operation of equipment and machines that use, store, transport, or dispose of hazardous materials. Division 5, Part 1, Chapter 2.5, ensures that employees who are in charge of handling hazardous materials are appropriately trained. Division 5, Part 6, governs the operation and care of hazardous material storage tanks and boilers. Division 5, Part 7, ensures that employees who work with volatile flammable liquids are outfitted in appropriate safety gear and clothing. Division 5, Part 7.5, otherwise referred to as the California Refinery and Chemical Plant Worker Safety Act of 1990, was enacted to prevent or minimize the consequences of catastrophic releases of toxic, flammable, or explosive chemicals. The establishment of process safety management standards is intended to eliminate, to a substantial degree, the risks to which workers are exposed in petroleum refineries, chemical plants, and other related manufacturing facilities.

California Department of Forestry and Fire Protection Fireworks in California Handbook

The *Fireworks in California* handbook was prepared by the California Department of Forestry and Fire Protection and includes a compilation of all relevant national and state standards related to fireworks (Appendix C). The Health and Safety Codes direct the California State Fire Marshal to prepare regulations governing the use of fireworks in California. The law provides a general framework around which more detailed regulations have been developed. The objective of the *Fireworks in California* handbook is to provide a publication that will enhance the safe use of pyrotechnic material and be a reference source for enforcement and fire prevention personnel as well as licensees. The laws and regulations that follow are identified in the *Fireworks in California* handbook and are directly applicable to the proposed project.

California Health and Safety Code, Sections 12500–12759 (State Fireworks Law)

California's Fireworks Law, passed in 1938, established the Office of the State Fire Marshal as the only fireworks classification authority in California. Fireworks are classified through laboratory analysis, field examinations, and the test firing of items. As part of the program, the State Fire Marshal requires the licensing of all pyrotechnic operators, fireworks manufacturers, importer-exporters, wholesalers, retailers, and public display companies. Pyrotechnic operators who discharge fireworks at public displays or launch high-powered and experimental rockets must also pass a written examination and provide proof of experience.

The state's Explosives Law authorizes the State Fire Marshal to adopt regulations for the safe use, handling, storage, and transportation of explosives. Under those regulations, local law enforcement agencies track the location of storage magazines within their jurisdictions through a permit process. Special exemptions have been provided within the regulations to allow for limited possession and storage of some explosives, such as black powder, which is used by hunters and the sporting community.

California Fire Code, Chapter 56, Explosives and Fireworks

Chapter 56 of the California Fire Code governs the possession, manufacture, storage, handling, sale, and use of explosives, explosive materials, fireworks, rockets, emergency signaling devices, and small arms ammunition. Exceptions include:

1. The Armed Forces of the U.S., USCG, or National Guard.
2. Explosives in forms prescribed by the official U.S. Pharmacopoeia.
3. The possession, storage, and use of small arms ammunition where packaged in accordance with DOT packaging requirements.
4. The possession, storage, and use of not more than 1 pound (0.453 kilogram) of commercially manufactured sporting black powder, 20 pounds (9 kilograms) of smokeless powder, and 10,000 small arms primers for hand loading small arms ammunition for personal consumption.
5. The use of explosive materials by federal, state, and local regulatory, law enforcement, and fire agencies acting in their official capacities.

6. Special industrial explosive devices that in the aggregate contain less than 50 pounds (23 kilograms) of explosive material.
7. The possession, storage, and use of blank industrial-power load cartridges where packaged in accordance with DOT packaging regulations.
8. Transportation in accordance with DOT 49 CFR Parts 100–185.
9. Items preempted by federal regulations.
10. Items preempted by state law and/or regulations.

Title 19, California Code of Regulations, Chapter 6. Fireworks

Article 3 of Chapter 6 of the CCR dictates that no person shall engage in any type of fireworks activities without having submitted an application for and having obtained a license from the State Fire Marshal in accordance with the provisions of the chapter. Exceptions include licensed pyrotechnic operators, basic commercial, restricted commercial, and rockets, first class, who may employ unlicensed assistants. Licensed special effects and theatrical pyrotechnicians may employ unlicensed assistants. Unlicensed assistants shall perform only when under the direct, immediate, and constant supervision of the licensee when handling fireworks and pyrotechnic compositions. In addition, when applying for a permit under Health and Safety Code Section 12640(e), an applicant shall submit the following information and evidence to the authority having jurisdiction:

1. The name of the organization sponsoring the display, together with the names and license numbers of persons actually in charge of the display.
2. The date and time of day the display is to be held.
3. The exact location planned for the display.
4. The size and number of all fireworks to be discharged, including the number of set pieces, shells, and other items. Shells shall be designated by diameter, specifying single, multiple break, or salute.
5. The manner and place of storage of all fireworks prior to, during, and after the display.
6. Diagram of the grounds on which the display is to be held, showing the point at which the fireworks are to be discharged; the location of all buildings, roads, and other means of transportation; the lines behind which the audience will be restrained; and the location of all nearby trees, telegraph or telephone lines, or other overhead obstruction.
7. Proof that satisfactory workers' compensation insurance is carried for all employees in compliance with Labor Code Section 3700.
8. If the permit is for a public display or special effects, documentary proof of conformance with Sections 12610 and 12611, Health and Safety Code.
9. A State Fire Marshal's license for the public display of fireworks, under Health and Safety Code Sections 12575, 12576, or 12577. No permit for a public display of any type shall be granted unless a public display license, general, special, or limited, has been first obtained from the State Fire Marshal.
10. The name and license number of the wholesaler who supplied all items used in the display.

Hazardous Materials Transportation, Title 13, California Code of Regulations

Selected sections of Title 13 of the CCR, including Section 1150, Sections 1160 through 1164, Section 1166, and Section 1167, establish regulations for the transportation of hazardous materials and explosives such as fireworks. These sections cover the designation of routes and stopping places, en route inspections, detours, the labeling of hazardous materials, and other transportation regulations.

4.5.3.3 Regional

San Diego County Code, Title 6, Division 8

The San Diego County Code of Regulatory Ordinances, under Title 6, Division 8, Chapters 8 through 11, establishes the HMD as the local CUPA. The HMD inspects businesses or facilities that handle or store hazardous materials, generate hazardous waste, generate medical waste, and own or operate underground storage tanks.

4.5.3.4 Local

City of San Diego Municipal Code, Article 5, Division 56

Article 5, Division 56, of the City of San Diego Municipal Code regulates explosives and fireworks. The City adopted Sections 5601.1 through 5608.1.1 of the California Fire Code without change pursuant to Section 55.0101(a) of the municipal code. Under this division of the municipal code, it is unlawful for any person to possess, store, manufacture, offer for sale, sell at retail, use, or explode any fireworks within the incorporated City limits. However, fireworks may be part of a public display when permitted by the City and conducted by a State of California licensed pyrotechnic operator.

City of San Diego Special Event Permit

In San Diego, a Special Event Permit is required for an organized activity that incorporates the use of:

- City public streets, sidewalks, and rights-of-way; and/or
- City public parks or other City public property; and/or
- Outdoor private property, including parking lots, only when the property is part of a Special Event Venue that includes City public property and permission has been received by the property owner/manager (for example, a parking lot used as part of a street festival venue).

All activities associated with the use of pyrotechnics must be reviewed and approved by the San Diego Fire Department, in compliance with the International Fire Code, as amended by the State of California and City of San Diego. Examples include indoor and outdoor fireworks, lasers, model rocket launches, and special effects using pyrotechnical devices. A permit and full demonstration to the State Fire Marshal prior to the event date is required. As part of the permit requirements, onsite stand-by and inspection services may be required because of the size, complexity, and/or unique safety issues regarding the activities associated with the event.

City of Coronado Municipal Code, Title 20, Chapter 20.16

Under Chapter 20, Chapter 26.10, of the City of Coronado Municipal Code, it is unlawful for any person to commence, conduct, manage, participate in, or sponsor a public display of fireworks without an operations permit for public displays of fireworks.

City of Coronado Operations Permit: Public Displays of Fireworks

An operations permit is required for the activities set forth in Title 20, Operations Permits, of the Coronado Municipal Code. The activities described in Title 20 require regulation by the City of Coronado to protect and promote the health, safety, and public peace of the community. An operations permit for public displays of fireworks is required under Chapter 20.16 of Title 20. An application for a public display of fireworks operations permit must be filed no later than 14 days prior to the proposed date of the public fireworks display. The Director of Fire Services is authorized to issue the public displays of fireworks operations permit.

City of Coronado Special Event Permit

Individuals and organizations wishing to hold an event in City-owned facilities or on public rights-of-way shall obtain a Special Event Permit from the City Manager's Office or Recreation Services, depending on the size or type of event. Review of the Special Event Permit application by City staff and/or the City Council ensures the event will be held safely with minimum disruption to the surrounding community, and that the cost of the event is borne by its sponsors. A special event is any scheduled or planned non-emergency event occurring within the City of Coronado that can reasonably be expected to require increased or modified emergency or non-emergency services or support by the City government and personnel. There are three types of special events that require approval by the City Manager and/or City Council: Major Events, Moderate Events, and Minor Events.

City of National City Municipal Code, Title 10, Chapter 10.16

Under Title 10, Chapter 10.16, of the National City Municipal Code, it is unlawful to discharge, fire, use, possess, or store any or all types and manner of fireworks, including firecrackers, bombs, rockets, torpedoes, Roman candles, or any other type or manner of fireworks or substances designed or intended for pyrotechnic displays, in the City. The City Council, upon application of any person, may issue a permit for the public display of fireworks under the direct supervision of a person who has been examined and approved by the State Fire Marshal. All such displays of fireworks shall be located, discharged, or fired so as, in the opinion of the City Council, not to be hazardous to surrounding property or endanger any person or persons.

City of National City Temporary Use Permit

Temporary Use Permits are used for certain special activities, events, or structures that are beneficial to the public for limited periods of time even though they would not comply with building, fire, zoning, or other local codes, if they were permanent. Chapter 15.60 of the National City Municipal Code regulates these permits. In general, for any organized activity that uses public property, facilities, parks, sidewalks, streets, or any public rights-of-way, applicants need to obtain this permit. In some cases, activities or events taking place on private property also require a Temporary Use Permit. Temporary Use Permits include submittal of information such as staging required, roadways

used and/or closed for the event, times, and other information. These Temporary Use Permits are forwarded to City departments such as the fire department for review and emergency planning purposes (Hernandez pers. comm.).

There are three types of Temporary Use Permits for different uses and activities: Class A, Class B, and Class C. Class A activities require City Council approval and include activities such as block or holiday parties, fairs, and musical concerts/festivals. Class B activities are subject to conditions and City codes, as applicable, and include activities such as mobile trailers for offices on active construction sites or for temporary classrooms. Class C activities are subject to Business License Regulations and include activities such as Christmas tree sale lots, garage sales, and special promotion/outdoor sales. The City may also attach any conditions and/or limitations deemed necessary to protect public health, safety, and welfare. Such conditions may include hours of use, security, trash collection and disposal, and traffic control. The City will also notify the applicant of any supplemental permits and provisions that may be required, such as a County environmental health permit, fire permit, or fireworks permit.

City of National City Fireworks Permit

For special events requiring a Temporary Use Permit that propose to include a fireworks display, a fireworks permit must be obtained from the National City Fire Department in addition to the Temporary Use Permit. The fireworks permit must be obtained at least 2 weeks prior to the event. The National City Fire Department has absolute authority, control, and decisions over all fireworks and/or pyrotechnic displays for which it issues a permit. An inspection from the fire department must be obtained prior to any ignition of any fireworks.

City of Chula Vista Municipal Code Title 2, Chapter 2.66

Under Title 2, Chapter 2.66, of the Chula Vista Municipal Code, it is unlawful to discharge any firearm or fireworks ("fireworks" shall mean any composition or device for the purpose of producing a visible or an audible effect by combustion, deflagration, or detonation) without the written consent of the City.

City of Chula Special Event Permit

The City of Chula Vista maintains Special Event Guidelines, which outline the Special Event Permit process and any special event-related permit types, as well as the requirements for event infrastructure, operational plans (e.g., medical, traffic control), community outreach, and insurance. The Special Event Permit process is managed by the Office of Communications and supported by the Special Events Management Team. The permit process involves submitting a permit application to the Office of Communication, which is responsible for reviewing and issuing the Special Event Permit. There are a number of different special event-related permits that may be issued independent of, or in addition to, a Special Event Permit. Examples of special event-related permits include alcohol use permits, building permits (for temporary structures), and a firework/pyrotechnic/special effect/laser permit. The proposed event venue, activities, components, attendance, and unique circumstance of the event are contributing factors to the final determination of the required permit types.

City of Chula Vista Firework/Pyrotechnic/Special Effect/Laser Permit

A firework/pyrotechnic/special effect/laser permit is one of the special event-related permits outlined in the City of Chula Vista's Special Event Guidelines. This permit may be issued independent of, or in addition, to a Special Event Permit, and is required for all activities associated with the use of pyrotechnics and open flames and must be reviewed and approved by the Chula Vista Fire Department in compliance with the California Fire Code as amended by the State of California and City of Chula Vista. Examples of activities in this category include outdoor fireworks, lasers, model rocket launches, open flame activities such as fire walking, and special effects using pyrotechnical devices. As part of the permit requirements, onsite stand-by and inspection services may be required due to the size, complexity, and/or unique safety issues regarding the activities associated with the event.

City of Imperial Beach Special Event Permit

A Special Event Permit is required for any organized activity held completely or partially on public land (excluding recreation centers) or an event requiring adjacent parking or traffic variances or activity on privately owned property when the property is not designed or intended for that activity. The Imperial Beach Fire Department must be notified as part of the special event permit application process whether the special event includes fireworks.

4.5.4 Project Impact Analysis

4.5.4.1 Methodology

The following impact analysis evaluates the effects from fireworks-related hazards and hazardous materials associated with the proposed new fireworks display events. Based on the existing conditions described above, the impact analysis assesses the potential direct and indirect impacts from fireworks-related hazards and hazardous materials and determines whether the proposed new fireworks display events would result in a significant impact, pursuant to the applicable thresholds listed below.

4.5.4.2 Thresholds of Significance

The following significance criteria are based on Appendix G of the State CEQA Guidelines and provide the basis for determining the significance of impacts associated with hazards and hazardous materials resulting from implementation of the proposed project. The determination of whether a hazard and/or hazardous material impact would be significant is based on the professional judgment of the District as lead agency, supported by the recommendations of qualified personnel at ICF, all of which is based on the evidence in the administrative record.

Impacts are considered significant if the proposed project would result in any of the following:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

3. Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.
4. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport, public use airport, or private airstrip, result in a safety hazard for people residing or working in the project area.
6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
7. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including areas where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

The analysis of whether the proposed project would have a significant impact related to hazards and hazardous materials under Thresholds 3, 4, 5, and 7 is provided in Section VII of the Initial Study/Environmental Checklist (Appendix A of this Draft EIR), which determined that the proposed project would result in less-than-significant impacts. The analysis and conclusions therein are incorporated by reference into this section of the Draft EIR and are summarized in Chapter 6, *Additional Consequences of Project Implementation*. Therefore, only Thresholds 1, 2, and 6 are discussed in the impact analysis that follows.

4.5.4.3 Project Impacts and Mitigation Measures

Threshold 1: Implementation of the proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Threshold 2: Implementation of the proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Impact Discussion

Proposed New Fireworks Display Events

The proposed new fireworks display events would be temporary and infrequent in nature and, therefore, would not require the transport, use, and disposal of hazardous materials on a routine basis. On-land facilities are not required, and no construction on land or in the water is proposed as part of the project. As such, no permanent facilities involving the routine transport, use, or disposal of hazardous materials are included as part of the proposed project.

Although no permanent, continuous operations would occur, the proposed new fireworks display events would require the infrequent transport, delivery, and placement of fireworks on barges within

and/or adjacent to San Diego Bay up to four times per year. The fireworks would be set up at a loading facility yard, in accordance with the California Department of Forestry and Fire Protection's *Fireworks in California* handbook (Appendix C), which is enforced by the responsible city fire department with jurisdiction over each show. In accordance with Title 19 of the CCR, all fireworks operators are required to obtain a fireworks license from the California Department of Forestry and Fire Protection, Office of the State Fire Marshal, in order to operate a fireworks display event in California. Because the proposed new fireworks display events would be temporary and infrequent in nature; would be required to comply with the state and local laws set forth in the *Fireworks in California* handbook, as enforced by the responsible city fire departments; and would be required to comply with existing federal, state, and local regulations, the proposed new fireworks display events would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Required compliance with existing laws and regulations would ensure that the potential for a significant hazard to occur from routine transport, use, or disposal of hazardous materials associated with fireworks would be less than significant.

The proposed new fireworks display events would be required to maintain a safety zone around the fireworks launch sites. This safety zone delineates the area in which public access is prohibited; neither spectators on land nor vessels in the water are allowed within the zone during the time the fireworks are being launched. This safety zone is established by USCG and/or the State Fire Marshal, as appropriate, around the barge from which the fireworks are launched. Once the fireworks display event is over, the fireworks operator and the State Fire Marshal would inspect the mortars and surrounding areas for any safety issues, such as unexploded firework components, in accordance with the requirements of Title 19 of the CCR. All unexploded fireworks, including unexploded components, would be collected, handled, and disposed of by the fireworks operator in accordance with Title 19 of the CCR. Additionally, no one would be allowed into the safety zone until granted permission by the State Fire Marshal of the responsible city (Szymanski pers. comm.). Once the site is cleared, the fireworks operator would proceed with post-fireworks display event cleanup practices, consistent with the general permit and as required by the proposed ordinance, including collecting any unexploded fireworks and floating debris from spent fireworks. As such, because of the temporary and infrequent nature of the proposed new fireworks display events, as well as the highly regulated manner in which fireworks are allowed to be launched, the proposed new fireworks display events would not result in a significant hazard to residents or workers in the vicinity of the fireworks display events. Required compliance with existing laws and regulations would ensure that the potential for a significant hazard to occur from routine transport, use, or disposal of hazardous materials associated with fireworks would be less than significant.

As discussed above, no construction is proposed as part of the project. As such, typical construction-related hazardous materials, including gasoline, oil, other vehicle-related fluids, paints, solvents, and metals, would not be used. It is possible that gasoline, oil, and other vehicle-related fluids could be released by trucks on land during the transport of pyrotechnic devices or by tugboats or other vessels in the water during operation of a fireworks display event. However, compliance with federal (including DOT Hazardous Materials Regulations [49 CFR 100–185]), state (including Title 19 of the CCR), and local regulations, in combination with oversight by licensed fireworks operators and responsible city fire departments, would ensure that all hazardous materials associated with fireworks are used, stored, and disposed of properly. As such, potential impacts related to a hazardous materials release during the proposed new fireworks display events would be less than

significant. Water contaminants are discussed in Section 4.6, *Hydrology and Water Quality*, and air pollutants are discussed in Section 4.2, *Air Quality and Health Risk*.

Based on the information above, the proposed new fireworks display events would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous waste or the release of hazards materials associated with fireworks. Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance does not include any conditions pertaining to fireworks-related hazards or hazardous materials above and beyond the federal, state, and local laws and regulations that currently exist and, therefore, would not result in any change to the existing condition in terms of these issues. As such, the effects of the proposed ordinance on existing fireworks display events would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous waste or the release of hazards materials associated with fireworks. No significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the release of hazardous materials associated with fireworks. Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or the release of hazardous materials associated with fireworks. Therefore, no significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

No mitigation is required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation

Proposed New Fireworks Display Events

Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impacts would occur.

Threshold 6: Implementation of the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Impact Discussion

The proposed new fireworks display events would be located in areas where existing emergency response times for fire protection, emergency medical services, and police protection meet adopted standards, as indicated in Section 4.9, *Public Services and Facilities*. The proposed new fireworks display events would be temporary and infrequent in nature. In addition, the proposed project does not include any characteristics (e.g., permanent road closures) that would physically impair or otherwise interfere with emergency response or evacuation in the vicinity of the proposed new fireworks display events. Ongoing implementation and updating of relevant Emergency Operations Plans would ensure an adequate response to emergencies and evacuation plans as growth occurs and reduce the potential for interfering with emergency plans.

Proposed New Fireworks Display Events

As discussed in Section 4.10, *Transportation, Circulation, and Parking*, fireworks display events generate increased levels of vehicle, pedestrian, and bicycle traffic, with moderately increased levels of vehicle traffic and significantly increased levels of pedestrian and bicycle traffic observed to occur during Fourth of July fireworks display events. Such additional pedestrian and bicycle traffic can be anticipated to occur during the proposed new fireworks display events along the National City and Chula Vista Bayfronts. As a result, the potential exists for pedestrian and bicycle traffic to overflow into adjacent roadways and intersections, which, in turn, could impede vehicle circulation and temporarily impair emergency response.

The National City Fire Department would provide fire protection and emergency services during the proposed new Fourth of July fireworks display event along the National City Bayfront on the barge and within the landside viewing areas in the City. The City of National City requires Temporary Use Permits for special events, which include submittal of information such as the staging required, roadways used and/or closed for the event, times, and other information. The Temporary Use Permits are forwarded to City departments such as the fire department for review and emergency planning purposes (Hernandez pers. comm.). The City may attach any conditions and/or limitations to the Temporary Use Permit deemed necessary to protect public health, safety, and welfare. Such conditions may include hours of use, security, trash collection and disposal, and traffic control. A fireworks permit from the National City Fire Department would also be required for the proposed new fireworks display event. The fireworks permit must be obtained at least 2 weeks prior to the fireworks display event. The National City Fire Department has absolute authority, control, and decisions over all fireworks and/or pyrotechnic displays for which it issues a permit. An inspection from the fire department must be obtained prior to any ignition of any fireworks. In addition, the National City Police Department implements an operational plan and a traffic plan to respond to any emergencies during special events, such as a fireworks display event. Consistent with its current

practice, the National City Police Department would implement an operational plan and a traffic plan during the proposed new Fourth of July fireworks display event in National City.

Regarding the proposed new fireworks display events along the Chula Vista Bayfront, the Chula Vista Fire Department would provide fire protection and emergency services during both the Fourth of July and non-Fourth of July displays on the barge and within the landside viewing areas in the City. The City currently maintains Special Event Guidelines, which outline the Special Event Permit process, any special event-related permit types, and any requirements for the special event, such as an operational plan. There are multiple types of operational plans that may be required as part of the Special Event Permit issued by the City, including medical and transportation operational plans. Events with a higher potential risk are required to implement an appropriate medical operational plan to address the specific needs of the attendees and/or participants. The Chula Vista Police Department in conjunction with the City of Chula Vista Public Works/Traffic Engineering staff determines if a transportation operational plan is required. The transportation operational plan would require traffic control in order to facilitate vehicular, bicycle, and pedestrian movement on City streets and public rights-of-way that would potentially be affected by the event. These operational plans are developed for each special event application approval. In accordance with the City's Special Event Guidelines, medical operational plans specific to each proposed new fireworks display event would be implemented if deemed necessary through the Special Event Permit process; therefore, response times to the sites of these proposed new displays are not relevant as emergency/medical response units would be strategically assigned per each proposed new fireworks display event in order to maintain effective response. In addition, there are a number of different special event-related permits that may also be issued independent of, or in addition to, a Special Event Permit. A firework/pyrotechnic/special effect/laser permit is one of the special event-related permits outlined in the City of Chula Vista's Special Event Guidelines. This permit is required for all activities associated with the use of pyrotechnics and open flames and must be reviewed and approved by the Chula Vista Fire Department in compliance with the California Fire Code as amended by the State of California and City of Chula Vista. As part of the permit requirements, onsite stand-by and inspection services may be required due to the size, complexity, and/or unique safety issues regarding the activities associated with the event. In accordance with the City's Special Event Guidelines, medical and transportation operational plans specific to each proposed new fireworks display event would be implemented if deemed necessary; therefore, response times to the sites of these proposed new displays are not relevant as response units would be strategically assigned per each proposed new fireworks display event in order to maintain effective emergency response.

Additionally, the proposed new fireworks display events along the National City and Chula Vista Bayfronts would be required to comply with all federal, state, and local laws and regulations governing fireworks, including, but not limited to, the laws and regulations set forth in the *Fireworks in California* handbook, which is enforced by the responsible city fire department with jurisdiction over each display, as well as any special event permit requirements of the National City and Chula Vista Fire Departments.

Because the proposed new fireworks display events would occur within San Diego Bay, other emergency response services would be provided by the Harbor Police Department (HPD), which would employ special patrol vessels to ensure safety on the water during these new fireworks display events, as necessary. HPD currently provides police protection, law enforcement, and marine firefighting services in and around San Diego Bay for the District. Event-specific regulatory and enforcement services are also provided by USCG for all fireworks display events that occur within

San Diego Bay. USCG uses event-specific information to coordinate with HPD on the position and location of personnel and assets. Therefore, because of the temporary and infrequent nature of the proposed new fireworks display events, as well as the highly regulated manner in which fireworks displays are allowed to occur, the proposed new fireworks display events would not impair implementation of an adopted emergency response plan. The impacts would be less than significant.

Furthermore, as discussed in Section 4.10, *Transportation, Circulation, and Parking*, the implementation of mitigation measure **MM-TRA-1** requires compliance with the traffic-related conditions of the proposed ordinance, which require implementation of an Event Transportation and Parking Management Plan before, during, and after each proposed new fireworks display event. Implementation of **MM-TRA-1** would further improve circulation around the viewing locations by employing traffic control personnel to facilitate the movement of vehicular, pedestrian, and bicycle personnel, thereby reducing the potential for delay that might impede emergency response.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance contains several conditions of approval to reduce potential environmental impacts, including implementation of an Event Transportation and Parking Management Plan for publicly advertised fireworks display events. The Event Transportation and Parking Management Plan would include transportation demand and parking management strategies, such as providing event traffic control and promoting the use of public transit. This would alleviate congestion around the locations of the individual existing displays and reduce the potential for delay that might impede emergency response times. Compliance with the proposed ordinance may improve the existing condition by ensuring adequate circulation and emergency access on the roadway network surrounding the existing fireworks display events. As such, the effects of the proposed ordinance on existing fireworks display events would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. No significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, no significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

No mitigation is required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation

Proposed New Fireworks Display Events

Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No impacts would occur.

Section 4.6

Hydrology and Water Quality

4.6.1 Overview

This section describes the existing conditions and applicable laws and regulations for hydrology and water quality, followed by an analysis of the proposed project's potential to: (1) violate water quality standards or waste discharge requirements, (2) create or contribute runoff water that would exceed existing or planned stormwater drainage systems or provide substantial sources of polluted runoff, and (3) substantially degrade water quality. All other hydrology and water quality issues were addressed in Section IX of the Initial Study/Environmental Checklist (Appendix A) and were determined to be less than significant, including impacts on groundwater supplies, drainage patterns, place housing within a 100-year flood hazard area, and tsunamis, seiches, and mudflows. The analysis and conclusions regarding these impacts are also summarized in Chapter 6, Section 6.4, *Effects Not Found to be Significant*.

Information in this section is summarized from the *San Diego Bay and Imperial Beach Oceanfront Fireworks Display Events Project Water Quality Technical Report*, which was prepared by Amec Foster Wheeler Infrastructure, Inc. in February 2017 and is provided as Appendix G and incorporated by reference herein.

Table 4.6-1 summarizes the significant impacts and mitigation measures discussed in this section.

Table 4.6-1. Summary of Significant Impacts and Mitigation Measures

Summary of Potentially Significant Impact(s)	Summary of Mitigation Measure(s)	Level of Significance After Mitigation	Rationale for Finding After Mitigation
Impact-WQ-1: Surface Water Pollutant Related to Fireworks Debris for the Proposed New Fireworks Display Events	MM-WQ-1: Implementation of the Water Quality-Related Conditions of the Proposed Ordinance, which require the use of alternative fireworks, specific packaging material, best management practices, compliance with SDRWQCB General Permit, and compliance with other required permits	Significant and Unavoidable	Compliance with the water quality-related conditions of the proposed ordinance, which require the use of alternative fireworks, implementation of best management practices, compliance with SDRWQCB's General Permits requirements and other required permits will reduce the potential for fireworks related debris to pollute surface waters. However, due to uncontrollable factors such as weather conditions, amount of paper incinerated, sunken material, or material that is blown onto land may affect the ability to recover all post-show debris impacts related to fireworks on surface waters would remain significant and unavoidable.

Summary of Potentially Significant Impact(s)	Summary of Mitigation Measure(s)	Level of Significance After Mitigation	Rationale for Finding After Mitigation
Impact-WQ-2. Surface Water Pollutant Related to Increased Human-Generated Trash and Litter for the Proposed New Fireworks Display Events	MM-WQ-2: Implementation of the Water Quality–Related Conditions of the Proposed Ordinance for Human-Generated Trash and Litter, which require additional trash receptacles and clean up at major viewing areas during publicly advertised fireworks display events	Less than Significant	Compliance with the proposed ordinance would require the fireworks operator to double the number of trash receptacles and clean up at major viewing areas, which would reduce the amount of human-generated trash and litter that could potentially enter San Diego Bay and degrade the water quality. In addition, the District maintains parks and other public areas within its jurisdiction during the Fourth of July fireworks display events, which would continue to be provided for the proposed new events. Therefore, impacts are reduced to a level less than significant.

4.6.2 Existing Conditions

Fireworks display events requiring a discretionary action by the District or operated by the District’s tenants currently occur on the Fourth of July and other days throughout the year at various locations adjacent to and in the waters of San Diego Bay and the Pacific Ocean near Imperial Beach. The existing fireworks display events are described in detail in Chapter 2, *Environmental Setting*, of this Draft EIR. Figure 2-1 shows the locations of the existing and proposed new fireworks launch sites in San Diego Bay and the Imperial Beach Oceanfront.

4.6.2.1 Surface Water Hydrology

The project area is under the regulatory authority of the San Diego Regional Water Quality Control Board (SDRWQCB). The San Diego region is divided into 11 hydrologic units (HUs) for administrative purposes. Each of the HUs flow from elevated regions in the east to lagoons, estuaries, or bays in the west and feature similar water quality characteristics and issues. With the exception of the Fourth of July Imperial Beach Fireworks Show, which takes place from the middle of the Imperial Beach Pier in the Pacific Ocean, the existing and proposed new fireworks display events that would be governed by the proposed ordinance occur adjacent to and in the waters of the San Diego Bay Watershed Management Area (WMA), which contains the Pueblo San Diego HU,

Sweetwater HU, and Otay HU, as shown on Figure 4.6-1. The Pacific Ocean shoreline is within the Tijuana River WMA.

San Diego Bay Watershed

The San Diego Bay WMA encompasses a 444-square-mile area (approximately 284,500 acres) that extends eastward from San Diego Bay for more than 50 miles to the Laguna Mountains. The WMA ranges in elevation from sea level at San Diego Bay to a maximum elevation of approximately 6,000 feet above sea level at the eastern boundary. Most of the WMA land area generally lies north of the Tijuana River WMA, south of the San Diego River WMA, west of the Anza Borrego WMA, and east of the Pacific Ocean. SDRWQCB-prepared Water Quality Control Plan for the San Diego Basin (SDRWQCB 1994) (Basin Plan) defines the San Diego Bay WMA as containing three HUs: (1) the Pueblo San Diego (Pueblo) HU, (2) the Sweetwater River (Sweetwater) HU, and (3) the Otay River (Otay) HU.

The source of most freshwater input to San Diego Bay is surface runoff from urban areas and intermittent flow from rivers and creeks during rain events. Dams and extensive use of groundwater over the past century in the Sweetwater and Otay Rivers have significantly reduced the input from these rivers to the Bay.

Pueblo San Diego Hydrologic Unit (908.00)

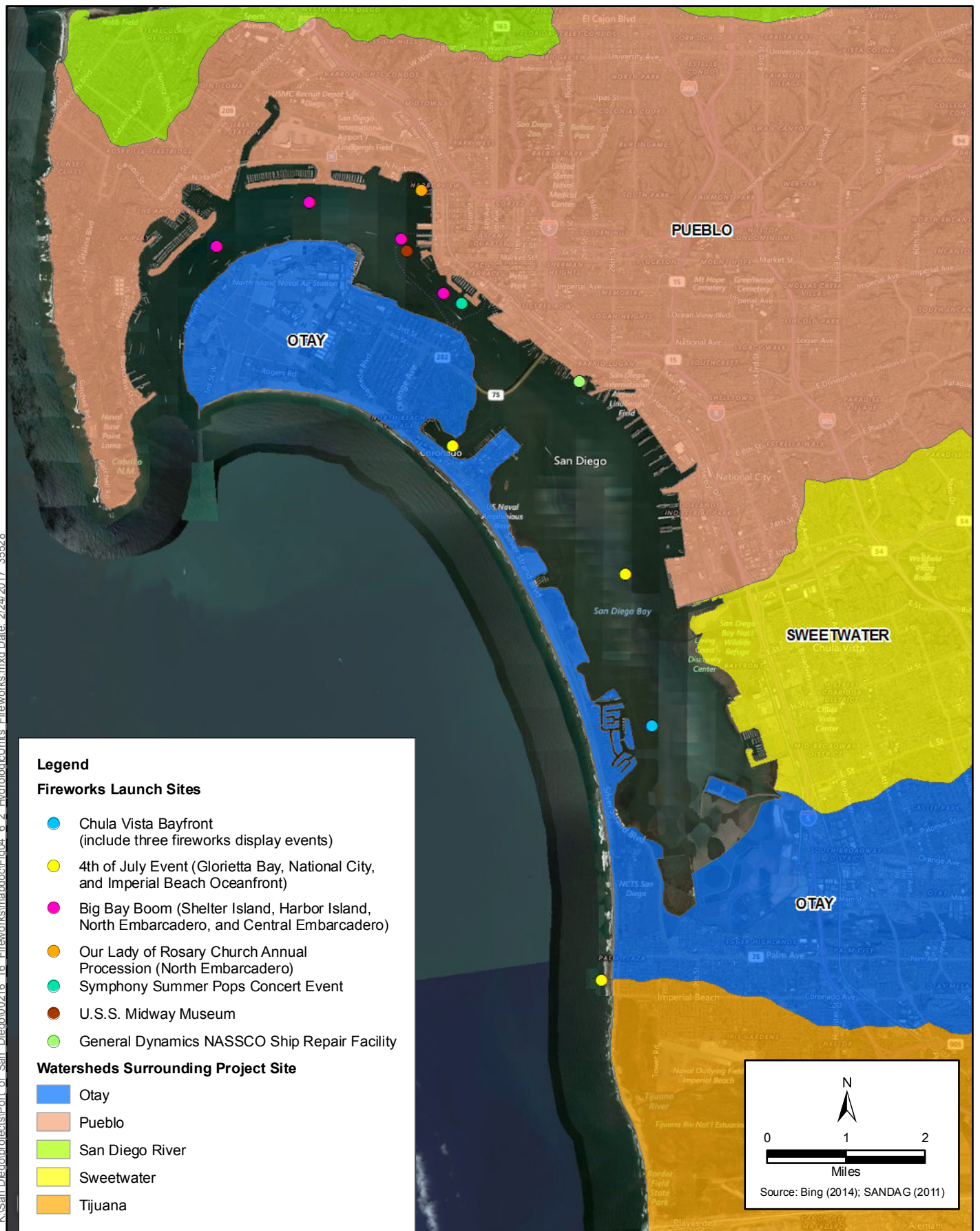
The Pueblo HU encompasses approximately 60 square miles and has no central stream system. The Basin Plan identifies the Pueblo HU as the smallest of the three San Diego Bay HUs, covering approximately 38,000 acres. It is the most developed and most densely populated watershed in the San Diego Bay Watershed Management Area. It contains three hydrologic areas (HAs): Point Loma (908.1), San Diego Mesa (908.2), and National City (908.3). Major water features are Chollas Creek, Paleta Creek, and San Diego Bay. Most of the water from the Pueblo HU drains to San Diego Bay, although a portion of the Point Loma HA drains directly to the Pacific Ocean.

Sweetwater River Hydrologic Unit (909.00)

The Sweetwater HU is the largest of the three San Diego Bay HUs, encompassing over 415 square miles. Three main drainage areas are included within the Sweetwater HU: Lower Sweetwater HA (Hydrologic Subareas 909.11, 909.12, and 908.32),¹ Middle Sweetwater HA (909.20), and Upper Sweetwater HA (909.30). It has four major water bodies: Sweetwater River, Sweetwater Reservoir, Loveland Reservoir, and San Diego Bay. Portions of the San Diego Bay National Wildlife Refuge, including the Sweetwater Marsh, are in the Sweetwater HU. Much of this watershed is occupied by undeveloped lands in the Cleveland National Forest, Cuyamaca Rancho State Park, and the unincorporated communities of Pine Valley, Descanso, Alpine, and the Viejas Indian Reservation. The Cleveland National Forest, Cuyamaca Rancho State Park, and Viejas Indian Reservation are regulated separately, and the Responsible Parties² do not have authority to require their participation or to implement Municipal Permit requirements.

¹ Telegraph Canyon Channel is in HSA 909.11, but drains directly to San Diego Bay rather than to the Sweetwater River. Hydrologic Subarea 908.32, while technically in the Pueblo HU, drains to the Sweetwater River, so it is considered part of the Sweetwater HU.

² In this document, the Co-permittees within the San Diego Bay Watershed Management Area and the California Department of Transportation are collectively referred to as Responsible Parties.



Otay River Hydrologic Unit (910.00)

The Basin Plan identifies the Otay HU as the second largest of the three San Diego Bay HUs. The Otay HU consists of three HAs: Coronado (910.10), Otay Valley (910.20), and Dulzura (910.30). It comprises nearly 160 square miles and includes four major water bodies: the Upper and Lower Otay Reservoirs, Otay River, and San Diego Bay. The two reservoirs supply drinking water, wildlife habitat, and recreational opportunities. The Otay HU includes portions of San Diego Bay and the San Diego Bay National Wildlife Refuge, the Rancho Jamul Ecological Reserve, the Otay Valley Regional Park, and approximately 23,000 acres that provide habitat for endangered plant and animal species as part of the San Diego County Multiple Species Conservation Program.

Table 4.6-2 shows the hierarchical structure of HU, HA, and Hydrologic Subarea.

Table 4.6-2. Project Vicinity Hydrologic Units, Hydrologic Areas, and Hydrologic Subareas

Hydrologic Unit	Hydrologic Areas	Hydrologic Subareas
Pueblo San Diego (908.00)	Point Loma (908.10)	N/A
	San Diego Mesa (908.20)	Lindbergh (908.21)
		Chollas (908.22)
	National City (908.30)	El Toyon (908.31)
		Paradise (908.32)
Sweetwater River (909.00)	Lower Sweetwater (909.10)	Telegraph (909.11)
		La Nacion (909.12)
	Middle Sweetwater (909.20)	Jamacha (909.21)
		Hillsdale (909.22)
		Dehesa (909.23)
		Galloway (909.24)
		Sequan (909.25)
		Alpine Heights (909.26)
	Upper Sweetwater (909.30)	Loveland (909.31)
		Japatul (909.32)
		Viejas (909.33)
		Descanso (909.34)
		Garnet (909.35)
Otay River (910.00)	Coronado (910.10)	N/A
	Otay (910.20)	N/A
	Dulzura (910.30)	Savage (910.31)
		Proctor (910.32)
		Jamul (910.33)
		Lee (910.34)
		Lyon (910.35)
		Hollenbeck (910.36)
		Engineer Springs (910.37)
Source: SDRWQCB 2011a		

Pacific Ocean Shoreline

As mentioned, the Fourth of July Imperial Beach Fireworks Show occurs from the middle of the Imperial Beach Pier in the Pacific Ocean. The Pacific Ocean shoreline is part of the Tijuana River WMA, which covers a range of natural ecosystems. The watershed originates in the 6,000-foot-elevation, pine forest-covered mountains in east San Diego County and extends to the tidal saltwater estuary at the mouth of the Tijuana River and sandy beaches along the Pacific Ocean shoreline in the west.

4.6.2.2 Surface Water Quality

San Diego Bay and the Pacific Ocean are the receiving water bodies for existing fireworks display events, while the Bay would be the receiving water body for the proposed new fireworks display events. The surface water quality of these water bodies is described below.

San Diego Bay

Tides in San Diego Bay are classified as mixed diurnal/semi-diurnal, with a dominant semi-diurnal component. Generally, San Diego Bay has two low and two high tides per day, on an approximately two-week spring-neap tidal cycle that is associated with the phase of the moon. Tidal exchange in San Diego Bay exerts control over flushing, salt and heat balances, and water residence time. The ebb and flow of tides mix ocean and San Diego Bay waters, and produce currents, induce changes in salinity, and alternately expose and inundate portions of the shoreline. Tidal flushing and mixing are important for maintaining water quality and moderating water temperature that has been affected by exchange with the atmosphere or by heating.

Water quality in San Diego Bay is influenced by processes and activities that take place within the San Diego Bay and the watershed HUs, including through tidal flushing and currents, as well as from freshwater inflows. Water quality characteristics (e.g., salinity, temperature, and dissolved oxygen) form a gradient within San Diego Bay: waters in the northern Bay have conditions similar to those of the ocean; the central Bay is intermediate in character; and the southern Bay is strongly affected by shallow depths, fresh water inflows, and insulation. The turbidity (i.e., the amount of particulate matter in suspension in the water column) of San Diego Bay waters is affected by phytoplankton blooms; inputs of fine sediments from surface runoff during and after storms; and sediment resuspension by winds, waves, and human activities. Consequently, an increase in turbidity can decrease light penetration and the level of primary biological production. Turbidity in San Diego Bay varies both by time and by location.

Pacific Ocean

The Pacific Ocean shoreline in the vicinity of the Fourth of July Imperial Beach Fireworks Show lies within the Southern California Bight. Oceanographic conditions within the Southern California Bight are influenced by the Southern California Countercurrent, which is a large-scale eddy of the California Current, and the California Undercurrent, which is a northward-flowing current that occurs inshore and beneath the California Current. Local-scale current patterns are complex and reflect the effects of local winds, tidal circulation, regional climatic events, and seasonal cycles in seawater properties and stratification.

There are four primary sources for nearshore currents: (1) wave-driven currents, (2) wind-driven surface currents moving approximately in the direction of the wind, (3) tidal currents that trend parallel to shore and switch direction with the falling or rising tide, and (4) currents near the mouth of coastal lagoons that result from river flow and/or tidal exchange within coastal wetlands. There are two types of surf zone currents: longshore currents and onshore/offshore currents.

Water quality within the Pacific Ocean reflects natural seasonal patterns. During late spring through fall, solar heating preferentially warms the ocean surface, resulting in depth-related gradients in water temperature (thermocline). Strong density gradients (pycnocline), related primarily to the water temperature changes with depth, restrict vertical mixing of the water column, which strongly affects the depth distribution of most water quality parameters. During winter and early spring, the strength of the vertical stratification decreases in response to weaker solar heating, mixing by winter storms, and upwelling.

Upwelling is initiated when northern winds displace surface waters offshore, resulting in replacement by colder, deeper waters with lower dissolved oxygen concentrations and higher salinity and nutrient concentrations. Upwelling is generally present from late March through July in the San Diego County area. Downwelling occurs when southern winds push offshore waters toward the shore, thus pushing nearshore surface waters down and causing warmer waters and lower salinity than are typical for deeper waters. Seasonal upwelling and downwelling affect marine water quality along the San Diego coast.

Additionally, stormwater runoff from coastal rivers and streams adds freshwater that can cause large turbidity plumes and reductions in near-surface salinity up to several miles from shore. River and stream discharges also add suspended sediments, nutrients, bacteria and other pathogens, and chemical contaminants to nearshore waters.

Beneficial Uses for Surface Waters

SDRWQCB has region-wide and water body-specific beneficial uses, and has set numeric and narrative water quality objectives for several pollutants and parameters for specific surface waters in its region. The beneficial uses of the receiving surface waters and water bodies for existing and proposed new fireworks display events—Pacific Ocean and San Diego Bay—are shown in Table 4.6-3.

Table 4.6-3. Beneficial Uses of Receiving Surface Waters or Water Bodies for Existing and Proposed New Fireworks Display Events

Water Body	Designated Beneficial Uses
Pacific Ocean	Water contact recreation, non-contact recreation, wildlife habitat, industrial service supply, navigation, commercial and sport fishing, preservation of biological habitats of special significance, rare, threatened or endangered species, marine habitat, migration of aquatic organisms, spawning, reproduction, and/or early development, shellfish harvesting and aquaculture.
San Diego Bay	Water contact recreation, non-contact recreation, wildlife habitat, industrial service supply, navigation, commercial and sport fishing, preservation of biological habitats of special significance, rare, threatened or endangered species, estuarine habitat, marine habitat, migration of aquatic organisms, spawning, reproduction, and/or early development and shellfish harvesting.

Source: SDRWQCB 2011a

San Diego Bay sediments are impaired for several constituents. A total of 172 acres of San Diego Bay are designated as impaired, containing toxic sediments and/or degraded benthic communities due to both point and nonpoint sources. The principal constituents of concern for surface water quality in the project area include chlorinated pesticides, polycyclic aromatic hydrocarbon (PAH), polychlorinated biphenyl (PCB), and heavy metals.

The Pacific Ocean shoreline near the site of the Fourth of July Imperial Beach Fireworks Show (i.e., Imperial Beach Pier) has one Clean Water Act (CWA) Section 303(d) listing for a chemical contaminant (PCBs in fish tissue), but no listings for either toxicity or benthic community effects. The Pacific Ocean shoreline, Tijuana HU, is also on the Section 303(d) list for bacteria contamination.

4.6.3 Applicable Laws and Regulations

4.6.3.1 Federal

Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA also issues Flood Insurance Rate Maps that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in the community. The design standard for flood protection is established by FEMA. FEMA's minimum level of flood protection for new development is the 100-year flood event, also described as a flood that has a 1-in-100 chance of occurring in any given year.

Additionally, FEMA has developed requirements and procedures for evaluating earthen levee systems and mapping the areas affected by those systems. Levee systems are evaluated for their ability to provide protection from 100-year flood events, and the results of this evaluation are documented in the FEMA Levee Inventory System. Levee systems must meet minimum freeboard standards and must be maintained according to an officially adopted maintenance plan. Other FEMA levee system evaluation criteria include structural design and interior drainage.

Clean Water Act

The primary goals of the CWA are to restore and maintain the chemical, physical, and biological integrity of the nation's waters and to make all surface waters fishable and swimmable. The U.S. Environmental Protection Agency (EPA) is the lead federal agency responsible for water quality management. The CWA of 1972 (33 U.S. Code [USC] 1251–1387) is the primary federal law that governs and authorizes water quality control activities by EPA as well as the states. The federal CWA of 1977 (33 USC 1251 et seq.), which amended the federal Water Pollution Control Act of 1972, established the basic structure for regulating discharges of pollutants into the waters of the United States (not including groundwater). Under the CWA, it is unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a National Pollutant Discharge Elimination System (NPDES) permit is obtained and implemented within compliance. In addition, the CWA requires the states to adopt water quality standards for receiving water bodies and to have those standards approved by EPA. Water quality standards consist of designated beneficial uses for

a particular receiving water body (e.g., wildlife habitat, agricultural supply, fishing), along with water quality criteria necessary to support those uses.

Section 303: Impaired Water Bodies (303(d) list) and Total Maximum Daily Loads

Under Section 303(d) of the CWA, the State Water Resources Control Board (SWRCB) is required to develop a list of impaired water bodies that do not meet water quality standards (promulgated under the National Toxics Rule [NTR] or the California Toxics Rule [CTR]) after the minimum technology-based effluent limitations have been implemented for point sources. Lists are to be priority ranked for development of a total maximum daily load (TMDL). A TMDL is a calculation of the total maximum amount of a pollutant that a water body can receive on a daily basis and still safely meet water quality standards. The California RWQCBs and EPA are responsible for establishing TMDL waste-load allocations and incorporating improved load allocations into water quality control plans, NPDES permits, and waste discharge requirements. Section 305(b) of the CWA requires that states assess the status of water quality conditions within the state in a report to be submitted every 2 years.

Both CWA requirements are being addressed through the development of a 303(d)/305(b) Integrated Report, which would address both an update to the 303(d) list and a 305(b) assessment of statewide water quality. SWRCB developed a statewide 2010 California Integrated Report based upon the Integrated Reports from each of the nine RWQCBs. The 2010 California Integrated Report was approved by the SWRCB at a public hearing on August 4, 2010, and EPA issued its final decision and approval on October 11, 2011.

All of the 303(d) listed impaired waters with potential to be affected by the proposed project would be evaluated as part of this Draft EIR, and mitigation measures would be implemented if necessary to protect waters from further impairment.

Section 303: List of Water Quality Limited Segments

SWRCB approved the 2010 Integrated Report (CWA Section 303(d) List/305(b) Report) on August 4, 2010 (SWRCB 2014). On November 12, 2010, EPA approved the 2010 California 303(d) List of Water Quality Limited Segments.

The following is summary of San Diego Bay and Pacific Ocean Section 303(d)-listed locations for sediment chemistry, water chemistry, benthic community effects, or sediment toxicity impairments only for areas near fireworks display events. The bacterial impairments listed below are not a constituent of concern for fireworks display events and are provided for informational purposes only.

- San Diego Bay: 303(d)-listed for impaired Ocean, Commercial, and Sport Fishing (COMM) (PCBs)
- San Diego Bay Shoreline, North of 24th Street Marine Terminal: 303(d)-listed for impaired marine habitat (MAR) (benthic community effects and sediment toxicity)
- San Diego Bay Shoreline, Seventh Street Channel: 303(d)-listed for impaired MAR (benthic community effects and sediment toxicity)
- San Diego Bay Shoreline, at Americas Cup Harbor: 303(d)-listed for impaired Estuarine Habitat beneficial use (EST) (copper)
- San Diego Bay Shoreline, near Submarine Base: 303(d)-listed for impaired MAR (benthic community effects, sediment toxicity, and toxicity)

- San Diego Bay, Shelter Island Yacht Basin: 303(d)-listed for impaired EST (dissolved copper)
- San Diego Bay Shoreline, 32nd Street San Diego Naval Station: 303(d) listed for impaired MAR (benthic community effects and sediment toxicity)
- San Diego Bay Shoreline, at Harbor Island (East Basin): 303(d) listed for EST (copper)
- San Diego Bay Shoreline, at Harbor Island (West Basin): 303(d)-listed for impaired EST (copper)
- San Diego Bay Shoreline, at Marriott Marina: 303(d)-listed for impaired EST (copper)
- San Diego Bay Shoreline, at Spanish Landing: 303(d)-listed for impaired Contact Water Recreation (REC-1) and Shellfish Harvesting (SHELL) (total coliform)
- San Diego Bay Shoreline, Between Sampson and 28th Streets: 303(d)-listed for impaired MAR (copper and PAHs), COMM (mercury and PCBs), and warm freshwater habitat (zinc)
- San Diego Bay Shoreline, Downtown Anchorage: 303(d)-listed for impaired MAR (benthic community effects and sediment toxicity)
- San Diego Bay Shoreline, near Chollas Creek: 303(d)-listed for impaired MAR (benthic community effects and sediment toxicity)
- San Diego Bay Shoreline, near Coronado Bridge: 303(d)-listed for impaired MAR (benthic community effects and sediment toxicity)
- San Diego Bay Shoreline, near Switzer Creek: 303(d)-listed for impaired MAR (chlordane and PAHs)
- San Diego Bay Shoreline, Vicinity of B Street and Broadway Piers: 303(d)-listed for impaired MAR (benthic community effects and sediment toxicity) and REC 1 and SHELL (total coliform)
- San Diego Bay Shoreline, Chula Vista Marina: 303(d)-listed for impaired EST (copper)
- Pacific Ocean Shoreline, Imperial Beach Pier: 303(d)-listed for impaired REC 1 (fecal coliform and total coliform) and COMM (PCBs)³
- San Diego Bay Shoreline, at Coronado Cays: 303(d)-listed for impaired EST (copper)
- San Diego Bay Shoreline, at Glorietta Bay: 303(d)-listed for impaired EST (copper)

National Pollutant Discharge Elimination System

The NPDES permit program was established by the CWA to regulate discharges to surface waters of the United States. Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal and industrial discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, or other activities. Permits issued pursuant to the NPDES are implemented at the state and local levels.

³ This listing (Decision ID 5535) is based upon PCB levels in fish tissue (a perch species). One station was sampled on Imperial Beach Pier in either March 1999 or April 2000. The tissue sample result exceeded the Office of Environmental Health Hazard Assessment Screening Value of 20 nanograms per gram.

Oil Pollution Act

The Oil Pollution Act (OPA) was signed into law in August 1990, largely in response to rising public concern following the Exxon Valdez oil spill in Prince William Sound, Alaska. The OPA improved the nation's ability to prevent and respond to such incidents by expanding the federal government's ability to respond with funding and other resources. The OPA also created the national Oil Spill Liability Trust Fund, which funds responses to spill incidents.

In addition, the OPA provided new requirements for contingency planning, by both government and industry; it expanded the National Oil and Hazardous Substances Pollution Contingency Plan in a three-tiered approach: (1) the federal government must direct all public and private responses for certain types of spill events. (2) area committees (composed of federal, state, and local government officials) must develop detailed and location-specific area contingency plans. and (3) owners or operators of vessels and certain facilities that pose a serious threat to the environment must prepare their own facility response plans.

The OPA also increased penalties for regulatory noncompliance, broadened the response and enforcement authorities of the federal government, and preserved state authority to establish laws governing oil spill prevention and response.

National Toxics Rule and California Toxics Rule

EPA adopted the NTR on December 22, 1992, and amended it on May 4, 1995, and November 9, 1999. Approximately 40 NTR criteria are also applied in California.

On May 18, 2000, EPA adopted the CTR. This rule prescribed new toxics criteria for California, incorporated the previously adopted NTR criteria that were applicable in the state, and specified water quality criteria for priority pollutants. The CTR was amended on February 13, 2001.

Endangered Species Act

The Endangered Species Act does not authorize any action that results in the taking of a threatened or endangered species or any action that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code Sections 2050 to 2097) or the Federal Endangered Species Act (16 USC 1531–1544). The Endangered Species Act requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The discharger is responsible for meeting all requirements of the Endangered Species Act.

United States Coast Guard Marine Safety Program

The U.S. Coast Guard (USCG), pursuant to 33 Code of Federal Regulations (CFR) 100, implements the Marine Safety Program, which is designed to ensure the safety of vessels and recreational boaters on navigable U.S. waters during fireworks display events. USCG issues marine event permits to sponsors of public fireworks display events that have the potential to endanger marine safety. An application for approval of marine event must be submitted to USCG for approval no later than 135 days prior to the event if the applicant does not meet criteria specified in 33 CFR 100.15(c), or 60 days prior to the event if the applicant does meet the criteria. After approving plans for a fireworks display event, USCG is authorized to promulgate special local regulations as necessary to ensure public safety on navigable waters immediately prior to, during, and immediately after the

approved fireworks display event. Such regulations may include a restriction on or control of the movement of vessels through a specified fireworks display event area.

Department of Homeland Security Chemical Facility Anti-Terrorism Standards

On October 4, 2006, the U.S. Department of Homeland Security (DHS) Appropriations Act of 2007 was signed into law. Under Section 550 of the Appropriations Act of 2007, DHS finalized chemical facility anti-terrorism standards on November 2, 2007 (Perry et al. 2007). Facilities possessing any of the 335 chemicals of interest in quantities at or above screening threshold quantities must complete an electronic “top screen” questionnaire that determines whether further assessments and security plans should be developed to ensure safety. The information should allow DHS to determine the potential for and possible consequences of a terrorist attack, and to assess the possible risks if dangerous chemicals are stolen. Pyrotechnic technicians and businesses act as chemical storage facilities and use and store some of the chemicals listed in Part 27 of the standards, and so are subject to DHS review. Operators may not use dangerous or explosive chemicals not on the list without DHS review and consideration of safety.

4.6.3.2 State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (embodied in the California Water Code) of 1969 (Porter Cologne Act) is California’s statutory authority for the protection of water quality. Under the Porter-Cologne Act, the state must adopt water quality policies, plans, and objectives that protect its waters for the use and enjoyment of the people. Under the California Water Code, the State of California is divided into nine regions governed by RWQCBs that, under the guidance and review of SWRCB, implement and enforce provisions of the California Water Code and the CWA. The project site is located in Region 9, the San Diego region, and governed by SDRWQCB.

The Porter-Cologne Act also requires waste dischargers to notify the RWQCBs of their activities through the filing of Reports of Waste Discharge and authorizes SWRCB and the RWQCBs to issue and enforce waste discharge requirements, NPDES permits, Section 401 water quality certifications, or other approvals.

Section 13050 of the California Water Code defines what is considered pollution, contamination, or nuisance. Briefly defined, *pollution* means an alteration of water quality such that it unreasonably affects the beneficial uses of water. *Contamination* means an impairment of water quality to the degree that it creates a hazard to public health. *Nuisance* is defined as anything that is injurious to health, is offensive to the senses, or is an obstruction to property use, and which affects a considerable number of people.

State Implementation Policy

On March 2, 2000, SWRCB adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*. This State Implementation Policy (SIP) applies to discharges of toxic pollutants into the inland surface waters, enclosed bays, and estuaries of California subject to regulation under the state’s Porter-Cologne Act and the federal CWA. Such regulation may occur through the issuance of NPDES permits or other relevant regulatory approaches. The SIP establishes a standardized approach for permitting discharges of toxic

pollutants to non-ocean surface waters in a manner that promotes statewide consistency. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. The RWQCB's General Permit implements the requirements of the SIP with regard to potential water quality-related impacts associated with fireworks display events over or near water bodies.

Office of the California State Fire Marshal

California's Fireworks Law, which was passed in 1938, established the Office of the State Fire Marshal as the fireworks classification authority in the state. The state's Explosives Law authorizes the California State Fire Marshal to adopt regulations for the safe use, handling, storage, and transportation of fireworks in California. Fireworks are classified through laboratory analysis, field examinations, and test firing of fireworks items. The State Fire Marshal requires licensing of all pyrotechnic operators, manufacturers, importer-exporters, wholesalers, retailers, and public display companies. Pyrotechnic operators who discharge fireworks at public displays or launch high-powered and experimental rockets must also pass a written examination and provide proof of experience. The laws and regulations governing the transportation, use, and storage of fireworks in California are contained in the following.

- State Fireworks Law, California Health and Safety Code, Sections 12500–12728
- State Fireworks Regulations, California Code of Regulations (CCR) Title 19, Chapter 6
- Storage, CCR Title 27, Part 55, Subpart K
- Hazardous Materials Transportation, CCR Title 13

California State Department of Toxic Substances Control

In light of the risks to public health and the environment posed by perchlorate releases, the California Legislature adopted the Perchlorate Contamination Prevention Act of 2003, amending Chapter 6.5 of Division 20 of the Health and Safety Code and requiring the California Department of Toxic Substances Control to adopt regulations specifying best management practices (BMPs) for perchlorate and perchlorate-containing substances. The perchlorate BMP regulations were adopted on December 31, 2005, and are contained in CCR Title 22, Social Security Division 4.5, Environmental Health Standards for the Management of Hazardous Waste Chapter 33, Best Management Practices for Perchlorate Materials Article 1, Sections 67384.1–67384.11. In Section 67384.8(c), Special Best Management Practices for Flares and Pyrotechnic Perchlorate Materials, these regulations provide that: “[w]ithin twenty-four (24) hours of a public display of fireworks or the use of dangerous fireworks, the pyrotechnics operator, in addition to complying with CCR Title 19, Section 1003, shall, to the extent practical, collect any stars and un-ignited pyrotechnic material found during the required inspection of the entire firing range.”

4.6.3.3 Local

San Diego Integrated Regional Water Management Plan

In the San Diego region, there is a complex array of water supply, water management, water quality protection, pollution prevention, habitat protection, flood protection, and recreational needs. Water management plans have been developed within the region to address these needs. However, jurisdictional and water management conflicts exist among the individual water management plans,

and many challenges exist to identifying, addressing, and resolving water management issues. The Integrated Regional Water Management Plan (IRWMP) was developed in 2007 to bring stakeholders together and coordinate a regional approach to water management issues, pursuant to statewide IRWMP Guidelines established by SWRCB and the State of California Department of Water Resources in 2004 and updated in 2007. In addition, the 2013 Final Draft IRWMP is now available.

Water Quality Control Plan for the San Diego Basin

RWQCBs are required to develop and periodically update a water quality control plan or basin plan (SDRWQCB 2011b). A water quality control plan establishes water quality objectives for the ground and surface waters of the region and includes an implementation plan describing the actions by SDRWQCB and others that are needed to achieve and maintain these water quality objectives. The project area falls under the Water Quality Control Plan for the San Diego Basin.

As defined in the Porter-Cologne Act, water quality objectives are the established limits or levels of chemical constituents allowable in water (SDRWQCB 2011b). The designation of water quality objectives must satisfy all of the applicable requirements of the Porter-Cologne Act and the CWA. Through water quality objectives, SDRWQCB provides for the reasonable protection of beneficial uses, considering existing water quality, environmental, and economic factors. Beneficial uses applicable to the receiving waters within the San Diego region are listed in Table 4.6-4.

Table 4.6-4. San Diego Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use
Various	Coastal Waters (Pacific Ocean, Enclosed Bays and Estuaries, Harbors, and Lagoons)	<ul style="list-style-type: none"> • Industrial service supply (IND) • Navigation (NAV) • Contact water recreation (REC-1) • Non-contact water recreation (REC-2) • Commercial and sport fishing (COMM) • Biological habitats of special significance (BIOL) • Estuarine habitats (EST) • Wildlife habitat (WILD) • Preservation of rare, threatened, or endangered species (RARE) • Marine habitat (MAR) • Aquaculture (AQUA) • Migration of aquatic organisms (MIGR) • Spawning (SPWN) • Shellfish harvesting (SHELL)
Various	Inland Surface Waters	<ul style="list-style-type: none"> • Municipal and domestic supply (MUN) • Agricultural supply (AGR) • Industrial service supply (IND) • Industrial process supply (PROC) • Groundwater recharge (GWR) • Hydropower generation (POW) • Contact water recreation (REC-1) • Non-contact water recreation (REC-2) • Biological habitats of special significance (BIOL) • Cold freshwater habitat (COLD) • Wildlife habitat (WILD) • Spawning (SPWN) • Preservation of rare, threatened, or endangered species (RARE)

SDRWQCB Municipal Stormwater Permit (Order No. R9-2013-0001)

The Municipal Stormwater Permit (Order No. R9-2013-0001 as amended by Order Nos. R9-2015-001 and R9-2015-0100) is an NPDES permit issued that requires the owners and operators of municipal separate storm sewer systems (MS4s) within the San Diego region to implement management programs to limit discharges of pollutants and non-stormwater discharges to and from their MS4 from all phases of development. The Municipal Stormwater Permit requires the District and other “co-permittees” to develop watershed based Water Quality Improvement Plans (WQIPs). The Municipal Stormwater Permit emphasizes watershed program planning and program outcomes. The intent of the Permit is to enable each jurisdiction to focus its resources and efforts to: reduce pollutants in stormwater discharges from its MS4, effectively prohibit non-stormwater discharges to its MS4, and achieve the interim and final [Water Quality Improvement Plan] numeric goals.

National Pollutant Discharge Elimination System Permit (General Permit)

The General NPDES Permit for Residual Firework Pollutant Waste Discharges to Waters of the United States in the San Diego region from the Public Display of Fireworks (No. R9-2011-0022) (General Permit) covers the point-source discharge of residual firework pollutant waste to surface waters, and requires users of fireworks to obtain coverage under the General Permit prior to the public display of fireworks. A copy of the General Permit, the Notice of Intent, and post-event reporting forms are included as attachments to Appendix G.

CWA Section 301(a) broadly prohibits the discharge of any pollutant to waters of the United States, except in compliance with an NPDES permit. Fireworks residue waste discharged into surface waters constitutes discharge of a pollutant from a point source within the meaning of the CWA. Therefore, coverage under an NPDES permit is required before residual firework pollutant wastes can be lawfully discharged.

EPA and SDRWQCB have classified these types of discharges as minor discharges. In accordance with Section 2200, Title 23 of the California Code of Regulations, discharges regulated by the Order are determined to be Category 3. The threat to water quality and complexity of the discharge is determined to be Category 3C.⁴

Section 122.48 of the NPDES permit program requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code Sections 13267 and 13383 authorize RWQCBs to require technical and monitoring reports. The General Permit provides monitoring and reporting requirements to implement federal and state requirements.

The current General Permit was valid until May 31, 2016. Following the expiration date, the provisions set forth are to be re-evaluated and re-established or updated as needed. Dischargers covered under this order at the time of expiration would continue to be covered until coverage becomes effective under a reissued permit. Upon reissuance of this order by the RWQCB, dischargers may need to seek re-enrollment under the revised order. Discharger categories and monitoring requirements are discussed in more detail in the General Permit contained in Appendix G.

SeaWorld San Diego (SeaWorld) is currently the only Category 1 discharger in the San Diego region. SeaWorld is required to conduct a higher level of monitoring and reporting than Category 2 dischargers because of the high number of events it conducts each year adjacent to Mission Bay.

Category 2 entities are all other dischargers of fireworks of any net explosive weight from a single event or multiple events to any surface water of the United States within the San Diego region.

Category 1 Dischargers

All Category 1 dischargers monitor the receiving water body to assess compliance with receiving water limits. The compliance monitoring may be performed independently by individual dischargers, collaboratively through participation in a coalition that monitors San Diego Bay or Mission Bay, or both, as determined by SDRWQCB. Monitoring of both sediment and water quality is

⁴ Category 3C is defined as “Those discharges of waste that could degrade water quality without violating water quality objectives, or could cause a minor impairment of designated beneficial uses” and “dischargers having no waste treatment systems or that must comply with best management practices” (California Code of Regulations, Title 23, Division 3, Chapter 9, Waste Discharge Reports and Requirements, Article 1. Fees).

required, as outlined in the General Permit Attachment E, Section IX.C. Water quality testing includes chemistry analysis of (at a minimum) conventional nutrients (including total phosphorus and perchlorate), semivolatile organic compounds (bis-phthalate), and metals (total and dissolved). Sediment testing includes chemical analysis, toxicity testing, and assessment of benthic community condition, no less than once every 3 years.

Category 2 Dischargers

Category 2 dischargers are not required to perform monitoring unless otherwise determined by SDRWQCB, based on the considerations outlined in General Permit, Attachment E, Section IX.B.2. Best Management Practices Required by the General Permit.

All dischargers (i.e., fireworks display event organizers) covered under the General Permit are required to prepare a Fireworks Best Management Practices Plan (FBMPP). The FBMPP can be in any of the following forms.

1. An official document or manual with full descriptions, figures, etc.
2. A brief letter or notice describing or listing the BMPs to be implemented for health and safety at the event.
3. A map or image describing and indicating where BMPs will be implemented before, during, and after the event.

The information needed to prepare an FBMPP is provided as an attachment to the *San Diego Bay and Imperial Beach Oceanfront Fireworks Display Events Project Water Quality Technical Report* (Appendix G).

Reporting

The General Permit contains the following reporting requirements.

- **Public Fireworks Display Event Log.** Dischargers shall maintain a written log for each public fireworks display event containing the information as described in Section V.C. of the General Permit. The log shall be completed within 5 days following each public fireworks display event and shall be made available to SDRWQCB upon request.
- **Post Firework Display Event Reporting.** No later than 30 calendar days following each public fireworks display event, the discharger shall complete the Public Display of Fireworks Post Event Report Form and make it available to SDRWQCB upon request. A copy of the Public Display of Fireworks Post Event Report Form is provided as an attachment to Appendix G.

Compliance

As stated in the General Permit, compliance is determined as follows.

This Order requires the use of minimum BMPs to control and abate the discharge of pollutant wastes from public fireworks events to surface waters in the San Diego Region. Proper implementation of the BMPs will assure the protection of water and sediment quality within the receiving waters. Dischargers enrolled under this Order are expected to comply with all water and sediment quality objectives through the implementation of BMPs. Compliance will be determined by evaluating the proper implementation of the minimum BMPs and their effectiveness in preventing and minimizing pollutant waste loading from public fireworks events to surface waters. Compliance will also be evaluated using information obtained under the monitoring and reporting program of this Order.

San Diego Bay Watershed Water Quality Improvement Plan

The Municipal Stormwater Permit requires the development of the San Diego Bay WQIP. The purpose of the WQIP is to guide the District and other Phase I Municipalities' Jurisdictional Runoff Management Plans (JRMPs) toward improving water quality in MS4 discharges and receiving waters. In the WQIP, priorities and goals are established and each jurisdiction identified strategies to assist in attaining the goals. This approach establishes the foundation that the District uses to develop and implement its JRMP. The District implements the WQIP in collaboration with other local agencies that have jurisdiction within the San Diego Bay Watershed Management Area, which comprises three hydrologic units: Pueblo San Diego, Sweetwater River, and Otay River.

Jurisdictional Runoff Management Plan

Under the Municipal Stormwater Permit, each jurisdiction is to prepare a JRMP. Each JRMP must contain a component that addresses issues related to construction activities and a component that addresses issues related to existing development. Additionally, each co-permittee prepares and submits an annual report that describes the implementation of programs and strategies to reduce the discharge of pollutants of concern to the MS4 and receiving waters to the maximum extent practicable.

The District's JRMP serves as an informational document that provides an overall account of the program to be conducted by the District during the 5-year life of the Municipal Permit. The District's JRMP has been developed to meet the conditions of the Municipal Permit and to assist the District in achieving the goals identified in the WQIP. District-specific WQIP-based strategies have been incorporated into the JRMP. The JRMP program's focus is on controlling stormwater discharges to the MS4 with the overall goal of achieving receiving water quality improvements. The JRMP utilizes District-specific jurisdictional activities as well as watershed-based strategies. Enforcement of the JRMP helps to prevent stormwater pollutants from entering into the local storm drains and ultimately San Diego Bay.

San Diego Harbor Safety Plan

The San Diego Harbor Safety Plan is designed to provide mariners using the waters of San Diego Bay an up-to-date guide to critical navigation issues that will enhance vessel safety, with the ultimate goal of pollution prevention and protection of the region's valuable resources. This plan has been developed by the San Diego Harbor Safety Committee as mandated in the California Oil Spill Prevention and Response Act of 1990 (OSPR Act) (Government Code Sections 8574.1 et seq.). The goals of the OSPR Act are to improve the prevention, removal, abatement, response, containment, clean up, and mitigation of oil spills in the marine waters of California. The OSPR Act and its implementing regulations (14 CCR 800–802) created harbor safety committees for the major harbors of California to “plan for the safe navigation and operation of tankers, barges, and other vessels within each harbor” by preparing “a harbor safety plan, encompassing all vessel traffic within the harbor.”

The plan sections include the following.

- **Emergency Response Procedures.**
- **Best Maritime Practices.**
- **Geographic Boundaries.** A detailed description of the geographical boundaries of the harbor.

- **Harbor Conditions.** A description of existing and expected conditions of weather, tidal ranges, and other factors.
- **Aids to Navigation and Navigational Hazards.** An evaluation and list of the aids to navigation in the harbor, and list of navigational hazards.
- **Anchorage and Anchorage Management.** A description of the existing anchorages and any limitations to those anchorages.
- **Communications.** A review and evaluation of the adequacy of current ship-to-ship and ship-to-shore communications used in the harbor area.
- **Vessel Traffic Patterns.** A description of the types of vessels that call on the ports or facilities within the harbor area, and an assessment of current safety issues.
- **Tug Escort/Tug Assist.** A description of the usage of tug escorts in the harbor, including a procedure for a case-by-case determination of need, based on specific criteria.
- **Vessel Traffic Service.** A description of the San Diego Marine Information Systems for the harbor area.
- **Bridge Management Requirements.** An assessment of the physical limitations affecting vertical and horizontal clearances.
- **Competitive Aspects.** An identification and discussion of the economic impacts of implementing the provisions of the plan.
- **Project Funding.**
- **Enforcement.** An analysis of enforcement, and suggested mechanisms to ensure that the provisions of the plan are fully and uniformly enforced with regularity.
- **Harbor Safety Committee Recommendations and Accomplishments.** Includes Recommendations and actions taken to implement recommendations.
- **Implementation.** Provides an overview of implementation avenues for the recommendations contained in the Harbor Safety Plan.
- **Applicable Regulations and Guidelines.** Includes Underkeel Clearance Guidelines, Non-Tank Oil Spill Contingency Plan regulations, and Tug Escort regulations.
- **Miscellaneous.** Pilotage Evaluation Report, Ballast Water Regulations, Limited Visibility Guidelines, and Underwater Pipelines.

4.6.4 Project Impact Analysis

4.6.4.1 Methodology

The proposed new fireworks display events would occur adjacent to or in the waters of San Diego Bay along the National City and Chula Vista Bayfronts; therefore, these activities could result in potential impacts on the ambient water quality of the Bay. Potential impacts on surface water quality include: (1) activities associated with the setup, deployment, and demobilization of fireworks launch features (e.g., barges and tugs); (2) residual fireworks-related chemicals falling on surface waters; and (3) discharge of paper and other debris items that may fall into surface waters

during the launch and detonation operations. Impacts of the proposed new fireworks display events on surface water quality were analyzed using available information on potential existing sources of pollution and water quality conditions in the project study area. These conditions were then compared to potential project-related sources of pollution during proposed new fireworks display events, such as combustion residue, airborne particulates, chemical pollutants, and debris such as paper, cardboard, wires, fuses, and plastic. Because fireworks display events do not currently occur along the National City and Chula Vista Bayfronts, no water quality data could be collected to assess the potential water quality impacts associated with these proposed new displays. However, the existing Big Bay Boom and SeaWorld fireworks display events monitoring programs have both conducted post-event receiving water monitoring in coastal water bodies. This water quality monitoring provides the most relevant information to assess potential effects of fireworks on surface waters in the San Diego Bay region. Therefore, to understand the potential water quality impacts associated with the proposed new fireworks display events, the results of the Big Bay Boom and SeaWorld water quality monitoring were utilized to identify potential project-related water quality impacts. Additionally, information was gathered by conducting literature searches and contacting SDRWQCB.

Potential water quality impacts associated with the proposed new fireworks display events were evaluated by comparing post-fireworks display event water quality monitoring results for the Big Bay Boom and SeaWorld fireworks display events to (1) ambient (pre-show) conditions, (2) applicable water quality standards, and (3) findings of scientific studies and monitoring programs. Receiving waters with CWA Section 303(d) impaired water quality were identified, along with the impairment (pollutant/stressor) and an indication of whether the impairment has the potential to be further affected by the proposed new fireworks display events.

4.6.4.2 Thresholds of Significance

The following significance criteria are based on Appendix G of the State CEQA Guidelines and provide the basis for determining the significance of impacts associated with hydrology and water quality resulting from implementation of the proposed project. The determination of whether a hydrology and water quality impact would be significant is based on the professional judgment of the District as Lead Agency supported by the recommendations of qualified personnel at ICF, all of which is based on the evidence in the administrative record.

Impacts are considered significant if the proposed project would result in any of the following.

1. Violate any water quality standards or waste discharge requirements.
2. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.

3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or siltation on or off site.
4. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site, substantially affecting the existing environment.
5. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
6. Otherwise substantially degrade existing water quality.
7. Place housing within a 100-year flood hazard area such that the existing environment is substantially affected.
8. Place within a 100-year flood hazard area structures that would impede or redirect flood flows such that the existing environment is substantially affected.
9. Expose people who are already present or structures already in existence to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.
10. Contribute to inundation by seiche, tsunami, or mudflow.

As discussed in the Initial Study/Environmental Checklist Section IX (Appendix A), Thresholds 2, 3, 4, and 7 through 10 are not included in the analysis below, as it was determined that the proposed project would not result in significant impacts related to groundwater supplies, drainage patterns, housing being placed within flood hazard areas, people or structures being exposed to harm or damage from flooding as a result of the failure of a levee or dam, or inundation by seiche, tsunami, and mudflow. Those conclusions and the rationale that supports them are summarized in Chapter 6, Section 6.4, *Effects Not Found to be Significant*. Therefore, only Thresholds 1, 5, and 6 are discussed in the impact analysis that follows.

4.6.4.3 Project Impacts and Mitigation Measures

Threshold 1: Implementation of the proposed project would not violate any water quality standards or waste discharge requirements.

Threshold 6: Implementation of the proposed project would otherwise substantially degrade water quality.

Impact Discussion

Potential Impacts of Fireworks Chemical Residues on Surface Waters

Water Quality Testing for Existing Fireworks Display Events

Fireworks display events conducted over water have the potential to affect surface water quality in a number of ways, including from chemical residues that might fall back into surface waters during

and after the fireworks display event and discharge of fireworks-related debris into surface waters from the launch sites and following shell detonation.

In general, most aerial firework shells typically consist of a cylindrical or spherical cartridge, usually constructed of paper, plastic, or cardboard, and may include some plastic or paper internal components used to compartmentalize chemicals within the shell. Most of the incendiary elements and shell casings burn up in the atmosphere; however, portions of the casings and some internal structural components and chemical residue fall back to the ground or receiving water bodies. A firework combustion residue is produced in the form of smoke, airborne particulates, chemical pollutants, and debris such as paper, plastic, cardboard, wires, and fuses. This combustion residue and unignited pyrotechnic material, including duds and misfires, can fall into surface waters. The results of studies that have analyzed the potential effects of existing fireworks display events on water quality within San Diego Bay, as well as other locations in the San Diego region and the United States, are detailed below.

Big Bay Boom Monitoring Program

While no water quality monitoring is required for the Big Bay Boom per the requirements of the General Permit for a Category 2 discharger (see Section 4.6.3, *Applicable Laws and Regulations*), voluntary pre- and post-show water quality monitoring has been conducted annually for the Big Bay Boom fireworks display event since 2013 by the fireworks organizer. For consistency, the Big Bay Boom water quality monitoring program has used the same list of fireworks-related chemicals of concern identified for Category 1 dischargers in the General Permit.⁵ The 2013–2015 monitoring efforts included collection of post-event samples after the Fire Marshal gave the “all-clear” signal (typically 20 minutes following the fireworks display event). For the 2016 monitoring program, pump systems were deployed directly on the downwind side of two fireworks barges that collected samples immediately (within 1 to 2 minutes) following the end of the fireworks display event.

In each annual Big Bay Boom monitoring report, analytical data were evaluated as follows: (1) results were compared with CTR ambient water quality criteria, (2) a comparison was made between the pre- and post-event concentration levels, and (3) the chemistry results were evaluated based on the distance from the fireworks barge. Table 4.6-5 shows the chemicals that were analyzed for San Diego Bay, and Table 4.6-6 presents an overview of the water quality monitoring program for the Big Bay Boom.

⁵ Under the General Permit, all Category 1 dischargers are required to prepare a Water and Sediment Monitoring Plan and conduct comprehensive water and sediment quality monitoring. For fireworks display events, SeaWorld is currently the only Category 1 discharger in the San Diego region. SeaWorld is required to conduct a higher level of monitoring and reporting than Category 2 dischargers because of the high number of events they conduct each year. Category 2 entities are all other dischargers of fireworks of any net explosive weight from a single event or multiple events to any surface water of the United States within the San Diego region.

Table 4.6-5. Water Chemistry Analytical Testing for San Diego Bay

Conventional, Nutrient	Semivolatile Organic Compound	Metals (Total and Dissolved)
Total phosphorous, total perchlorate	Bis-phthalate	Arsenic, barium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, potassium, selenium, silver, thallium, tin, titanium, vanadium, zinc
Source: Appendix G		

Table 4.6-6. Big Bay Boom Monitoring Program Elements (2013–2016)

Monitoring Year	Monitoring Program Overview
2013	<ul style="list-style-type: none"> North Embarcadero site only Samples collected 300 feet, 600 feet, and 900 feet downwind of fireworks launch barge in the upper 1 meter of water Samples collected as soon as possible after receiving the “all clear” from the Fire Marshal (referred to as time 0), and at 30 minutes and 60 minutes
2014	<ul style="list-style-type: none"> Harbor Island site only Samples collected 0 feet, 25 feet, and 50 feet, and downwind of fireworks launch barge in the upper 1 meter of water Samples collected as soon as possible after receiving the “all clear” from the Fire Marshal (referred to as time 0)
2015	<ul style="list-style-type: none"> Harbor Island site only Samples collected 0 feet, 25 feet, and 50 feet, downwind of the fireworks launch barge in the upper 1 meter of water Samples collected as soon as possible after receiving the “all clear” from the Fire Marshal (referred to as time 0)
2016	<ul style="list-style-type: none"> North Embarcadero and South Embarcadero sites (two barges) Samples collected 0 feet, 25 feet, and 50 feet downwind at both fireworks barges in the upper 1 meter of water Two 0-foot samples collected adjacent to both barges immediately following the fireworks display event 25-foot and 50-foot samples collected at both barge sites as soon as possible after receiving the “all clear” from the Fire Marshal

Source: Appendix G

The following provides an overview of the voluntary Big Bay Boom water quality monitoring efforts from 2013 through 2016. Figures 4.6-2 through 4.6-5 compare pre-fireworks display event versus post-fireworks display event chemistry results for the 2013–2016 monitoring events, respectively. These figures present the analytical results for six chemical analytes (copper, zinc, mercury, molybdenum, phosphorous, and perchlorate) of the 21 analytes tested (results for all chemical tests are contained in Appendix G). These six analytes were selected because of their importance as contaminants of concern in San Diego Bay (i.e., CWA Section 303(d) listings or TMDLs), a heightened level of concern identified in the General Permit (i.e., perchlorate analyses), or, in the case of molybdenum, the lack of other local sources that may help confirm an increased concentration level

due to fireworks residues. In addition, the other chemical analytes that were tested but not analyzed in this section were not detected at levels that warrant further discussion/analysis.

2013 Monitoring Program

The 2013 water quality evaluation found limited relationships between the pre- and post-show results based on distance from the fireworks barge as well as time following the fireworks show in that there were no apparent trends or cause and effect relationships across analytes for (1) different time periods or (2) distances from the deployment barge (Figure 4.6-2). The average concentration levels for copper, zinc, and mercury observed at all three distances from the fireworks barge were below ambient water quality criteria levels of concerns. The metals measured with no available criteria levels (e.g., molybdenum) were found to be at similar concentrations in the water column in pre-show and post-show samples. This was also found to be the case for phosphorus. One chemical of concern, perchlorate, was detected at low levels at all three sampling locations; however, it was also detected in the pre-show sample in 2013.

2014 Monitoring Program

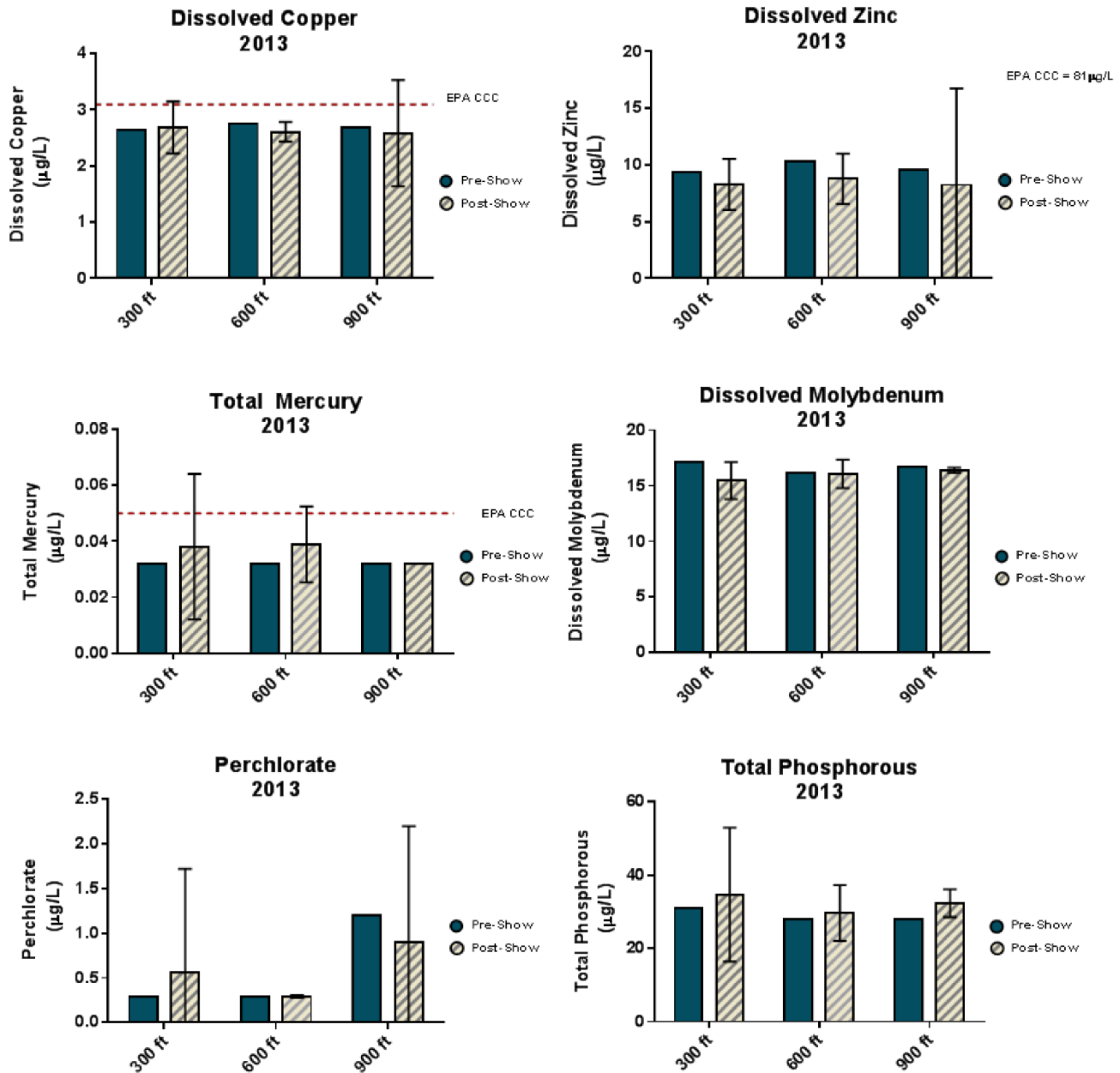
The 2014 Big Bay Boom monitoring showed no clear relationships between the pre- and post-show results based on distance from the fireworks barge (Figure 4.6-3), except for perchlorate. The concentration levels for copper, zinc, and mercury observed at all three distances from the fireworks barge were below ambient water quality criteria levels of concerns. The metals measured with no available criteria levels (e.g., molybdenum) were found to be at similar concentrations in the water column in pre-show and post-show samples. This was also found to be the case for phosphorus during the 2014 monitoring event.

Perchlorate showed an increase in both the 25-foot and 50-foot collection sites compared with the pre-fireworks display event baseline. While perchlorate was detected in some post-fireworks display event samples, the concentrations observed were very low (slightly above the method detection limit of 0.29 micrograms per liter [$\mu\text{g/L}$]). Although there is no CTR criterion for perchlorate, the highest concentration of perchlorate detected ($1.4 \mu\text{g/L}$) is orders of magnitude lower than the 10 to 100 milligrams per liter (mg/L) range found to cause sublethal effects on freshwater fish in laboratory tests.

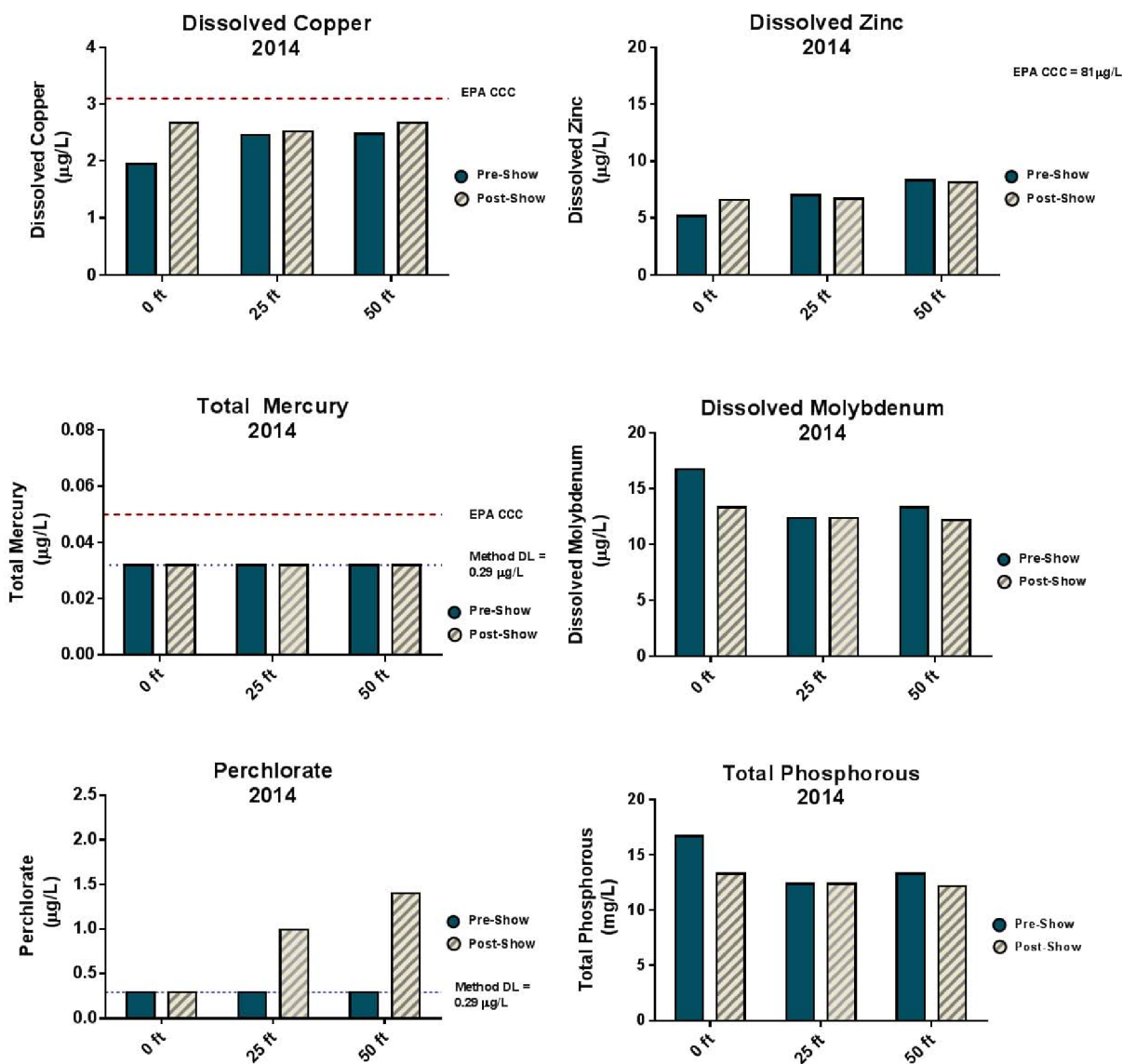
2015 Monitoring Program

Limited relationships between the pre- and post-show results based on distance from the fireworks barge as well as time following the fireworks show were observed during the 2015 monitoring event (Figure 4.6-4). Except for copper and mercury, all constituent concentrations were below CTR criteria levels or were similar to pre-fireworks display event baseline levels. Additionally, concentrations of both trace metals were in fact slightly greater in pre-show versus post-show samples. Although copper and mercury concentrations exceeded chronic CTR criteria, there was no pre- or post-fireworks display event trend indicating that the fireworks display event was responsible for the observed exceedances. Furthermore, concentrations were well below acute CTR criteria maximum concentration levels. The metals measured with no available criteria levels (e.g., molybdenum) were found to be at similar concentrations in the water column in pre-show and post-show samples. This was also found to be the case for phosphorus.

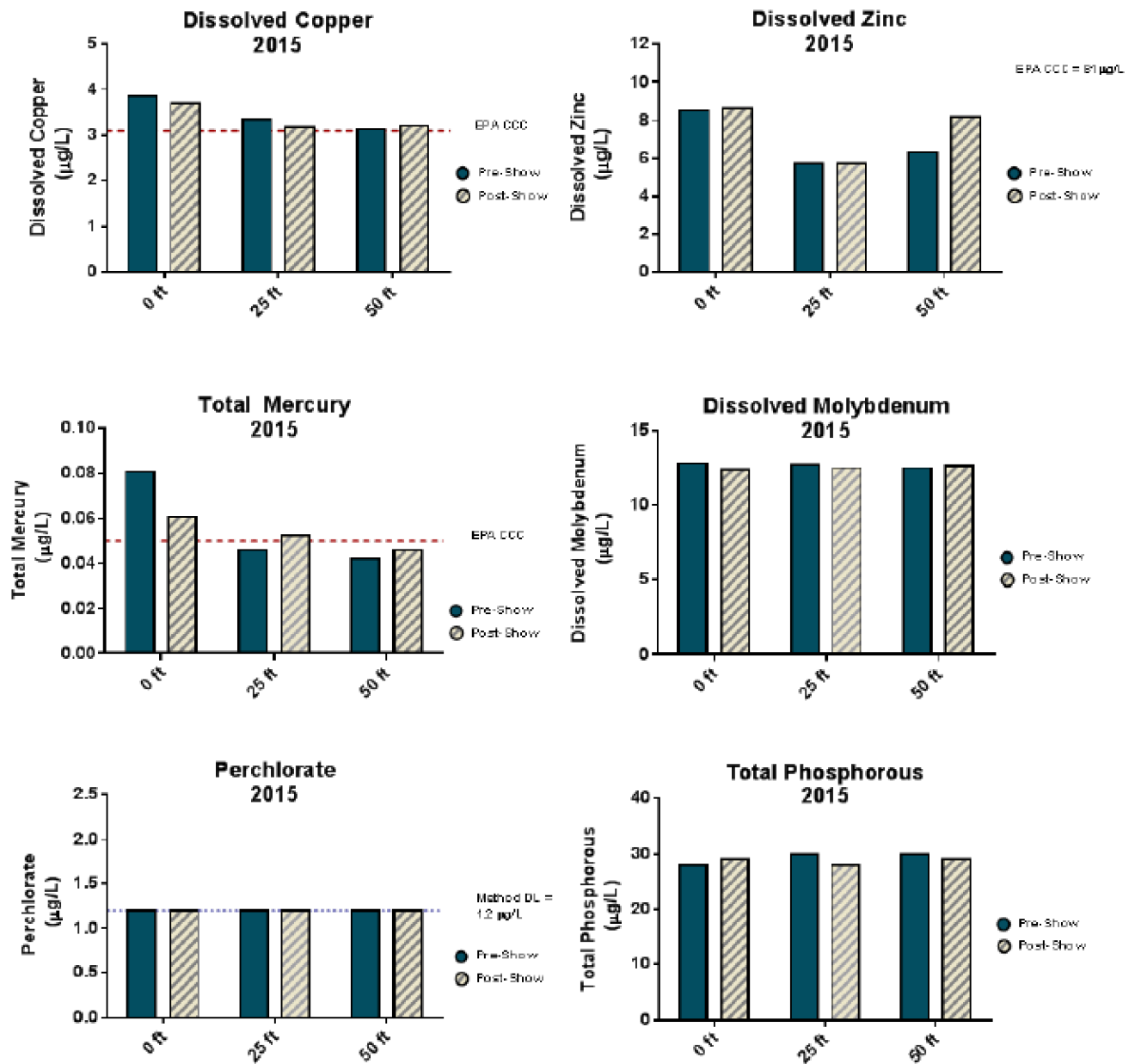
Unlike 2014, perchlorate levels were all non-detect in 2015 compared to the established method detection limit. It should be noted, however, that the method detection limit in 2014 ($0.29 \mu\text{g/L}$) was



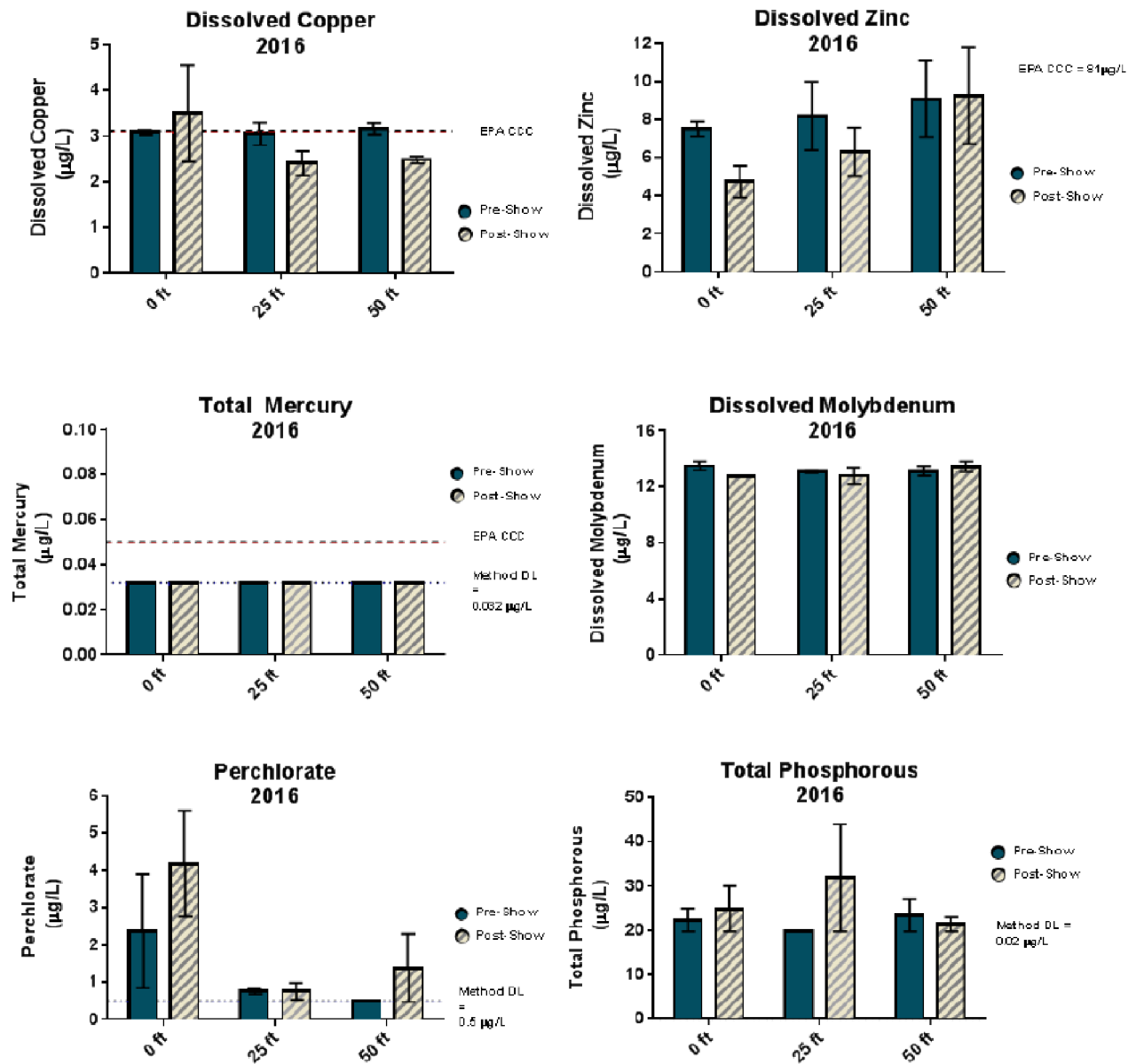
Mean values \pm 95 percent confidence intervals for post-show analyses ($n=3$; time 0, 30 min. post-show, and 60 min. post-show). Bars shown for the pre-show samples represent a single value at each sampling location.



Bars represent results for a single value at each sampling location.



Bars represent results for a single value at each sampling location.



Bars represent mean results for duplicate values at each sampling location; one sample from each of the two monitored barges. Error bars represent the range of values observed at the two barges.

lower than the 2015 detection limit (1.2 µg/L).⁶ The higher detection limit in 2015 may be the reason that the results were non-detect.

2016 Monitoring Program

Limited relationships between the pre- and post-show results—based on distance from the fireworks barge as well as time following the fireworks show—in metal levels were observed in the Big Bay Boom 2016 monitoring data (Figure 4.6-5). Dissolved copper was the only metal detected at a concentration that exceeded a CTR water quality criterion; however, it did so in both the pre-fireworks display event and post-fireworks display event samples. The metals measured with no available criteria levels (e.g., molybdenum) were found to be at similar concentrations in the water column in pre-show and post-show samples. Phosphorus levels were similar in pre-show and post-show samples collected at 0 feet and 50 feet from the fireworks barge. The post-show phosphorus level in the 25-foot sample was slightly higher compared to the pre-show sample, but only slightly above the detection limit.

Low levels of perchlorate were detected in most pre-fireworks display event and post-fireworks display event samples collected in 2016. The post-fireworks display event samples collected adjacent to the fireworks barges appear to show increased perchlorate levels compared with pre-fireworks display event levels. The maximum post-fireworks display perchlorate concentration observed was 6.4 µg/L, which is well below the levels that have been shown by researchers to result in toxic effects on aquatic organisms in laboratory toxicity tests (10 to 100 mg/L).

Big Bay Boom Monitoring Summary

Overall, chemical levels observed during the Big Bay Boom monitoring events have shown limited changes in water quality with regard to collection time or distance from the fireworks barge. The one exception is perchlorate, which has shown a slight pattern of increased concentration in some post-fireworks display event samples; however, the results have been variable. The post-show perchlorate levels since 2013 ranged from non-detect to a maximum concentration of approximately 6.4 µg/L in 2016 (at time 0 immediately adjacent to one of the barges). The concentrations were generally in the 1–2 µg/L range over this monitoring period. There is no water quality CTR criterion for perchlorate in surface waters, and perchlorate results detected in the Big Bay Boom monitoring programs are considerably lower compared with the levels that have produced effects in toxicity tests (10 to 100 mg/L).

With regard to the other chemicals analyzed (metals and organics), there were no discernible patterns observed with relation to the sampling distance from the fireworks barge or the collection time following the existing Big Bay Boom fireworks display events.

SeaWorld Monitoring Program

SeaWorld is classified as a Category 1 discharger under the General Permit. As such, SeaWorld was required to prepare a Water and Sediment Monitoring Plan and conduct comprehensive water and sediment quality monitoring of its launch site adjacent to Fiesta Island on Mission Bay. The nightly firework display events at SeaWorld are generally performed during the summer months, between

⁶ The analytical laboratory reported the following with regard to the 2015 perchlorate detection limits, “Due to matrix interference, a 40x dilution was reported for Perchlorate for seven samples. However, results were non-detect for all samples at lower dilutions but QA/QC criteria were not met due to the internal standard failing.” The laboratory was able to achieve lower detection limits during the other three sampling events.

April and September. Since 1985, a total of approximately 3,800 fireworks events have been performed. Under the current SeaWorld Master Plan update, approved by the California Coastal Commission in 2001, SeaWorld may present up to 150 fireworks events per year, with an anticipated average between 110 and 120 events per year.

Because of SeaWorld's history of fireworks display events dating back for decades, the large number of fireworks display events conducted on a yearly basis, and the fact that the fireworks are barge-launched in the same general location in a shallow, enclosed basin with reduced circulation, SeaWorld fireworks display events likely represent the maximum firework pollutant loading conditions and cumulative effects (i.e., the "worst-case scenario") in the San Diego region, including the Pacific Ocean, with respect to potential impacts of fireworks on water and sediment quality.

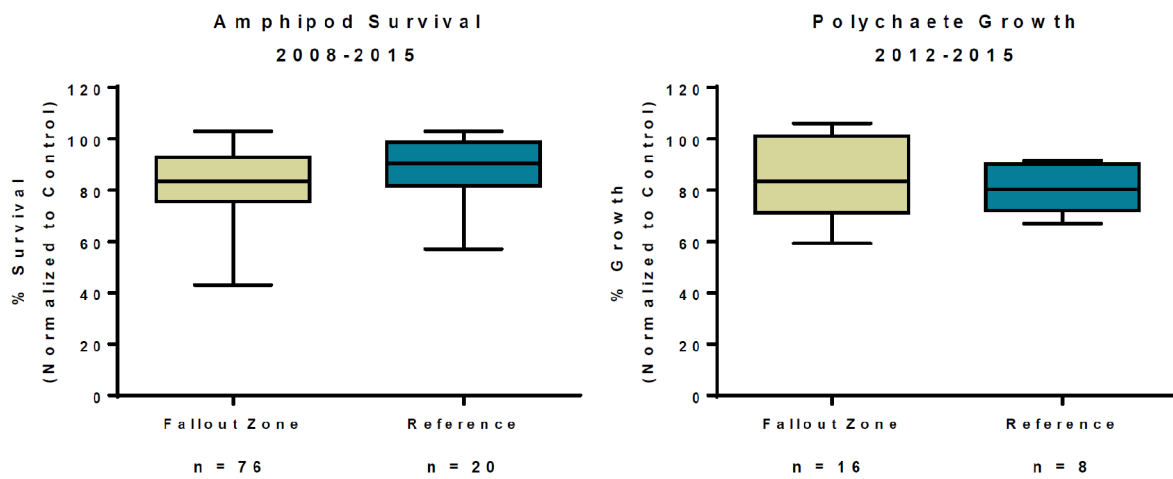
SeaWorld has performed extensive water and sediment quality monitoring at its launch site in Mission Bay since 2011. It began more intensive monitoring of the fireworks fallout zone in 2008. The enhanced monitoring program includes sediment chemistry and toxicity analyses, and benthic community conditions (Appendix G). Recent sediment testing has been conducted using the multiple lines of evidence approach outlined in the SWRCB California Sediment Quality Objectives program.

A general summary of SeaWorld's monitoring results is presented below.

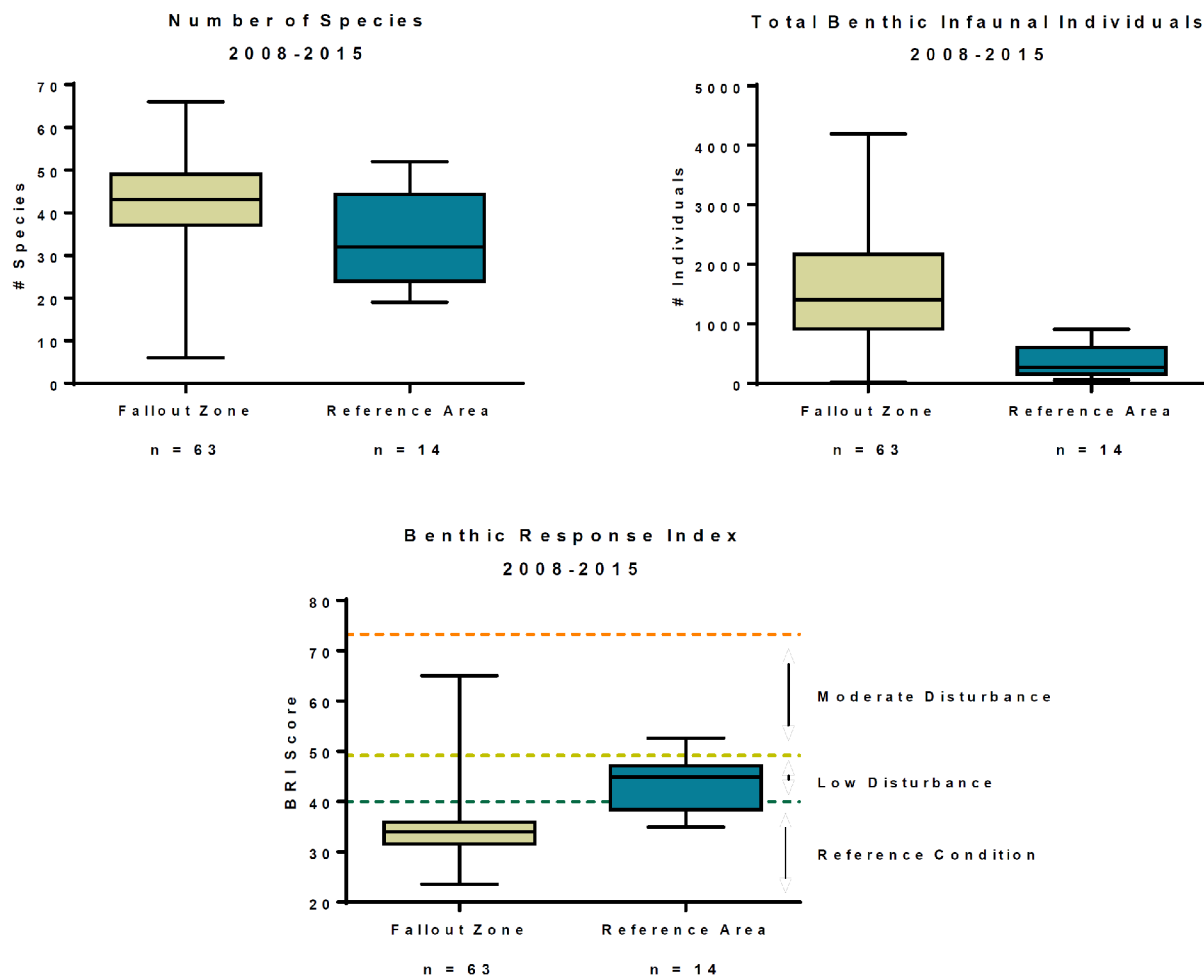
- Except for perchlorate and bis-phthalate, results of water chemistry sampling of regular SeaWorld events to date have shown little evidence of pollutants within the receiving water column at levels above applicable water quality criteria or detected reference site levels.
- Based on water quality data obtained to date, it is unlikely that single fireworks display events of a size smaller than SeaWorld's Fourth of July and Labor Day fireworks display events would cause exceedances of applicable water quality criteria in the water column of receiving waters.
- SeaWorld's sediment monitoring in Mission Bay found increased metal levels within the fireworks zone when compared with a reference site (metals included barium, chromium, cobalt, copper, molybdenum, potassium, selenium, silver, thallium, titanium, and vanadium). Sediment grain size and concentration analysis found correlations for barium, cobalt, chromium, copper, titanium, and vanadium. The data from sediment testing indicate an increase over time of these specific chemicals within the sediment in the fireworks fallout area when compared to the reference site sediments.

In addition, beginning in 2008, SeaWorld has been conducting a more comprehensive assessment of the aquatic environment near its launch site by Fiesta Island in Mission Bay to identify any potential effects attributable to fireworks display events. The assessment has included amphipod and polychaete toxicity tests and benthic infaunal community analyses.

The results of these analyses are summarized in Figures 4.6-6 (toxicity) and 4.6-7 (benthic infaunal analyses). Results for the fireworks fallout zone are compared with two different reference locations in Mission Bay. Both the toxicity and benthic community results clearly indicate that the fireworks fallout zone is not degraded in comparison with the reference sites. The number of individuals collected and number of species were actually greater in the fallout zone relative to those found at the reference sites. Furthermore, samples collected in the fireworks discharge area were considered to have benthic community conditions representative of a healthy reference condition according to the benthic response index, which is a commonly used metric specific to the Southern California coastal shelf and embayments (Smith et al. 2003).



Plots showing the median and 25th to 75th percentile distribution (colored boxes), and whiskers depicting min and max values (n = the total number of measurements for each plot)



Plots showing the median and 25th to 75th percentile distribution (colored boxes), and whiskers depicting min and max values (n = the total number of measurements for each plot)

Additionally, SDRWQCB concluded that sediment chemistry tests conducted in the fallout zone indicated increased metal levels within the fireworks zone when compared with a reference site. However, based on SeaWorld's monitoring program results, this increase has not resulted in toxicity or benthic community degradation within the fallout zone.

Additional Studies

Amec Foster Wheeler conducted a review of fireworks-related water quality studies throughout the United States as well as pertinent studies on perchlorate (a firework component). The information is intended to supplement the findings of local water quality monitoring programs. The studies and report reviews are summarized in Table 5-4 of Appendix G. It is clear from these studies that perchlorate is the primary fireworks chemical of concern, as it has received the most attention from a monitoring and research standpoint due to its potential environmental and human health impacts. Perchlorate originates from the dissolution of salts such as ammonium, sodium, potassium, and magnesium in water. In these forms, perchlorate is used as an oxidizer in propellants for fireworks. Perchlorates are stable at normal temperatures, but when they are heated to a high temperature, they begin to react. Once they begin to react, they produce a large amount of heat. This heat causes more of the perchlorates to begin reacting, creating even more heat. This chain reaction process repeats until an explosion occurs. Because perchlorates react in this way, they are used in rocket motors, fireworks, flares, gunpowder, and explosives (Appendix G).

Although perchlorate is recognized as an environmental contaminant and chemical of concern in fireworks, the consequences of elevated perchlorate levels in an aquatic system are not fully understood. Perchlorate also has health implications for humans, as it is absorbed by the thyroid gland in place of iodine, which can interfere with the production of thyroid hormone (ATSDR 2008). Thyroid hormone is essential for metabolism and mental development, so perchlorate exposure is thought to be particularly harmful to fetuses. The potential impact of perchlorate on humans and other living organisms is directly linked to its mobility and attenuation in the environment.

Perchlorates are soluble in water and generally have high mobility in soils (ATSDR 2008). This characteristic results in their ability to move from soil surfaces into groundwater (a process called leaching) when they enter the environment. As shown in a study conducted at Mount Rushmore, perchlorates from fireworks can concentrate in groundwater (Hoogestraat and Rowe 2016). In 2007, the Massachusetts Department of Environmental Protection released a multi-year study that linked areas that had hosted annual fireworks display events to perchlorate-contaminated public wells (MADEP 2007).⁷ The results of this study led Massachusetts to develop the nation's only drinking water standard for perchlorate, set at 2 µg/L (0.002 mg/L).

Perchlorates are ionic substances and, therefore, do not volatilize from water or soil surfaces. Perchlorates are known to remain unreactive in the environment for long periods of time; however, evidence suggests that microorganisms found in soil and water may eventually reduce perchlorate to other substances. If perchlorates are released to air, they eventually settle out of the air, primarily in rainfall. Perchlorates do not appear to accumulate in animals (ATSDR 2008).

Review of the toxicity studies conducted on perchlorate indicate that the range of concentrations tested in laboratory studies that resulted in effects were in the 10 to 100 mg/L range. The highest

⁷ While a perchlorate standard has been developed for drinking water, there are no standards for surface waters. The drinking water standard of 2 µg/L is orders of magnitude below the levels where environmental effects have been observed.

ambient levels of perchlorate measured in the Big Bay Boom and SeaWorld monitoring programs have been less than 10 µg/L (i.e., less than 0.01 mg/L), which is several orders of magnitude less than those in the laboratory studies. Note that the majority of the laboratory studies have been conducted on freshwater fish.

In addition, most of the studies conducted to assess the potential impacts of fireworks on water quality have been conducted on lakes. Lake environments are considerably different from coastal areas such as San Diego Bay or the Pacific Ocean, where tidal and current mixing is a dominant characteristic.

Proposed New Fireworks Display Events

The proposed project includes the addition of up to four new fireworks display events that would occur along the National City and Chula Vista Bayfronts. Water quality impacts associated with these proposed new displays were estimated based on the results of the water quality monitoring conducted for the Big Bay Boom fireworks display event and other fireworks display events in the San Diego region such as SeaWorld. As discussed above, water quality monitoring of the Big Bay Boom fireworks display events since 2013 has shown no substantial degradation of water quality when comparing ambient chemical levels (pre-show) with post-show levels.

Over the 4-year water quality monitoring for Big Bay Boom, the only chemical of concern that has shown a slight increase over ambient levels is perchlorate. Overall, perchlorate is a chemical of concern because of its potential to cause environmental and human health impacts. Studies have shown that perchlorate related to fireworks display events over land can build up in groundwater. Laboratory studies have shown perchlorate to cause sublethal effects on freshwater fish in the 10 to 100 mg/L range. The highest ambient levels of perchlorate measured in the Big Bay Boom monitoring program occurred in 2016, when a maximum concentration of approximately 6.4 µg/L was detected. The concentrations measured in the monitoring programs for the previous years (2013–2015) have been substantially less than 10 µg/L (i.e., less than 0.01 mg/L) and were generally in the 1–2 µg/L range, which is several orders of magnitude below the 10 to 100 mg/L range found to cause sublethal effects on freshwater fish in laboratory tests. In addition, while a perchlorate standard has been developed for drinking water, there are no standards for surface waters. The drinking water standard of 2 µg/L is orders of magnitude below the levels where environmental effects have been observed. While the levels of perchlorate measured in these water quality monitoring results are above Massachusetts' drinking water standard for perchlorate of 2 µg/L (0.002 mg/L), as identified above, municipal or domestic water supply is not a beneficial use of San Diego Bay. Therefore, because San Diego Bay is not a source of potable water, the drinking water standards for perchlorate set by the State of Massachusetts are not relevant. Additionally, perchlorate is of minor concern with regard to the proposed new fireworks display events because: (1) groundwater is not a beneficial use in the fireworks display areas, (2) concentration levels measured in ambient surface waters following the Big Bay Boom and SeaWorld fireworks display events are orders of magnitude below the effective levels observed in laboratory tests, and (3) the enclosed environments in which perchlorate has been shown to accumulate are unlike conditions in San Diego Bay environments where tidal and current mixing is a dominant characteristic (Appendix G).

The proposed new fireworks display events would be substantially smaller than the Big Bay Boom (with approximately 456 pounds and 114 pounds of fireworks being detonated per Fourth of July and other non-Fourth of July display, respectively, compared to the approximately 5,342 pounds of

fireworks for the existing Big Bay Boom) and, therefore, would result in substantially less amounts of fireworks-generated chemical residues falling into the Bay. No sediment monitoring has been conducted as part of the existing Big Bay Boom monitoring program, but SeaWorld has conducted considerable sediment testing in Mission Bay, and its fallout zone is shallower and has more restrictive current and tidal flow compared to the anticipated launch sites for the proposed new fireworks display events. As SDRWQCB noted in the General Permit, SeaWorld events likely represent the maximum firework pollutant loading conditions and cumulative effects in the San Diego region, including the Pacific Ocean, with respect to potential impacts of fireworks on water and sediment quality. While SeaWorld's testing has found an increase of some chemicals within the sediments in the fireworks fallout zone, the observed increase has not resulted in any toxicity or benthic community impacts. As such, it is anticipated that the proposed new fireworks display events would not result in any sediment toxicity or benthic community impacts, as these displays are smaller, would occur much less frequently, and be held in an area subject to greater current and tidal flow than the SeaWorld fireworks displays. Therefore, the proposed new fireworks display events would not violate any water quality standards or waste discharge requirements, and potential impacts would be less than significant.

Furthermore, as discussed in Chapter 3, *Project Description*, the proposed ordinance includes a condition of approval that would require compliance with the requirements of SDRWQCB's General Permit and includes specific requirements to submit necessary reports to the District for verification. In addition, a condition of the ordinance requires all fireworks display events to use alternative fireworks produced with pyrotechnic formulas that replace perchlorate with other oxidizers and propellants that burn cleaner, produce less smoke, and reduce pollutant waste loading to surface waters.

Potential Direct Impacts of Fireworks Debris on Surface Waters

Big Bay Boom Debris Management

In accordance with the General Permit, the existing Big Bay Boom event has an established debris management program that is implemented following each fireworks display event. The Big Bay Boom debris management and recovery program has three main components.

1. Recovery of debris on each fireworks barge by the fireworks operator following the event to prevent debris from entering the water during transit back to the barge staging area. Additional debris removal and proper disposal is conducted once the barges reach the loading/setup yard facility. Recovered materials are properly disposed of.
2. Collection and proper disposal of floating debris by the fireworks organizer and fireworks operator as soon as permitted by the Fire Marshal. The organizer and operator conduct a sweep of the fireworks detonation zone surrounding each of the four barges to gather and properly dispose of floating debris from spent fireworks.
3. The fireworks detonation zone and shoreline areas adjacent to the four barge locations are inspected again by the fireworks organizer for debris no later than 24 hours following the fireworks display event. Any cardboard, paper, or other debris is removed.

As previously stated, the General Permit requires that information on debris recovery be submitted with the Public Display of Fireworks Post Event Report Form. The form requires the fireworks organizer to report regarding inspection of the entire firing range (including the fireworks

launching area, adjacent shorelines, quays, docks, and the fireworks fallout area), barge(s) (if used), and adjacent surface water(s) and cleanup of particulate matter and debris from ignited and unignited pyrotechnic material within 24 hours following the display.

SeaWorld Debris Management

As required under the General Permit, SeaWorld submitted its FBMPP to SDRWQCB in July 2011. The purpose of its plan is to ensure that: (1) fireworks debris is properly cleaned up and removed after each fireworks display event, (2) unexpended materials are properly handled and disposed of by trained and knowledgeable personnel, and (3) trained fireworks personnel screen fireworks debris prior to disposal to verify that there are no unexpended/unexploded fireworks devices in the debris pile. SeaWorld's FBMPP also describes procedures for fireworks and trash collection, specific cleanup procedures for the launch area and environs (including a map depicting the cleanup areas), and recordkeeping requirements. SeaWorld has implemented its FBMPP activities before, during, and after each event.

SeaWorld's site-specific BMPs include conducting sweeps of (1) the fireworks fallout area where floating debris from spent fireworks is removed from the water using hand-held fishnets and (2) the fireworks barge immediately after each fireworks display event to prevent solid waste and debris from being swept into the water by winds (Brown and Caldwell 2015). Unexploded fireworks, including unexploded components, are collected, placed in a container, and disposed of by the pyrotechnic operator. In addition, crews from a SeaWorld subcontractor collect fireworks debris from the adjacent shoreline every morning and afternoon following each fireworks display event.

According to the General Permit, prior to 2011, SeaWorld typically collected an average of 11 pounds of fireworks-related wet debris each evening following the fireworks display event and 8 pounds the following morning (SDRWQCB 2011c). In 2015, the wet material collected by SeaWorld following each fireworks display event averaged between 2 and 15 pounds. The mass of dry material collected from the adjacent beach varied from 10 to 75 pounds and included both firework debris and other debris items found along the beach.

Summary of Debris Management

The estimated net weight of pyrotechnic materials in an aerial fireworks shell (Class B) is typically about half (i.e., 50 percent) of its total weight (Poulton and Kosanke 1995). Using this estimate, 50 percent of the total weight of a fireworks display consists of pyrotechnic materials while the other 50 percent is composed of a mixture of cardboard, paper, plastic, and inert substances that comprise the shell and lifting charge. In addition, an unknown portion of the solid material that comprises the lifting charge is combusted or otherwise destroyed during launch operations. This combusted material cannot be recovered via debris management after the fireworks have been detonated.

According to the General Permit, the fireworks organizer and fireworks operator are required to collect and weigh the post-event debris remaining on the launch platform (i.e., barge or pier) as well as the surrounding waters. These weights are required to be submitted to SDRWQCB as part of the Post Event Reporting Form. Using conservative assumptions, the weight of the debris recovered from the launch platform combined with the dry weight of the debris collected in the surrounding waters should equal approximately one-half of the total display weight. If the total recovered debris weight (including debris recovered from the launch platform and surrounding waters) is less than the expected recoverable weight, the unaccounted amount is the portion of the fireworks-related

debris assumed lost to the environment. Some of the factors that may affect the ability to successfully recover all post-show debris could include the size of the debris pieces (i.e., too small to recover), weather conditions such as wind or rain, the amount of paper incinerated, sunken material, or material that was blown onto land. As noted above, a portion of the solid material that comprises the lifting charge is combusted or otherwise destroyed during launch operations. This combusted material cannot be recovered via debris management after the fireworks have been detonated.

In addition, the composition of the shells used for the display event should also be taken into consideration. As previously discussed, an aerial shell typically consists of a cylinder or spherical cartridge, usually constructed of paper, plastic, or cardboard, and may include some plastic or paper internal components used to compartmentalize chemicals within the shell. Some components of the shell (paper, cardboard, and cotton string) are biodegradable and would not persist for long periods in the aquatic environment. However, other materials, such as plastic, are likely to persist in the marine environment for lengthy periods if they are not recovered during the post-event cleanup operations conducted by the fireworks organizer.

Fireworks debris is a potential source of pollutants that could adversely affect water quality if it is not properly recovered following a fireworks display event. Consequently, there is a potential for the proposed fireworks display events to pollute surface waters if fireworks debris is not properly recovered, which would be considered a significant impact (**Impact-WQ-1**).

For this reason, under the General Permit, SDRWQCB requires dischargers (i.e., fireworks organizers) to prepare and implement FBMPPs for all fireworks display events covered by the General Permit that address post-show debris recovery from launch platforms and surrounding waters and proper disposal of all recovered materials.

The General Permit also requires the submittal of a Public Display of Fireworks Post Event Report to SDRWQCB. The following debris-related information must be submitted as part of the report.

- Confirmation that the entire firing range (including the fireworks launching area, adjacent shorelines, quays, docks, and fireworks fallout area), barge(s) (if used), and adjacent surface water(s) were inspected and cleaned of particulate matter and debris from ignited and unignited pyrotechnic material within 24 hours following the display
- An estimate of the amount of debris collected from the firing range (in pounds dry weight)
- An estimate of the amount of floating debris collected from adjacent surface water(s) (in pounds wet weight)

In addition, the implementation of mitigation measure **MM-WQ-1** requires the implementation of the water quality-related conditions of approval of the proposed ordinance. One of these conditions of approval would require the fireworks organizer, with the assistance of the fireworks operator, to prepare and implement a comprehensive FBMPP for each proposed new fireworks display event consistent with the requirements of the General Permit. The comprehensive FBMPP would include detailed debris BMPs that address the prevention, recovery, disposal, logging, and reporting of debris in a standard and consistent manner, as well as other operational and environmental protection practices in compliance with the General Permit and the proposed District ordinance. The proposed ordinance also includes a condition of approval that requires a reduction in the amount of non-biodegradable fireworks components for each proposed new display.

Potential Indirect Impacts of Increased Human-Generated Trash on Surface Waters

Increased human activity within the public viewing areas such as parks during a fireworks display event may result in an increase in human-generated trash and litter that if not properly disposed of and cleaned up can enter San Diego Bay and degrade the water quality (**Impact-WQ-2**). The District currently maintains parks and other public areas within its jurisdiction following large events such as a fireworks display event. This includes increased/additional trash cleanup and other maintenance services at affected parks within 24 hours following Fourth of July fireworks display events to minimize impacts from increased use of the parks that serve as viewing locations. As with existing fireworks display events, the District would continue to provide these maintenance services following the proposed new Fourth of July fireworks display events. In addition, implementation of mitigation measure **MM-WQ-2** requires the implementation of a water quality-related condition of approval of the proposed ordinance that requires the placement of additional trash receptacles at major public viewing areas to reduce increased human-generated trash during publicly advertised fireworks display events from entering the San Diego Bay.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance contains several conditions of approval that would reduce potential impacts on the water quality of San Diego Bay and the Imperial Beach Oceanfront. The proposed ordinance requires the use of alternative fireworks that replace perchlorate with other oxidizers and propellants that burn cleaner, produce less smoke, and reduce pollutant waste; removal of packaging; inclusion of biodegradable inner components; implement BMPs; compliance with SDRWQCB's General Permit requirements and other required permits; and implementation of post-display cleanup practices consistent with the requirements of SDRWQCB's General Permit. These conditions would require additional clean-up of fireworks-generated debris from existing fireworks display events thereby reducing the potential for water quality degradation. As such, there would be no significant adverse impacts on water quality as a result of the effects of the proposed ordinance on existing fireworks display events.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events would not violate any water quality standards or waste discharge requirements and would not otherwise substantially degrade water quality.

However, fireworks debris from the proposed new fireworks display events and increased human-generated trash during the events are potential sources of pollutants that could adversely affect water quality if it is not properly recovered and properly disposed of following a fireworks display event.

Potentially significant impact(s) include the following.

Impact-WQ-1: Surface Water Pollutant Related to Fireworks Debris. There is a potential for the proposed fireworks display events to pollute surface waters if fireworks debris is not properly recovered, which would be considered a significant impact.

Impact-WQ-2: Surface Water Pollutant Related to Increased Human-Generated Trash and Litter. There is a potential for publicly advertised fireworks display events to pollute surface waters if increased human-generated trash and litter within the major public viewing areas is not properly disposed of and cleaned up, which would be considered a significant impact.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not result in violation of any water quality standards or waste discharge requirements and would not otherwise substantially degrade water quality. Therefore, no significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

MM-WQ-1: Implementation of Water Quality-Related Conditions of the Proposed Ordinance for Fireworks Debris. The fireworks organizer and operator are required to comply with the following water quality-related conditions of the proposed ordinance.

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(d) Fireworks Chemical Composition and Packaging.

1. Chemical Composition.

- B. All fireworks display events shall use alternative fireworks produced with pyrotechnic formulas which replace perchlorate with other oxidizers and propellants that burn cleaner, produce less smoke and reduce pollutant waste loading to surface waters, unless the Applicant establishes in writing and to the satisfaction of the Executive Director that such alternative fireworks are not commercially available.

2. Packaging.

- A. Prior to commencement of a fireworks display event, the fireworks operator shall remove and properly dispose of all packaging, wrapping and labels from all fireworks to be used in the event.
- B. Fireworks that include a plastic outer casing or non-biodegradable inner components that make up more than five (5) percent of the mass of the shell or device are prohibited.

(f) Best Management Practices (BMPs). Fireworks display events shall implement the following BMPs for fireworks display event preparation, discharge and clean-up:

- 1. Fireworks display events on barges shall be set up at a loading facility in accordance with the requirements and under the supervision of the municipal fire department with jurisdiction over the event. Barges shall be inspected for leaks and other potential safety issues. Idling time for delivery trucks and loading equipment shall not exceed three (3) minutes and all such trucks and equipment shall be shut down when not in use.
- 2. Fireworks shall be brought to the barge and loaded in their California Department of Transportation (DOT)-approved shipping cartons. Fireworks shall be encased in paper

to prevent spillage of loose compounds. All packaging material and debris, including fuses, wires, shipping cartons and other wrapping, shall be properly disposed of in trash receptacles as the fireworks display event is set up. Unless prohibited by the municipal fire marshal with jurisdiction over the fireworks display event, barges shall be equipped with a fire-retardant debris barrier that extends six feet (6') in height, with openings no larger than ¼ inch, around the perimeter of the fireworks launch area to contain debris.

3. Wires from the electric match placed in the fireworks fuse shall be wrapped around nails that are installed on the racks to prevent wires from being pulled out and falling into the water. Wire cables connected to computer firing equipment modules shall also be properly secured to ensure they remain on the barge during the fireworks display event.
4. Once the fireworks are prepared for launch, all trash and debris shall be removed from the barge while it is at the loading facility and prior to the barge being moved into position. No loose material shall be allowed on the barges during the fireworks display event.
5. Following the fireworks display event and upon expiration of any safety period required by the municipal fire marshal with jurisdiction over the fireworks display event, the fireworks operator shall pick up all loose material on the barge, including all trash and debris resulting from the discharge of the fireworks, to prevent it from being discharged into the water while the barge is underway.
6. Upon return to the loading facility, the fireworks operator shall clean the barge of all fireworks related material and shall photograph and properly dispose of all fireworks trash and debris. Unexploded fireworks and related components shall be collected and disposed of by the fireworks operator in accordance with all applicable regulations. Fireworks operators shall photograph the barge prior to and after cleaning.
7. Following the fireworks display event and upon expiration of any safety period required by the municipal fire marshal with jurisdiction over the event, the fireworks organizer shall provide cleanup crews and boats to conduct sweeps of the fireworks detonation zone to gather any floating debris from spent Fireworks using hand held fishnets, pool skimmers, or other similar equipment.
8. The morning after the fireworks display event, the fireworks organizer shall conduct another sweep of the fireworks detonation zone and quays, piers and docks adjacent to the fireworks detonation zone to remove fireworks trash and debris. The fireworks organizer shall collect, bag, weigh and photograph all trash and debris collected prior to its disposal.
9. The morning after the fireworks display event, the fireworks organizer shall perform a cleanup of the shoreline using crews of not fewer than five persons per barge on the shoreline adjacent to each barge location. Each crew member shall be equipped with trash bags and a trash grabber. The fireworks organizer shall collect, bag, weigh, and photograph all trash and debris collected prior to its disposal.
10. Within five (5) business days after a fireworks display event, the fireworks organizer shall provide the Executive Director with the photographs and written evidence of the weight of the fireworks trash and debris collected pursuant to subdivisions (5) through

(9) above. If the weight of the fireworks trash and debris collected is less than fifty percent (50%) of the net weight of fireworks launched during the fireworks display event, the fireworks organizer shall offset the remaining amount by providing a crew of not fewer than two (2) persons for each barge or other launch site used in the fireworks display event to participate in the next scheduled "Operation Clean Sweep" or other District-sponsored clean-up event prior to the end of the calendar year to recover trash and debris from San Diego Bay and/or the Imperial Beach Oceanfront.

(i) Compliance with San Diego Water Board General Permit.

1. Prior to the Executive Director's issuance of a permit pursuant to this article, the Applicant shall demonstrate that it has applied for coverage and has been enrolled under the San Diego Water Board General Permit.
2. The Applicant shall comply with all applicable terms, conditions and Best Management Practices required by the San Diego Water Board General Permit, which shall be incorporated into and considered in the terms, conditions and Best Management Practices of any permit issued by the Executive Director pursuant to this article.
3. The Applicant shall submit to the District copies of all applications, plans, reports and other documentation required by the San Diego Water Board General Permit, including without limitation the Notice of Intent, Fireworks Best Management Practices Plan, Public Fireworks Display Log and the Public Display of Fireworks Post Event Report, within the time required for the submission of such reports to the San Diego Water Board.

(j) Compliance with Other Required Permits: Prior to the Executive Director's issuance of a Permit pursuant to this article, the Applicant shall demonstrate that it has obtained and shall comply with all other permits and approvals required by federal, state and local laws and regulations including, without limitation, such permits and approvals as are required by the United States Coast Guard, California Coastal Act, the District Code, including Article 10 (Stormwater Management and Discharge Control), and the fire marshal of any city which has jurisdiction over all or any part of the activity allowed under said Permit.

(k) Compliance with Laws: The Applicant shall comply with any and all applicable rules and regulations promulgated by the District, including without limitation the District Code, the Chula Vista Bayfront Master Plan Settlement Agreement and Natural Resources Management Plan, and with the laws, rules and regulations of the United States of America and the State of California, and of any department or agency thereof, and with the applicable ordinances, rules and regulations of any city which has jurisdiction over all or any part of the activity allowed under said Permit. The Applicant's failure to comply with any applicable law, ordinance, rule or regulation shall be cause for immediate revocation of said permit and for the denial of applications for future Permits.

MM-WQ-2: Implementation of Water Quality-Related Conditions of the Proposed Ordinance for Human-Generated Trash and Litter. The fireworks organizer and operator are required to comply with the following water quality-related condition of the proposed ordinance.

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- (f) Best Management Practices (BMPs). Fireworks display events shall implement the following BMPs for fireworks display event preparation, discharge and clean-up:

11. For all Fourth of July fireworks display events and for Non-Fourth of July fireworks display events which are advertised to the public, the fireworks operator shall double the number of trash receptacles at major viewing areas prior to each fireworks display event; trashcans shall be emptied and parks and viewing areas shall be cleaned following the event.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance After Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events would not violate any water quality standards or waste discharge requirements. During implementation of the proposed new fireworks display events, fireworks debris is a potential source of pollutants that could adversely affect water quality if it is not properly recovered following a fireworks display event. Implementation of mitigation measure **MM-WQ-1**, which requires compliance with the water quality-related conditions of the proposed ordinance, would ensure that fireworks-generated debris is properly cleaned up and disposed of, thereby reducing the amount of unrecovered fireworks debris that could create or contribute substantial additional sources of polluted runoff and substantially degrade water quality. However, uncontrollable factors such as weather conditions, amount of paper incinerated, sunken material, or material that is blown onto land may affect the ability to recover all post-show debris related to fireworks on surface waters. Therefore, impacts would be significant and unavoidable.

In addition, during the fireworks display event, there is a potential for an increase of human-generated trash and litter at major viewing areas that if not properly disposed of or cleaned up could enter San Diego Bay and degrade water quality. Implementation of mitigation measure **MM-WQ-2**, which requires compliance with the water quality-related conditions of the proposed ordinance, would require additional trash receptacles and clean up at the major viewing areas during publicly advertised fireworks display events to ensure that trash is properly disposed of and cleaned up, thereby reducing the amount of human-generated trash and litter entering San Diego Bay that could degrade the water quality. Furthermore, the District currently maintains parks and other public areas within its jurisdiction following large events such as a fireworks display event. This includes increased/additional trash cleanup and other maintenance services at affected parks within 24 hours following Fourth of July fireworks display events to minimize impacts from increased use of the parks that serve as viewing locations. As with existing fireworks display events, the District would continue to provide these maintenance services following the proposed new Fourth of July fireworks display events. Therefore, impacts would be reduced to a level less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impacts would occur.

Threshold 5: Implementation of the proposed project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

Impact Discussion

Proposed New Fireworks Display Events

The proposed project involves four new fireworks display events in San Diego Bay and does not include the construction of any impervious surfaces that would generate stormwater runoff that would flow into existing or planned stormwater drainage systems. Additionally, because the fireworks would be launched from barges within San Diego Bay, the proposed project would not generate any substantial landside sources of polluted runoff that could potentially enter the stormwater drainage system. Therefore, fireworks debris generated by the proposed new fireworks display events would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. No impacts would occur.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance does not include any conditions pertaining to polluted runoff from fireworks because the fireworks are launched from barges and/or piers within San Diego Bay and do not generate any substantial landside sources of polluted runoff that enter the stormwater system; therefore, there would be no change to the existing condition. As such, the effect of the proposed ordinance on existing fireworks display events would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. No significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. No impacts would occur.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. No significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

No mitigation is required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance After Mitigation

Proposed New Fireworks Display Events

No impacts would occur.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impacts would occur.

Section 4.7

Land Use and Planning

4.7.1 Overview

Land use and planning issues refer to the proposed project's compatibility with surrounding land uses and its consistency with land use plans and policies that have regulatory jurisdiction over the project site. This section describes the existing land uses that could be adversely affected by the proposed project; outlines the applicable laws and regulations related to land use and planning; and analyzes the proposed project's consistency with applicable plans and regulations, such as the California Coastal Act (CCA) and the Port Master Plan (PMP).

Impacts related to land use were considered significant if the proposed project would (1) conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect or (2) conflict with any applicable habitat conservation plan or natural community conservation plan. The other land use issue, dividing an established community, was analyzed in Section X of the Initial Study/Environmental Checklist (Appendix A), which is incorporated here by this reference. Potential impacts were determined to be less than significant. The analysis and conclusions regarding this impact are included in Chapter 6, Section 6.4, *Effects Not Found to be Significant*.

Based on the analysis that follows, all impacts related to land use and planning would be less than significant. No mitigation is required.

4.7.2 Existing Conditions

Existing fireworks displays originate from piers, flight decks, and/or barges adjacent to and/or in the waters of north San Diego Bay, including areas adjacent to Shelter Island, Harbor Island, and the Centre City Embarcadero (which includes North Embarcadero, Central Embarcadero, and South Embarcadero), Glorietta Bay in Coronado, the NASSCO ship repair facility, and the Imperial Beach Oceanfront. Fireworks display events do not currently occur along the Bayfront in National City or Chula Vista but could occur in the future as part of the proposed project.

San Diego Bay and the Imperial Beach Oceanfront are used by a variety of watercraft, ranging from small recreational boats (sailing, fishing, and watersport boats) to mid-sized vessels, such as personal yachts and harbor cruise ferries/yachts, and large vessels, such as cruise ships, container barges, and U.S. Navy vessels. The land uses adjacent to pier, flight deck, and barge locations are described below. In addition, the existing characteristics of the project sites and the surrounding communities are described in Chapter 2, *Environmental Setting*. For the reader's convenience, this section restates the description of the environmental setting provided in Chapter 2 as it applies to land use and planning.

North San Diego Bay

Piers, flight decks, and/or barges used for existing fireworks display events are located within north San Diego Bay adjacent to Shelter Island, Harbor Island, and the Centre City Embarcadero. Most of the waterfront land uses within these areas comprise tourist destinations and visitor-serving uses, such as hotels, restaurants, and marinas.

Shelter Island

Shelter Island proper is a narrow strip of land, approximately 1 mile in length and less than 0.1 mile in width, that extends off the Point Loma peninsula via Shelter Island Drive. Uses along Shelter Island include primarily hotels, restaurants, and yacht- or marine-related businesses. Fishing piers and boat launches are also located at various points along Shelter Island. Shelter Island Shoreline Park, a public waterfront park with playgrounds, benches, a beach, and a promenade, spans the entire length of Shelter Island. The park is narrow along the middle length but opens up into wider green lawns at the northern and southern ends of the island. Marinas occupy the inlets that are situated between Shelter Island and Point Loma on the north and south sides of Shelter Island Drive. The only Fourth of July fireworks display event that currently occurs near Shelter Island is the Big Bay Boom, which entails the placement of a single temporary barge just offshore of Shelter Island.

The area north of Shelter Island comprises portions of the Point Loma peninsula. The waterfront of Point Loma, approximately 0.4 mile to the west of Shelter Island, is occupied primarily by residential uses. North of these residential uses is property belonging to the U.S. Navy as well as Liberty Station, formerly part of a Naval Training Center that was decommissioned and converted into a mixed-use community that includes multi-family residential uses, retail and office space, restaurants, and publicly accessible parks.

The northern portion of Coronado Island is directly south of Shelter Island. The only land use on the northern portion of Coronado Island is Hasley Field, the airport for Naval Air Station North Island.

Harbor Island

Harbor Island is similar to Shelter Island—a narrow strip of land, approximately 1.5 miles long and 317 feet wide, that extends off the San Diego mainland via Harbor Island Drive. Harbor Island includes primarily hotels, restaurants, and marinas situated in the inlets between Harbor Island and the mainland of San Diego. Other uses include yacht- and sailing-oriented retail shops (charter companies, sport fishing outlets) and publicly accessible shoreline parks. Harbor Island is directly south of San Diego International Airport; the car rental lots occupy the landward side of the island north of the marinas. A large U.S. Coast Guard facility is located east of Harbor Island, also adjacent to the airport. In addition to the residential uses within Point Loma and west of Harbor Island, there is some naval housing to the south, across the Bay. This housing is within Naval Air Station North Island, located on Coronado Island. The only fireworks display event that currently occurs near Harbor Island is the Big Bay Boom Fourth of July event, which entails the placement of a single temporary barge just offshore of Harbor Island.

Centre City Embarcadero

The Centre City Embarcadero spans the length of the Bayfront within the downtown San Diego area, beginning at Laurel Street to the north (just south of San Diego International Airport) and ending roughly at Park Boulevard, which is south of the Convention Center and north of the Tenth Avenue

Marine Terminal. The Centre City Embarcadero is an active waterfront area. Harbor Drive, which runs the length of Centre City Embarcadero, provides vehicular access and on-street parking to uses along the embarcadero. For the purposes of this Draft EIR, the Centre City Embarcadero is broken down into three segments: North Embarcadero, Central Embarcadero, and South Embarcadero, as described below.

North Embarcadero

The North Embarcadero segment runs north to south and spans the downtown Bayfront from Laurel Street to the north to just before North Harbor Drive to the south (where it turns east, just north of Ruocco Park and the Seaport Village). Land uses in the North Embarcadero area along North Harbor Drive include large parcels of land dedicated to the Solar Turbines facility just south of the airport and the San Diego County Administrative Center, which is south of Solar Turbines. The U.S. Navy's Commander, Naval Base San Diego, and Naval Supply Center also occupy large areas on the eastern side of North Harbor Drive in the North Embarcadero area. Other uses include hotels, restaurants, and public parks. Waterside uses in the North Embarcadero include maritime museums, merchant ships, cruise ship terminals, commercial fishing boats, and pleasure craft. The Laurel Street Roadstead anchorage, which is an open-anchorage small-craft marina, is also located just offshore, within the "Crescent Zone" of the North Embarcadero area (the Crescent Zone is the portion of the curvilinear shoreline just south of the U.S. Coast Guard facility).

Little Italy and the central business district of downtown San Diego are east of the North Embarcadero. Uses in these areas are typical of a downtown and include a mix of high-density residential dwellings, high- and medium-rise office buildings, restaurants, and retail establishments. The Grape Street Pier, which is the project site for the existing Our Lady of the Rosary Church annual procession fireworks display event, is also within the Crescent Zone of the North Embarcadero. Also within the North Embarcadero is the U.S.S. Midway Museum, which currently hosts public and private events, some of which include a fireworks display event. Finally, the Big Bay Boom Fourth of July fireworks display event currently occurs within the North Embarcadero area, involving the placement of a single temporary barge just offshore of the North Embarcadero.

Central Embarcadero

The Central Embarcadero area comprises primarily Seaport Village, a waterfront shopping and dining complex south of the intersection of Pacific Highway and West Harbor Drive. The Central Embarcadero also includes Embarcadero Marina Park North, a publicly accessible park that extends from the Seaport Village area. The Big Bay Boom Fourth of July fireworks display event is the only fireworks display event that currently occurs within the Central Embarcadero area. It entails the placement of a single temporary barge just offshore of the Central Embarcadero.

South Embarcadero

The South Embarcadero is bounded to the north by Seaport Village and to the south by the Tenth Avenue Marine Terminal. Uses within the South Embarcadero area include restaurants, the San Diego Convention Center, and public parks, including the location for the Symphony Summer Pops concert series at Embarcadero Marina Park South. Marinas occupy the inlet created by the two L-shaped segments that form Embarcadero Marina Parks North and South. Three high-rise hotels are also located along the waterfront in the South Embarcadero area. The South Embarcadero is adjacent to the Gaslamp Quarter, which includes high- and medium-rise residential buildings, medium-rise office buildings, the Petco Park baseball stadium, and numerous tourist-oriented uses,

such as hostels and hotels, restaurants, and boutique retail shops. Existing fireworks display events that occur within the South Embarcadero include those associated with the San Diego Symphony's Summer Pops concert series, which entail the placement of a single temporary barge just offshore of Embarcadero Marina Park South.

Coronado Bayfront

Both the north and east coasts of the Coronado Bayfront are in proximity to existing fireworks display events. Uses along the north coast of the Coronado Bayfront include Naval Air Station North Island and single- and multi-family residential uses that front the Bay along 1st Street between Alameda Boulevard and A Avenue. Commercial uses are concentrated toward the eastern end of the north Bayfront, including the Ferry Landing Marketplace, which offers a number of restaurants and small boutique or tourist-oriented shops. A hotel—the Coronado Island Marriott Resort and Spa—is located at the northeast corner of the Coronado Bayfront. Public open spaces along the north Bayfront include Bayview Park at I Avenue and 1st Street, Centennial Park at Orange Avenue and 1st Street, and Coronado Ferry Landing Park at B Avenue and 1st Street. Landside areas along the northern Coronado Bayfront, particularly Coronado Ferry Landing Park, are used as viewing areas for the Big Bay Boom Fourth of July fireworks display event.

The only fireworks display event that currently occurs along the Coronado Bayfront is the Fireworks Show Over Glorietta Bay, a Fourth of July fireworks display event that entails the placement of a single temporary barge at the southeastern corner of Glorietta Bay. Land uses along the east coast of the Coronado Bayfront include a marina, boat rental facilities, yacht clubs, hotels, Coronado Municipal Golf Course, high-rise condominiums, a community center and public parks, and the U.S. Naval Amphibious Base. Public viewing opportunities along the eastern Coronado Bayfront are provided from the waterfront pedestrian paths that are part of the Coronado Community Center, located along the western side of Glorietta Bay, as well as Glorietta Bay Park, located along the southwestern portion of Glorietta Bay, north of the U.S. Naval Amphibious Base.

General Dynamics NASSCO Ship Repair Facility

Existing fireworks display events also occur at the NASSCO ship repair facility, which is located on tidelands adjacent to (west of) the Barrio Logan neighborhood, south of the San Diego-Coronado Bay Bridge, and north of Chollas Creek and Naval Base San Diego. The segment of the Bay spanning from the Coronado Bay Bridge to Chollas Creek is occupied largely by ship repair yards. Adjacent land uses include other shipyards to the north, a naval base to the south, San Diego Bay to the west, and commercial and residential uses associated with the Barrio Logan neighborhood to the east, across Interstate (I-) 5.

Imperial Beach Oceanfront

An existing fireworks display event in Imperial Beach takes place on the Fourth of July near the middle of the approximately 1,300-foot-long Imperial Beach Pier—a publicly accessible pier that provides a promenade and fishing opportunities. A restaurant is located at the end of the Pier. The Imperial Beach Oceanfront area comprises a long, uninterrupted beach that is lined predominantly by residential uses, including single-family homes, condominium complexes, and multi-family apartment complexes. The waterfront area also includes hotels, restaurants, boutique retail shops, and public parks.

National City Bayfront

The vast majority of Bayfront area within National City is occupied by either U.S. Navy shipyards or the National City Marine Terminal. There are other industrial uses, such as metal working businesses and boat repair facilities, in the Bayfront. The nearest publicly accessible park is Pepper Park at the southernmost extent of Tidelands Avenue, approximately 0.45 mile away from the edge of the Bay. Pier 32 Marina is adjacent to Pepper Park, along the Sweetwater Marsh Unit of the San Diego Bay National Wildlife Refuge, which includes Paradise Creek to the east and D Street fill to the south. In addition, Marina Gateway Plaza, which includes a hotel as well as some restaurants and shopping, and the National City Depot, which is a railway museum, are approximately 0.5 mile from the Bayfront. Most of National City's residential uses are east of I-5; however, there are small pockets of residential uses west of I-5 at the corner of Cleveland and 22nd Street. There is also a multi-family building at McKinley Avenue and 18th Street.

Chula Vista Bayfront

Large portions of the Chula Vista Bayfront are dedicated to wildlife reserves and marshes. Other uses include public parks, marinas, a recreational vehicle campground, a salt works operation, and a boat repair facility. Just east of the Bayfront, land uses consists of large, fenced, vacant parcels that have been graded/plowed or minimally paved and a smattering of industrial and institutional uses. I-5 is approximately 0.6 mile east of the Bayfront. Uses to the east of I-5 include residential (e.g., single-family homes, multi-family homes, mobile home parks), retail, hotel, and restaurant uses.

4.7.3 Regulatory Framework

4.7.3.1 Federal

Coastal Zone Management Act of 1972

The U.S. Congress recognized the importance of meeting the challenge of continued growth in the coastal zone by passing the Coastal Zone Management Act in 1972. The act, administered by the National Oceanic and Atmospheric Administration (NOAA) Office of Ocean and Coastal Resource Management, provides for management of the nation's coastal resources and balances economic development with environmental conservation.

The Coastal Zone Management Act outlines two national programs. The National Coastal Zone Management Program includes 34 coastal programs that aim to balance competing land and water issues in the coastal zone. The National Estuarine Research Reserve System creates field laboratories that provide a greater understanding of estuaries and how humans affect them. The overall program objectives of the act are to “preserve, protect, develop, and, where possible, restore or enhance the resources of the nation's coastal zone.”

The Coastal Zone Management Act ensures that development projects in coastal areas are designed and sited in a manner that is consistent with coastal zone land uses, maximizes public health and safety, and ensures that biological resources (e.g., wetlands, estuaries, beaches, fish and wildlife and their habitat) within the coastal zone are protected. The enforceable policies of that document are found in Chapter 3 of the California Coastal Act of 1976 (as amended). The California Coastal

Commission (CCC or Commission) enforces the Coastal Zone Management Act by certifying that a proposed project is consistent with the California Coastal Act.

National Wildlife Refuge System Administration Act of 1966

The National Wildlife Refuge System Administration Act of 1966 consolidated the various categories of lands, administered by the Secretary of the Interior through the U.S. Fish and Wildlife Service (USFWS), into a single National Wildlife Refuge System. The act establishes a unifying mission for the refuge system, a process for determining compatible uses of refuges, and a requirement for preparing comprehensive conservation plans. The act states, first and foremost, that the mission of the National Wildlife Refuge System be focused singularly on wildlife conservation. In addition, the act identifies six priority wildlife-dependent recreation uses, clarifies the secretary's authority to accept donations of money for land acquisition, and places restrictions on the transfer, exchange, or other disposal of lands within the refuge system (NOAA 2012).

San Diego Bay National Wildlife Refuge Final Comprehensive Conservation Plan and Environmental Impact Statement

The San Diego Bay National Wildlife Refuge is managed by USFWS as part of the National Wildlife Refuge System. A Comprehensive Conservation Plan is prepared pursuant to the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997. USFWS manages the Sweetwater Marsh and South San Diego Bay units of the San Diego Bay National Wildlife Refuge in accordance with the approved Comprehensive Conservation Plan. The Comprehensive Conservation Plan provides long-range guidance on refuge management through its vision, goals, objectives, and strategies. The Comprehensive Conservation Plan also provides a basis for a long-term adaptive management process, including implementing, monitoring progress, evaluating and adjusting, and revising plans accordingly (USFWS 2006).

4.7.3.2 State

California Coastal Act

The CCA went into effect on January 1, 1977, and granted the Commission authority to review and approve plans and projects located within the coastal zone. Under the CCA, cities and counties are encouraged to prepare Local Coastal Programs that guide implementation of conservation, development, and regulatory policies required by the CCA within the local coastal zone. Within port districts, PMPs serve this same function under the CCA. The draft PMP is then submitted to the CCC for certification, which ensures that the plan complies with the CCA. Once the PMP is certified, the District is then authorized to issue Coastal Development Permits (CDPs), as prescribed by the adopted PMP for coastal zone projects within its jurisdiction. The District's PMP was certified by the CCC on January 21, 1981. The District is authorized to issue CDPs for projects within its jurisdiction.

Although certain aspects of fireworks display events occur within the District's jurisdiction (e.g., loading and setting up fireworks on barges), other aspects of some fireworks displays (e.g., launching fireworks from barges) occur in waters of San Diego Bay, which are outside the District's jurisdiction but within the jurisdiction of the California State Lands Commission (CSLC). The CCC retains coastal permitting authority over waters within the CSLC's jurisdiction. Therefore, the

District is responsible for determining whether a CDP is required for some fireworks display events, while the CCC makes the CDP determination for other fireworks display events.

Fireworks display events are not explicitly discussed in the CCA or within the PMP. However, the CCC has previously issued exemptions from having to obtain a CDP under the Guidelines for the Exclusion of Temporary Events from Coastal Commission Permit Requirements (Guidelines) for existing fireworks display events, such as the Big Bay Boom. Similarly, for the Fourth of July Imperial Beach Fireworks Show, the District previously issued exclusions from the requirement to obtain a CDP, pursuant to the District's CDP regulations. All existing fireworks display events occurring within San Diego Bay and the Imperial Beach Oceanfront, whether in the CCC's or District's jurisdiction, are subject to review under the CCA.

California Public Trust Doctrine

The Public Trust Doctrine is a common law doctrine that provides that public lands and waters are held by the state or its delegated trustee (i.e., CSLC) for the benefit of all of the people of California. All tidelands and submerged lands, granted or ungranted, as well as navigable rivers, sloughs, etc., are covered under the Public Trust Doctrine. The Public Trust Doctrine, as overseen by CSLC, restricts the types of land uses allowed on public lands, including within the District's jurisdiction. The Public Trust Doctrine limits the uses of sovereign lands to waterborne commerce, navigation, fisheries, open space, water-oriented recreation, ecological habitat protection, or other recognized public trust purposes. As discussed in Chapter 1, *Introduction*, because the barges associated with the proposed new fireworks display events would be held in place by tugs and not anchored or moored, no land use approvals from CSLC would be required (Collins pers. comm.).

Port Act

The Port Act (Appendix 1 of the California Harbor and Navigation Code) was adopted in 1962. Through the Port Act, the State of California delegated its authority to the District to manage and control certain tidelands and submerged waters. Specifically, the District was established for the development, operation, maintenance, control, regulation, and management of the tidelands and lands underlying the inland navigable waters of San Diego Bay. Under the Port Act, the District was granted broad police powers. The Port Act requires the District to exercise its land management authority and powers over (1) the tidelands and submerged lands granted to the District and (2) any other lands conveyed to the District by any city or the County of San Diego or acquired by the District. The Port Act grants the District exclusive police power over property and development subject to its jurisdiction. A PMP is also required by the Port Act, which must specify the land and water uses within the District's jurisdiction.

California State Lands Commission Strategic Plan

The CSLC Strategic Plan (2016–2020), adopted on December 18, 2015, contains strategic goals and key actions that have been designed to guide CSLC in managing and protecting important natural resources on public lands within the state of California, including the tidelands and submerged lands within the jurisdiction of the District. Strategies applicable to the goals of the proposed project include the following:

Strategy 1.1 – Provide the highest levels of public health and safety and the protection and preservation of lands and resources under the Commission's jurisdiction.

Key Action 1.1.1 – Incorporate best management practices (BMPs) and other provisions into new and renewed leases to promote public health and safety and protect the environment.

Strategy 1.4 – Incorporate into the Commission’s project analyses and decision-making processes strategies to address climate change, sea-level rise, greenhouse gas emissions, water conservation, and the generation of litter and marine debris.

4.7.3.3 Local

Port Master Plan

The PMP guides the physical development of the lands within the District’s jurisdiction and also serves as the District’s coastal program for purposes of the CCA, described above. The District’s jurisdiction includes the public trust lands (i.e., tidelands) bayward of the mean high-tide line, submerged lands generally to the U.S. Pierhead Line, and other upland properties, as acquired by the District. The District manages these lands in trust for the people of the state of California.

The PMP is the primary document that governs land and water uses within the District’s jurisdiction, including some of the project sites. The PMP is organized into four sections: (I) Introduction, (II) Planning Goals, (III) Master Plan Interpretation, and (IV) Precise Plans. Section II establishes planning goals and related policies that pertain to development and operation of lands within the District’s jurisdiction. Section III provides additional land use objectives and criteria that apply to specific land use types, including commercial, industrial, recreation, conservation, military, and public facility uses. Section IV identifies 10 planning districts, each of which is guided by a Precise Plan that guides future development. The proposed ordinance would apply to fireworks display events that occur within and/or adjacent to the following planning districts.

- Planning District 1 (Shelter Island/La Playa)
- Planning District 2 (Harbor Island/Lindbergh Field)
- Planning District 3 (Centre City Embarcadero)
- Planning District 4 (Tenth Avenue Marine Terminal)
- Planning District 5 (National City Bayfront)
- Planning District 6 (Coronado Bayfront)
- Planning District 7 (Chula Vista Bayfront)
- Planning District 10 (Imperial Beach Oceanfront)

Descriptions of the land and water uses for each project area are discussed below.

Shelter Island

Shelter Island is within Planning District 1 of the PMP. The land and water use designations for this area include, but are not limited to, a combination of marine sales and services, commercial recreation, commercial fishing, park, open space, boat anchorage, recreational boat berthing, and military uses. The PMP states that the intent of this planning district is to retain present land use allocations while making some improvements through extensive renovation of older facilities, improvements to the quality of the landscape, and improvements to visual and physical access to the Bayfront. It foresees the continuation of planned land and water uses for the Shelter Island area.

Harbor Island

Harbor Island is within Planning District 2 of the PMP. The land and water use designations for this site include, but are not limited to, a combination of commercial recreation, aviation-related commercial and industrial, park/plaza, boat anchorage, open bay, and specialized berthing. The PMP states that the intent of this planning district is to retain and continue aviation-related industries and commerce. It foresees a focus on public parks and tourist/commercial uses within the planning district.

Centre City Embarcadero

Centre City Embarcadero is within Planning District 3 of the PMP. The land and water use designations for this area include, but are not limited to, a combination of commercial recreation, commercial fishing, marine terminal, aviation-related industrial, park/plaza, specialized berthing, and ship anchorage. The PMP states that the intent of this planning district is to continue to create a unified waterfront, both visually and physically, while implementing extensive renovations and development plans, which include commercial recreation, county government administration, and U.S. Navy uses. It also plans for the continuation of public parks and tourist/commercial uses within the planning district. In addition, the PMP envisions replacing the existing Grape Street Pier with a 30,000-square-foot curvilinear pier, with a 12,000-square-foot public boat dock, designated as “park plaza.” The waterside termination of this pier is designated as “commercial recreation” to allow possible development of a commercial facility.

Tenth Avenue Marine Terminal

The Tenth Avenue Marine Terminal, including the NASSCO ship repair facility, is within the PMP’s Planning District 4. The land and water use designations for this area include, but are not limited to, marine terminal, marine-related industrial, park/plaza, terminal berthing, and specialized berthing. The PMP envisions continued use and intensification of the marine-related industrial uses in this area as well as continuation of the park use in this area.

National City Bayfront

The National City Bayfront is within the PMP’s Planning District 5. The land and water use designations for this area include, but are not limited to, Navy ship berthing, marine-related and marine terminal industrial, terminal berthing, park/plaza, recreational boat berthing, and commercial recreation. The PMP envisions continued use and intensification of the marine-related uses in this area.

Coronado Bayfront

The Coronado Bayfront, including Glorietta Bay, is within the PMP’s Planning District 6. The land and water use designations for this area include, but are not limited to, commercial recreation, recreational boat berthing, golf course, park/plaza, and boat anchorage. The PMP envisions the continuation of commercial, park, and marina-related uses.

Chula Vista Bayfront

The Chula Vista Bayfront is within the PMP’s Planning District 7. The land and water use designations for this area include, but are not limited to, a combination of commercial recreation,

industrial business park, park/plaza, wetlands, estuary, and boat navigation corridor. The PMP states that the intent of this planning district is to transform the planning district into a world-class Bayfront by emphasizing public waterfront amenities to enhance the Bayfront's natural and economic resources. It foresees the development of approximately 556 acres of Chula Vista Bayfront, which will include public parks and commercial recreational uses. Although the District's planning policy encourages marine-related industrial uses, the plan provides the opportunity to attract new industrial, business/commercial, and commercial recreational development to this planning district.

Imperial Beach Oceanfront

The Imperial Beach Oceanfront is located within the PMP's Planning District 10. Land and water use designations within the District's jurisdiction for this area include commercial recreation, park, and open ocean. The PMP anticipates more intensive development for the Pier when market conditions allow. This would involve construction of a pier saddle and platform to accommodate a restaurant and other appropriate visitor-serving uses.

San Diego Unified Port District Code, Ordinance 19

Sections 55 and 56 of the San Diego Unified Port District Act require the Board of Port Commissioners to make and enforce necessary rules and regulations governing the use and control of all navigable waters, tidelands, and submerged lands within the District and to make and enforce certain local police and sanitary regulations related to the District. As such, the adoption of Ordinance 19 established a system for the codification of District ordinances.

Ordinance 19 covers topics such as watercraft speed regulations, aquatic activities, anchoring or mooring in the Bay, park regulations, diving activities, alcohol use, stormwater control, fishing, and others. Specific to the proposed project, Sections 4.30, 4.35, 4.36, and 4.40 of Ordinance 19 establish restrictions for anchoring and mooring vessels, such as fireworks barges, in the Bay, including the identification of allowable anchoring activities and areas.

Chula Vista Bayfront Master Plan Natural Resources Management Plan

The Chula Vista Bayfront Master Plan Natural Resources Management Plan (NRMP) was prepared by the District and the City of Chula Vista and adopted in May 2016. It contains goals, objectives, and strategies for promoting and enhancing natural resources within the 535-acre Chula Vista Bayfront area. It serves as an important environmental guidance and implementation document, applicable to all development within the Chula Vista Bayfront area. All projects, both public and private, will be evaluated by the District and City of Chula Vista relative to furthering the goals, objectives, standards, and strategies contained therein. The Chula Vista Bayfront Master Plan NRMP allows a maximum of three fireworks display events to occur per year, all outside of the California least tern nesting season (March 15 through August 31), except on the Fourth of July, which may be allowed if in full regulatory compliance and if nesting colonies are monitored during the event, with any impacts reported to the Wildlife Advisory Committee so they can be addressed.

San Diego Bay Integrated Natural Resources Management Plan

The San Diego Bay Integrated Natural Resources Management Plan (INRMP) is a long-term strategy sponsored by two of the major managers of San Diego Bay: the U.S. Navy and District. Its intent is to

provide direction for the good stewardship that natural resources require while also supporting the ability of the Navy and District to meet their missions and continue functioning within the Bay. The core strategies of the plan are to (1) manage and restore habitats, populations, and ecosystem processes; (2) plan and coordinate projects and activities so that they are compatible with natural resources; (3) improve information sharing, coordination, and dissemination; (4) conduct research and long-term monitoring that supports decision-making; and (5) put in place a Stakeholder's Committee and Focus Subcommittees for collaborative, ecosystem-based problem-solving in pursuit of the goal and objectives.

4.7.4 Project Impact Analysis

4.7.4.1 Methodology

The following impact analysis evaluates the land use and planning impacts that would result should the proposed project be implemented. The impact analysis provides a project consistency analysis with respect to applicable plans and regulations, based on the existing regulations described in Section 4.7.3. Merely being inconsistent with an existing plan or regulation is not necessarily a significant impact under CEQA; rather, the inconsistency must result in a substantial adverse effect on the environment.

4.7.4.2 Thresholds of Significance

The following significance criteria are based on Appendix G of the State CEQA Guidelines and provide the basis for determining the significance of impacts associated with land use and planning resulting from implementation of the proposed project. The determination of whether a land use and planning impact would be significant is based on the thresholds described below and the professional judgment of the District as lead agency, as supported by the recommendations of qualified personnel at ICF, all of which is based on the evidence in the administrative record.

Impacts are considered significant if the proposed project would result in any of the following:

1. Physically divide an established community.
2. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.
3. Conflict with any applicable habitat conservation plan or natural community conservation plan.

The analysis of whether the proposed project would have a significant impact on land use under Threshold 1 is provided in Section X of the Initial Study/Environmental Checklist (Appendix A of this Draft EIR), which determined that the project would not physically divide an established community. The analysis and conclusions therein are incorporated by reference into this section of the Draft EIR and are summarized in Chapter 6, *Additional Consequences of Project Implementation*. Therefore, only Thresholds 2 and 3 are discussed in the impact analysis that follows.

4.7.4.3 Project Impacts and Mitigation Measures

Threshold 2: Implementation of the proposed project would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.

Impact Discussion

The applicable land use plans, policies, or regulations of the District, adopted for the purpose of avoiding or mitigating an environmental effect, are the PMP, San Diego Unified Port District Code, Chula Vista Bayfront Master Plan NRMP, and the San Diego Bay INRMP.

Proposed New Fireworks Display Events

The proposed project includes up to four proposed new fireworks display events per year in San Diego Bay, including up to three fireworks display events along the Chula Vista Bayfront, as allowed by the Chula Vista Bayfront Master Plan Settlement Agreement and NRMP, and one proposed new Fourth of July fireworks display event along the National City Bayfront. Consistency of the proposed new fireworks display events with the goals and policies of the PMP are detailed in Table 4.7-1, below. Sections 4.30, 4.35, 4.36, and 4.40 of Ordinance 19 of the San Diego Unified Port District Code establish restrictions for anchoring and mooring of vessels such as fireworks barges in the Bay, including the identification of allowable anchoring activities and areas. However, barges for the proposed new fireworks display events would be held in place by tugboats and would not be anchored in the Bay. Therefore, the proposed new fireworks display events would not conflict with the San Diego Unified Port District Code. Consistency of the proposed new fireworks display events with the Chula Vista Bayfront Master Plan NRMP and the San Diego Bay INRMP are discussed under Threshold 3, below.

The CCA governs all coastal resources planning and management and protects public access and recreation within the coastal zone. The CCA generally aims to protect the overall quality of the coastal zone, including its natural and artificial resources, ensure a balance between coastal resource conservation and the social and economic needs of the people of the state, maximize public access and public recreational opportunities within the coastal zone, and prioritize coastal-dependent and coastal-related development along the coast. Under the CCA, the Commission is granted authority to review and approve plans and projects located within the coastal zone. The Commission has, in the past, processed CDPs for fireworks display events within other areas of the coastal zone throughout California, including those that involve potential impacts related to public use of sandy beaches or other public access areas as well as marine and habitat resources. In other instances, the Commission has not required a CDP for a fireworks display event when it can be determined that the specific temporary event would not have any significant adverse impact on coastal resources. For these events, CCC issues an exemption from being required to obtain a CDP under the Guidelines. The Guidelines were developed to minimize permitting burdens for the vast majority of temporary events that do not raise CCA concerns and provide procedures that the Commission can use to determine whether a temporary event is excluded from CDP requirements, pursuant to Public Resources Code Section 30610(i). As defined in the Guidelines, a temporary event means an activity or use that constitutes development, as defined in Section 30106 of the Coastal Act, of limited duration; involves the placement of non-permanent structures; and/or involves

exclusive use of a sandy beach, parkland, filled tidelands, water, streets, or a parking area that is otherwise open and available for general public use.

As part of the proposed project, the proposed new fireworks display events that would occur within San Diego Bay along the National City and Chula Vista Bayfronts, whether in CCC's or District's jurisdiction, would be subject to the CCA. An analysis of the proposed new fireworks display events' consistency with the applicable policies of the CCA is discussed in Table 4.7-2. As shown in Tables 4.7-1 and 4.7-2, the proposed new fireworks display events would be consistent with the PMP and the CCA. Consequently, impacts related to conflicts with a land use plan, policy, or regulation adopted for the purpose of avoiding an environmental effect would be less than significant.

Table 4.7-1 Project Consistency with Port Master Plan

Goal, Policy, Objective	Proposed Project Consistency
<p>Planning Goal VIII. The District will enhance and maintain the bay and tidelands as an attractive physical and biological entity.</p> <ul style="list-style-type: none"> Each activity, development, and construction project should be designed to best facilitate its particular function, which should be integrated with and related to the site and surroundings of that activity. Views should be enhanced through view corridors, the preservation of panoramas, accentuation of vistas, and shielding of the incongruous and inconsistent. Establish guidelines and standards facilitating the retention and development of an aesthetically pleasing tideland environment free of noxious odors, excessive noise, and hazards to the health and welfare of the people of California. Establish and foster an artworks program to promote, enhance, and enliven the waterfront experience through the public and private placement of works of art. 	<p>Consistent. The proposed project does not involve any physical construction and would not interfere with views of the Bay and tidelands. The proposed new fireworks display events would be temporary in nature and would occur on an infrequent basis. Consequently, no long-term impacts would occur with implementation of the proposed project. The proposed project would not present noxious odors, excessive noise, beyond what is traditionally generated by fireworks display events, or hazards to the health and welfare of the people of California, as ensured by the post-fireworks display event cleanup practices required by the proposed ordinance, which include water quality maintenance and removal of debris (see Section 4.6, <i>Hydrology and Water Quality</i>). The proposed new fireworks display events would be open to the public to promote, enhance, and enliven the waterfront experience. The proposed ordinance would establish guidelines and standards for fireworks display events to ensure that the aesthetically pleasing tidelands environment is retained. In addition, restriction of public access would not occur under the proposed project. As such, the proposed new fireworks display events would be consistent with this planning goal.</p>
<p>Planning Goal X. The quality of water in San Diego Bay will be maintained at such a level as will permit human water contact activities.</p> <ul style="list-style-type: none"> Maintain a program of flotsam and debris cleanup. Ensure through lease agreements that District tenants do not contribute to water pollution. Cooperate with the Regional Water Quality Control Board (RWQCB), the County Health Department, and other public agencies in a continual program of monitoring water quality and identifying the source of any pollutant. Adopt ordinances and take other legal and 	<p>Consistent. The proposed project involves adoption of an ordinance to regulate fireworks display events that require a discretionary action by the District or are operated by the District's tenants that occur throughout the year in and around San Diego Bay and the Imperial Beach Oceanfront and includes the addition of up to four new fireworks display events per year. Mitigation measure MM-WQ-1 requires implementation of the water quality-related conditions of the proposed ordinance. These condition of approval require the use of alternative fireworks that replace perchlorate with other oxidizers and propellants that burn cleaner, specific packaging materials, best management practices, a reduction in the amount of non-biodegradable fireworks components, and compliance</p>

Goal, Policy, Objective	Proposed Project Consistency
remedial action to eliminate sources of pollution.	with RWQCB's general permit and other required permits, including post-fireworks display event cleanup of debris and solid waste. Land- and waterside cleanup activities are further described in Section 4.6, <i>Hydrology and Water Quality</i> .
<p>Planning Goal XI. The District will protect, preserve, and enhance natural resources, including natural plant and animal life in the bay, as a desirable amenity, an ecological necessity, and a valuable and usable resource.</p> <ul style="list-style-type: none"> Promote and advance public knowledge of natural resources through environmental educational materials. Identify existing and potential assets. Keep apprised of the growing body of knowledge on ecological balance and interrelationships. Encourage research, pilot programs, and development in aquaculture as long as it is consistent with this goal. Administer natural resources so that impacts on natural resource values remain compatible with the preservation requirements of the public trust. 	<p>Consistent. The proposed new fireworks display events allowed under the proposed project would be temporary in nature and occur on an infrequent basis. Consequently, any potential significant impacts on biological resources resulting from the proposed new fireworks display events would be short term and temporary. As discussed in Section 4.3, <i>Biological Resources</i>, the proposed ordinance would include several conditions of approval for protecting biological resources to ensure that natural resources and animal life in the Bay are protected throughout the proposed new fireworks display events. Furthermore, the proposed ordinance would also include conditions to encourage visitors to remain in designated viewing areas and employ safe boating procedures in order to protect sensitive habitats of San Diego Bay. Implementation of these conditions of approval are required by MM-BIO-1 and MM-BIO-2. No food sources for wildlife would be affected by the proposed new fireworks display events.</p>
<p>Conservation Element – Land Use Objectives and Criteria. Natural marine resource utilization activities on tidelands should:</p> <ul style="list-style-type: none"> Be planned and located so as to present minimum conflicts with existing and proposed incompatible uses. Promote multiple utilization of the unique plant, shellfish, fish and wildlife resources of the bay. Encourage the protection and restoration of functional areas that have a high ecological value. Be accessible to the public for non-appropriative uses, consistent with nature interpretive functions. Enhance the open space character of the bay. 	<p>Consistent. The proposed project would not involve any physical development and would not interfere with natural marine resource utilization on tidelands.</p>
<p>Public Recreation – Land Use Objectives and Criteria. Parks, plazas, public access ways, vista points, and recreational activities on District lands and tidelands should:</p> <ul style="list-style-type: none"> Provide a variety of public access and carefully selected active and passive recreational facilities suitable for all age groups, including families with children, throughout all seasons of the year. Enhance the marine, natural resource, and 	<p>Consistent. The proposed project would not involve any physical development and would not interfere with public recreational opportunities on tidelands. The proposed project consists of an ordinance to govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. Because the proposed new fireworks display events would occur throughout the year in and around San Diego Bay, the proposed project would provide the opportunity for an increased variety of public recreation that would be suitable for all age groups of the general</p>

Goal, Policy, Objective	Proposed Project Consistency
<p>human recreational assets of San Diego Bay and its shoreline for all members of the public.</p> <ul style="list-style-type: none"> • Provide for clear and continuous multilingual information throughout District lands and facilities to and about public access ways and recreational areas. 	public.

Table 4.7-2. Consistency with California Coastal Act, Chapters 3 and 8

Policy Text	Proposed Project Consistency
30210. In carrying out the requirements of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people, consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.	Consistent. Fireworks display events are temporary in nature, and the proposed project does not involve any landside or waterside construction, either in the coastal zone or otherwise, that would have a permanent effect on public access within the coastal zone. Proposed new fireworks display events are anticipated to be cost-free, public, and temporary. All normally accessible areas would remain open and available to the general public, with the exception of any immediate fireworks launch site and associated fireworks safety zone. These restrictions ensure the safety of the public.
30211. Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.	Consistent. The proposed project does not involve any physical development that could permanently interfere with the public's right of access to the sea. Proposed new fireworks display events would not interfere with existing waterfront areas that are open to the public and would not include any restrictions on public access to parking lots, upland public recreational areas, or sandy beach, nor are they anticipated to include an admission charge that could discourage low-income individuals from attending the event.
30212(a). Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where (1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources; (2) adequate access exists nearby; or (3) agriculture would be adversely affected.	Consistent. The proposed project does not involve any physical development that could permanently interfere with public access from the nearest public roadway to the shoreline or along the coast. During fireworks display events associated with the proposed project, public access would be primarily maintained, except for when it is determined necessary to restrict public access to protect fragile coastal resources. No public streets are anticipated to be closed to accommodate the fireworks display events.
30224. Increased recreational boating use of coastal waters shall be encouraged, in accordance with this division, by developing dry storage areas, increasing public launching facilities, providing additional berthing space in existing harbors, limiting non-water-dependent land uses that congest access corridors and preclude boating support facilities, providing harbors of refuge, and by providing for new	Consistent. The proposed new fireworks display events associated with the proposed project would temporarily affect the ability of boaters to use portions of the normally accessible waters in San Diego Bay during the time of the events; however, this impact would be minimal because of the short duration of the proposed new fireworks display events (20 minutes maximum during a Fourth of July display) and infrequent. Additionally, the use of waters by recreational boaters

Policy Text	Proposed Project Consistency
boating facilities in natural harbors, new protected water areas, and in areas dredged from dry land.	would not be entirely prohibited during fireworks display events, but rather would be restricted to occur outside of U.S. Coast Guard–designated safety zones during the display. All other normally available areas would continue to be available for use by boaters during the proposed new fireworks display events.
30230. Marine resources shall be maintained, enhanced, and, where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.	Consistent. Fireworks display events are temporary and infrequent in nature, and the proposed project does not involve any landside or waterside construction, either in the coastal zone or otherwise, that would have a permanent effect on coastal resources within the coastal zone. Consequently, any potential impacts on biological resources resulting from the proposed new fireworks display events would be short term and temporary. As discussed in Section 4.3, <i>Biological Resources</i> , the proposed ordinance includes several conditions of approval for protecting biological resources, which would ensure that natural resources and animal life in the Bay would be protected throughout the proposed new fireworks display events. Implementation of these conditions of approval are required by MM-BIO-1 and MM-BIO-2 . Implementation of MM-BIO-1 and MM-BIO-2 would help to ensure that future uses of the marine environment would be carried out in a manner that sustains the biological productivity of coastal waters and maintains healthy populations of all species of marine organisms for long-term commercial, recreational, scientific, and educational purposes, as required by this policy. Furthermore, the proposed new fireworks display events that would occur within San Diego Bay along the National City and Chula Vista Bayfronts would be subject to CCC or District review for CCA consistency. The requirement to obtain CCC or District approval demonstrates consistency with the CCA.
30232. Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.	Consistent. The proposed project does not involve any landside or waterside construction, either in the coastal zone or otherwise, that would involve the routine use of crude oil, gas, petroleum products, or other hazardous substances. However, the proposed new fireworks display events would involve the infrequent and temporary use of fireworks, requiring the detonation of petroleum-based chemicals, as well as the temporary use of barges, requiring petroleum-based products for propulsion. The fireworks would be set up at a loading facility yard in accordance with the California Department of Forestry and Fire Protection's <i>Fireworks in California</i> handbook (Appendix C), which is enforced by the responsible city fire department with jurisdiction over each show. It is possible that gasoline, oil, other vehicle-related fluids, paints, solvents, and metals could be released by trucks on land during the transportation of pyrotechnic devices or by tugboats or other vessels in the water during operation of a fireworks display event.

Policy Text	Proposed Project Consistency
	<p>As discussed in Section 4.5, <i>Hazards and Hazardous Materials</i>, required compliance with existing laws and regulations would ensure that the potential for a significant hazard to occur from routine transport, use, or disposal of hazardous materials would be less than significant. Additionally, mitigation measure MM-WQ-1 requires implementation of the water quality-related conditions of the proposed ordinance. These conditions of approval require the use of alternative fireworks that replace perchlorate with other oxidizers and propellants that burn cleaner, specific packaging materials, best management practices, a reduction in the amount of non-biodegradable fireworks components, and compliance with RWQCB's general permit and other required permits, including post-fireworks display event cleanup of debris and solid waste. Land- and waterside cleanup activities are further described in Section 4.6, <i>Hydrology and Water Quality</i>.</p>
<p>30240. (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.</p>	<p>Consistent. There is no environmentally sensitive habitat area within the proposed project sites. As such, the proposed project would not have the potential to significantly disrupt environmentally sensitive habitat areas. Fireworks display events are temporary and infrequent in nature, and the proposed project does not involve any landside or waterside construction, either in the coastal zone or otherwise, that would have a permanent effect on coastal resources within the coastal zone. Consequently, any potential significant impacts on biological resources, including habitat areas, would be short term and temporary. The proposed new fireworks display events would not occur immediately within any sensitive habitat areas. However, some fireworks display events would occur in the vicinity of sensitive habitat areas. The proposed ordinance includes several conditions of approval for protecting biological resources to ensure that natural resources, including sensitive habitats, in and around the Bay are protected throughout the proposed new fireworks display events. Implementation of these conditions of approval are required by MM-BIO-1 and MM-BIO-2. Additionally, the proposed new fireworks display events that would occur within San Diego Bay along the National City and Chula Vista Bayfronts would be subject to CCC or District review for CCA consistency. The requirement to obtain CCC or District approval demonstrates consistency with the CCA.</p>
<p>30253(a). New development shall do all of the following: (a) minimize risks to life and property in areas of high geologic, flood, and fire hazard.</p>	<p>Consistent. All proposed new fireworks display events would occur over water, which substantially reduces the potential for fire hazards. The proposed new fireworks display events would be launched from barges within San Diego Bay. The proposed ordinance would include conditions of approval to comply with all applicable laws and regulations that would address fire hazards and</p>

Policy Text	Proposed Project Consistency
<p>30708. All port-related developments shall be located, designed, and constructed so as to:</p> <ul style="list-style-type: none"> (a) Minimize substantial adverse environmental impacts. (b) Minimize potential traffic conflicts between vessels. (c) Give highest priority to the use of existing land space within harbors for port purposes, including, but not limited to, navigational facilities, shipping industries, and necessary support and access facilities. (d) Provide for other beneficial uses consistent with the public trust, including, but not limited to, recreation and wildlife habitat uses, to the extent feasible. (e) Encourage rail service to port areas and multi-company use of facilities. 	<p>ensure public safety during the proposed new fireworks display events. Additionally, all proposed new fireworks display events would be required to comply with the state and local laws set forth in the California Department of Forestry and Fire Protection's <i>Fireworks in California</i> handbook (Appendix C), which are enforced by the responsible city fire department with jurisdiction over each show.</p> <p>Consistent. The proposed project does not involve any physical construction and would not interfere with traffic between vessels, land use within harbors for port purposes, or rail service to port areas and multi-company use of facilities. As discussed in this Draft EIR, the proposed ordinance would include various conditions of approval to avoid adverse environmental impacts associated with the proposed new fireworks display events. In addition, mitigation measures would be implemented to minimize significant environmental impacts. Furthermore, the proposed project would enhance the visitor-serving experience of viewing fireworks display events from various vantage points around District tidelands by providing safe, high-quality fireworks display events that are open to the public. By enhancing the public's experience within District tidelands, the proposed project would be promoting publicly beneficial uses of trust lands, consistent with the Public Trust Doctrine.</p>

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance contains several conditions of approval to address issues such as air quality, biological resources, water quality, and traffic and improve the existing condition related to existing fireworks display events. Because the proposed ordinance would improve the existing condition in terms of the aforementioned resources, among others, it would be consistent with applicable land use plans, policies, and regulations of the District adopted for the purpose of avoiding or mitigating an environmental effect, including the PMP and San Diego Unified Port District Code. Therefore, the effects of the proposed ordinance on existing fireworks display events would not conflict with applicable land use plans, policies, or regulations of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. No significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of

avoiding or mitigating an environmental effect. Impacts would be less than significant, and no mitigation measures are required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, no significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

No mitigation is required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation

Proposed New Fireworks Display Events

Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impact would occur.

Threshold 3: Implementation of the proposed project would not conflict with an applicable habitat conservation plan or natural community conservation plan.

Impact Discussion

The following impact analysis considers whether the proposed project would conflict with applicable habitat conservation plans or natural community conservation plans. The habitat conservation plans or natural community conservation plans that apply to the proposed project are the San Diego Bay INRMP, Chula Vista Bayfront Master Plan NRMP, and San Diego Bay National Wildlife Refuge Comprehensive Conservation Plan. Other adopted conservation plans in the vicinity of the proposed project, which do not apply to the District, include the City of San Diego Multiple Species Conservation Program (MSCP) Subarea Plan and the City of Chula Vista MSCP Subarea Plan. Section 4.3, *Biological Resources*, of this Draft EIR considers whether the proposed project would conflict with these other conservation plans.

Proposed New Fireworks Display Events

As mentioned, three habitat conservation plans are applicable to the proposed project, including the San Diego Bay INRMP, Chula Vista Bayfront Master Plan NRMP, and San Diego Bay National Wildlife Refuge Comprehensive Conservation Plan. As summarized in Tables 4.7-3 through 4.7-5, below, the proposed new fireworks display events would not conflict with the goals of the San Diego Bay

INRMP, Chula Vista Bayfront Master Plan NRMP, and San Diego Bay National Wildlife Refuge Comprehensive Conservation Plan because they would not significantly affect any sensitive species or habitats in and adjacent to the Bay with compliance with the biological resources-related conditions of the proposed ordinance and implementation of the mitigation measures described in Section 4.3, *Biological Resources*. The proposed new fireworks display events would be consistent with the San Diego Bay INRMP, Chula Vista Bayfront Master Plan NRMP, and San Diego Bay National Wildlife Refuge Comprehensive Conservation Plan and would not result in any significant direct impacts on habitat within the identified areas of biological significance and conservation (see Section 4.3, *Biological Resources*, of this Draft EIR for a detailed discussion of impacts on habitats and natural communities). Therefore, there would be no conflicts with these applicable habitat conservation plans.

Table 4.7-3. Consistency with the San Diego Bay INRMP

Plan Text	Proposed Project Consistency
Protected Sites – Objective 4.2.1. Ensure effective protection of a minimum quantity and quality of the remaining marine and coastal habitat in San Diego Bay, targeting a mix of habitat types that maximizes ecosystem function and carrying capacity.	Consistent. The proposed ordinance includes several conditions of approval for protecting biological resources to ensure that the quality of the remaining marine and coastal habitat in the vicinity of the proposed new fireworks display events would be protected. The proposed ordinance includes conditions related to post-firework display event cleanup practices, consistent with the general permit; a reduction in the amount of non-biodegradable fireworks components that can be used; and conditions to reduce trespassing into sensitive habitat. Implementation of these conditions of approval are required by MM-BIO-1 and MM-BIO-2 . Furthermore, as required by the Chula Bayfront Master Plan Settlement Agreement and NRMP, monitoring of avian species will be conducted during the Fourth of July fireworks display event along the Chula Vista Bayfront (see Section 4.3, <i>Biological Resources</i> and Section 4.6, <i>Hydrology and Water Quality</i>).
Oil Spill Prevention and Cleanup – Objective 5.4.2. Prevent spills of oil and other hazardous substances, and ensure the effectiveness of prevention and response planning.	Consistent. The proposed project does not involve any landside or waterside construction, either in the coastal zone or otherwise, that would involve the routine use of crude oil, gas, petroleum products, or other hazardous substances. However, the proposed new fireworks display events would involve the infrequent and temporary use of fireworks, requiring the detonation of petroleum-based chemicals, as well as the temporary use of barges, requiring petroleum-based products for propulsion. The fireworks would be set up at a loading facility yard in accordance with the California Department of Forestry and Fire Protection's <i>Fireworks in California</i> handbook (Appendix C), which is enforced by the responsible city fire department with jurisdiction over each show. It is possible that gasoline, oil, other vehicle-related fluids, paints, solvents, and metals could be released by trucks on land during the transportation of pyrotechnic devices or by tugboats or

Plan Text	Proposed Project Consistency
Cumulative Effects – Objective 5.5. Minimize adverse cumulative effects on habitats and species of the bay ecosystem.	<p>other vessels in the water during operation of a fireworks display event. As discussed in Section 4.5, <i>Hazards and Hazardous Materials</i>, required compliance with existing laws and regulations would ensure that the potential for a significant hazard to occur from the routine transport, use, or disposal of hazardous materials would be less than significant. Additionally, mitigation measure MM-WQ-1 requires implementation of the water quality-related conditions of the proposed ordinance. These conditions of approval require the use of alternative fireworks that replace perchlorate with other oxidizers and propellants that burn cleaner, specific packaging materials, best management practices, a reduction in the amount of non-biodegradable fireworks components, and compliance with RWQCB's general permit and other required permits, including post-fireworks display event cleanup of debris and solid waste. Land- and waterside cleanup activities are further described in Section 4.6, <i>Hydrology and Water Quality</i>. As such, the proposed new fireworks display events would be consistent with this objective.</p> <p>Consistent. As discussed in Chapter 5, <i>Cumulative Impacts</i>, the proposed ordinance includes several conditions of approval for protecting biological resources to ensure that natural resources and animal life in the Bay are protected throughout the proposed new fireworks display events. With implementation of MM-BIO-1 and MM-BIO-2, which require compliance with the biological resources-related conditions of the proposed ordinance, potential adverse cumulative effects on habitats and species of the Bay ecosystem would be minimized.</p>

Table 4.7-4. Consistency with the Chula Vista Bayfront Master Plan Natural Resources Management Plan

Plan Text	Proposed Project Consistency
<p>Objective 3.2-4: Deposition of Air Pollutants. Minimize aerial deposition of pollutants within the [Chula Vista Bayfront Master Plan] watershed and marine waters that come from sources such as car exhaust, boat exhaust, and fireworks.</p> <p>I. A maximum of three fireworks events can be held, outside of California least tern nesting season (March 15 through August 31), except Fourth of July, which may be allowed if in full regulatory compliance and if nesting colonies are monitored during the event, with any impacts reported to the Wildlife Advisory Committee so they can be addressed. All shows must comply with all applicable water quality and species</p>	<p>Consistent. The proposed new fireworks display events held within the Chula Vista Bayfront Master Plan area would be limited to three per year and would be in full regulatory compliance, pursuant to the Chula Vista Bayfront Master Plan Settlement Agreement and NRMP. One proposed new Fourth of July fireworks display event would occur within the California least tern nesting season; however, the proposed ordinance includes a number of noise- and light-reduction conditions of approval for the proposed new fireworks display events that would occur during the breeding season. Implementation of these conditions would be required by MM-NOI-1.</p>

Plan Text	Proposed Project Consistency
<p>protection regulations. All shows must be consistent with policies, goals, and objectives in the NRMP (Settlement Agreement 4.9.2; MMRP 4.8-6)</p>	<p>Additionally, the Chula Vista Bayfront Settlement Agreement and NRMP require monitoring of least tern nests during the proposed new Fourth of July fireworks display events along the Chula Vista Bayfront (see Section 4.3, <i>Biological Resources</i>). Any impacts on least terns would be reported to the Wildlife Advisory Committee to be addressed pursuant to the Chula Vista Bayfront Master Plan Settlement Agreement.</p>
<p>Objective 4.5-1. Fireworks Shows. Regulate and monitor fireworks shows to avoid and minimize impacts on native wildlife.</p> <p>I. Per the Settlement Agreement and the MMRP of the EIR:</p> <p>A. A maximum of three fireworks events can be held (Settlement Agreement 4.9.2; MMRP 4.8-6).</p> <p>B. All shows are to be held outside of California least tern nesting season, except a Fourth of July fireworks show, which is permitted only if it is in full regulatory compliance and accompanied by monitoring of nesting colonies during the event. Any impacts on the nesting colonies during the event would be reported to the Wildlife Advisory Committee so they can be addressed (Settlement Agreement 4.9.2; MMRP 4.8-6).</p> <p>C. All shows must comply with all applicable water quality and species protection regulations and be consistent with all other goals and objectives contained in this NRMP (Settlement Agreement 4.9.2; MMRP 4.8-6).</p> <p>II. Fireworks shows should be appropriately located and timed to avoid as much disturbance to wildlife as possible. Adaptive management for placement and timing, based on monitoring results, is recommended.</p> <p>III. Fireworks shows are encouraged to be low-noise producing, with display altitudes adjusted pursuant to the best available science to minimize disruption to bird species. The duration of shows should remain as short as feasible to limit the duration of potential noise impacts. Whirling, sonic booms, and similar types of fireworks are discouraged.</p>	<p>Consistent. The proposed new fireworks display events in the Chula Vista Bayfront area would occur in compliance with the Chula Vista Bayfront Master Plan Settlement Agreement and must follow the guidelines outlined in the NRMP. Fireworks display events that would occur during the California least tern nesting season in the Chula Vista Bayfront area would be limited to the Fourth of July, in accordance with the Settlement Agreement and NRMP. In addition, as detailed in Section 4.6, <i>Hydrology and Water Quality</i>, MM-WQ-1 and MM-WQ-2 require implementation of the water quality-related conditions of the proposed ordinance, which require the use of alternative fireworks that replace perchlorate with other oxidizers and propellants that burn cleaner, specific packaging materials, best management practices, additional trash receptacles in landside viewing areas, a reduction in the amount of non-biodegradable fireworks components, and compliance with RWQCB's general permit and other required permits, including post-fireworks display event cleanup of debris and solid waste.</p>
MMRP = Mitigation Monitoring and Reporting Plan	

Table 4.7-5. Consistency with the San Diego Bay National Wildlife Refuge Comprehensive Conservation Plan

Plan Text	Proposed Project Consistency
<p>Sweetwater Marsh Unit Goal 1. Protect, manage, enhance, and restore coastal wetland and upland habitats to benefit native fish, wildlife, and plant species within the Sweetwater Marsh Unit.</p>	<p>Consistent. The proposed new fireworks display events that would occur in proximity to the Sweetwater Marsh Unit include one display along the National City Bayfront and up to three displays along the Chula Vista Bayfront. The proposed new fireworks display events would be temporary in nature and occur on an infrequent basis. Consequently, no long-term impacts on habitat would occur with implementation of the proposed project. As discussed in Section 4.3, <i>Biological Resources</i>, the proposed new fireworks display events along the National City and Chula Vista Bayfronts may result in direct and indirect impacts on sensitive habitat within the Sweetwater Marsh Unit. However, the proposed ordinance includes several conditions of approval to reduce potential direct and indirect impacts on sensitive coastal wetland habitat to less-than-significant levels. Implementation of these conditions are required by MM-BIO-1 and MM-BIO-2. In addition, as detailed in Section 4.6, <i>Hydrology and Water Quality</i>, MM-WQ-1 and MM-WQ-2 require implementation of the water quality-related conditions of the proposed ordinance, which require the use of alternative fireworks that replace perchlorate with other oxidizers and propellants that burn cleaner, specific packaging materials, best management practices, additional trash receptacles in landside viewing areas, a reduction in the amount of non-biodegradable fireworks components, and compliance with RWQCB's general permit and other required permits, including post-fireworks display event cleanup of debris and solid waste. This would ensure that quality habitat is maintained for native fish, wildlife, and plant species within the Sweetwater Marsh Unit.</p>
<p>Sweetwater Marsh Unit Goal 2. Support recovery and protection efforts for the federally and state listed threatened and endangered species and species of concern that occur within the Sweetwater Marsh Unit.</p>	<p>Consistent. The proposed new fireworks display events that would occur in proximity to the Sweetwater Marsh Unit include one display event along the National City Bayfront and up to three displays along the Chula Vista Bayfront. Proposed new fireworks display events along the Chula Vista Bayfront would occur outside of the California least tern nesting season (except for one display on the Fourth of July), in compliance with the Chula Vista Bayfront Master Plan Settlement Agreement, and would follow the guidelines outlined in the Chula Vista Bayfront Master Plan NRMP. In addition, the proposed project includes one new Fourth of July fireworks display event along the National City</p>

Plan Text	Proposed Project Consistency
<p>Sweetwater Marsh Unit Goal 3. Protect and restore the environmental health of the refuge's coastal salt marsh and upland habitats by making contaminants remediation a priority for refuge lands, adjacent properties, and upstream developments.</p>	<p>Bayfront. For the proposed new fireworks display events that would occur during the breeding season, the proposed ordinance includes a number of noise- and light-reduction conditions of approval to minimize the temporary disturbance experienced by sensitive avian species. Implementation of these conditions are required by MM-NOI-1. As such, these proposed new fireworks display events would not jeopardize recovery and protection efforts for the federally and state listed threatened and endangered species and species of concern that occur within the Sweetwater Marsh Unit.</p> <p>Consistent. The proposed new fireworks display events that would occur in proximity to the Sweetwater Marsh Unit include one display event along the National City Bayfront and up to three displays along the Chula Vista Bayfront. As discussed in Section 4.3, <i>Biological Resources</i>, new fireworks display events proposed along the National City and Chula Vista Bayfronts would have the potential to result in direct and indirect impacts on sensitive habitat within the Sweetwater Marsh Unit. However, the proposed ordinance includes several conditions of approval to reduce potential direct and indirect impacts on sensitive coastal salt marsh habitat to less-than-significant levels. Implementation of these conditions are required by MM-BIO-1 and MM-BIO-2. These conditions of approval would ensure that human trespass, increased boat traffic, and human-generated trash and debris during proposed new fireworks display events would not affect the environmental health of the coastal salt marsh and upland habitats. In addition, as detailed in Section 4.6, <i>Hydrology and Water Quality</i>, MM-WQ-1 and MM-WQ-2 require implementation of the water quality-related conditions of the proposed ordinance, which require the use of alternative fireworks that replace perchlorate with other oxidizers and propellants that burn cleaner, specific packaging materials, best management practices, additional trash receptacles in landside viewing areas, a reduction in the amount of non-biodegradable fireworks components, and compliance with RWQCB's general permit and other required permits, including post-firework display event cleanup of debris and solid waste. These conditions would reduce the potential for contamination of coastal salt marsh habitat.</p>
<p>South San Diego Bay Unit Goal 1. Protect, manage, enhance, and restore open water, coastal wetlands, and native upland habitat to benefit the native fish, wildlife, and plant species supported within the</p>	<p>Consistent. The proposed new fireworks display events that would occur in proximity to the South San Diego Bay Unit include up to three fireworks display events along the Chula Vista Bayfront. The proposed new fireworks display events would be</p>

Plan Text	Proposed Project Consistency
South San Diego Bay Unit.	<p>temporary in nature and occur on an infrequent basis. Consequently, no long-term impacts on habitat would occur with implementation of the proposed project. As discussed in Section 4.3, <i>Biological Resources</i>, the new fireworks display events proposed along the Chula Vista Bayfront would have the potential to result in direct and indirect impacts on sensitive habitat within the South San Diego Bay Unit. However, the proposed ordinance includes several conditions of approval to reduce potential direct and indirect impacts on sensitive habitat to less-than-significant levels. Implementation of these conditions are required by MM-BIO-1 and MM-BIO-2. In addition, as detailed in Section 4.6, <i>Hydrology and Water Quality</i>, MM-WQ-1 and MM-WQ-2 require implementation of the water quality-related conditions of the proposed ordinance, which require the use of alternative fireworks that replace perchlorate with other oxidizers and propellants that burn cleaner, specific packaging materials, best management practices, additional trash receptacles in landside viewing areas, a reduction in the amount of non-biodegradable fireworks components, and compliance with RWQCB's general permit and other required permits, including post-fireworks display event cleanup of debris and solid waste. This would ensure that quality habitat would be maintained for native fish, wildlife, and plant species within the South San Diego Bay Unit.</p>
<p>South San Diego Bay Unit Goal 2. Support recovery and protection efforts for the federally and state listed threatened and endangered species and species of concern that occur within the South San Diego Bay Unit.</p>	<p>Consistent. The proposed new fireworks display events that would occur in proximity to the South San Diego Bay Unit include up to three fireworks display events along the Chula Vista Bayfront. Proposed new fireworks display events along the Chula Vista Bayfront would occur outside of the California least tern nesting season (except for one display on the Fourth of July), in compliance with the Chula Vista Bayfront Master Plan Settlement Agreement, and would follow the guidelines outlined in the Chula Vista Bayfront Master Plan NRMP. For the one proposed new display that would occur during the breeding season in proximity to the South San Diego Bay Unit, the proposed ordinance includes a number of noise- and light-reduction conditions of approval to minimize the temporary disturbance experienced by sensitive avian species. Implementation of these conditions are required by MM-NOI-1. Furthermore, MM-WQ-1 and MM-WQ-2 require implementation of the water quality-related conditions of the proposed ordinance, which require the use of alternative fireworks that replace perchlorate with other oxidizers and propellants that burn cleaner, specific packaging materials, best</p>

Plan Text	Proposed Project Consistency
<p>South San Diego Bay Unit Goal 3. Provide high-quality foraging, resting, and breeding habitat for colonial nesting seabirds, migratory shorebirds and waterfowl, and salt marsh-dependent species.</p>	<p>management practices, additional trash receptacles in landside viewing areas, a reduction in the amount of non-biodegradable fireworks components, and compliance with RWQCB's general permit and other required permits, including post-fireworks display event cleanup of debris and solid waste. As such, these proposed new fireworks display events would not jeopardize recovery and protection efforts for the federally and state listed threatened and endangered species and species of concern that occur within the South San Diego Bay Unit.</p>
	<p>Consistent. The proposed new fireworks display events that would occur in proximity to the South San Diego Bay Unit include up to three fireworks display events along the Chula Vista Bayfront. Proposed new fireworks display events along the Chula Vista Bayfront would occur in proximity to sensitive wetlands within the South San Diego Bay Unit that provide stopover habitat for migrating waterfowl and shorebirds and nesting habitat for sensitive avian species. The proposed new fireworks display events would be temporary in nature and occur on an infrequent basis. Consequently, no long-term impacts on sensitive wetlands would occur with implementation of the proposed project. As discussed in Section 4.3, <i>Biological Resources</i>, the proposed new fireworks display events are not anticipated to result in any long-term or permanent substantial adverse effects on avian species because temporary disturbance from noise and light would be short term and infrequent and would not result in direct mortality of birds, a decrease in productivity, or long-term changes in behavior (e.g., colony abandonment). Additionally, the proposed ordinance includes a number of noise- and light-reduction conditions of approval for fireworks display events that would occur during the breeding season, which would further reduce the temporary disturbance experienced by migrating avian species. Implementation of these conditions are required by MM-NOI-1. Furthermore, MM-WQ-1 and MM-WQ-2 require implementation of the water quality-related conditions of the proposed ordinance, which require the use of alternative fireworks that replace perchlorate with other oxidizers and propellants that burn cleaner, specific packaging materials, best management practices, additional trash receptacles in landside viewing areas, a reduction in the amount of non-biodegradable fireworks components, and compliance with RWQCB's general permit and other required permits, including post-fireworks display event cleanup of debris and solid waste. This would ensure that migrating wildlife species do not</p>

Plan Text	Proposed Project Consistency
	mistakenly consume the waste. As such, it is not anticipated that fireworks-generated debris, light, and noise would alter the migratory patterns of any species or render nesting sites inhospitable. Consequently, the proposed project would not result in long-term alteration of migratory patterns or abandonment of nesting sites.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance contains several conditions of approval to address issues such as air quality, biological resources, water quality, and traffic, among others, and improve the existing condition related to fireworks display events. Because the proposed ordinance would improve the existing condition in terms of the aforementioned resources, it would be consistent with applicable habitat conservation plans and natural community conservation plans, including the San Diego Bay INRMP, Chula Vista Bayfront Master Plan NRMP, and San Diego Bay National Wildlife Refuge Comprehensive Conservation Plan. Therefore, effects of the proposed ordinance on existing fireworks display events would not conflict with an applicable habitat conservation plan or natural community conservation plan. No significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events would not conflict with an applicable habitat conservation plan or natural community conservation plan. Impacts would be less than significant, and no mitigation measures are required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not conflict with an applicable habitat conservation plan or natural community conservation plan. Therefore, no significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

No mitigation is required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation

Proposed New Fireworks Display Events

Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impact would occur.

4.8.1 Overview

This section describes the existing conditions and applicable laws and regulations governing project-related noise and vibration. The section also discusses the proposed project's potential to increase noise and vibration in the project vicinity during the operation of fireworks display events.

Impacts related to noise were analyzed by ICF noise analysts and were considered significant if the proposed project would (1) generate or expose persons to noise levels in excess of established standards or (2) result in a substantial temporary or periodic increase in ambient noise levels. All other noise and vibration issues, including groundborne vibration, permanent increases in noise, and impacts related to public and private airport/airstrips, were analyzed in Section XII of the Initial Study/Environmental Checklist (Appendix A), which is incorporated here by this reference, and were determined to be less than significant. The analysis and conclusions regarding these impacts are included in Section 6.4, *Effects Not Found to Be Significant*, of Chapter 6. Table 4.8-1 summarizes the significant impacts and mitigation measures discussed in Section 4.8.5, *Project Impact Analysis*.

Table 4.8-1. Summary of Significant Noise and Vibration Impacts and Mitigation Measures

Summary of Potentially Significant Impact(s)	Summary of Mitigation Measure(s)	Level of Significance After Mitigation	Rationale for Finding After Mitigation
Impact-NOI-1: Substantial Periodic or Temporary Increase in Ambient Noise Levels of the Proposed New Fireworks Display Events	MM-NOI-1. Implementation of the Noise-Related Conditions of the Proposed Ordinance, which require limitations on barge locations and shell sizes and avoidance of salutes within the first quarter of a fireworks display.	Significant and Unavoidable	The proposed ordinance contains several conditions of approval intended to limit noise impacts on sensitive biological resources. These conditions would require the proposed new fireworks display events to either be located outside a 1-mile radius from sensitive habitats or to both limit maximum shell size to 8-inches and avoid the use of salutes within the first quarter of a fireworks display

Summary of Potentially Significant Impact(s)	Summary of Mitigation Measure(s)	Level of Significance After Mitigation	Rationale for Finding After Mitigation
			event. These conditions of the ordinance would provide modest abatement (reduction) of the overall project noise levels. However, because loud noise (including noise levels intended to be significantly higher than ambient conditions) is considered an integral part of traditional fireworks display events, mitigation measures to fully eliminate significant noise impacts, such as silent fireworks, would substantially change the fundamental nature of the proposed project.

4.8.2 Noise Fundamentals and Terminology

Noise is commonly defined as unwanted sound. Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is often defined as sound that is objectionable because it is disturbing or annoying.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receptor, and the propagation path between the two. The loudness of the noise source and the obstructions or atmospheric factors, which affect the propagation path to the receptor, determine the sound level and the characteristics of the noise perceived by the receptor.

The following sections provide an explanation of key concepts and acoustical terms used in the analysis of environmental and community noise.

4.8.2.1 Frequency, Amplitude, and Decibels

Continuous sound can be described by *frequency* (pitch) and *amplitude* (loudness). A low-frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz, or thousands of Hz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

The amplitude of pressure waves generated by a sound source determines the loudness of that source. The amplitude of a sound is typically described in terms of *sound pressure level*, which refers to the root-mean-square pressure of a sound wave and can be measured in units called microPascals (μPa). One μPa is approximately one hundred-billionth (0.0000000001) of normal atmospheric pressure. Sound pressure levels for different kinds of noise environments can range from less than 100 to over 100,000,000 μPa . Because of this large range of values, sound is rarely expressed in terms of μPa . Instead, a logarithmic scale is used to describe the sound pressure level (also referred to simply as the sound level) in terms of decibels, abbreviated dB. Specifically, the decibel describes the ratio of the actual sound pressure to a reference pressure and is calculated as follows.

$$SPL = 20 \times \log_{10} \left(\frac{X}{20 \mu\text{Pa}} \right)$$

Where X is the actual sound pressure and 20 μPa is the standard reference pressure level for acoustical measurements in air.

The threshold of hearing for young people is about 0 dB, which corresponds to 20 μPa .

Decibel Addition

Because decibels are logarithmic units, sound pressure levels cannot be added or subtracted through ordinary arithmetic. On the dB scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when two identical sources are each producing sound of the same loudness, their combined sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one excavator produces a sound pressure level of 80 dB, two excavators would not produce 160 dB. Rather, they would combine to produce 83 dB. The cumulative sound level of any number of sources, such as excavators, can be determined using decibel addition. The same decibel addition is used for A-weighted decibels described below.

4.8.2.2 Perception of Noise and A-Weighting

The dB scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by characteristics of the human ear.

Human hearing is limited in the range of audible frequencies as well as in the way it perceives the sound pressure level in that range. In general, people are most sensitive to the frequency range of 1,000 to 8,000 Hz and perceive sounds within that range better than sounds of the same amplitude in higher or lower frequencies. To approximate the response of the human ear, sound levels in

various frequency bands are adjusted (or “weighted”), depending on human sensitivity to those frequencies. The resulting sound pressure level is expressed in A-weighted decibels, abbreviated dBA. When people make judgments regarding the relative loudness or annoyance of a sound, their judgments correlate well with the A-weighted sound levels of those sounds. Table 4.8-2 describes typical A-weighted sound levels for various noise sources.

Table 4.8-2. Typical Noise Levels in the Environment

Common Outdoor Noise Source	Sound Level (dBA)	Common Indoor Noise Source
	— 110 —	Rock band
Jet flying at 1,000 feet		
	— 100 —	
Gas lawn mower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower at 100 feet	— 70 —	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	— 60 —	
		Large business office
Quiet urban daytime	— 50 —	Dishwasher in next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: California Department of Transportation 2013.

Human Response to Noise

Noise-sensitive receptors (also called “receivers”) are locations where people reside or where the presence of unwanted sound may adversely affect the use of the land. Noise-sensitive receptors typically include residences, hospitals, schools, guest lodging, libraries, and certain types of passive recreational uses.

The effects of noise on people can be listed in three general categories.

- Subjective effects of annoyance, nuisance, or dissatisfaction.

- Interference with activities such as speech, sleep, learning, or working.
- Physiological effects such as startling and hearing loss.

In most cases, effects from sounds typically found in the natural environment (compared to an industrial or an occupational setting) would be limited to the first two categories: creating an annoyance or interfering with activities. No completely satisfactory method exists to measure the subjective effects of sound or the corresponding reactions of annoyance and dissatisfaction. This lack of a common standard arises primarily from the wide variation in individual thresholds of annoyance and habituation to sound. Therefore, an important way of determining a person's subjective reaction to a new sound is by comparing it to the existing baseline or "ambient" environment to which that person has adapted. In general, the more the level or tonal (frequency) variations of a sound exceed the previously existing ambient sound level or tonal quality, the less acceptable the new sound will be, as judged by the exposed individual.

Studies have shown that under controlled conditions in an acoustics laboratory, a healthy human ear is able to discern changes in sound levels of 1 dBA. In the normal environment, the healthy human ear can detect changes of about 2 dBA; however, it is widely accepted that changes of 3 dBA in the normal environment are considered just noticeable to most people. A change of 5 dBA is readily perceptible, and a change of 10 dBA is perceived as being twice as loud. Accordingly, a doubling of sound energy (e.g., doubling the volume of traffic on a highway) resulting in a 3-dBA increase in sound would generally be barely detectable.

Equipment and vehicle operation during nighttime hours can potentially result in noise events that disturb the sleep of people living in nearby residential areas. Interior noise levels between 50 and 55 dBA maximum sound level (L_{max}) during nighttime hours (10 p.m. to 7 a.m.) were found to result in sleep disturbance and annoyance (Nelson 1987).

4.8.2.3 Noise Descriptors

Because sound levels can vary markedly over a short period of time, various descriptors or noise "metrics" have been developed to quantify environmental and community noise. These metrics generally describe either the average character of the noise or the statistical behavior of the variations in the noise level. The most common of these metrics are described below:

Equivalent Sound Level (L_{eq})

The equivalent sound level (L_{eq}) is the most common metric used to describe short-term average noise levels. Many noise sources produce levels that fluctuate over time; examples include mechanical equipment that cycles on and off, or construction work, which can vary sporadically. The L_{eq} describes the average acoustical energy content of noise for an identified period of time, commonly 1 hour. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustical energy over the duration of the exposure. For many noise sources, the L_{eq} will vary depending on the time of day—a prime example is traffic noise, which rises and falls depending on the amount of traffic on a given street or freeway.

Maximum Sound Level (L_{\max}) and Minimum Sound Level (L_{\min})

L_{\max} and L_{\min} refer to the maximum and minimum sound levels, respectively, that occur during the noise measurement period. More specifically, they describe the root-mean-square sound levels that correspond to the loudest and quietest 1-second intervals that occur during the measurement.

Community Noise Equivalent Level (CNEL)

It is recognized that a given level of noise may be more or less tolerable depending on the duration of the exposure experienced by an individual, as well as the time of day during which the noise occurs. The community noise equivalent level (CNEL) is a measure of the cumulative 24-hour noise exposure that considers not only the variation of the A-weighted noise level but also the duration and the time of day of the disturbance. The CNEL is derived from the 24 A-weighted 1-hour L_{eq} that occur in a day, with “penalties” applied to the L_{eq} occurring during the evening hours (7 p.m. to 10 p.m.) and nighttime hours (10 p.m. to 7 a.m.) to account for increased noise sensitivity during these hours. Specifically, the CNEL is calculated by adding 5 dBA to the evening L_{eq} , adding 10 dBA to the nighttime L_{eq} , and then taking the average value for all 24 hours.

Day-Night Sound Level (L_{dn})

Much like CNEL above, day-night sound level (L_{dn}) is also a measure of the cumulative 24-hour noise exposure that considers not only the variation of the A-weighted noise level but also the duration and the time of day of the disturbance. The L_{dn} is derived in exactly the same way as CNEL, except that no “penalty” is applied to the evening hours of 7 p.m. to 10 p.m. Specifically, the L_{dn} is calculated from the 24 A-weighted 1-hour L_{eq} that occur in a day by adding 10 dBA to the nighttime (10 p.m. to 7 a.m.) L_{eq} and then taking the average value for all 24 hours.

It is noted that various federal, state, and local agencies have adopted CNEL or L_{dn} as the measure of community noise. While not identical, CNEL and L_{dn} are normally within 1 dBA of each other when measured in typical community environments, and many noise standards/regulations use the two interchangeably.

4.8.2.4 Sound Propagation

When sound propagates over a distance, it changes in both level and frequency content. The manner in which noise is reduced with distance depends on the following important factors.

Geometric Spreading

Sound from a single source (i.e., a *point source*) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates (or drops off) at a rate of 6 dBA for each doubling of distance. Highway noise is not a single stationary point source of sound. The movement of vehicles on a highway makes the source of the sound appear to emanate from a line (i.e., a *line source*) rather than from a point. This results in cylindrical spreading rather than the spherical spreading resulting from a point source. The change in sound level (i.e., *attenuation*) from a line source is 3 dBA per doubling of distance.

Ground Absorption

Usually the noise path between the source and the observer is very close to the ground. The excess noise attenuation from ground absorption occurs due to acoustic energy losses on sound wave reflection. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is done for simplification only; for distances of less than 200 feet, prediction results based on this scheme are sufficiently accurate. For acoustically “hard” sites (i.e., sites with a reflective surface, such as a parking lot or a smooth body of water, between the source and the receptor), no excess ground attenuation is assumed because the sound wave is reflected without energy losses. For acoustically absorptive or “soft” sites (i.e., sites with an absorptive ground surface, such as soft dirt, grass, or scattered bushes and trees), an excess ground attenuation value of 1.5 dBA per doubling of distance is normally assumed. When added to the geometric spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dBA per doubling of distance for a line source and 7.5 dBA per doubling of distance for a point source.

Atmospheric Effects

Research by the California Department of Transportation (Caltrans) and others has shown that atmospheric conditions can have a major effect on noise levels. Wind has been shown to be the single most important meteorological factor within approximately 500 feet, whereas vertical air temperature gradients are more important over longer distances. Other factors, such as air temperature, humidity, and turbulence, also have major effects. Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lower noise levels. Increased sound levels can also occur because of temperature inversion conditions (i.e., increasing temperature with elevation, with cooler air near the surface, where the sound source tends to be and the warmer air above which acts as a cap, causing a reflection of ground level-generated sound).

Shielding by Natural or Human-Made Features

A large object or barrier in the path between a noise source and a receptor can substantially attenuate noise levels at the receptor. The amount of attenuation provided by this shielding depends on the size of the object, proximity to the noise source and receptor, surface weight, solidity, and the frequency content of the noise source. Natural terrain features (such as hills and dense woods) and human-made features (such as buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receptor with the specific purpose of reducing noise. A barrier that breaks the line of sight between a source and a receptor will typically result in at least 5 dB of noise reduction. A higher barrier may provide as much as 20 dB of noise reduction.

4.8.3 Existing Conditions

The area surrounding the various fireworks display event sites considered in the analysis is quite large, essentially incorporating the entire San Diego Bay, Imperial Beach Oceanfront, and surrounding land uses. These land uses vary considerably in nature and development density, and include open space and parks, single-family residential neighborhoods, downtown commercial and multi-family residential uses, and airport and industrial uses (including the District’s maritime and maritime industrial uses). As a result, the primary noise sources and associated ambient noise levels vary substantially throughout

the study area. Overall, the primary ambient noise sources affecting the study area are aircraft (from San Diego International Airport, Naval Air Station North Island, and Naval Outlying Landing Field Imperial Beach), traffic on streets and freeways, railroad operations, and industrial operations (including District maritime, maritime industrial, and shipping activities); the relative importance of each noise source varies from location to location throughout the project vicinity.

The noise environment also includes periodic fireworks display events. Many of these are displays that require a discretionary action by the District or that are operated by the District's tenants or member cities, such as the annual Big Bay Boom, the Fourth of July Imperial Beach Fireworks show, Fireworks Show Over Glorietta Bay, the San Diego Symphony Summer Pops concert series, the *U.S.S. Midway* displays, NASSCO ship repair facility displays, and Our Lady of the Rosary Church annual procession. Other fireworks displays in the project vicinity include those held by cities or private organizations outside of the District's jurisdiction and not operated by a District tenant, such as the Fourth of July fireworks display event at Kimball Park in National City (landside) and nightly fireworks displays held throughout the summer at SeaWorld. Refer to Tables 2-1 and 2-2 in Chapter 2, *Environmental Setting*, of this Draft EIR for additional details of existing fireworks display events.

4.8.3.1 Noise Monitoring

In order to quantify existing noise conditions, long-term (LT) noise monitoring was conducted at six locations in the project vicinity. All measurements were conducted from Sunday, July 3, to Wednesday, July 6, 2016. These measurements were conducted to capture both ambient noise levels (on July 3, 5, and 6) and fireworks noise levels (on the Fourth of July). The six noise monitoring locations, designated LT1 through LT6, are indicated on Figure 4.8-1 and described in more detail below. For accessibility, safety, and security reasons, the monitoring was primarily conducted at facilities owned, operated, or controlled by the District or its member cities. At each measurement location, average (L_{eq}) and maximum (L_{max}) noise levels were recorded every minute. Subsequent analysis of these data was then performed to calculate the hourly L_{eq} and L_{max} . Additional details of the noise monitoring methodology and results are provided in Section 4.8.5.1, *Methodology*, and Appendix H. The measured ambient noise levels are summarized in Table 4.8-3 in terms of the range of hourly L_{eq} and L_{max} values observed within the daytime (7 a.m. to 7 p.m.), evening (7 p.m. to 10 p.m.), and nighttime (10 p.m. to 7 a.m.) periods each day. In addition to these ranges, the hourly values measured between 9 p.m. and 10 p.m. are called out in the table because they are used as the basis for comparison of fireworks noise levels.

LT1: San Diego Harbor Police Department, Shelter Island Station

Equipment for monitoring location LT1 was mounted on a tripod, approximately 5 feet above the ground within a chain-link fenced storage area on the east side of the station building. This location had unobstructed views of San Diego Bay to the east and south. LT1 is representative of land uses on Shelter Island, as well as the closest homes on the west side of the Bay. The closest fireworks display event to this location was the Big Bay Boom.

LT2: B Street Pier

Equipment for monitoring location LT2 was mounted on a tripod, approximately 5 feet above the ground on the west end of the B Street Pier with an unobstructed view of the Bay to the west. LT2 is representative of land uses adjacent to the shoreline along the Embarcadero. The closest fireworks display event to this location was the Big Bay Boom.

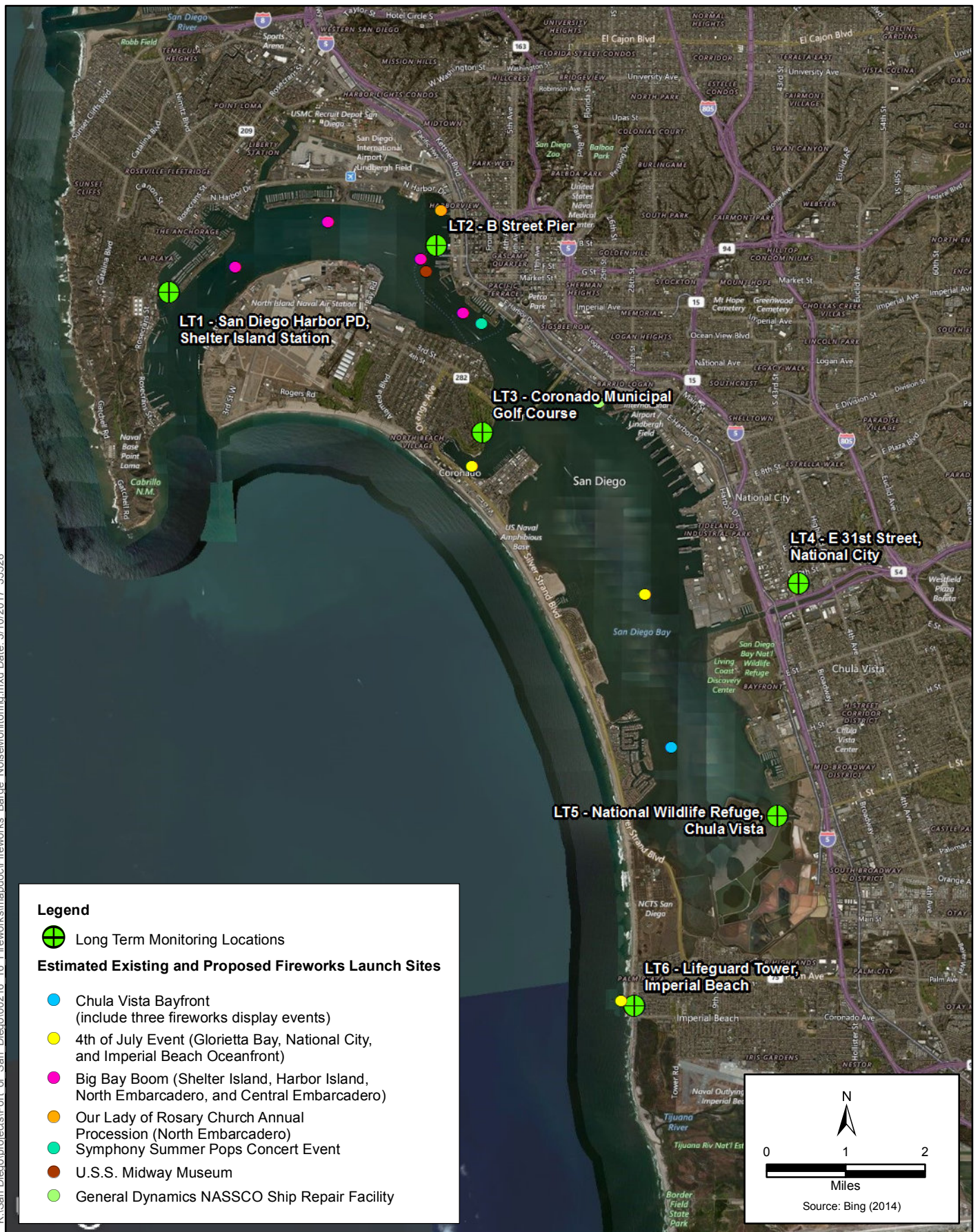


Table 4.8-3. Long-term Noise Measurements

Site #	Location	Date	Time Period ¹	Range of Hourly Values, dBA	
				L _{eq}	L _{max}
LT-1	San Diego Harbor Police Department Shelter Island Station, 1401 Shelter Island Drive, San Diego	7/3/16	Day	51.8–55.3	69.4–89.1
			Evening	53.1–57.7	76.3–99.9
			9–10 p.m.	57.7	99.9
			Nighttime	48.5–51.6	69.1–81.5
		7/5/16	Day	54.1–57.6	73.5–85
			Evening	46.4–57.4	70.2–80.5
			9–10 p.m.	46.4	70.2
			Nighttime	34.8–55.6	51.6–80.7
		7/6/16	Day	51.6–58.1	71.8–88.1
			Evening ²	Not Measured	Not Measured
			Nighttime ³	51.0–54.0	58.6–83.6
LT-2	B Street Pier, 1140 North Harbor Drive, San Diego	7/3/16	Day	57.7–65.8	73.5–86.8
			Evening	55.2–57	72.7–77.3
			9–10 p.m.	56.1	77.3
			Nighttime	51.5–57.4	73–77.6
		7/5/16	Day	55.8–60.2	71.5–80.7
			Evening	60.5–61.5	73.7–82.7
			9–10 p.m.	61.5	82.7
			Nighttime	45.6–59.2	51.8–77.7
		7/6/16	Day	56.6–64.2	76.8–90.2
			Evening ²	Not Measured	Not Measured
			Nighttime ³	45.6–58.5	55–76.3
LT-3	Coronado Municipal Golf Course, 2000 Visalia Row, Coronado	7/3/16	Day	53.4–54.8	67.3–79.6
			Evening	53.6–59.6	75.9–82.6
			9–10 p.m.	59.6	78.6
			Nighttime	58.5–59.5	69.4–81.1
		7/5/16	Day	50.4–60.9	67.3–92
			Evening	49.9–55.9	67.4–79.3
			9–10 p.m.	49.9	69.9
			Nighttime	42.1–52.1	50.8–79.8
		7/6/16	Day	49.2–55.9	70.5–74.6
			Evening ²	Not Measured	Not Measured
			Nighttime ³	42.6–51.4	48.8–76

Site #	Location	Date	Time Period ¹	Range of Hourly Values, dBA	
				L _{eq}	L _{max}
LT-4	Residential neighborhood, in front of 130 East 31 st Street, National City	7/3/16	Day	56.7–58.2	70.8–79.2
			Evening	55.7–57.4	72–75.9
			9–10 p.m.	55.7	75.9
			Nighttime	51.3–54.2	71.9–77.1
		7/5/16	Day	57.4–63.1	73.4–92.4
			Evening	57.3–60.1	74.7–84.7
			9–10 p.m.	57.3	78.7
			Nighttime	47.6–54.7	55.9–80.3
		7/6/16	Day	56.6–60.1	75.3–90.7
			Evening ²	Not Measured	Not Measured
			Nighttime ³	48.3–57.3	60.4–75.6
LT-5	Chula Vista Wildlife Reserve, Chula Vista	7/3/16	Day	44.1–49	60.9–80.1
			Evening	44.4–45.6	58.2–64.7
			9–10 p.m.	44.4	61.0
			Nighttime	42.5–45.6	60–66.6
		7/5/16	Day	43.8–54.9	59.1–83
			Evening	44.3–57.5	56.3–79.6
			9–10 p.m.	44.3	56.3
			Nighttime	36.6–49.3	48–81.4
		7/6/16	Day	39.1–69.1	64.6–93.3
			Evening ²	Not Measured	Not Measured
			Nighttime ³	32.5–47.3	49.2–78.6
LT-6	Imperial Beach Lifeguard Tower, Dempsey Holder Safety Center, 950 Ocean Lane, Imperial Beach	7/3/16	Day	66.4–68.6	76.6–84.3
			Evening	67.5–68.1	79.1–85.4
			9–10 p.m.	67.7	85.4
			Nighttime	66.4–67	74.4–76.8
		7/5/16	Day	64.9–69.1	76.5–100.6
			Evening	66.1–66.6	74.1–78.9
			9–10 p.m.	66.1	74.1
			Nighttime	61.5–66.2	65.8–75.1
		7/6/16	Day	63.4–66.2	71.4–95.2
			Evening ²	Not Measured	Not Measured
			Nighttime ³	61.9–66.1	66.7–76.7

¹ Daytime hours = 7 a.m. to 7 p.m.; evening hours = 7 p.m. to 10 p.m.; nighttime hours = 10 p.m. to 7 a.m. Hourly monitoring at all six sites started between 10 a.m. and 3 p.m. on 7/3/16 and ended between 10 a.m. and 12 p.m. on 7/6/16. Exact monitoring times are provided in Appendix H.

² Data was not gathered during the evening hours (7 p.m. to 10 p.m.) of 7/6/16 because all noise measurements were stopped between 10 a.m. and 12 p.m.

³ Nighttime data on 7/6/16 only refers to data gathered between midnight and 7 a.m. Because noise measurements were subsequently stopped during daytime hours, no additional nighttime data was gathered.

LT3: Coronado Municipal Golf Course

Equipment for monitoring location LT3 was mounted on a tree, approximately 9 feet above the ground, facing south toward Glorietta Bay with unobstructed views of San Diego Bay and Glorietta Bay to the east and south. This location was close to the fence on the side of the golf course's driving range. LT3 is representative of land uses in Coronado around Glorietta Bay. The closest fireworks display event to this location was the Fireworks Show Over Glorietta Bay.

LT4: East 31st Street, National City

Equipment for monitoring location LT4 was mounted on a power pole, approximately 9 feet above the ground, facing west toward the Bay. This location was on the south side of East 31st Street, within a residential neighborhood approximately 0.5 mile east of Interstate (I-) 5 and 1.4 miles east of the Bay. Various intervening structures obscured the view of the Bay. LT4 is representative of inland uses within National City and was more than 4 miles from any of the fireworks display events sites. The closest fireworks display event to this location was actually not within the District's jurisdiction; rather it was an unrelated landside fireworks display event at Kimball Park in National City, approximately 5,500 feet north of LT4.

LT5: Chula Vista Wildlife Reserve, Chula Vista

Equipment for monitoring location LT5 was mounted on a tripod, approximately 5 feet above the ground on the roadway leading to the Chula Vista Wildlife Reserve. Both the road and the reserve are closed to the public. This location had unobstructed views of the Bay to the north, west, and south. LT5 is representative of land uses adjacent to the shoreline in Chula Vista and was approximately 3 miles northeast of the Fourth of July Imperial Beach Fireworks Show display event site.

LT6: Imperial Beach Lifeguard Tower

Equipment for monitoring location LT6 was mounted on a tripod, approximately 5 feet above the exterior deck of the lifeguard tower at the Dempsey Holder Safety Center in Imperial Beach. The deck was on the third floor of the tower with an unobstructed view of the ocean and the Imperial Beach Pier to the west. LT6 is representative of land uses adjacent to the shoreline in Imperial Beach. The closest fireworks display event to this location was the Fourth of July Imperial Beach Fireworks Show.

At each measurement location, L_{eq} and L_{max} noise levels were recorded every minute. This allowed for the noise levels during fireworks display events to be isolated and analyzed, as well as for longer-term noise levels (such as 1-hour L_{eq}) to be calculated. In order to estimate the increases in noise levels due to the fireworks display events, the noise levels measured during the fireworks on Monday, the Fourth of July were compared to the noise levels during the same time period on Sunday, July 3 and Tuesday, July 5.

Long-term ambient noise measurements were conducted using various Type 2 integrating sound level meters (Rion models NL-21 and NL-22, Larson Davis model LxT2, and SoftdB model Piccolo/SLM-P3). Each sound level meter was field-calibrated for accuracy using a Larson Davis model CAL200 acoustical calibrator prior to the measurements.

4.8.4 Applicable Laws and Regulations

4.8.4.1 Federal

Noise Control Act of 1972

The Federal Noise Control Act of 1972 (Public Law 92 574) established a requirement that all federal agencies administer their programs to promote an environment free of noise that would jeopardize public health or welfare. The U.S. Environmental Protection Agency was given responsibility for the following.

- Providing information to the public regarding identifiable effects of noise on public health and welfare.
- Publishing information on the levels of environmental noise that will protect the public health and welfare with an adequate margin of safety.
- Coordinating federal research and activities related to noise control.
- Establishing federal noise emission standards for selected products distributed in interstate commerce.

4.8.4.2 State

California requires each local government entity to perform noise studies and implement a noise element as part of its general plan. State land use guidelines for evaluating the compatibility of various land uses as a function of community noise exposure are presented in Section 4.8.4.3, *Local*, below.

Title 24, California Code of Regulations

Title 24, Part 2 of the California Code of Regulations (California Building Code) governs the interior environment of new buildings. Section 1207 provides standards for noise affecting “dwelling units and sleeping units.” The code states, “Interior noise levels attributable to exterior sources shall not exceed 45 dB in any habitable room. The noise metric shall be either L_{dn} or CNEL, consistent with the noise element of the local general plan.”

4.8.4.3 Local

Port Master Plan

The proposed project is within and/or adjacent to the jurisdiction of the District. Key noise-related policies in the Port Master Plan are described below.

Planning Goals

Section II of the Port Master Plan sets forth goals and related policies for development and operation of land within the District’s jurisdiction.

Goal VIII. The Port District will enhance and maintain the bay and tidelands as an attractive physical and biological entity.

Establish guidelines and standards facilitating the retention and development of an aesthetically pleasing tideland environment free of noxious odors, excessive noise, and hazards to the health and welfare of the people of California.

City of Coronado Municipal Code

Chapter 41.10 of the City of Coronado Municipal Code makes it unlawful for any person to cause noise by any means to the extent that the 1-hour L_{eq} exceeds the applicable limit given in Table 4.8-4, at any location in the City of Coronado on or beyond the boundaries of the property on which the noise is produced. However, these noise limits do not apply to permitted public fireworks displays, as described below (per Chapter 20.16 of the Municipal Code).

Table 4.8-4. City of Coronado Noise Limits

Land Use Zone	Time of Day	1-Hour L_{eq} (dBA)
All R-1A; R-1B (Single-Family Residential)	7 a.m. to 7 p.m.	50
	7 p.m. to 10 p.m.	45
	10 p.m. to 7 a.m.	40
All R-3; R-4; R-PCD; and R-5 (Multi-Family Residential and Planned Community Development Residential)	7 a.m. to 7 p.m.	55
	7 p.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
Commercial (C); Commercial Recreation (C-R); Hotel/Motel (HM); Civic Use (C-U); Open Space (OS); and Parking Overlay (P-1)	7 a.m. to 10 p.m.	60
	10 p.m. to 7 a.m.	50

Source: City of Coronado Municipal Code, Chapter 41.10.

Note: The sound level limit at a location on a boundary between two zoning districts is the arithmetic mean of the respective limits for the two districts.

Chapter 20.16 of the City of Coronado Municipal Code makes it unlawful for any person to commence, conduct, manage, participate in, or sponsor a public display of fireworks without an operations permit. Other regulations of Chapter 20.16 include the following.

- No fireworks display shall be permitted after 10:00 p.m.
- No concussion type, noncolor shells, for example, “salutes” or “report,” greater than three inches shall be used, except those shells which may be larger but do not have decibel readings above 137 decibels.
- No permittee shall conduct more than three public displays of fireworks during any 30-day period.
- The permittee shall provide notice of the time and date of the public display by publishing a notice using a one-eighth page advertisement in a newspaper of general circulation within the city. Notice shall be published no less than five days before the event.

- The City Manager may vary the regulations of this chapter for events which are sponsored by the City or are conducted for the benefit of the general public.

Chapter 20.16 also states that the “regulations of this chapter shall apply to public display of fireworks rather than other noise regulations contained in this code,” indicating that properly permitted fireworks display events are exempt from Chapter 41.10, described above.

City of Chula Vista Municipal Code

Chapter 19.68 of the City of Chula Vista Municipal Code states that “no person shall operate, or cause to be operated, any source of sound at any location within the city or allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person” that causes the noise level to exceed the environmental noise level limits given in Table 4.8-5.

Table 4.8-5. City of Chula Vista Noise Limits

Receiving Land Use Category	Time of Day	1-Hour L_{eq} (dBA)
All Residential (except multiple dwelling)	7 a.m. to 10 p.m. weekdays	55
	8 a.m. to 10 p.m. weekends	
	10 p.m. to 7 a.m. weekdays	45
	10 a.m. to 8 a.m. weekdays	
Multiple Dwelling Residential	7 a.m. to 10 p.m. weekdays	60
	8 a.m. to 10 p.m. weekends	
	10 p.m. to 7 a.m. weekdays	50
	10 a.m. to 8 a.m. weekdays	
Commercial	7 a.m. to 10 p.m. weekdays	65
	8 a.m. to 10 p.m. weekends	
	10 p.m. to 7 a.m. weekdays	60
	10 a.m. to 8 a.m. weekdays	
Light Industry – IR and I-L zone	All day	70
Heavy Industry – I zone	All day	80

Source: City of Chula Vista Municipal Code.

Notes: In the event the alleged offensive noise, as judged by the enforcement officer, contains a steady, audible sound such as a whine, screech, or hum, or contains a repetitive impulsive noise such as hammering or riveting, the standard limits shall be reduced by 5 dB.

If the measured ambient level exceeds the standard limits, the allowable noise exposure standard shall be the ambient noise level.

However, fireworks displays would be considered special events and would be exempt from the noise standards under Section 19.68.060, *Special provision (exemptions)*, of the Municipal Code, which states “The provisions of this title shall not apply to occasional outdoor gatherings, public dances, shows, and sporting and entertainment events.”

Chapter 2.66 of the City of Chula Vista Municipal Code prohibits the discharge any fireworks without the written consent of the City.

City of Imperial Beach Municipal Code

Chapter 9.32 of the City of Imperial Beach Municipal Code addresses noise qualitatively, but does not provide quantitative standards. The code makes it unlawful for any person, firm, association, or corporation to disturb the peace, quiet, and comfort of the community or any portion thereof or neighborhood therein by creating or causing to be created any unreasonably loud or disturbing unnecessary noises in the city. However, fireworks displays permitted by the City are exempted from the noise ordinance pursuant to Section 9.32.060 of the municipal code, which exempts properly permitted civic functions and other activities.

National City Municipal Code

Chapter 12.06 of the National City Municipal Code states that “no person shall operate or cause to be operated any source of sound at any location within the city, or allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person,” that causes the noise level to exceed the environmental noise level limits given in Table 4.8-6 at any point on or beyond the boundaries of the property on which the sound is produced.

Table 4.8-6. National City Noise Limits

Receiving Land Use Category	Time of Day	1-Hour L_{eq} (dBA)
All residential (less than 9 dwelling units)	7 a.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	45
Multi-unit residential (9 dwelling units or more)	7 a.m. to 10 p.m.	60
	10 p.m. to 7 a.m.	50
Commercial	7 a.m. to 10 p.m.	65
	10 p.m. to 7 a.m.	60
Light Industry (Industry east of I-5)	All day	70
Heavy Industry (Industry west of I-5)	All day	80

Source: National City Municipal Code.

Notes: In the event the alleged offensive noise contains a steady, audible sound such as a whine, screech, or hum, or contains a repetitive impulsive noise such as hammering or riveting, or contains music or speech, the standard limits shall be reduced by 5 dBA.

If the measured ambient level exceeds the standard limits, the allowable noise level standard shall be the ambient noise level.

However, fireworks displays within the city are required to have appropriate permits and would follow the appropriate process to obtain an exception to the noise standards as described in Section 12.16.020, *Special permit exceptions for environmental noise*, of the Municipal Code.

The requirement for proper permitting of fireworks is further addressed in Chapter 10.16 of the National City Municipal Code, which prohibits the use, possession, or storage of fireworks within the city except for permitted fireworks exhibitions. For permitted fireworks displays, the code requires that “[a]ll such display or displays of fireworks shall be of such character and so located, discharged or fired, as, in the opinion of the city council shall not be hazardous to surrounding property or endanger any person or persons.”

City of San Diego Municipal Code 59.5.0401 (Noise Ordinance)

The Noise Ordinance makes it unlawful for any person to cause noise by any means to the extent that the 1-hour L_{eq} exceeds the applicable limit given in Table 4.8-7 at any location in the City of San Diego on or beyond the boundaries of the property on which the noise is produced. However, the code also exempts permitted fireworks displays from these standards, stating “[t]his section does not apply to fireworks displays authorized by permit from the Fire Department.”

Table 4.8-7. City of San Diego Noise Limits

Land Use	Time of Day	1-Hour L_{eq} (dBA)
Single Family Residential	7 a.m. to 7 p.m.	50
	7 p.m. to 10 p.m.	45
	10 p.m. to 7 a.m.	40
Multi-Family Residential (up to a maximum density of 1/2,000)	7 a.m. to 7 p.m.	55
	7 p.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
All Other Residential	7 a.m. to 7 p.m.	60
	7 p.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50
Commercial	7 a.m. to 7 p.m.	65
	7 p.m. to 7 a.m.	60
Industrial or Agricultural	Any time	75

Source: City of San Diego Municipal Code.

Note: The sound level limit at a location on a boundary between two zoning districts is the arithmetic mean of the respective limits for the two districts.

4.8.5 Project Impact Analysis

4.8.5.1 Methodology

In order to quantify noise levels from the proposed new fireworks display events, noise monitoring was conducted at six locations (LT1 through LT6) in the project vicinity between Sunday, July 3, and Wednesday, July 6, 2016, as described in Section 4.8.3.1, *Noise Monitoring*, and shown in Figure 4.8-1. These measurements were obtained to quantify noise levels from fireworks display events and provide reference data to be used in estimating potential future noise levels and impacts associated with the proposed project. The following Fourth of July fireworks display events were measured.

1. The Big Bay Boom: A fireworks display event using four launch barges in San Diego Bay.
2. Fourth of July Imperial Beach Fireworks Show: A fireworks display event with fireworks launched from the middle portion of Imperial Beach Pier.
3. The Fireworks Show Over Glorietta Bay: A fireworks display event using one launch barge adjacent to Coronado in Glorietta Bay.

Measurement locations LT1, LT2, LT3, and LT6 were chosen to be generally representative of land uses on or close to the waterfront that would be exposed to the highest levels of noise as a result of the fireworks display events. LT4 and LT5 were chosen to investigate noise levels at other cities around San Diego Bay that are not immediately adjacent to the Fourth of July fireworks displays. LT1 and LT2 were the closest measurements to the Big Bay Boom, measurement LT3 was closest to the Fireworks Show Over Glorietta Bay, and LT6 was closest to the Fourth of July Imperial Beach Fireworks Show. LT4 and LT5 were between 3 and 7 miles from the various fireworks display events. Photos of each measurement location are provided in Appendix H.

A noise model, provided in Appendix H, was developed using the measured noise levels and geographical coordinates of the fireworks launch locations and receivers to analyze the noise level contributions of each launch location and to estimate the associated sound power. These sound power levels were then used to estimate noise contour distances from each launch location as well as noise levels from other existing and proposed fireworks display events.

4.8.5.2 Thresholds of Significance

The following significance criteria are based on Appendix G of the State CEQA Guidelines and the City of San Diego's CEQA Significance Determination Thresholds and provide the basis for determining significance of impacts associated with noise and vibration resulting from the proposed project. The determination of whether a noise impact would be significant is based on the applicable noise thresholds and the professional judgment of the District as Lead Agency supported by the recommendations of qualified personnel at ICF and based wholly on the substantial evidence in the administrative record.

Impacts are considered significant if the proposed project would result in any of the following.

1. Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies.
2. Expose persons to or generate excessive groundborne vibration or groundborne noise levels.
3. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
4. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. This impact would occur if the 1-hour L_{eq} generated by a fireworks display event would exceed the ambient 1-hour L_{eq} by 10 dBA or more at any noise-sensitive receptor.
5. Expose people residing or working in the project area within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, to excessive noise levels.
6. Expose people residing or working in the project area within the vicinity of a private airstrip to excessive noise levels.

The analysis of whether the proposed project would have a significant impact associated with noise and vibration under Thresholds 2, 3, 5, and 6 is provided in Section XII of the Initial Study/Environmental Checklist (Appendix A), which determined that the project would not result in significant impacts related to groundborne vibration, permanent increases in noise, and public and

private airport/airstrips. The analysis and conclusions in Section XII of the Initial Study/Environmental Checklist are incorporated by reference in this section of the Draft EIR and are summarized in Section 6.4, *Effects Not Found to Be Significant*, of Chapter 6. Therefore, only Thresholds 1 and 4 are discussed in the impact analysis that follows.

4.8.5.3 Project Impacts and Mitigation Measures

Threshold 1: Implementation of the proposed project would not expose persons to or generate noise levels in excess of standards established in the applicable city's municipal code.

Impact Discussion

Proposed New Fireworks Display Events

Fireworks Display Events

It is noted that each of the five cities considered within the project study area have procedures in place to issue permits for fireworks display events and to exempt such events from the noise limits prescribed in their respective municipal codes. The cities also do not seek to, nor would they have jurisdiction to, impose their typical noise limits on fireworks display events occurring within neighboring cities. Although the new fireworks display events proposed at the National City and Chula Vista Bayfronts as part of the project would temporarily generate high noise levels at nearby sensitive receptors (estimated noise levels are analyzed under Threshold 4, below), the proposed ordinance would require all fireworks display events to obtain all required permits and to comply with local regulations. Accordingly, all of the displays allowed under the proposed project would be appropriately permitted and exempted from the noise limits of the applicable Municipal Code noise standards of the affected cities. As such, impacts would be less than significant for all proposed fireworks display events throughout the study area.

Traffic

The Transportation Assessment (Appendix J) provides traffic data and analysis from Fourth of July and non-Fourth of July fireworks display events at a range of locations. In order to evaluate the potential traffic noise impacts associated with the Fourth of July fireworks display events proposed as part of the project, it was assumed that traffic data for the Fourth of July event at the Imperial Beach Oceanfront would provide the most representative example. This was based on the general similarities between the Imperial Beach fireworks display event and the proposed new fireworks display events (i.e., single launch location, distinct to an individual city, relatively large separation from the launch location to the nearest related display, same size of display on Fourth of July). The Transportation Assessment indicates increases in vehicular volumes of up to 37 percent on studied roadway segments due to the Fourth of July fireworks display event.

In order to evaluate the potential traffic noise impacts associated with the non-Fourth of July fireworks display events proposed as part of the project, it was assumed that traffic data for the End of WWII 70th Anniversary event, which was the sample non-Fourth of July display studied in the Transportation Assessment, would provide the most representative example. This was based on the smaller overall size of the End of WWII 70th Anniversary event when compared to the sample Fourth

of July fireworks display event. The Transportation Assessment indicates increases in vehicular volumes of 18 to 28 percent on studied roadway segments within the City of San Diego during this event.

All else being equal, traffic volumes would have to double (i.e., increase by 100 percent) to cause a barely detectable noise increase of 3 dB. Therefore, with traffic volume increases of up to 37 percent during Fourth of July and up to 28 percent during other events, no substantial change to traffic noise levels is predicted to occur as a result of the proposed new fireworks display events, and the potential impact would be less than significant.

Effect of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern the continuation of fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance does not include any conditions pertaining to noise level in excess of standards established in the applicable city's municipal code and, therefore, would not result in any change to the existing condition. Under the proposed ordinance, fireworks display events would continue to be required to comply with local noise regulations and to obtain special event or fireworks display permits from the affected city. These permits exempt fireworks display events from local noise standards. Therefore, the effect of the proposed ordinance on existing fireworks display events would not expose persons to or generate noise levels in excess of standards established in the applicable city's municipal code, and no significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

Implementation of the proposed new fireworks display events would not expose persons to or generate noise levels in excess of standards established in the applicable city's municipal code because permitted fireworks display events are exempted from the noise level limits of the National City and Chula Vista Municipal Codes, as well as the surrounding member cities. Therefore, impacts would be less than significant.

Effect of Proposed Ordinance on Existing Fireworks Display Events

Under the proposed ordinance, existing fireworks display events would continue to be required to comply with local noise regulations and to obtain special event or fireworks display permits from the affected city. These permits exempt fireworks display events from local noise standards. Therefore, the effect of the proposed ordinance on existing fireworks display events would not expose persons to or generate noise levels in excess of standards established in the applicable city's municipal code, and no significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

No mitigation is required.

Effect of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance After Mitigation**Proposed New Fireworks Display Events**

Impacts would be less than significant.

Effect of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impacts would occur.

Threshold 4: Implementation of the proposed project would result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the proposed project.

Impact Discussion

For the purposes of quantifying noise levels for the proposed new fireworks display events, measured data from existing fireworks display events were analyzed and extrapolated. Noise levels were measured at six locations during the 2016 Fourth of July fireworks display events as described in Section 4.8.5.1, *Methodology*. These events included the Big Bay Boom, Fourth of July Imperial Beach Fireworks Show, and the Fireworks Show Over Glorietta Bay. Analyzing the minute-by-minute data provided in Appendix H, it was possible to calculate the L_{eq} and L_{max} noise levels at each location during the fireworks display events. Table 4.8-8 summarizes the noise levels measured during the fireworks display events, along with the duration of the fireworks display event measured at each location. Using these data, it was also possible to calculate the equivalent 1-hour L_{eq} generated by the fireworks display events at each location.

The measured fireworks display event noise levels at LT4 in National City were substantially higher than would be expected based on the distances to the various fireworks display events within San Diego Bay and Imperial Beach. Research was conducted to determine what other noise sources in the area may have contributed to the measured noise levels, and it was determined that a simultaneous landside fireworks display took place on the Fourth of July at Kimball Park in National City, approximately 5,500 feet north of LT4. The data from LT4 that was substantially affected by the Kimball Park display is noted in Table 4.8-8.

Because the primary fireworks display events of interest for this project are those occurring in San Diego Bay and at Imperial Beach Oceanfront, it is informative to consider the noise levels that would occur at each measurement location as a result of only those fireworks displays. Therefore, the fireworks noise model in Appendix H was used to estimate the “corrected” noise levels for the combined Fourth of July fireworks noise levels excluding noise from the Kimball Park display. The results of this analysis are reported in Table 4.8-9. The results indicate that Fourth of July fireworks noise levels would be much lower at LT4 without the event at Kimball Park, and slightly lower at LT5. All of the other measurement locations are far from Kimball Park (3.5 miles or farther) and very close to San Diego Bay or the Imperial Beach Oceanfront fireworks display events; therefore, the effects of the Kimball Park display are negligible at LT1, LT2, LT3, and LT6.

Table 4.8-8. Measured Fourth of July Fireworks Noise Levels From All Sources

Noise Monitoring Location	Fireworks Display Events			
	Event L_{eq}	Event L_{max}	Duration	1-Hour L_{eq}^a
LT1 San Diego Harbor Police Department Shelter Island Station, San Diego	71.6 dBA	98.7 dBA	19 minutes	66.6 dBA
LT2 B Street Pier, San Diego	88.5 dBA	107.1 dBA	19 minutes	83.5 dBA
LT3 Coronado Municipal Golf Course	76.2 dBA	95.9 dBA	20 minutes	71.4 dBA
LT4 East 31 st Street, National City	63.6 dBA ^b	84.1 dBA ^b	19 minutes	57.8 dBA ^b
LT5 Chula Vista Wildlife Reserve, Chula Vista	51.7 dBA	75.7 dBA	19 minutes	45.8 dBA
LT6 Dempsey Holder Safety Center Lifeguard Tower, Imperial Beach	87.0 dBA	107.2 dBA	18 minutes	81.7 dBA

^a All 1-hour L_{eq} 's have been corrected for ambient noise; i.e., ambient noise levels have been subtracted from the total measured noise level to calculate the noise level attributable to fireworks noise alone.

^b The measured noise levels at LT4 are attributable to National City Fourth of July fireworks at Kimball Park rather than San Diego Bay/Imperial Beach fireworks display events.

Table 4.8-9. Corrected Fourth of July Fireworks Noise Levels for San Diego Bay/Imperial Beach Oceanfront Displays Only

Noise Monitoring Location	Fireworks Display Events				Ambient 1-Hour L_{eq}
	Event L_{eq}^a	Event L_{max}^b	Duration	1-Hour L_{eq}^a	
LT1 San Diego Harbor Police Department Shelter Island Station, San Diego	71.6 dBA	98.7 dBA	19 minutes	66.6 dBA	46.4–57.7
LT2 B Street Pier, San Diego	88.5 dBA	107.1 dBA	19 minutes	83.5 dBA	56.1–61.5
LT3 Coronado Municipal Golf Course	76.2 dBA	95.9 dBA	20 minutes	71.4 dBA	49.9–59.6
LT4 East 31 st Street, National City	42.1 dBA	--	19 minutes	37.1 dBA	55.7–57.3
LT5 Chula Vista Wildlife Reserve, Chula Vista	48.7 dBA	--	19 minutes	43.7 dBA	44.3–44.4
LT6 Dempsey Holder Safety Center Lifeguard Tower, Imperial Beach	87.0 dBA	107.2 dBA	18 minutes	81.7 dBA	66.1–67.7

All L_{eq} values have been corrected for ambient noise; i.e., ambient noise levels have been subtracted from the total measured noise level to calculate the noise level attributable to fireworks noise alone.

^b L_{max} not reported at LT4 or LT5 because measured L_{max} cannot reliably be attributed to San Diego Bay or Imperial Beach Oceanfront fireworks display events.

The same fireworks noise model was used to estimate the noise contour distances (i.e., the distances at which various 1-hour L_{eq} 's would occur) from each of the launch sites for the measured fireworks display events. These contour distances are shown in Table 4.8-10.

Table 4.8-10. Estimated Noise Contours from Measured Fourth of July Launch Locations

1-Hour L_{eq} Noise Contour	Contour Distance From Fireworks Launch Locations (feet)					
	Shelter Island Barge	Harbor Island Barge	North Embarcadero Barge	Central Embarcadero Barge	Glorietta Bay	Imperial Beach Pier
80 dBA	1,665	1,665	1,665	1,660	1,000	1,040
75 dBA	2,680	2,675	2,675	2,675	1,665	1,725
70 dBA	4,135	4,135	4,135	4,135	2,685	2,765
65 dBA	6,065	6,065	6,065	6,065	4,135	4,255
60 dBA	8,500	8,500	8,500	8,500	6,080	6,230
55 dBA	11,385	11,385	11,385	11,385	8,515	8,695
50 dBA	14,665	14,665	14,665	14,665	11,395	11,615
45 dBA	18,280	18,280	18,280	18,280	14,680	14,920

Proposed New Fireworks Display Events

The proposed new fireworks display events would consist of two Fourth of July fireworks display events (one at National City Bayfront and one at Chula Vista Bayfront) and two non-Fourth of July fireworks display events (both at Chula Vista Bayfront). Each of the proposed new Fourth of July fireworks display events are anticipated to use 456 total pounds of fireworks for up to 20 minutes with approximate shell sizes ranging from 3 to 8 inches. All of these variables (total pounds, duration, and shell size) are very similar to the Fourth of July Imperial Beach Fireworks Show measured in 2016. Therefore, it was assumed that the noise levels generated by the proposed new Fourth of July displays (and associated noise contour distances) would be the same as those for the Fourth of July Imperial Beach Fireworks Show.

Each of the other two proposed new non-Fourth of July fireworks display events are assumed to have a duration of approximately 3 to 10 minutes and to use one quarter of the total pounds of fireworks when compared to the proposed new Fourth of July fireworks display events. This reduction in total pounds equates to a noise reduction of 6 dBA in the 1-hour L_{eq} .¹ Therefore, it was assumed that the 1-hour L_{eq} generated by these proposed new non-Fourth of July fireworks display events would be 6 dBA quieter than those for the measured Fourth of July Imperial Beach Fireworks Show.

The precise future locations of the launch barges to be used for the proposed new fireworks display events have not yet been established. To provide a basis for analysis, the assumed locations indicated in Figure 4.8-1 were used. These locations were established by assuming each of the launch barges would be placed as close as possible to the respective Bayfront (Chula Vista or National City) while still maintaining a minimum buffer distance of 1 mile from nesting habitat for sensitive bird species (as suggested by the proposed ordinance that would apply to the displays).

The noise model in Appendix H was used to estimate the noise levels as a result of these proposed new fireworks display events. Table 4.8-11 indicates the assumed source noise levels for each

¹ L_{eq} reduction for reduced pounds of fireworks from 456 to 114 pounds calculated as: $10 \times \log(114/456) = -6$ dB.

proposed new fireworks display event at a standard reference distance of 50 feet. (These levels do not represent the noise at any specific receiver; they are reported to illustrate the relative difference in noise source levels estimated for each proposed display.) Based on these source levels, Table 4.8-12 summarizes the resulting estimated noise contour distances for each of the proposed new fireworks display events.

Table 4.8-11. Estimated 1-Hour L_{eq} at 50 Feet From Proposed New Fireworks Display Events

	Chula Vista, Fourth of July	National City, Fourth of July	Chula Vista, Other Non-Fourth of July (2 events)
1-Hour L_{eq} at 50 feet	107 dBA	107 dBA	101 dBA
Note: A standard reference distance of 50 feet is used to provide a comparison of the noise levels from each proposed fireworks display event. These reference noise levels do not represent the noise at any specific receiver.			

Table 4.8-12. Estimated Noise Contours From Proposed New Fireworks Display Events

1-Hour L_{eq} Noise Contour	Contour Distance From Fireworks Launch Locations (feet)		
	Chula Vista, Fourth of July	National City, Fourth of July	Chula Vista, Other
80 dBA	1,040	1,040	550
75 dBA	1,730	1,725	935
70 dBA	2,765	2,765	1,565
65 dBA	4,255	4,255	2,525
60 dBA	6,230	6,230	3,920
55 dBA	8,695	8,695	5,800
50 dBA	11,615	11,615	8,170
45 dBA	14,920	14,920	10,995

Because the project study area is so large and consists of many varied land uses and neighborhoods, ambient noise levels vary widely throughout the study area. The measured ambient 1-hour L_{eq} (for the 9 p.m. to 10 p.m. hour when fireworks display events would occur) varies from 44.3 dBA at the Chula Vista Wildlife Reserve (LT5) to 67.7 dBA at the Dempsey Holder Safety Center Lifeguard Tower (LT6). (Refer to Table 4.8-3 for additional details of the measured ambient noise levels.)

Each jurisdiction's noise standards are a useful tool for providing a standardized set of assumptions regarding ambient noise levels. Knowing that development within each city should typically be required to comply with the relevant noise standards of the municipal code, it is reasonable to assume that ambient noise levels at the various noise-sensitive land uses within each city will be close to the applicable noise standards. Table 4.8-13, below, summarizes the noise standards for each city that would apply during the anticipated fireworks display event time period of 9 p.m. to 10 p.m. Using these assumed ambient noise levels, it is then possible to estimate the distances at which noise from each of the various fireworks launch locations would exceed the ambient noise levels by 10 dBA and create a significant impact. Because the City of Imperial Beach does not have

quantitative noise standards, the assumed ambient noise level is conservatively based on the lowest assumed ambient noise level of the other cities.

Table 4.8-13. Assumed Ambient Noise Levels at Noise-Sensitive Uses, 9 p.m. to 10 p.m.

Land Use	San Diego	Coronado	National City	Chula Vista	Imperial Beach
Single-Family Residential	45	45	55	55	45
Multi-Family Residential	50	50	60	60	50
Other Residential	55	--	--	--	--
Commercial	60	60	65	65	60

Note: The City of Imperial Beach does not have quantitative noise standards; the assumed ambient noise level is based on the San Diego/Coronado Municipal Code noise standards.

Guest lodging facilities, such as hotels, are not considered by the District to be sensitive to daytime noise from project operation; however, they are considered to be sensitive to potential evening and nighttime noise (i.e., noise generated by the project between 7 p.m. and 7 a.m.). Parks are generally closed during nighttime hours so are only considered to be sensitive during the daytime and evening hours of 7 a.m. to 10 p.m. For the purposes of this analysis, both hotels and parks are considered to be commercial land uses.

Proposed New Fourth of July Fireworks Display Event Impacts

Based on the assumed ambient noise levels in Table 4.8-13, for receptors within National City and Chula Vista (which both have the same assumed ambient noise levels), proposed new Fourth of July fireworks display events in National City and Chula Vista Bayfronts would generate a significant impact at any single-family homes (a 1-hour L_{eq} of 65 dBA or more) within 4,255 feet, a significant impact at any multi-family homes (a 1-hour L_{eq} of 70 dBA or more) within 2,765 feet, and a significant impact at any noise-sensitive commercial uses (a 1-hour L_{eq} of 75 dBA or more) within 1,730 feet (see Table 4.8-12). Because these Fourth of July fireworks display events would be required to maintain a minimum buffer distance of 1 mile from nesting habitat for sensitive bird species as a condition of the proposed ordinance and required with the implementation of mitigation measure **MM-NOI-1**, there would be no noise-sensitive receptors in National City or Chula Vista within 4,255 feet of either launch location, and impacts would be less than significant in these cities.

For receptors within the City of Coronado, the proposed fireworks display events would generate a significant impact at any single-family homes (a 1-hour L_{eq} of 55 dBA or more) within 8,695 feet, a significant impact at any multi-family homes (a 1-hour L_{eq} of 60 dBA or more) within 6,230 feet, and a significant impact at any noise-sensitive commercial uses (a 1-hour L_{eq} of 70 dBA or more) within 2,765 feet (see Table 4.8-12). For both the National City and Chula Vista Fourth of July fireworks display events, these impact distances include many homes to the west in the City of Coronado. For the Chula Vista Fourth of July fireworks display event, the impact distances would also include Grand Caribe Shoreline Park in the City of Coronado and, depending on the precise location of the launch barge, could also include a hotel (Loews Coronado Bay Resort). Impacts at these receptors would be significant (**Impact-NOI-1**).

Significant impacts are not anticipated to extend to any other noise-sensitive land uses within Coronado or any other cities. It is noted, however, that if the ultimate location of the launch barge for

the proposed Chula Vista fireworks display event is closer to the Chula Vista Bayfront than was assumed in the analysis (i.e., less than 1 mile from nesting habitat for sensitive bird species), then it is possible some significant impacts could occur within the City of Chula Vista; these impacts would occur at single-family homes, multi-family homes, or noise-sensitive commercial uses located within 4,255 feet, 2,765 feet, or 1,730 feet, respectively, from the launch barge location (**Impact-NOI-1**).

Moving either launch barge east toward the National City and Chula Vista Bayfronts would reduce the level of impact in the City of Coronado; while impacts would not be reduced to less than significant, there would be fewer impacted receivers, and the magnitude of the noise increases at the remaining impacted receivers would be reduced.

Proposed New Other Non-Fourth of July Fireworks Display Events

For receptors within the City of Chula Vista, the proposed new other non-Fourth of July fireworks display events would generate a significant impact at any single-family homes (a 1-hour L_{eq} of 65 dBA or more) within 2,440 feet, a significant impact at any multi-family homes (a 1-hour L_{eq} of 70 dBA or more) within 1,510 feet, and a significant impact at any noise-sensitive commercial uses (a 1-hour L_{eq} of 75 dBA or more) within 895 feet (see Table 4.8-12). Because the assumed launch location would be more than 2,440 feet from the closest receptors in the City of Chula Vista, impacts within the City of Chula Vista would be less than significant.

For receptors within the City of Coronado, these fireworks display events would generate a significant impact at any single-family homes (a 1-hour L_{eq} of 55 dBA or more) within 5,640 feet, a significant impact at any multi-family homes (a 1-hour L_{eq} of 60 dBA or more) within 3,800 feet, and a significant impact at any noise-sensitive commercial uses (a 1-hour L_{eq} of 70 dBA or more) within 1,510 feet (see Table 4.8-12). Based on the assumed location of the launch barge, these impact distances include the Coronado Cays homes and Grand Caribe Shoreline Park to the west in the City of Coronado. Impacts at these receptors would be significant (**Impact-NOI-1**).

Significant impacts are not anticipated to extend to any other noise-sensitive land uses within Coronado or any other cities. It is noted, however, that if the ultimate location of the launch barge for the proposed fireworks display events is closer to the Chula Vista Bayfront than was assumed in the analysis (i.e., less than 1 mile from nesting habitat for sensitive bird species) then it is possible some significant impacts could occur within the City of Chula Vista; these impacts would occur at any single-family homes, multi-family homes, or noise-sensitive commercial uses located within 2,440 feet, 1,510 feet, or 895 feet, respectively, of the launch barge location (**Impact-NOI-1**).

Moving the launch barge east toward the Chula Vista Bayfront would reduce the level of impact in the City of Coronado. As the launch location is moved farther east there would be fewer impacted receivers in Coronado, and the magnitude of the noise increases at the remaining impacted receivers would be reduced. If the launch barge were to be located more than 5,640 feet from single-family homes in Coronado impacts in Coronado would be reduced to less than significant.

Traffic

As discussed above, a review of the Transportation Assessment (Appendix J) indicates only modest changes in vehicular volumes in the study area due to a Fourth of July fireworks display event, with even smaller changes associated with a smaller non-Fourth of July fireworks display event.

Therefore, no substantial change to traffic noise levels is predicted as a result of the proposed new non-Fourth of July fireworks display events, and the impact would be less than significant.

Effect of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would apply to fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance contains several conditions of approval intended to limit impacts on sensitive biological resources. These conditions would require the fireworks display events that occur during the nesting season to either be located outside a 1-mile radius from sensitive habitats, or to both limit maximum shell size to 8 inches and avoid the use of salutes within the first quarter of a fireworks display event. It is not anticipated that any of the existing fireworks display events launch locations would be moved as a result of the ordinance. As a result, the noise levels from existing fireworks display events would remain largely unchanged except for potential abatement (reduction) that would occur as a result of limiting shell sizes and salutes. As such, the effects of the proposed ordinance on existing fireworks display events would not result in an increase in ambient noise levels. Therefore, no significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events would result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the proposed project (**Impact-NOI-1**). Potentially significant impact(s) include the following.

Impact NOI-1: Substantial Periodic or Temporary Increase in Ambient Noise Levels of the Proposed New Fireworks Display Events. For proposed new fireworks display events (both Fourth of July and non-Fourth of July events), these noise increases would occur at homes and the Grand Caribe Shoreline Park in the City of Coronado, west of the proposed National City and Chula Vista launch locations. Depending on the precise location of the proposed Chula Vista launch barge, substantial noise increases due to the proposed new Fourth of July fireworks display events may also occur at Loews Coronado Bay Resort. If the ultimate location of the launch barge for the proposed Chula Vista fireworks display event is closer to the Chula Vista Bayfront than was assumed in the analysis then it is possible some significant impacts could also occur within the City of Chula Vista. Because the proposed new fireworks display events would occur at locations that do not currently have similar fireworks displays, the affected noise-sensitive receptors are not currently exposed to similar levels of fireworks noise and the impacts would be significant. However, it is also noted that the impacts would be very infrequent (approximately three times per year) and would include the Fourth of July, which is a traditional nationwide event during which most people have a reasonable expectation and understanding that fireworks will occur.

Effect of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not cause or contribute to any increase in ambient noise levels. Therefore, no significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

MM-NOI-1: Implementation of Noise-Related Conditions of the Proposed Ordinance. The fireworks organizer and operator are required to comply with the following noise related conditions of the proposed ordinance.

Section X.07 – Permits – Conditions of Approval

- (e) Protection of Sensitive Species and Habitat. The following conditions shall apply to fireworks display events that occur between February 15 and September 15 (i.e., avian breeding season) and are located less than one (1) mile from any federally or state-listed avian species nesting colonies:
1. Location. Fireworks display events shall be located not less than one (1) mile from any federally or state-listed avian species nesting colony unless the maximum size of shells used in the event is limited to eight (8) inches.
 2. Salutes. Fireworks display events shall not use concussion type, non-color shells such as “salutes” or “reports” during the initial twenty-five percent (25 percent) of the duration of any display (e.g., within the first 5 minutes of a 20-minute display).

Effect of Proposed Ordinance on Existing Fireworks Display Events

No mitigation required.

Level of Significance After Mitigation

Proposed New Fireworks Display Events

Implementation of mitigation measure **MM-NOI-1** would provide some reduction in overall noise levels from proposed new fireworks display events. The exact amount of noise reduction provided by these conditions cannot be quantified because of the many variables (e.g., precise numbers and types of fireworks to be used, size or shells, etc.), but the reductions would be modest. Because loud noise (including noise levels that are intended to be significantly higher than ambient conditions) is considered an integral part of traditional fireworks display events, mitigation measures, such as avoiding the use of noise-generating fireworks (i.e., using silent fireworks), would fundamentally change the nature of the proposed project and the overall audible experience of the display. No other mitigation measures have been identified. Therefore, impacts would be significant and unavoidable.

To reduce noise impacts associated with the proposed project, various alternatives to traditional fireworks display events are discussed in Chapter 7, *Alternatives to the Proposed Project*, of this Draft EIR.

Effect of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impacts would occur.

Section 4.9

Public Services and Facilities

4.9.1 Overview

This section addresses public service providers' ability to serve the proposed project in accordance with adopted performance standards and discusses whether a potential inability to meet a performance standard would require new or expanded facilities.

The discussion below describes the existing public services and facilities that could be adversely affected by the proposed project; outlines the applicable laws and regulations related to public services and facilities; and analyzes the proposed project's potential effect on (1) fire and emergency response and facilities, (2) police response and facilities, (3) and other public facilities. All other public services and facilities issues, including potential impacts on schools and parks, were addressed in Section XIV of the Initial Study/Environmental Checklist (Appendix A) and were determined to be less than significant. The analysis and conclusions regarding these impacts are also summarized in Chapter 6, Section 6.4, *Effects Not Found to be Significant*.

The analysis is based on the responses of fire, emergency, and police providers to a project description and a questionnaire regarding whether the proposed project would significantly affect the respective provider's ability to provide services and could lead to a need to construct new or expanded facilities. The responses are incorporated in the analysis below and are provided as Appendix I of this EIR.

Based on the analysis that follows, all impacts related to public services and facilities would be less than significant. No mitigation is required.

4.9.2 Existing Conditions

The following section describes the agencies that currently do, or in the future would, provide fire, police, and other public services within the water and land side for fireworks display events within San Diego Bay and the Imperial Beach Oceanfront that require a discretionary action by the District or are operated by the District's tenants.

4.9.2.1 Fire Protection and Emergency Response

City of San Diego Fire-Rescue Department

The City of San Diego Fire-Rescue Department (SDFD) service area covers 331 square miles; SDFD is responsible for 17 miles of coastline extending 3 miles offshore and serves a population of approximately 1,337,000 people. SDFD has 48 fire stations and employs approximately 1,139 uniformed personnel and 161 civilian personnel, for a total of 1,300 personnel (SDFD 2016).

SDFD provides fire protection and emergency services for fireworks display events that require a Special Event Permit from the City, such as the Big Bay Boom and any displays associated with the

San Diego Symphony Summer Pops, Our Lady of Rosary Church, U.S.S. Midway Museum, and NASSCO. For barge-based fireworks display events, SDFD provides these services on the barges and in any landside viewing areas within the City. SDFD reviews special event applications, issues permits for barge setup and preparation, and provides inspection services on the barges during fireworks display events in accordance with the California Health and Safety Code, Sections 12500–12759, Title 19, California Code of Regulations, Chapter 6 Fireworks, and the California Department of Forestry and Fire Protection’s *Fireworks in California* handbook (Appendix C).

For landside fire protection and emergency services, four SDFD fire stations respond in the event of a fireworks-related emergency along San Diego Bay:

- Fire Station 22 at 1055 Catalina Boulevard
- Fire Station 1 at 1222 1st Avenue
- Fire Station 4 at 404 8th Avenue
- Fire Station 7 at 944 Cesar E. Chavez Parkway

Fire Station 22 is the primary responding unit to incidents near Shelter Island; it has one engine (Becker pers. comm.; SDFD 2016). Fire Station 1 is the primary responding unit to incidents near Harbor Island and North Embarcadero; it has one battalion, two engines, one truck, one light and air unit, one chemical rig, one medic, one mobile canteen, and one x-ray unit. Fire Station 4 is the primary responding unit to incidents near the South Embarcadero, including Embarcadero Marina Park South; it has one engine and one heavy rescue vehicle. Fire Station 7 is the primary responding unit to incidents along central San Diego Bay, near the community of Barrio Logan; it has one engine. The difference between a fire engine and a fire truck is that an engine is the primary piece of fire apparatus for carrying personnel, water, hoses, and pumping equipment, while trucks carry equipment and ladders, but do not have water tanks. A battalion chief’s vehicle is a red sport utility vehicle that will respond with both lights and siren to the scene of incidents.

SDFD uses the National Fire Protection Association (NFPA) 1710 Standard for the Organization and Deployment of Fire Suppression Operations to determine adequate response times. This standard uses a “best practice” initial response time of four firefighters within 5 minutes (1 minute for dispatch and 4 minutes for travel) and an effective fire force of 15 firefighters within 9 minutes (1 minute for dispatch and 8 minutes for travel) (CFD 2010). The current response times of the primary responding units to areas along San Diego Bay within their respective jurisdictions varies between 3–10 minutes.

San Diego Harbor Police Department

Harbor Police Department (HPD) provides law enforcement and marine firefighting services in and around San Diego Bay for the District. Specifically, HPD’s jurisdiction includes all tidelands extending through five member cities: San Diego, Coronado, National City, Chula Vista, and Imperial Beach. There are four HPD offices: downtown San Diego, San Diego International Airport, Chula Vista, and Shelter Island. The downtown San Diego office is at 3380 North Harbor Drive and serves as the headquarters and administration building, while the substations are at 1401 Shelter Island (Police Dock), “J” Street (South Bay), and San Diego International Airport at Lindbergh Field. As of November 2016, HPD has 130 sworn officers, all trained as firefighters and police officers (District 2016). HPD is composed of the following departments as they pertain to fire protection and emergency response.

- **Marine Firefighting** – Marine firefighter officers with HPD are unique because they are cross-trained as both land- and marine-based firefighters. The patrol boats also serve as firefighting boats that respond to fire emergencies in the Bay. Each officer is highly trained and fully equipped with firefighting equipment, and each boat includes a water cannon capable of shooting a stream of water several hundred feet. The fireboats can handle small electrical fires or a large vessel engulfed in flame by containing the fire, knocking it down, rescuing trapped victims, and protecting adjacent vessels in a marina. The fireboats can be cooperatively used with SDFD if necessary, and SDFD takes control of fire protection service upon arrival at the scene.
- **Vessel Patrol** – HPD vessels patrol San Diego Bay, its associated waterways, and coastal areas, similar to the way it patrols on land. These vessels are staffed 24 hours a day, in all types of weather. The primary function is being able to respond to all types of law enforcement-related issues. Additionally, part of the fleet is designed for response to any fire and rescue-related calls. All of HPD's vessels can also accommodate the Dive Rescue Team and the different missions they handle (District 2016). HPD provides two 35-foot patrol boats crewed by two officers with the primary objective of enforcing the rules of the water as they pertain to private watercraft. A third boat is available for peak events in the San Diego Bay.

City of Coronado Fire Department

The Coronado Fire Department provides fire protection and emergency services for fireworks display events in the City, such as the Fireworks Show Over Glorietta Bay. For barge-based fireworks display events, the Coronado Fire Department provides these services on the barge and within landside viewing areas in the City. The Coronado Fire Department has 30 fire suppression personnel staffing two fire stations on a 24-hour basis. The Coronado Fire Department also provides lifeguard service to the City's ocean beaches, and has access to a small boat for bay use. The main station in the middle of the village has one Advanced Life Support (ALS) assessment fire engine and one ambulance, while the Coronado Cays station has one ALS assessment fire engine. The Coronado Fire Department has mutual aid agreements with other governmental agencies such as the Navy, SDFD, and the City of Imperial Beach. The Coronado Fire Department also relies heavily on District assistance for fighting fires in the bay (City of Coronado 2005).

The Coronado Fire Department uses the NFPA 1710 Standard for the Organization and Deployment of Fire Suppression Operations to determine adequate response times. The Coronado Fire Department's first engine company is predicted to be on scene in 4 minutes or less, which meets the NFPA 1710 standard. However, if the entire first alarm is not on scene in 8 minutes or less, the NFPA 1710 guideline would not be met (Blood pers. comm.). The Coronado Fire Department utilizes a robust Automatic Aid System and the bulk of this response comes from surrounding agencies. Additional resources can be requested on an as-needed basis by the Incident Commander.

The Coronado Fire Department reviews special event applications, issues permits for barge setup and preparation, and provides inspection services on the barge during fireworks display events in accordance with the California Health and Safety Code, Sections 12500–12759, Title 19, California Code of Regulations, Chapter 6 Fireworks, and the *Fireworks in California* handbook (Appendix C).

City of National City Fire Department

The National City Fire Department provides fire protection and emergency medical services in National City, and the Lower Sweetwater Fire Protection District covers the unincorporated area of Lincoln Acres. The department operates out of two fire stations and serves an area of approximately 9 square miles with 63,000 residents. Station 34 is at 343 East 16th Street, and Station 31 is at 2333 Euclid Avenue in unincorporated Lincoln Acres. The administration office is at 1243 National City Boulevard. The National City Fire Department is composed of three divisions: Administration, Fire Prevention, and Operations, and maintains a staff of 44 personnel that provide fire control, emergency medical service, rescue, and fire prevention and education. The department is dependent on automatic aid and mutual aid partners, including the cities of San Diego and Chula Vista, as well as Federal Fire and the Bonita Fire Protection District (City of National City 2011). Station 34 would provide the primary response for a proposed new fireworks display event along the National City Bayfront, and would involve Truck 34 and Engine 34.

The National City Fire Department contracts with a private ambulance provider to provide emergency medical services within the City. Fire department personnel typically arrive on scene first and provide basic and ALS services. When paramedic ambulance crews arrive to provide ALS support services, fire department personnel regularly assist. In most instances, depending on staffing levels, the department provides a paramedic on both Engine 34 and Engine 31, in addition to paramedic services on ambulances provided by the ambulance provider. The National City Fire Department uses the NFPA 1710 Standard for the Organization and Deployment of Fire Suppression Operations to determine adequate response times. The current response time is approximately 6 minutes from the time of the 911 call to the time on scene, 90 percent of the time.

The National City Fire Department would provide fire protection and emergency services during a proposed new fireworks display event along the National City Bayfront on the barge and within the landside viewing areas. The National City Fire Department would review special event applications, issue permits for barge setup and preparation, and provide inspection services on the barge during this proposed new fireworks display event in accordance with the California Health and Safety Code, Sections 12500–12759, Title 19, California Code of Regulations, Chapter 6 Fireworks, and the *Fireworks in California* handbook (Appendix C).

City of Chula Vista Fire Department

The Chula Vista Fire Department provides fire protection and emergency medical services and has 140 total personnel. Currently, the department consists of nine fire stations that are staffed on a 24-hour basis with 36 personnel plus two battalion chiefs for each 24-hour shift. In March of 2008, the Chula Vista Fire Department contracted fire and emergency medical dispatch services with SDFD. The department is dispatched for all 911 calls for service using automatic vehicle location technology that identifies the closest and most appropriate emergency resource type. Additionally, the Chula Vista Fire Department transitioned to a new level of Emergency Medical Service that provides a Paramedic or ALS on all responses from the department.

The Chula Vista Fire Department uses the NFPA 1710 Standard for the Organization and Deployment of Fire Suppression Operations to determine adequate response times. The City of Chula Vista response time metric is 7 minutes for 80 percent of the calls for the first unit to arrive on scene. Current response times from the primary fire station(s) to the areas along the Chula Vista Bayfront are 5 minutes from Fire Station 1, 7 minutes from Fire Station 2, and 8 minutes from Fire

Station 5. The primary response unit for areas along the Chula Vista Bayfront include three Type 1 Engines, one Type 1 Truck, and one Incident Commander (Muns pers. comm.).

The Chula Vista Fire Department would provide fire protection and emergency services during a proposed new fireworks display event along the Chula Vista Bayfront on the barge and within the landside viewing areas. The Chula Vista Fire Department would review special event applications, issue permits for barge setup and preparation, and provide inspection services on the barge during this proposed new fireworks display event in accordance with the California Health and Safety Code, Sections 12500–12759, Title 19, California Code of Regulations, Chapter 6 Fireworks, and the *Fireworks in California* handbook (Appendix C).

City of Imperial Beach Fire Department

The Imperial Beach Fire Department provides fire protection and emergency services for fireworks display events in the City, such as the Fourth of July Imperial Beach Fireworks Show. The fire department provides these services at the fireworks launch site and within any landside viewing areas in the City. The Imperial Beach Fire Department has one fire station, staffed with 12 suppression personnel, one secretary, one deputy chief, and one fire chief/public safety director. Suppression personnel include three captains, one engineer, two engineer/paramedics, four firefighter/paramedics, and one firefighter (City of Imperial Beach 2016). The department provides fire suppression, emergency medical services, prevention, education, inspection, community service, and weed abatement duties. Response times are not relevant to special events, as the department currently implements event-specific response plans for this and other high-congestion events. Additionally, all Imperial Beach fire engineers are trained and accredited through the State of California to respond in a variety of conditions, including heavy traffic (Santos pers. comm.).

The Imperial Beach Fire Department reviews special event applications, issues permits for fireworks setup and preparation, and provides inspection services on the Pier during fireworks display events in accordance with the California Health and Safety Code, Sections 12500–12759, Title 19, California Code of Regulations, Chapter 6 Fireworks, and the *Fireworks in California* handbook (Appendix C).

4.9.2.2 Police Protection

City of San Diego Police Department

The San Diego Police Department (SDPD) provides law enforcement services for areas within the District’s jurisdiction that generate City tax revenue (e.g., San Diego Convention Center, hotels, restaurants). SDPD includes a wide range of units from narcotics, robbery, and vice to education, records, and communications. SDPD consists of nine neighborhood divisions. The areas around San Diego Bay are within the jurisdiction of SDPD’s Central Division and Western Division, the headquarters of which are at 2501 Imperial Avenue and 5215 Gaines Street, respectively. The Central Division is responsible for a 9.7-square-mile area and a population of 103,524 residents, which extends beyond the Downtown Community Plan boundaries. The Western Division encompasses 22.7 square miles and serves a population of 129,709 residents (City of San Diego 2016).

The quality of SDPD police protection services is evaluated by the average response time to an emergency call. Table 4.9-1 shows SDPD’s standards for determining adequate response times and recent actual response times. As shown in Table 4.9-1 below, some call type priorities are not within

SDPD's response time standards. SDPD develops event-specific operational plans to ensure effective response times during fireworks display events during the Fourth of July weekend and other events for any affected commands. Assigned officers are strategically deployed in the affected areas to navigate heavy traffic, and a supervisor is assigned to oversee utilization of police personnel and resources (Underwood pers. comm.). There is also a City-wide goal for SDPD to have 1.48 officers per 1,000 residents. As of August 8, 2016, SDPD has 1,783 sworn officers and a ratio of 1.36 officers per 1,000 residents (Underwood pers. comm.).

Table 4.9-1. San Diego Police Department Response Time Standards and Actual Response Times

Call Type	Description	Standard (minutes)	Actual (minutes)
Priority Emergency (E)	Imminent threat to life	7	6.9
Priority 1	Serious crimes in progress	14	13.2
Priority 2	Less serious, non-life-threatening crimes	27	30.6
Priority 3	Minor crimes/non-urgent requests	70	76.8
Priority 4	Minor requests for police service	70	83.3

Source: Underwood pers. comm.

San Diego Harbor Police Department

In addition to providing marine-based firefighting services, HPD is the law enforcement authority for the District. The various locations over which HPD has jurisdiction are described above under Section 4.9.2.1, *Fire Protection and Emergency Response*.

HPD vehicle patrols monitor all activity on land around the Bay and include the following departments.

- **Vehicle Patrol** – HPD provides police protection services throughout the District's jurisdiction, including portions of the following member cities: San Diego, Coronado, Chula Vista, National City, and Imperial Beach.
- **Bike Team** – The HPD Bike Team is a specially trained unit that is used for assisting in general patrol duties, as well as special events. This unit can access areas that patrol cars cannot and is an effective tool that helps to curtail criminal activities via highly visible and proactive patrol. It is also used for special events, such as the Big Bay Boom. Officers receive numerous hours of training and tactics to accomplish the mission, and ride specially designed bicycles made for law enforcement work.
- **Vessel Collision Team** – San Diego HPD has a team of officers that are specially trained in vessel collision investigations. This team responds to any serious vessel collisions, sinkings, and major fires on San Diego Bay. These investigations can be very complex and difficult to handle due to the nature of a "floating scene." The team handles all types of vessel versus vessel and vessel versus non-vessel incidents. HPD Vessel Collision Investigators have been a part of many high-profile and very serious cases in recent years. Its talents and training have proved a very valuable resource for the region.

- Dive Team** – San Diego HPD has the premier Dive Team in San Diego County. This team is specially trained in search and rescue, evidence and body recovery, underwater explosive detection, vehicle recovery, and many other surface and underwater capabilities. The Dive Team has two sergeants who supervise a 20-member team. All members are able to be called in for any water emergency, around the clock. The team also has a dedicated primary dive boat as well as a towable Rigid Hull Inflatable Boat (District 2016).

During existing Fourth of July fireworks display events, HPD increases personnel staffing on patrol versus normal personnel staffing on patrol. HPD also assigns units to major patrol areas. Effective response times are achieved by the use of additional units on tidelands including bicycle units and vessel units (Brick pers. comm.). Additionally, HPD has traffic plans for before, during, and after fireworks display events. HPD also has an Emergency Operations Guide for responses during fireworks display events. The quality of HPD protection services is evaluated by the average response time to an emergency call, which is measured against the adopted response time standard for that particular type of call. HPD currently only has defined standards for Priority 1 calls. Table 4.9-1 shows HPD's standards for determining adequate response times and actual response times for July 4, 2016. As shown in Table 4.9-2, there are no current deficiencies in HPD's response times, particularly during the Fourth of July holiday.

Table 4.9-2. Harbor Police Department Response Time Standards and Actual Response Times (July 4, 2016)

Call Type	Location	Standard (minutes)	Actual (minutes)
Priority 1	Vehicle	≤7	6.6
	Vessel	≤9	3.7
	Airport	≤5	3.3
Priority 2 ¹	Vehicle		2.3
	Vessel		2.8
	Airport		1.2

Source: Brick pers. comm.
¹ HPD does not have any defined standards for Priority 2 calls.

City of Coronado Police Department

The Coronado Police Department employs a total of 40 sworn and 18 non-sworn personnel. The department staffs police officers, reserve officers, outside agencies, volunteers, explorers, and contracted security personnel in order to ensure adequate response times. During special events such as fireworks display events, the Emergency Operations Center is in operation, patrol and dispatch staffing levels are increased to handle calls for service, and outside local law enforcement personnel provide additional support to help monitor higher traffic and pedestrian volumes. In addition, the department follows an emergency response plan to respond to emergencies during special events (Castellano pers. comm.). The department strategically places personnel throughout the City to be able to respond timely to all calls for service. As shown below in Table 4.9-3, there are no current deficiencies in the department's response times.

Table 4.9-3. Coronado Police Department Response Time Standards and Actual Response Times

Call Type	Description	Standard (minutes)	Actual (minutes)
Priority Emergency (E)	Imminent threat to life	5	2.5
Priority 1	Serious crimes in progress	5	2.5
Priority 2	Less serious, non-life-threatening crimes	ASAP	5
Priority 3	Minor crimes/non-urgent requests	ASAP	7.5
Priority 4	Minor requests for police service	ASAP	7

Source: Castellano pers. comm.

City of National City Police Department

The National City Police Department is headquartered at 1200 National City Boulevard and employs a total of 86 sworn and 49 non-sworn personnel spread out over six shifts. Staffing is dependent on the beat, time of day, and crime trends in the City. Currently, there is no city-wide officer-to-resident ratio goal. During special events such as fireworks display events, the department implements an operational plan and a traffic plan to respond to any emergencies during these events (Sullivan pers. comm.). As shown below in Table 4.9-4, there are no current deficiencies in the department's response times.

Table 4.9-4. National City Police Department Response Time Standards and Actual Response Times

Call Type	Description	Standard ¹ (minutes)	Actual (minutes)
Priority Emergency (E)	Imminent threat to life		3.6
Priority 1	Serious crimes in progress		9.9
Priority 2	Less serious, non-life-threatening crimes		20.9
Priority 3	Minor crimes/non-urgent requests		5.7
Priority 4	Minor requests for police service	Self-initiated ²	0.1

Source: Sullivan pers. comm.

¹ The National City Police Department currently does not have any adopted standards for different call types.

² Priority 4 call types are officer initiated and occur when an officer makes his own stop.

City of Chula Vista Police Department

The Chula Vista Police Department employs a total of 227 sworn officers and 84 civilian personnel. Officers work three 10-hour shifts Monday through Thursday, and three 12.5-hour shifts Friday through Sunday. Approximately 10 to 19 sworn officers are deployed per shift. During special events such as fireworks display events, additional City services may be allocated through the City's special event planning and permitting processes (Redmond pers. comm.). As shown below in Table 4.9-5, the department is currently deficient in its response times.

Table 4.9-5. Chula Vista Police Department Response Time Standards and Actual Response Times

Call Type	Description	Standard¹ (minutes)	Actual (minutes)
Priority 1	Serious crimes in progress	6	6.8
Priority 2	Less serious, non-life-threatening crimes	12	13.8

Source: Redmond pers. comm.
¹ The Chula Vista Police Department currently only has standards for Priority 1 and 2 call types.

City of Imperial Beach Police Department

The Imperial Beach Station of the San Diego County Sheriff's Department provides contract law enforcement services to the City of Imperial Beach and the unincorporated communities of Bonita, Sunnyside, Chula Vista, Lincoln Acres, Proctor Valley, San Miguel Mountain, Otay Valley, and Otay Mesa. The division has approximately 40 sworn personnel assigned to the command. Imperial Beach has a population of approximately 26,000 residents and covers about a 4-square-mile area. Units include:

- **Patrol Deputies:** Patrol deputies respond to calls for service 24 hours a day
- **Traffic Deputies:** Traffic deputies handle vehicle code enforcement, traffic collision investigations, and traffic control within the City of Imperial Beach
- **Detectives:** Detectives investigate cases involving theft, physical assaults (excluding homicides), sexual assaults, vandalism, burglaries, annoying phone calls, and other crimes. Specialized investigative units such as homicide, bomb/arson, financial crimes, domestic violence, child abuse, and narcotics handle specific crimes for the entire Sheriff's jurisdiction, including the Imperial Beach Station
- **Crime Prevention Specialists and Senior Volunteers**

During special events such as fireworks display events, deputies are assigned to locations in the City in order to ensure effective response times. The needs of the City, expected number of event attendees, and traffic expectations are provided to the command before such events so resources are strategically placed in order to minimize travel time. During special events such as fireworks display events, strategic placement of deputies ensures little to no impact from traffic conditions. Generally, response times for non-emergency calls are 5 minutes or less and emergency calls are responded to in under 2 minutes (Taft pers. comm.)

4.9.2.3 Other Public Services

Other public service providers for fireworks display events within San Diego Bay and the Imperial Beach Oceanfront include the U.S. Coast Guard (USCG). USCG Sector San Diego is headquartered on the waterfront across from the San Diego International Airport and consists of helicopters, small boats, cutters, aids to navigation, marine safety inspections, and other operations. USCG is responsible for USCG operations from the Mexican border northward to above San Mateo Point, and offshore as far as 200 miles. Under certain circumstances, search and rescue operations can even be extended into Mexican waters. Team Coast Guard in San Diego consists of 230 Active Duty, 150 Reservist, and 700 volunteer Auxiliary members (USCG Sector San Diego 2016).

USCG facilitates events that occur on federal waterways by receiving, analyzing, and reviewing Applications for Marine Event for each event. For barge-based fireworks display events, USCG enforces regulatory Safety Zones around each barge (to ensure public safety and clearance of the area) as well as enforcement (as appropriate) of the Navigation Rules (vessel transits, vessel lighting, vessel anchoring, etc.). Staffing is increased on the night of the event, with additional patrol units providing specific event command and control, and multiple active duty and auxiliary vessel assets. A “normal duty watch” is also provided, consisting of a command center, search and rescue and law enforcement vessels, and search and rescue aircraft.

For fireworks display events occurring within San Diego Bay, USCG closely coordinates with HPD and the responsible city’s fire department on the position and location of personnel and assets, in addition to normal requirements and duties for operations related to safety and security within their area of responsibility (Cole pers. comm.).

4.9.3 Applicable Laws and Regulations

4.9.3.1 Federal

United States Coast Guard Marine Safety Program

Pursuant to 33 Code of Federal Regulations (CFR) 100, USCG implements the Marine Safety Program, which is designed to ensure the safety of vessels and recreational boaters on navigable U.S. waters during fireworks display events. USCG issues marine event notifications to sponsors of public fireworks display events that have the potential to endanger marine safety. An application for the marine event must be submitted to USCG no later than 135 days prior to the event if the applicant does not meet criteria specified in 33 CFR 100.15(c), or 60 days prior to the event if the applicant does meet the criteria. After issuing a marine event notification for the fireworks display event, USCG is authorized to promulgate special local regulations as necessary to ensure public safety on navigable waters immediately prior to, during, and immediately after the approved fireworks display event. Such regulations may include a restriction on or control of the movement of vessels through a specified fireworks display event area.

4.9.3.2 State

California Department of Forestry and Fire Protection Fireworks in California Handbook

The *Fireworks in California* handbook was prepared by the California Department of Forestry and Fire Protection and includes a compilation of all relevant national and state standards relating to fireworks (Appendix C). The Health and Safety Codes direct the California State Fire Marshal to prepare regulations governing the use of fireworks in California. The law provides a general framework around which more detailed regulations have been developed. The objective of the *Fireworks in California* handbook is to provide a publication that will enhance the safe use of pyrotechnic material and to be a reference source for enforcement and fire prevention personnel as well as licensees. The following laws and regulations are identified in the *Fireworks in California* handbook and are directly applicable to the proposed project.

California Health and Safety Code, Sections 12500–12759 (State Fireworks Law)

California's Fireworks Law, passed in 1938, established the Office of the State Fire Marshal as the only fireworks classification authority in California. Fireworks are classified through laboratory analysis, field examinations, and test firing of items. As part of the program, the State Fire Marshal requires the licensing of all pyrotechnic operators, fireworks manufacturers, importer-exporters, wholesalers, retailers, and public display companies. Pyrotechnic operators who discharge fireworks at public displays or launch high-powered and experimental rockets must also pass a written examination and provide proof of experience.

The state's Explosives Law authorizes the State Fire Marshal to adopt regulations for the safe use, handling, storage, and transportation of explosives. Under those regulations, local law enforcement agencies track the location of storage magazines within their jurisdictions through a permit process. Special exemptions have been provided within the regulations to allow for limited possession and storage of some explosives, such as black powder, used by hunters and the sporting community.

Title 19, California Code of Regulations, Chapter 6, Fireworks

Article 3 of Chapter 6 of the California Code of Regulations dictates that no person shall engage in any type of fireworks activities without having submitted an application for and having obtained a license from the State Fire Marshal in accordance with the provisions of the chapter. Exceptions include Licensed Pyrotechnic Operators Basic Commercial, Restricted Commercial, and Rockets, First Class, who may employ unlicensed assistants. Licensed special effects and theatrical pyrotechnicians may employ unlicensed assistants. Unlicensed assistants shall perform only when under the direct, immediate, and constant supervision of the licensee when handling fireworks and pyrotechnic compositions. In addition, when applying for a permit under Health and Safety Code Section 12640(e), an applicant shall submit the following information and evidence to the authority having jurisdiction.

1. The name of the organization sponsoring the display, together with the names and license numbers of persons actually in charge of the display.
2. The date and time of day the display is to be held.
3. The exact location planned for the display.
4. The size and number of all fireworks to be discharged including the number of set pieces, shells, and other items. Shells shall be designated by diameter specifying single, multiple break, or salute.
5. The manner and place of storage of all fireworks prior to, during, and after the display.
6. Diagram of the grounds on which the display is to be held showing the point at which the fireworks are to be discharged; the location of all buildings, roads, and other means of transportation; the lines behind which the audience will be restrained; and the location of all nearby trees, telegraph or telephone lines, or other overhead obstruction.
7. Proof that satisfactory workers' compensation insurance is carried for all employees in compliance with Labor Code Section 3700.
8. If the permit is for a public display or special effects, documentary proof of conformance with Sections 12610 and 12611, Health and Safety Code.

9. A State Fire Marshal's license for the public display of fireworks, under Health and Safety Code Sections 12575, 12576, or 12577. No permit for a public display of any type shall be granted unless a public display license general, special, or limited has been first obtained from the State Fire Marshal.
10. The name and license number of the wholesaler who supplied all items used in the display.

4.9.3.3 Local

Port Master Plan

Development along the waterfront is guided by the Port Master Plan, which divides tidelands around the Bay into ten Planning Districts, each with its own corresponding Precise Plan. Existing and proposed new fireworks display events currently occur or would occur within or adjacent to Planning District 1, Shelter Island/La Playa; Planning District 2, Harbor Island/Lindbergh Field; Planning District 3, Centre City Embarcadero; Planning District 4, Tenth Avenue Marine Terminal; Planning District 5, National City Bayfront; Planning District 6, Coronado Bayfront; Planning District 7, Chula Vista Bayfront; and Planning District 10, Imperial Beach Oceanfront.

City of San Diego Special Event Permit

In the City of San Diego, a Special Event Permit is required for an organized activity that incorporates the use of:

- City public streets, sidewalks, and rights-of-way; and/or
- City public parks or other City public property; and/or
- Outdoor private property including parking lots, only when the property is part of a Special Event Venue that includes City public property and permission has been received by the property owner/manager (for example, a parking lot used as part of a street festival venue).

All activities associated with the use of pyrotechnics must be reviewed and approved by SDFD in compliance with the International Fire Code, as amended by the State of California and City of San Diego. Examples include indoor and outdoor fireworks, lasers, model rocket launches, and special effects using pyrotechnical devices. A permit and full demonstration to the Fire Marshal prior to the event date is required. As part of the permit requirements, onsite stand-by and inspection services may be required due to the size, complexity, and/or unique safety issues regarding the activities associated with the event.

City of Coronado Operations Permit: Public Displays of Fireworks

An operations permit is required for the activities set forth in Title 20, Operations Permits, of the Coronado Municipal Code. The activities described in Title 20 require regulation by the City to protect and promote the health, safety, and public peace of the community. An operations permit for public displays of fireworks is required under Chapter 20.16 of Title 20. An application for a public display of fireworks operations permit must be filed no later than 14 days prior to the proposed date of the public fireworks display. The Director of Fire Services is authorized to issue the public displays of fireworks operations permit.

City of Coronado Special Event Permit

Individuals and organizations wishing to hold an event in City-owned facilities or on public rights-of-way shall obtain a Special Event Permit from the City Manager's Office or Recreation Services, depending on the size or type of event. Review of the Special Event Permit application by City staff and/or the City Council ensures the event will be held safely with minimum disruption to the surrounding community, and that the cost of the event is borne by its sponsors. A special event is any scheduled or planned non-emergency event occurring within the City of Coronado that can reasonably be expected to require increased or modified emergency or non-emergency services or support by the City government and personnel. There are three types of special events that require approval by the City Manager and/or City Council: Major Events, Moderate Events, and Minor Events.

City of National City Temporary Use Permit

Temporary Use Permits are used for certain special activities, events, or structures that are beneficial to the public for limited periods of time even though it would not comply with building, fire, zoning, or other local codes, if they were permanent. Chapter 15.60 of the National City Municipal Code regulates these permits. In general, for any organized activity that uses public property, facilities, parks, sidewalks, streets, or any public rights-of-way, applicants need to obtain this permit. In some cases, activities or events taking place on private property also require a Temporary Use Permit. Temporary Use Permits include submittal of information such as staging required, roadways used and/or closed for the event, times, and other information. These Temporary Use Permits are forwarded to City departments such as the fire department for review and emergency planning purposes (Hernandez pers. comm.). There are three types of Temporary Use Permits for different uses and activity: Class A, Class B, and Class C. Class A activities require City Council approval and include activities such as block or holiday parties, fairs, and musical concerts/festivals. Class B activities are subject to conditions and City codes, as applicable, and include activities such as mobile trailers for offices on active construction sites or for temporary classrooms. Class C activities are subject to Business License Regulations, and include activities such as Christmas tree sale lots, garage sales, and special promotion/outdoor sales. The City may also attach any conditions and/or limitations deemed necessary to protect public health, safety, and welfare. Such conditions may include hours of use, security, trash collection and disposal, and traffic control. The City will also notify the applicant of any supplemental permits and provisions that may be required, such as a County environmental health permit, fire permit, or fireworks permit.

City of National City Fireworks Permit

For special events requiring a Temporary Use Permit that propose to include a fireworks display, a fireworks permit must also be obtained from the National City Fire Department in addition to the Temporary Use Permit. The fireworks permit must be obtained at least 2 weeks prior to the event. The National City Fire Department has absolute authority, control, and decisions over all fireworks and/or pyrotechnic displays for which it issues a permit. An inspection from the fire department must be obtained prior to any ignition of any fireworks.

City of Chula Special Event Permit

The City of Chula Vista maintains Special Event Guidelines, which outline the Special Event Permit process and any special event-related permit types, as well as the requirements for event

infrastructure, operational plans (e.g., medical, traffic control), community outreach, and insurance. The Special Event Permit process is managed by the Office of Communications and supported by the Special Events Management Team. The permit process involves submitting a permit application to the Office of Communication, which is responsible for reviewing and issuing the Special Event Permit. There are a number of different special event-related permits that may be issued independent of, or in addition to, a Special Event Permit. Examples of special event-related permits include alcohol use permits, building permits (for temporary structures), and a firework/pyrotechnic/special effect/laser permit. The proposed event venue, activities, components, attendance, and unique circumstance of the event are contributing factors to the final determination of the required permit types.

City of Chula Vista Firework/Pyrotechnic/Special Effect/Laser Permit

A firework/pyrotechnic/special effect/laser permit is one of the special event-related permits outlined in the City of Chula Vista's Special Event Guidelines. This permit may be issued independent of, or in addition, to a Special Event Permit, and is required for all activities associated with the use of pyrotechnics and open flames and must be reviewed and approved by the Chula Vista Fire Department in compliance with the California Fire Code as amended by the State of California and City of Chula Vista. Examples of activities in this category include outdoor fireworks, lasers, model rocket launches, open flame activities such as fire walking, and special effects using pyrotechnical devices. As part of the permit requirements, onsite stand-by and inspection services may be required due to the size, complexity, and/or unique safety issues regarding the activities associated with the event.

City of Imperial Beach Special Event Permit

A Special Event Permit is required for any organized activity held completely or partially on public land (excluding recreation centers), or an event requiring adjacent parking or traffic variances, or an activity on privately owned property when the property is not designed or intended for that activity. The Imperial Beach Fire Department must be notified as part of the special event permit application process if the special event includes fireworks.

4.9.4 Project Impact Analysis

4.9.4.1 Methodology

The following impact analysis evaluates the potential impacts on public services by addressing the public service providers' ability to serve the proposed new fireworks display events in accordance with adopted performance standards. However, an inability to provide such service to the proposed new fireworks display events in accordance with the established performance standards is not automatically considered a significant impact on the environment; rather, any such inability is considered in relationship to existing facilities, and a determination is made as to whether new or expanded facilities would be needed, the construction of which could result in a significant impact on the environment.

This section discusses the proposed project's impacts on existing public services and facilities within the cities of National City and Chula Vista in association with the proposed new fireworks display

events along their respective Bayfronts. The analysis evaluates potential impacts on the following resources:

- Fire protection and related facilities;
- Police protection and related facilities; and
- Other public facilities

In addition to a review of relevant plans and policies, fire, police, and other public safety service providers were contacted and sent questionnaires to determine if the proposed new fireworks display events would significantly affect the respective providers' abilities to provide services, which could lead to construction of new or physically altered facilities. Their responses are summarized below in Section 4.9.4.3, *Project Impacts and Mitigation Measures*.

4.9.4.2 Thresholds of Significance

The following significance criteria are based on Appendix G of the State CEQA Guidelines and provide the basis for determining the significance of impacts associated with public services and recreation resulting from implementation of the proposed project. The determination of whether a public services or recreational impact would be significant is based on the professional judgment of the District as Lead Agency supported by the recommendations of qualified personnel at ICF and is based on the evidence in the administrative record.

Impacts are considered significant if the project would result in any of the following:

1. Fire Protection and Emergency Response—Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection and emergency services.
2. Police Protection—Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police protection.
3. Other Public Services—Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for schools.

4.9.4.3 Project Impacts and Mitigation Measures

Threshold 1: Fire Protection and Emergency Services—Implementation of the proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection and emergency services.

Impact Discussion

Fire protection and emergency response services for the proposed new fireworks display events would be provided by the National City Fire Department, Chula Vista Fire Department, and HPD (marine firefighting services).

The need for new or physically altered government facilities to maintain acceptable service ratios, response times, or other performance objectives for the National City Fire Department, Chula Vista Fire Department, and HPD would only potentially occur if the proposed new fireworks display events resulted in a permanent increase in population near viewing areas, which would potentially increase demand on fire protection and emergency response services of these agencies.

Proposed New Fireworks Display Events

The proposed new fireworks display events would be temporary and infrequent in nature and, therefore, would not require the construction of any permanent landside or waterside support facilities or residential structures that would create any long-term demand on public services. However, during the proposed new fireworks display events, an increase in the number of visitors to the National City and Chula Vista Bayfronts is expected to occur. This would potentially place increased demand on the fire and emergency response services of the National City and Chula Vista Fire Departments and HPD. Safety concerns related to the gathering of public in viewing areas could include fireworks display event management and response to hazards or security issues.

National City Fire Department

The National City Fire Department would provide fire protection and emergency services during the proposed new Fourth of July fireworks display event along the National City Bayfront on the barge and within the landside viewing areas in the City. During the proposed new Fourth of July fireworks display event, it is anticipated that there would be an increase in the number of visitors to the National City Bayfront. This would potentially temporarily place increased demand on the fire and emergency response services of the City. The current average general response time is approximately 6 minutes from the time of the 911 call to the time on scene, 90 percent of the time. The City of National City requires Temporary Use Permits for special events, which are forwarded to City departments such as the fire department for review and emergency planning purposes (Hernandez pers. comm.). The City may attach any conditions and/or limitations to the Temporary Use Permit deemed necessary to protect public health, safety, and welfare. Such conditions may include hours of use, security, trash collection and disposal, and traffic control. In addition, a fireworks permit from the National City Fire Department would be required for the proposed new fireworks display event. The fireworks permit must be obtained at least 2 weeks prior to the

fireworks display event. The National City Fire Department has absolute authority, control, and decisions over all fireworks and/or pyrotechnic displays for which it issues a permit. An inspection from the fire department must be obtained prior to any ignition of any fireworks.

In addition, proposed new fireworks display events along the National City Bayfront would be required to comply with all federal, state, and local laws and regulations governing fireworks, including but not limited to the laws and regulations set forth in the *Fireworks in California* handbook, which is enforced by the responsible city fire department with jurisdiction over each display, as well as any special event permit requirements of the National City Fire Department. Therefore, new or expanded fire protection or emergency service facilities would not need to be constructed in order to maintain acceptable service ratios, response times, or other performance objectives of the National City Fire Department, and impacts would be less than significant.

Furthermore, as discussed in Section 4.10, *Transportation, Circulation, and Parking*, the implementation of mitigation measure **MM-TRA-1** requires compliance with the traffic-related conditions of the proposed ordinance, which requires implementation of an Event Transportation and Parking Management Plan before, during, and after each proposed new fireworks display event. Implementation of mitigation measure **MM-TRA-1** would further improve circulation around the viewing locations by employing traffic control personnel to facilitate the movement of vehicular, pedestrian, and bicycle traffic, thereby reducing the potential for delay that might impede emergency response.

Chula Vista Fire Department

The Chula Vista Fire Department would provide fire protection and emergency services during both the proposed new Fourth of July and non-Fourth of July fireworks display events along the Chula Vista Bayfront on the barge and within the landside viewing areas in the City. Current response times from the primary fire station(s) to the areas along the Chula Vista Bayfront are 5 minutes from Fire Station 1, 7 minutes from Fire Station 2, and 8 minutes from Fire Station 5. The primary response unit for areas along the Chula Vista Bayfront include three Type 1 Engines, one Type 1 Truck, and once Incident Commander (Muns pers. comm.). During the proposed new fireworks display events, it is anticipated that there would be an increase in the number of visitors to the Chula Vista Bayfront, particularly during the proposed new Fourth of July fireworks display event. This would potentially temporarily place increased demand on the fire and emergency response services of the City. However, because the two proposed new non-Fourth of July fireworks display events in Chula Vista are anticipated to be significantly smaller in scale when compared to the proposed new Fourth of July fireworks display event, the demand for fire protection services would be minimal compared to a fireworks display event on the Fourth of July.

The City currently maintains Special Event Guidelines, which outline the Special Event Permit process and any special event-related permit types, as well as the requirements for event infrastructure, operational plans (e.g., medical, traffic control), community outreach, and insurance. There are multiple types of operational plans that may be required as part of the Special Event Permit issued by the City. Events with a higher potential risk are required to implement an appropriate medical operational plan to address the specific needs of the attendees and/or participants. These operational plans are developed for each special event application approval. In accordance with the City's Special Event Guidelines, medical operational plans specific to each proposed new fireworks display event would be implemented if deemed necessary through the Special Event Permit process; therefore, response times to the sites of these proposed new displays

are not relevant as emergency/medical response units would be strategically assigned per each proposed new fireworks display event in order to maintain effective response.

In addition, there are a number of different special event-related permits that may also be issued independent of, or in addition to, a Special Event Permit. The proposed event venue, activities, components, attendance, and unique circumstance of the event are contributing factors to the final determination of the required permit types. A firework/pyrotechnic/special effect/laser permit is one of the special event-related permits outlined in the City of Chula Vista's Special Event Guidelines. This permit is required for all activities associated with the use of pyrotechnics and open flames and must be reviewed and approved by the Chula Vista Fire Department in compliance with the California Fire Code as amended by the State of California and City of Chula Vista. As part of the permit requirements, onsite stand-by and inspection services may be required due to the size, complexity, and/or unique safety issues regarding the activities associated with the event. Furthermore, proposed new fireworks display events along the Chula Vista Bayfront would be required to comply with all federal, state, and local laws and regulations governing fireworks, including but not limited to the laws and regulations set forth in the *Fireworks in California* handbook, which is enforced by the responsible city fire department with jurisdiction over each display, as well as any additional special event permit requirements of the Chula Vista Fire Department. Therefore, new or expanded fire protection or emergency service facilities would not need to be constructed in order to maintain acceptable service ratios, response times, or other performance objectives of the Chula Vista Fire Department, and impacts would be less than significant.

Furthermore, as discussed in Section 4.10, *Transportation, Circulation, and Parking*, the implementation of mitigation measure **MM-TRA-1** requires compliance with the traffic-related conditions of the proposed ordinance, which require implementation of an Event Transportation and Parking Management Plan before, during, and after each proposed new fireworks display event. Implementation of mitigation measure **MM-TRA-1** would further improve circulation around the viewing locations by employing traffic control personnel to facilitate the movement of vehicular, pedestrian, and bicycle traffic, thereby reducing the potential for delay that might impede emergency response.

Harbor Police Department

Because the proposed new fireworks display events would occur within San Diego Bay along the National City and Chula Vista Bayfronts, other fire protection and emergency response services would be provided by HPD, which would deploy special patrol vessels to provide safety on the water. HPD currently provides marine firefighting services in and around San Diego Bay for the District. In addition to watercraft enforcement, HPD patrol boats can also serve as firefighting boats that respond to fire emergencies in the Bay. Consistent with its current operational practices during existing fireworks display events, HPD would continue to provide both of these services for fireworks display events, including the proposed new fireworks display events along the National City and Chula Vista Bayfronts. During existing Fourth of July fireworks display events, HPD increases personnel staffing in patrol versus normal personnel staffing in patrol, as necessary, thereby ensuring effective response times (Brick pers. comm.). Consistent with its current operational practices for existing Fourth of July fireworks display events, HPD would continue to increase personnel staffing, as necessary, for the fireworks display events, including the four proposed new fireworks display events along the National City and Chula Vista Bayfronts. Therefore, new or expanded facilities would not need to be constructed in order to maintain acceptable service

ratios, response times, or other performance objectives of HPD, and impacts would be less than significant.

Effects of the Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not include any conditions related to fire protection and emergency services and facilities above and beyond the federal, state, and local laws and regulations that currently exist. However, the proposed ordinance includes a condition of approval that requires implementation of an Event Transportation and Parking Management Plan for publicly advertised fireworks display events. The Event Transportation and Parking Management Plan would include transportation demand and parking management strategies, such as providing event traffic control and promoting the use of public transit. This would further improve circulation around the viewing locations by employing traffic control personnel to facilitate the movement of vehicular, pedestrian, and bicycle traffic, thereby reducing the potential for delay that might impede emergency response. Compliance with the proposed ordinance may improve the existing condition by ensuring adequate circulation and fire and emergency access on the roadway network surrounding the existing fireworks display events. As such, the effects of the proposed ordinance on existing fireworks display events would not require the construction of new or expanded fire protection or emergency service facilities in order to maintain acceptable service ratios, response times, or other performance objectives. No significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection and emergency services. Therefore, impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection and emergency services. Therefore, no significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

No mitigation is required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance After Mitigation

Proposed New Fireworks Display Events

Impacts would be less than significant.

Proposed Ordinance Changes to Existing Fireworks Display Events

No significant adverse impacts would occur.

Threshold 2: Police Protection—Implementation of the proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police protection.

Impact Discussion

Police protection services for the proposed new fireworks display events would be provided by the National City Police Department, Chula Vista Police Department, and HPD.

The need for new or physically altered government facilities to maintain acceptable service ratios, response times, or other performance objectives for the National City Police Department, Chula Vista Police Department, and HPD would only potentially occur if the proposed new fireworks display events resulted in a permanent increase in population near viewing areas, which would potentially increase demand on police protection services of these agencies.

Proposed New Fireworks Display Events

As stated above in Threshold 1, the proposed new fireworks display events would be temporary and infrequent in nature and, therefore, would not require the construction of any permanent landside or waterside support facilities or residential structures that would create any long-term demand on public services. However, during these proposed new fireworks display events, increased public gatherings near viewing areas along the National City and Chula Vista Bayfronts would potentially increase demand on police protection and law enforcement services from the National City and Chula Vista Police Departments and HPD. Safety concerns related to the gathering of public in viewing areas could include fireworks display event management and response to safety or security issues.

National City Police Department

For the proposed new Fourth of July fireworks display event that would occur along the National City Bayfront, the National City Police Department would provide traffic coordination and public safety in the areas around the landside viewing locations in the City. As mentioned, the City requires Temporary Use Permits for special events, as well as a fireworks permit for any special event containing a fireworks display. As part of the Temporary Use Permit process, the City may attach any conditions and/or limitations to the permit deemed necessary to protect public health, safety, and welfare, including but not limited to security and traffic control. During special events, the National City Police Department implements an operational plan and a traffic plan to respond to any

emergencies. Additionally, deployment for a proposed new Fourth of July fireworks display event would not affect the Patrol Divisions due to overtime funding by the service organizations and the City's General Fund providing staffing for the event (Sullivan pers. comm.). Consistent with its current practice, the National City Police Department would implement an operational plan and a traffic plan during the proposed new Fourth of July fireworks display event in National City. Therefore, new or expanded police facilities would not need to be constructed in order to maintain acceptable service ratios, response times, or other performance objectives of the National City Police Department, and impacts would be less than significant.

Furthermore, as discussed in Section 4.10, *Transportation, Circulation, and Parking*, the implementation of mitigation measure **MM-TRA-1** requires compliance with the traffic-related conditions of the proposed ordinance, which require implementation of an Event Transportation and Parking Management Plan before, during, and after each proposed new fireworks display event. Implementation of mitigation measure **MM-TRA-1** would further improve circulation around the viewing locations by employing traffic control personnel to facilitate the movement of vehicular, pedestrian, and bicycle traffic, thereby reducing the potential for delay that might impede police protection services and response.

Chula Vista Police Department

For both the proposed new Fourth of July and non-Fourth of July fireworks display events that would occur along the Chula Vista Bayfront, the Chula Vista Police Department would provide traffic coordination and public safety in the areas around the landside viewing locations in the City. During special events such as fireworks display events, additional City services may be allocated through the City's special event planning and permitting processes (Redmond pers. comm.). As mentioned, the City currently maintains Special Event Guidelines, which outline the Special Event Permit process, any additional special event-related permit types (i.e., a firework/pyrotechnic/special effect/laser permit), and any requirements for the special event, such as an operational plan. One of the types of operational plans that may be required as part of the Special Event Permit issued by the City is a transportation operational plan. The Chula Vista Police Department in conjunction with the City of Chula Vista Public Works/Traffic Engineering staff determines if a transportation operational plan is required. The transportation operational plan would require traffic control in order to facilitate vehicular, bicycle, and pedestrian movement on City streets and public rights-of-way that would potentially be affected by the event. All traffic control in the public right-of-way must be conducted by a representative of the police department or by a civilian who is certified in traffic control and authorized by the police department in conjunction with the City of Chula Vista Public Works/Traffic Engineering staff. The City's Special Event Guidelines also identify several other elements that should be included the transportation operational plan. These operational plans are developed for each special event application approval.

In accordance with the City's Special Event Guidelines, transportation operational plans specific to each proposed new fireworks display event would be implemented by the Chula Vista Police Department if deemed necessary; therefore, response times to the sites of these proposed new displays are not relevant as response units would be strategically assigned per each proposed new fireworks display event in order to maintain effective response. Therefore, new or expanded police facilities would not need to be constructed in order to maintain acceptable service ratios, response times, or other performance objectives, and impacts would be less than significant.

Furthermore, as discussed in Section 4.10, *Transportation, Circulation, and Parking*, the implementation of mitigation measure **MM-TRA-1** requires compliance with the traffic-related conditions of the proposed ordinance, which require implementation of an Event Transportation and Parking Management Plan before, during, and after each proposed new fireworks display event. Implementation of mitigation measure **MM-TRA-1** would further improve circulation around the viewing locations by employing traffic control personnel to facilitate the movement of vehicular, pedestrian, and bicycle traffic, thereby reducing the potential for delay that might impede police protection services and response.

Harbor Police Department

HPD also provides police protection and law enforcement services in and around San Diego Bay for the District. HPD and special patrol vessels currently provide safety on the water during existing fireworks display events. For the proposed new fireworks display events that would occur along the National City and Chula Vista Bayfronts, it is anticipated that HPD would provide additional police protection services, which would involve deploying landside patrols and special patrol vessels to provide law enforcement on the water. HPD has indicated that it currently provides adequate law enforcement service and response times during individual existing fireworks display events through the strategic placement of units on tidelands and major patrol areas (Brick pers. comm.). Consistent with its current operational practices, HPD would continue to provide adequate law enforcement services and response times for fireworks display events, including the four proposed new fireworks display events along the National City and Chula Vista Bayfronts. In addition, HPD would implement traffic plans and plans for emergency response through an Emergency Operations guide for each proposed new fireworks display event (Brick pers. comm.). During existing Fourth of July fireworks display events, HPD increases personnel staffing in patrol versus normal personnel staffing in patrol, thereby ensuring effective response times (Brick pers. comm.). Consistent with its current operational practices, HPD would continue to increase personnel staffing as necessary during fireworks display events, including the proposed new fireworks display events along the National City and Chula Vista Bayfronts. Therefore, new or expanded HPD facilities would not need to be constructed in order to maintain acceptable service ratios, response times, or other performance objectives of HPD, and impacts would be less than significant.

Furthermore, as discussed in Section 4.10, *Transportation, Circulation, and Parking*, the implementation of mitigation measure **MM-TRA-1** requires compliance with the traffic-related conditions of the proposed ordinance, which require implementation of an Event Transportation and Parking Management Plan before, during, and after each proposed new fireworks display event. Implementation of mitigation measure **MM-TRA-1** would further improve circulation around the viewing locations by employing traffic control personnel to facilitate the movement of vehicular, pedestrian, and bicycle traffic, thereby reducing the potential for delay that might impede police protection services and response.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. The proposed ordinance does not include any conditions related to police protection services and facilities above and beyond the federal, state, and local laws and regulations that currently exist. However, the proposed ordinance includes a condition of approval that requires implementation of an Event

Transportation and Parking Management Plan for publicly advertised fireworks display events. The Event Transportation and Parking Management Plan would include transportation demand and parking management strategies, such as providing event traffic control and promoting the use of public transit. This would further improve circulation around the viewing locations by employing traffic control personnel to facilitate the movement of vehicular, pedestrian, and bicycle traffic, thereby reducing the potential for delay that might impede police protection services and response. Compliance with the proposed ordinance may improve the existing condition by ensuring adequate circulation and police access on the roadway network surrounding the existing fireworks display events. As such, the effects of the proposed ordinance on existing fireworks display events would not require the construction of new or expanded police protection services and facilities in order to maintain acceptable service ratios, response times, or other performance objectives. No significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police protection services. Therefore, impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police protection services. Therefore, no significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

No mitigation is required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance After Mitigation

Proposed New Fourth of July Fireworks Display Events

Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No impacts would occur.

Threshold 3: Other Public Facilities—Implementation of the proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for USCG protection services.

Impact Discussion

The only other public service provider for fireworks display events is USCG, which provides regulatory, enforcement, and public safety services. Therefore, this section focuses on the services provided by this agency.

The need for new or physically altered government facilities to maintain acceptable service ratios, response times, or other performance objectives for USCG would only potentially occur if the proposed new firework display events resulted in a permanent increase in population near viewing areas, which would potentially increase demand on USCG protection services. Safety concerns related to the gathering of public in viewing areas could include event management and response to hazards or security issues.

Proposed New Fireworks Display Events

For all fireworks display events that occur within San Diego Bay, event-specific regulatory and enforcement services within San Diego Bay are provided by USCG. USCG facilitates events that occur on federal waterways by receiving, analyzing, and reviewing Applications for Marine Event for each event. During the proposed new fireworks display events within San Diego Bay, USCG would enforce regulatory Safety Zones around the barge (to ensure public safety and clearance of the area) as well as enforce (as appropriate) the Navigation Rules (vessel transits, vessel lighting, vessel anchoring, etc.). During existing Fourth of July fireworks display events, USCG also increases staffing on the night of the events, with additional patrol units providing specific event command and control, and multiple active duty and auxiliary vessel assets. A “normal duty watch” is also provided, consisting of a command center, search and rescue and law enforcement vessels, and search and rescue aircraft (Cole pers. comm.). Consistent with its current operational practices during existing Fourth of July fireworks display events, USCG would continue to increase personnel staffing and patrol units as necessary during fireworks display events, including the proposed new Fourth of July fireworks display events along the National City and Chula Vista Bayfronts.

During the proposed new fireworks display events within San Diego Bay, USCG would also coordinate with HPD on the position and location of personnel and assets. This coordination with HPD is in addition to USCG’s normal requirements and duties for operations related to safety and security within its area of responsibility. USCG would maintain acceptable service ratios, response times, and applicable performance objectives for each proposed new fireworks display event. Therefore, new or expanded USCG facilities would not need to be constructed in order to maintain acceptable service ratios, response times, or other performance objectives, and impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not include any conditions pertaining to other public services and facilities, such as USCG, above and beyond the federal, state, and local laws and regulations that currently exist and, therefore, would not result in any change to the existing condition in terms of these services. As such, the effects of the proposed ordinance on existing fireworks display events would not require the construction of new or expanded USCG facilities in order to maintain acceptable service ratios, response times, or other performance objectives. No significant adverse impacts would occur.

Level of Significance Prior to Mitigation**Proposed New Fireworks Display Events**

The proposed new fireworks display events would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for USCG protection services. Therefore, impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for USCG protection services. Therefore, no significant adverse impacts would occur.

Mitigation Measures**Proposed New Fireworks Display Events**

No mitigation is required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance After Mitigation**Proposed New Fireworks Display Events**

Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impacts would occur.

Section 4.10

Transportation, Circulation, and Parking

4.10.1 Overview

This section describes the existing conditions and applicable laws and regulations for transportation, circulation, and parking, followed by an analysis of the proposed project's potential to (1) conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system; (2) conflict with a county congestion management plan by exceeding a level-of-service (LOS) standard; (3) result in inadequate emergency access; (4) conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities; or (5) result in an insufficient supply of parking to meet the project demand. All other potential transportation, circulation, and parking issues, including changes in air traffic patterns and substantially increasing hazards due to a design feature, were analyzed in Section XVI of the Initial Study/Environmental Checklist (Appendix A), which is incorporated by reference, and potential impacts were determined to be less than significant. The analysis and conclusions regarding these impacts are also summarized in Chapter 6, Section 6.4, *Effects Not Found to be Significant*.

The information provided in this section is summarized from the *San Diego Bay and Imperial Beach Oceanfront Fireworks Display Event EIR Transportation Assessment* prepared by Chen Ryan Associates in March 2017 (Appendix J). Table 4.10-1 summarizes the significant impacts and mitigation measures discussed in Section 4.10.4, *Project Impact Analysis*.

Table 4.10-1. Summary of Significant Transportation Impacts and Mitigation Measures

Summary of Potentially Significant Impact(s)	Summary of Mitigation Measure(s)	Level of Significance After Mitigation	Rationale for Finding After Mitigation
Impact-TRA-1: Decrease in the Performance of Roadway, Pedestrian, and Bicycle Facilities from Proposed New Fireworks Display Events.	MM-TRA-1: Implementation of the Transportation-Related Conditions of the Proposed Ordinance, require the implementation of an Event Transportation and Parking Management Plan and compliance with other required permits	Significant and Unavoidable	The proposed ordinance includes a condition of approval that would require implementation of an Event Transportation and Parking Management Plan and compliance with other required permits, which would improve the performance of roadway, pedestrian, and bicycle facilities by facilitating the movement of vehicular, pedestrian, and bicycle traffic; however, there are no metrics or tools available to quantify the effectiveness of the Event Transportation and Parking Management Plan in reducing congestion. Because the extent to which impacts would be reduced cannot be quantified, it cannot be determined with certainty that the impacts would be reduced to less-than-significant levels.

Summary of Potentially Significant Impact(s)	Summary of Mitigation Measure(s)	Level of Significance After Mitigation	Rationale for Finding After Mitigation
Impact-TRA-2: Inadequate Parking Supply During Proposed New Fireworks Display Events.	Implement MM-TRA-1	Significant and Unavoidable	The proposed ordinance includes a condition of approval that would require implementation of an Event Transportation and Parking Management Plan and compliance with other required permits, which would reduce potential parking impacts; however, there are no metrics or tools available to quantify the effectiveness of the Event Transportation and Parking Management Plan in reducing parking impacts. Because the extent to which impacts would be reduced cannot be quantified, it cannot be determined with certainty that the impacts would be reduced to less-than-significant levels.

4.10.2 Existing Conditions

The proposed project includes up to four proposed new fireworks display events in San Diego Bay along the Chula Vista Bayfront and National City Bayfront. These proposed new fireworks display events include three displays along the Chula Vista Bayfront allowed under the Chula Vista Bayfront Master Plan Settlement Agreement and Natural Resources Management Plan, as well as one Fourth of July display along the National City Bayfront. The three proposed fireworks display events along the Chula Vista Bayfront include one Fourth of July display and two non-Fourth of July displays. Accordingly, the existing conditions discussion that follows is separated by each of these locations.

4.10.2.1 Study Area

Fireworks display events are unique in that there are numerous locations that attract vehicular traffic and multi-modal trips, as these events typically have a regional area of influence and can be viewed from various vantage points. The proposed new fireworks display events have the potential to affect transportation and circulation on the streets and intersections in the vicinity of the

proposed new displays, as well as the freeway facilities serving the fireworks display event viewing locations. The potential effects of the proposed new fireworks display events on parking facilities were also considered. The discussion below is separated by the location of the proposed new fireworks display events and identifies the key roadway corridors and their associated characteristics, as well as bicycle and transit connectivity within the study area for each location.

National City Bayfront

Roadway Corridors

There are three roadway corridors within the National City Bayfront study area that would provide access to the fireworks display event viewing areas along the Bayfront. Each of these corridors is described below. The descriptions provide a general understanding of the local roadway corridors and identify the existing setting for the roadway segment analysis presented in this section. Figure 4.10-1 depicts the traffic study area for the National City Bayfront.

Bay Marina Drive

Within the National City Bayfront study area, Bay Marina Drive has the following characteristics:

- Interstate (I-) 5 southbound ramps to Cleveland Avenue: four-lane roadway with a striped median and a posted speed limit of 30 miles per hour (mph).
- Cleveland Avenue to Marina Way: four-lane undivided roadway with a speed limit of 30 mph.
- Marina Way to Haffley Avenue: four-lane roadway, alternating between undivided and with a striped median, with a posted speed limit of 30 mph.
- Haffley Avenue to Tidelands Avenue: four-lane roadway, alternating between undivided and with a striped median, with a speed limit of 30 mph.
- Tidelands Avenue to Quay Avenue: four-lane undivided roadway with a speed limit of 30 mph.
- Quay Avenue to end: four-lane roadway with a striped median and speed limit of 30 mph.

Paved widths along Bay Marina Drive range from 64 to 85 feet. On-street parking is intermittently permitted west of Haffley Avenue. Sidewalks are generally present, with gaps along the south side of the roadway between the I-5 southbound ramps and Cleveland Avenue, along the south side of the roadway west of Tidelands Avenue, and along the north side of the roadway west of Quay Avenue.

Tidelands Avenue

Within the National City Bayfront study area, Tidelands Avenue has the following characteristics:

- Bay Marina Drive to W 28th Street: two-lane undivided roadway with a speed limit of 35 mph.
- W 28th Street to W 32nd Street: two-lane roadway, alternating between undivided and with a striped median, with a posted speed limit of 35 mph.
- W 32nd Street to end (Goesno Place): two-lane undivided roadway with a speed limit of 35 mph.

Paved widths along Tidelands Avenue range from 38 to 60 feet. On-street parking is permitted between Bay Marina Drive and W 32nd Street. Sidewalks are present along the east side of the roadway only.



Marina Way

Within the National City Bayfront study area, Marina Way is a two-lane roadway, with a median alternating between raised and striped, with additional undivided segments. There is no posted speed limit. Paved widths along Marina Way range from 24 to 50 feet. On-street parking is permitted along the southern portion of the roadway, where the roadway widens to accommodate parked cars. Sidewalks are present along the east side of the roadway only.

Bicycle Connectivity

Class II bicycle lanes are present along Bay Marina Drive east of the railroad tracks near Marina Way.

Transit Connectivity

Although no transit routes directly serve the National City Bayfront study area, the nearby 24th Street Transit Station east of I-5 is anticipated to provide access to the fireworks display event viewing areas along the Bayfront. This station is served by the Blue Line of the San Diego Trolley, which provides connectivity between the San Ysidro border crossing and America Plaza in Downtown San Diego. The San Diego Trolley and the Blue Line are discussed further below. The 24th Street Transit Station also provides bus connections to the following routes:

- Route 13, which runs between the 24th Street Station and Kaiser Hospital in the Grantville community of San Diego.
- Route 961, which runs between the 24th Street Station and the Encanto/62nd Street Trolley Station.
- Route 967, which runs between the 24th Street Station and the community of Paradise Hills.
- Route 968, which runs between the 24th Street Station and the community of Paradise Hills.

Chula Vista Bayfront

Roadway Corridors

There are eight roadway corridors within the Chula Vista Bayfront study area that would provide access to the fireworks display event viewing areas along the Bayfront. Each of these corridors is described below. The descriptions provide a general understanding of the local roadway corridors and identify the existing setting for the roadway segment analysis presented in this section. Figure 4.10-2 depicts the traffic study area for the Chula Vista Bayfront.

E Street

Within the Chula Vista Bayfront study area, E Street has the following characteristics:

- I-5 to Bay Boulevard/Living Coast Discovery Center: four-lane roadway with raised median and no posted speed limit.

Paved widths along E Street range from 75 to 100 feet. On-street parking is not permitted. Sidewalks are present along the south side of the roadway only.

Bay Boulevard

Within the Chula Vista Bayfront study area, Bay Boulevard has the following characteristics:

- E Street to F Street: two-lane undivided roadway with a posted speed limit of 35 mph.
- F Street to G Street: two-lane undivided roadway with a posted speed limit of 35 mph.
- G Street to H Street: two-lane undivided roadway with a posted speed limit of 35 mph.

Paved widths along Bay Boulevard range from 35 to 38 feet. On-street parking is not permitted. Sidewalks are present along the east side of the roadway between E Street and F Street, are intermittently present along the west side of the roadway between F Street and G Street, and are present along the west side of the roadway between G Street and H Street.

F Street/Lagoon Drive

Within the Chula Vista Bayfront study area, F Street/Lagoon Drive has the following characteristics:

- Bay Boulevard to Marina Parkway: two- to four-lane roadway with a median alternating between raised and undivided sections and a posted speed limit of 35 mph.

Paved widths along F Street/Lagoon Drive range from 26 to 74 feet. On-street parking is not permitted. Sidewalks are intermittently present along both sides of the road; however, gaps exist along the western portion of the roadway, as well as along the south side of the roadway between Bay Boulevard and the railroad tracks.

G Street

Within the Chula Vista Bayfront study area, G Street has the following characteristics:

- Bay Boulevard to Marina Parkway: two- to four-lane undivided roadway with no posted speed limit.
- Marina Parkway to Sandpiper Way: two-lane undivided roadway with no posted speed limit.
- Sandpiper Way to Quay Avenue: two-lane undivided roadway with no posted speed limit.
- Quay Avenue to end: two-lane undivided roadway with no posted speed limit.

Paved widths along G Street range from 50 to 52 feet. On-street parking is permitted west of Marina Parkway. Sidewalks are present between Bay Boulevard and the railroad tracks, as well as west of Marina Parkway along the north side of the roadway.

H Street

Within the Chula Vista Bayfront study area, H Street has the following characteristics:

- Bay Boulevard to Marina Parkway: three-lane roadway (one eastbound, two westbound), with a center left-turn lane and no posted speed limit.

Paved widths along H Street range from 58 to 72 feet. On-street parking is not permitted. Sidewalks are present along both sides of the roadway.



J Street

Within the Chula Vista Bayfront study area, J Street has the following characteristics:

- I-5 northbound to Bay Boulevard: five-lane roadway (three eastbound, two westbound), with a painted median and a posted speed limit of 30 mph.

Paved widths along J Street range from 80 to 96 feet. On-street parking is not permitted. Sidewalks are present along both sides of the roadway between the I-5 northbound and southbound ramps, while sidewalks are only present on the south side of the roadway between the I-5 southbound ramp and Bay Boulevard.

Marina Parkway (Northern Section)

Marina Parkway is a discontinuous roadway, with two distinct sections. Within the Chula Vista Bayfront study area, Marina Parkway has the following characteristics:

- Sandpiper Way to H Street: two-lane roadway with a striped median and no posted speed limit.
- G Street to F Street: two-lane undivided roadway with no posted speed limit.

Paved widths along Marina Parkway range between 33 and 66 feet. On-street parking is not permitted. Sidewalks are present along the east side of the roadway between Sandpiper Way and H Street only.

Sandpiper Way

Within the Chula Vista Bayfront study area, Sandpiper Way has the following characteristics:

- Marina Parkway to Bayside Parkway: two-lane undivided roadway with a posted speed limit of 25 mph.
- Bayside Parkway to G Street: two-lane undivided roadway with a posted speed limit of 25 mph.

The paved width along Sandpiper Way is 47 feet. On-street parking is permitted along both sides of the roadway. Sidewalks are present along the south/west side of the roadway between Marina Parkway and Bayside Parkway only.

Bicycle Connectivity

Within the Chula Vista Bayfront study area, Class I multi-use paths are present adjacent to H Street, as well as parallel to the railroad tracks between Marina Parkway and H Street (the Bayshore Bikeway), and along the Bayfront between Marina parkway and G Street. Class II Bike lanes are present along Bay Boulevard, F Street/Lagoon Drive, Marina Parkway, and Sandpiper Way. Class III bike routes are present along F Street and H Street, providing connectivity to points east of I-5.

Transit Connectivity

Although no transit routes directly serve the Chula Vista Bayfront study area, the nearby E Street and H Street Transit Stations east of I-5 are anticipated to provide access to the fireworks display event viewing areas along the Bayfront. Both of these stations are served by the Blue Line of the San Diego Trolley, which provides connectivity between the San Ysidro border crossing and America

Plaza in Downtown San Diego. The San Diego Trolley and the Blue Line are discussed further below. The E Street and H Street Transit Stations also provide bus connections to the following routes:

- Route 701, which runs between the H Street Station and the Palomar Street Transit Center in Chula Vista.
- Route 703, which runs between the H Street Station in Chula Vista and Otay Ranch Town Center in Otay Mesa.
- Route 704, which runs between the E Street Station and the Palomar Street Transit Center in Chula Vista.
- Route 705, which runs between the E Street Station and the Southwestern College Transit Center in eastern Chula Vista.
- Route 709, which runs between the H Street Station in Chula Vista and Otay Ranch Town Center in Otay Mesa.
- Route 932, which runs between the 8th Street Transit Center in National City and the Irish Avenue Transit Center in Otay Mesa.

San Diego Trolley

The San Diego Trolley provides regional public transportation to several areas along the San Diego Bay, including those areas that could potentially serve as viewing locations for the proposed fireworks display events within the Bay. The San Diego Trolley serves over 32 million annual passengers, with an average weekday ridership of 97,401 (MTS 2013). Each train consists of between one and four cars depending on need. Each car can hold between 96 and 104 passengers during commute times and up to 200 passengers during special events (referred to as *crush load*). This equates to between 384 passengers and up to 800 passengers during special events. As an average, it is assumed each train typically has three cars and operates at car commute capacity, or approximately 300 passengers per rush hour train.

Blue Line

The Metropolitan Transit System (MTS) Blue Line was the first light-rail line constructed in San Diego and was the start of the MTS Trolley System. In operation since 1981, the Blue Line began with service between downtown San Diego and the San Ysidro Port-of-Entry. Blue Line service has been expanded four times since its inception and now provides service between the San Ysidro Port-of-Entry to the south and the Old Town Transit Center to the north. In all, it services 15.4 miles and includes 18 stations.

The Blue Line currently runs at 7- to 8- minute headways during peak periods and 15-minute headways in off-peak periods. Existing ridership along the Blue Line is estimated at 145 and 151 passengers per train during the AM and PM peak hours, respectively, or about half of the current capacity of 300 passengers per train. Along the San Diego Bay, the Blue Line stops at the 12th and Imperial, Barrio Logan, Harborside, Pacific Fleet, 8th Street, 24th Street, E Street, H Street, Palomar Street, and Palm Avenue Stations. However, it is anticipated that only the 24th Street Station in National City and the E Street and H Street Stations in Chula Vista would provide access to the viewing areas for the proposed new fireworks display events due to their proximity to the Bayfronts.

4.10.3 Applicable Laws and Regulations

4.10.3.1 State

California Department of Transportation

The California Department of Transportation (Caltrans) has jurisdiction over the state highway system and is divided into 12 districts. Caltrans establishes acceptable freeway and on- and off-ramp operations based on the Transportation Research Board's *Highway Capacity Manual 2010* (Transportation Research Board 2010).

Signalized intersections at freeway ramps are required to be analyzed using intersection lane volume (ILV) procedures as described in Topic 406 of the *Highway Design Manual* (Caltrans 2015). This methodology is based on an assessment of each intersection as an isolated unit, without consideration of the effects from adjacent intersections. For this reason, the ILV analysis is used to provide additional validation of signalized ramp intersection operations derived from the *Highway Capacity Manual 2010* methodology.

4.10.3.2 Regional

San Diego Association of Government's San Diego Forward: The Regional Plan

San Diego Forward: The Regional Plan (Regional Plan) was adopted by the San Diego Association of Governments (SANDAG) Board of Directors on October 9, 2015, to establish a long-range blueprint for the San Diego region's growth and development through the year 2050. The Regional Plan was developed in close partnership with the region's 18 cities and the County government, and aims to provide innovative mobility choices and planning to support a sustainable and healthy region, a vibrant economy, and an outstanding quality of life for all. The Regional Plan integrates both the 2004 Regional Comprehensive Plan and the 2050 Regional Transportation Plan (RTP) and Sustainable Communities Strategy (SCS) into one unified plan. By incorporating the SCS, the Regional Plan is in compliance with Senate Bill 375, which identifies how the region will address greenhouse gas emissions to meet state-mandated levels and focuses on land use planning and transportation issues in an attempt to develop sustainable growth patterns on a regional level.

California State Proposition 111, passed by voters in 1990, established a requirement that urbanized areas prepare and regularly update a Congestion Management Program (CMP). The requirements within the state CMP were developed to monitor the performance of the transportation system, develop programs to address near-term and long-term congestion, and better integrate transportation and land use planning. SANDAG provided regular updates for the state CMP from 1991 through 2008. In October 2009, the San Diego region elected to be exempt from the state CMP, and, since this decision, SANDAG has been abiding by 23 Code of Federal Regulations (CFR) 450.320 to ensure the region's continued compliance with the federal congestion management process. The Regional Plan is the region's long-range transportation plan and SCS, and meets the requirements of 23 CFR 450.320 by incorporating the following federal congestion management process: performance monitoring and measurement of the regional transportation system, multimodal alternatives and non-single occupant vehicle analysis, land use impact analysis, the provision of

congestion management tools, and integration with the regional transportation improvement program process.

Riding to 2050, the San Diego Regional Bike Plan

The San Diego Regional Bike Plan (SANDAG 2010) was developed to support the 2004 Regional Comprehensive Plan and the 2050 RTP in implementing the regional strategy for utilizing the bicycle as a valid form of everyday travel. The bike plan, as a part of the SCS mandated by Senate Bill 375, provides for a detailed Regional Bike Network, as well as the programs that are necessary to support it. Implementation of the Regional Bike Plan would help the region meet goals for reducing greenhouse gas emissions and improve mobility.

4.10.3.3 Local

Both existing and proposed new fireworks display events occur within and/or adjacent to the land use jurisdiction of the District. Accordingly, because the streets and intersections serving the viewing sites are within the jurisdiction of some of the District's member cities, the following local laws, regulations, and plans were taken into account in the analysis of the proposed project's impacts on transportation, circulation, and parking.

City of National City

SANTEC/ITE Guidelines for Traffic Impact Studies in the San Diego Region

The City of National City utilizes the San Diego Traffic Engineers' Council (SANTEC) and the Institute of Transportation Engineers (ITE) *Guidelines for Traffic Impact Studies* (SANTEC/ITE 2002). The primary documents used to help prepare these guidelines were SANDAG's CMP and *Traffic Generators Manual*, the City of San Diego's *Traffic Impact Study Manual* and *Trip Generation Manual*, and Caltrans' *Draft Guide for the Preparation of Traffic Impact Studies*. The SANTEC/ITE guidelines were prepared to assist local agencies throughout the San Diego region in promoting consistency and uniformity in traffic impact studies. The guidelines provide thresholds for acceptable roadway and intersection operations and further guidance on internal review processes to aid consultants in traffic study preparation.

City of National City Bicycle Master Plan

The National City Bicycle Master Plan (City of National City n.d.) presents a new vision for bicycle transportation, recreation, sustainability, and quality of life in National City. The Bicycle Master Plan recommends various improvements based on public input, best practices, and analysis of existing conditions and future opportunities. The recommended improvements include bikeway network facilities, treatments at intersections and other spot locations, and bicycle support facilities. The improved facilities outlined in the plan will help to make bicycling an effective transportation option throughout National City. In addition, the Bicycle Master Plan includes design guidelines and bicycle program recommendations, and identifies funding sources for bicycle projects and programs.

City of National City Special Event Guidebook

The City of National City's Special Event Guidebook (City of National City n.d.) outlines the special event permitting process and provides information, rules, and regulations for special events in the City. Any event that takes place in a park or on a street under the jurisdiction of the City and is open to the general public is considered a "public special event." Temporary Use Permits, also considered special event permits, are used for certain special activities, events, or structures that are beneficial to the public for limited periods of time even though they would not comply with building, fire, zoning, or other local codes, if they were permanent. In general, for any organized activity that uses public property, facilities, parks, sidewalks, streets, or any public rights-of-way, applicants need to obtain this permit. Temporary Use Permits include submittal of information such as staging required, roadways used and/or closed for the event, times, and other information. The City of National City may also attach any conditions and/or limitations deemed necessary to protect public health, safety, and welfare, including but not limited to traffic control. The City of National City's Special Event Guidebook also identifies any supplemental permits and provisions that are required in addition to the Temporary Use Permit. A fireworks permit is one of the supplemental permits identified in the Special Event Guidebook, which must be obtained from the National City Fire Department.

City of Chula Vista

Guidelines for Traffic Impact Studies in the City of Chula Vista

In May 2000, the City of the Chula Vista initiated an effort to establish written guidelines for identification of project impacts in EIRs. The City of San Diego and SANTEC/ITE standards were used to reevaluate several recently completed studies in the City of Chula Vista to determine potential changes in the identification of project impacts. The guidelines provide guidance for determining the need and scope of traffic studies, as well as identifying impacts. In conformance with the requirements of the CMP, an analysis of CMP freeways and arterials is required for any project that generates 2,400 daily or 200 peak hour trips. A traffic study may also be required based on direction provided by the City Engineer and the Environmental Review Coordinator. The guidelines provide significance criteria for acceptable roadway, intersection, and freeway operations that are used to determine a project's specific or cumulative impacts on these facilities.

City of Chula Vista Bikeway Master Plan

The City of Chula Vista developed its first Bikeway Master Plan in 1996 (City of Chula Vista 1996). The 1996 plan established the types of bikeway facilities that should be implemented within the City of Chula Vista and identified the need to integrate with the existing system of regional bikeways in the San Diego metropolitan area. The original plan was replaced by one prepared and adopted in January 2005 (City of Chula Vista 2005). The 2005 plan included documenting and evaluating Chula Vista's existing bikeway facility system and its relationship with other systems such as public transit and recommending improvements wherever appropriate. The 2005 plan incorporated expected General Plan changes that would affect circulation patterns. The current 2011 Bikeway Master Plan (City of Chula Vista 2011) is an update of the 2005 Bikeway Master Plan, and is intended to fulfill project scope requirements and maintain City of Chula Vista compliance with California Streets and Highways Code, Section 891.2 requirements for bicycle transportation plans. The 2011 update was

prepared to ensure that Chula Vista's 2005 General Plan changes affecting bicycle transportation are accommodated in a timely manner.

City of Chula Vista Pedestrian Master Plan

The City of Chula Vista Pedestrian Master Plan (City of Chula Vista 2010) presents a long-range vision that will guide the development of Chula Vista's pedestrian facilities over the next 20 years. The plan was developed under the guidance of City of Chula Vista staff and with the advice of a citizen-based Project Working Group. Public input was also gathered through community meetings, a survey, a website, coordination with other City of Chula Vista outreach efforts, and four public workshops. The Pedestrian Master Plan identifies infrastructure improvements to improve pedestrian safety, connectivity, and access to high-demand locations throughout Chula Vista. Recommendations intended for citywide application include installation of missing sidewalk and missing curb ramps. The plan also presents conceptual designs for 30 high-priority pedestrian improvement projects. Furthermore, the Pedestrian Master Plan recommends education, encouragement, and enforcement programs and identifies deficiencies surrounding Chula Vista elementary schools and recommendations for Safe Routes to School initiatives.

City of Chula Vista Special Event Guidelines

The City of Chula Vista Special Event Guidelines (City of Chula Vista n.d.) outline the Special Event Permit process and any special event-related permit types, as well as the requirements for event infrastructure, operational plans (e.g., medical, traffic control), community outreach, and insurance. Examples of special event-related permits include alcohol use permits, building permits (for temporary structures), and a firework/pyrotechnic/special effect/laser permit. The proposed event venue, activities, components, attendance, and unique circumstance of the event are contributing factors to the final determination of the required permit types. As outlined in the City's Special Event Guidelines, the Chula Vista Police Department in conjunction with Chula Vista Public Works/Traffic Engineering staff determines if the special event requires traffic control in order to facilitate vehicular, bicycle, and pedestrian movement on City streets and public rights-of-way potentially affected by the special event. The following guidelines are recommended to be incorporated into the transportation operational plan:

- All traffic control in the public right-of-way must be conducted by a representative of the police department or by a civilian who is certified in traffic control and authorized by the police department in conjunction with City of Chula Vista Public Works/Traffic Engineering staff.
- All proposed street closures must be included in the permit application and be authorized by the police department in conjunction with City of Chula Vista Public Works/Traffic Engineering staff.
- If the event includes a plan to implement a shuttle plan to support the event needs, approval of the property owner is required for use of the property in the transportation plan. If approval to use the property is authorized by a property manager, the authorization letter must indicate that the property manager is authorized to approve the use on behalf of the property owner.
- The City of Chula Vista will evaluate the shuttle stops and proposed transportation routes as part of its overall evaluation of the event plans.

- Any taxi/limo drop-off/pick-up zones should be coordinated with the Chula Vista Police Department.
- Accessible parking and/or access must be included in the event plans.
- If the event involves street closures, traffic/safety equipment for the safe closure of the venue must be obtained and proper detour and parking information must be posted.
- If the event will alter or affect the flow of traffic (vehicle, bicycle, and/or pedestrian) on public streets, traffic control plans may be required.

City of Imperial Beach

The City of Imperial Beach is included because the Fourth of July Imperial Beach Fireworks Show was selected as the sample Fourth of July fireworks display event because it is similar in magnitude (i.e., pounds of fireworks and number of launch sites) and duration as the proposed new Fourth of July fireworks display events.

SANTEC/ITE Guidelines for Traffic Impact Studies in the San Diego Region

The City of Imperial Beach also utilizes the SANTEC/ITE *Guidelines for Traffic Impact Studies* (SANTEC/ITE 2002), which provide thresholds for acceptable roadway and intersection operations and further guidance on internal review processes to aid consultants in traffic study preparation. These guidelines are described above under the City of National City.

City of Imperial Beach Bicycle Transportation Plan

The City of Imperial Beach Bicycle Transportation Plan (City of Imperial Beach 2008) was prepared as a comprehensive update to the 1994 City of Imperial Beach General Plan and Coastal Plan's Circulation Element to better address not only local bicycle travel needs, but also to better serve regional long-distance travel and promote eco-tourism. The Bicycle Transportation Plan objectives include establishing facility types to be implemented and identifying points where the City of Imperial Beach's bikeway system could integrate with the existing San Diego metropolitan regional bikeway system. The plan's scope included documenting and evaluating Imperial Beach's existing bikeway facility system and its relationship to other systems such as mass transit, and recommending improvements wherever appropriate.

4.10.4 Project Impact Analysis

4.10.4.1 Methodology

Potential transportation and circulation impacts associated with the proposed project are summarized below based on the thresholds provided in Appendix G of the State CEQA Guidelines. Fireworks display events are unique and differ from a typical development project in various aspects. Firstly, fireworks display events are unique because they generally occur in the evening hours and are very short in duration. Fireworks display events are also unique in that there are a number of locations that attract vehicular traffic and multi-modal trips, as these events typically have a regional area of influence and can be viewed from various vantage points. Fourth of July

fireworks display events in particular are intended to entertain viewers in various locations, rather than only at the location of the launch site. Non-Fourth of July fireworks display events differ in that they are intended for a more limited audience attending a specific event, and viewers are generally located at or near the launch site. Because fireworks display events are typically coupled with other events (such as the Fourth of July holiday or a private event) that can also influence transportation patterns and trip generation, it is difficult to determine the changes in travel patterns that are directly associated with the fireworks display events themselves. Consequently, specific travel-related impacts cannot be assessed through a conventional traffic impact analysis approach, which would include intersection and roadway LOS analyses. Rather, the impact analysis below focuses on how transportation and parking demands would change during the proposed new fireworks display events, and how these changes potentially affect the efficiency of the surrounding transportation network.

To understand and identify the potential travel- and parking-related changes associated with both the proposed new Fourth of July and non-Fourth of July fireworks display events along the National City and Chula Vista Bayfronts, a sampling of data was collected during the Fourth of July Imperial Beach Fireworks Show (July 4, 2015) and the End of WWII 70th Anniversary (August 15, 2015), which was a public event held at the U.S.S. Midway Museum that included an approximately 10-minute fireworks display from the flight deck. For both sample events, data were collected for multiple modes of transportation and included vehicle, pedestrian, and bicycle counts. For the sample Fourth of July fireworks display event, the Fourth of July Imperial Beach Fireworks Show was selected because it is similar in magnitude (i.e., pounds of fireworks and number of launch sites) and duration as the proposed new Fourth of July fireworks display events. For the sample non-Fourth of July fireworks display event, the End of WWII 70th Anniversary was selected because it was a publicly advertised fireworks show that was open to the public, and therefore is representative of the proposed new non-Fourth of July fireworks display events in regard to transportation, circulation, and parking. The travel-related data from both sample fireworks display events were then compared to a typical Saturday (non-event, August 22, 2015) to determine changes in travel patterns and parking demands associated with both Fourth of July and non-Fourth of July fireworks display event types, and to identify where congestion, conflicts between the various modes of travel, and excess parking demand were observed.

The magnitude of travel- and parking-related changes observed during these sample fireworks display events were then correlated to the potential locations of the proposed new fireworks display events to qualitatively identify potential transportation and parking-related impacts associated with the proposed new fireworks display events.

Methodology for Data Collection Efforts

Fourth of July Imperial Beach Fireworks Show

Daily roadway segment counts were collected on the main roadways providing access to the viewing areas for the sample Fourth of July fireworks display event. Vehicular count data were collected at three key roadway segments accessing or adjacent to the event location. Key study roadway segments were selected based on a review of the roadway network surrounding the event and the level of access they provide to the event. Vehicular roadway counts were conducted during the entire day, midnight to midnight, and provide an hour-by-hour count of vehicular traffic entering and exiting the event location.

Vehicular, pedestrian, bicycle counts were also collected at key intersection locations providing access to the viewing areas for the sample Fourth of July fireworks display event. Three key study intersections were identified that provide access to the event. The study intersections provide key connections between the event location and the adjacent neighborhoods, as they are anticipated to have the highest vehicular, pedestrian, and bicyclist activity on event days. Because this analysis focuses on changes in travel patterns across multiple modes of transportation, only intersections with pedestrian and bicycle crossings that provide the main pedestrian and bicycle access points for the associated viewing areas were selected. Intersection counts were conducted between 7:00 p.m. and 11:00 p.m. to document the vehicular, pedestrian, and bicycle activity around the viewing areas before, during, and after the event.

In addition to roadway segment and intersection counts, parking occupancy counts were conducted at four parking facilities. Parking facilities that either directly serve or are within a quarter of a mile of the event location were counted during the afternoon and evening (at 1:00 p.m., 3:00 p.m., 5:00 p.m., and 7:00 p.m.) to determine whether and when they reached capacity.

A list of the key roadway segments, intersections, and parking facilities is provided in Table 4.10-2.

Table 4.10-2. Sample Fourth of July Imperial Beach Fireworks Show: Transportation Data Collection

Viewing Location	Roadway Segments	Intersections	Parking Facilities
Imperial Beach Oceanfront	<ul style="list-style-type: none"> • Palm Avenue between 7th Avenue and Rainbow Drive • Imperial Beach Boulevard between Connecticut Street and 4th Street • Seacoast Drive between Elkwood Avenue and Daisy Avenue 	<ul style="list-style-type: none"> • Palm Avenue and Seacoast Drive • Evergreen Avenue and Seacoast Drive • Imperial Beach Boulevard and Seacoast Drive 	<ul style="list-style-type: none"> • Daisy Avenue Parking Lot • Elm Avenue Parking Lot • Seacoast Drive Parking Lot • Imperial Beach Boulevard Parking Lot

Source: Appendix J

Freeway segment count data for State Route 75 and I-5 were not available from the Caltrans Performance Measurement System (PeMS) database for the Imperial Beach area. However, because of the regional nature of Fourth of July fireworks display events, Fourth of July data for the freeway segments that provide regional access to San Diego Bay and the Imperial Beach Oceanfront could be used to correlate potential project-related freeway traffic volumes, as similar volumes could be expected on the freeways that would provide access to the National City and Chula Vista Bayfronts. As such, freeway segment counts were obtained from the Caltrans PeMS database for segments of I-8 and I-5, each of which provide regional access to San Diego Bay. Four key freeway mainline segments were identified and studied.

- I-8 between Sports Arena Boulevard and I-5 Junction
- I-8 between I-5 Junction and Hotel Circle
- I-5 between Washington Street and Sassafras Street

- I-5 between Sassafras Street and Front Street

End of WWII 70th Anniversary Event

Daily roadway segment counts were collected on the main roadways providing access to the viewing areas for the sample other non-Fourth of July fireworks display event. Vehicular count data were collected at five key roadway segments across the two areas adjacent to the event location within the North Embarcadero, Central Embarcadero (Seaport Village), and South Embarcadero. Key study roadway segments were selected based on a review of the roadway network surrounding the event and the level of access to the event site provided by the roadway. Vehicular roadway counts were conducted during the entire day, midnight to midnight, and provide an hour-by-hour summary of vehicular traffic entering and exiting the event location.

Pedestrian and bicycle counts were also collected at key intersection locations providing access to the viewing areas for the sample other non-Fourth of July fireworks display event. Because this analysis focuses on changes in travel patterns across multiple modes of transportation, only intersections with pedestrian and bicycle crossings that provide the main pedestrian and bicycle access points for the associated viewing areas were selected. Two key study intersections providing access to the event were identified within the North Embarcadero area. This is because it was assumed that patrons coming to and from this event would park either in Seaport Village or on the G Street Mole and would use the Embarcadero to access the event site at the U.S.S. Midway Museum. Intersection counts were conducted between 5:00 p.m. and 7:00 p.m. and between 9:00 p.m. and 11:00 p.m. to document the vehicular, pedestrian, and bicycle activity around the viewing areas before, during, and after the event.

In addition to roadway segment and intersection counts, parking occupancy counts were conducted at six parking facilities. Parking facilities that either directly serve or are within a quarter of a mile of the event location were counted through the day (between 1:00 p.m. and 8:00 p.m.) to determine whether and when they reached capacity. Parking occupancy data were also obtained from the parking management companies who operate the paid public parking facilities in the area surrounding the sample other non-Fourth of July display.

A list of the key roadway segments, intersections, and parking facilities is provided in Table 4.10-3.

Table 4.10-3. Sample End of WWII 70th Anniversary Event: Transportation Data Collection

Viewing Location	Roadway Segments	Intersections	Parking Facilities
North Embarcadero	<ul style="list-style-type: none"> • Harbor Drive between Ash Street and Broadway • Harbor Drive between Broadway and G Street • Broadway between Harbor Drive and Pacific Highway 	<ul style="list-style-type: none"> • Harbor Drive and Broadway (Embarcadero) • Harbor Drive and Tuna Lane 	<ul style="list-style-type: none"> • Harbor Drive Surface Parking Lot (in front of Solar Turbines) • Harbor Drive Surface Parking Lot (in front of County Administration Center) • Navy Pier Parking Lot • G Street Pier Parking Lot
Central and South Embarcadero	<ul style="list-style-type: none"> • Harbor Drive between G Street and Pacific Highway • Harbor Drive between Kettner Boulevard and Market Street 	None	<ul style="list-style-type: none"> • Seaport Village Embarcadero Parking Lot • Convention Center Parking Lot

Source: Appendix J

Key study freeway segments were identified along I-5 that provide regional access to the sample other non-Fourth of July fireworks display event viewing areas. Freeway segment counts were obtained from the Caltrans PeMS database. Two key freeway mainline segments were identified and studied for the sample other non-Fourth of July fireworks display event.

- I-5 between Washington Street and Sassafras Street
- I-5 between Sassafras Street and Front Street

Roadway Segments, Intersections, and Freeway Segments

Impacts on roadway segments, intersections, and freeway segments would occur if the proposed project would conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. Traffic impacts on project study area roadways, intersections, and freeway segments within the District's five member cities were analyzed based on the thresholds provided in their respective guidelines, which are described in Section 4.10.3, *Regulatory Setting*. These guidelines all define project impact thresholds by facility type, and typically serve as the applicable plans, ordinances, or policies determining a project's potential impact on the performance of the circulation system. These thresholds are generally based upon an acceptable sustained increase in the volume to capacity ratio for roadway and freeway segments, and increases in vehicle delays for intersections. Traffic impacts within the City of Chula Vista are analyzed based on the *Guidelines for Traffic Impact Studies in the City of Chula Vista*, while the cities of National City and Imperial Beach both utilize the *SANTEC/ITE Guidelines for Traffic Impact Studies in the San Diego Region* for analyzing traffic impacts. In the event a proposed project exceeds the thresholds outlined in these guidelines, the project is considered to result in a conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness of the circulation system.

As mentioned, fireworks display events are unique in that there are a number of locations that attract vehicular traffic and multi-modal trips. In addition, fireworks display events are temporary and infrequent in nature, with any associated increase in traffic volumes utilizing the surrounding roadways, intersections, and freeway facilities also occurring on a temporary and infrequent basis. The temporary and infrequent nature of fireworks display events and any associated changes in transportation volumes or travel patterns, as well as changes to parking demand or supply, make the use of traditional transportation analysis methods and standards inappropriate. These traditional metrics are typically intended for identifying roadway facility impacts associated with permanent development projects or infrastructure changes that generate long-term changes in transportation volumes or travel patterns, as well as changes to parking demand or supply. Consequently, the various guidelines of the District's member cities, which generally rely on LOS analyses for determining long-term project-related impacts, would not be applicable to fireworks display events. Rather, because fireworks displays are a form of special event, it would be more appropriate to apply the standards of the special event guidelines for the cities of National City and Chula Vista, which both include requirements for maintaining effective circulation during special events, including fireworks display events. Therefore, for the purposes of this Draft EIR, the special event guidelines for the cities of National City and Chula Vista serve as the applicable plans, ordinances, or policies establishing measures of effectiveness for the performance of the circulation system, and the proposed project's consistency with these guidelines is considered.

Accordingly, this analysis focuses on how the short-term transportation and parking demand patterns changed around San Diego Bay and the Imperial Beach Oceanfront under sample event conditions, as compared to non-event conditions, and where congestion, conflicts between the various modes of travel, and excess parking demand may occur during the sample event. The changes in transportation and parking demand and travel patterns that occurred during existing fireworks display events were applied to the proposed new fireworks display events along the Chula Vista Bayfront and National City Bayfront to identify potential project-related impacts related to conflicts with applicable plans, ordinances, or policies establishing measures of effectiveness for the performance of the circulation system.

Public Transit

Impacts on transit circulation would occur if the proposed project would conflict with the adopted policies, plans, or programs that support public transit or would otherwise decrease the performance or safety of such facilities. Existing light-rail (Trolley) transit stops along south San Diego Bay include the Harborside, Pacific Fleet, 8th Street, 24th Street, E Street, H Street, Palomar Street, and Palm Avenue Stations. However, it is anticipated that only the 24th Street Station in National City and the E Street and H Street Stations in Chula Vista would provide access to the viewing areas for the proposed new fireworks display events due to their proximity to the Bayfronts. Transit ridership data were collected to understand changes in transit ridership associated with the existing Fourth of July fireworks display events. The changes in transit ridership that occurred during existing fireworks display events were applied to the proposed new fireworks display events along the Chula Vista Bayfront and National City Bayfront to identify potential project-related impacts on public transit.

Pedestrian and Bicycle Facilities

Impacts related to pedestrian and bicycle circulation would occur if the proposed project would conflict with the adopted policies, plans, or programs that support these alternative modes of transportation or would otherwise decrease the performance or safety of such facilities. Pedestrian and bicycle movement counts were conducted 2 hours before and 2 hours after the sample fireworks display events at key intersection locations providing access to the viewing areas. These counts provided a measure of change in pedestrian and bicycle activities near the viewing areas before and after these sample fireworks display events. They also provided another metric for assessing change in vehicular demand during the sample fireworks display events.

Parking

A significant parking impact would occur if the proposed project would result in an insufficient supply of parking to meet the project demand. Because the proposed project does not include any construction, potential parking impacts would not be related to a deficiency in parking provided by the project. Rather, potential parking impacts would occur if the proposed project would create a demand on existing parking facilities that would meet or exceed the capacity of such facilities. Parking facilities that could be potentially affected include those that either directly serve or are within a quarter of a mile of the viewing areas for the proposed new fireworks display events. Potential parking impacts associated with the proposed new fireworks display events were determined based on data collected during the sample fireworks display events.

4.10.4.2 Thresholds of Significance

The following significance criteria are based on Appendix G of the State CEQA Guidelines and provide the basis for determining significance of impacts associated with transportation, circulation, and parking conditions as a result of the proposed project's implementation. The determination of whether a transportation impact would be significant is based on the thresholds described below and the professional judgment of the District as Lead Agency and the recommendations of qualified personnel at ICF and Chen Ryan Associates, all of which is based on evidence in the administrative record. Impacts are considered significant if the project would result in any of the following.

1. Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.
2. Conflict with applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.
3. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
4. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
5. Result in inadequate emergency access.

6. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.
7. Result in an insufficient supply of parking to meet the project demand.

As discussed in the Initial Study/Environmental Checklist Section XVI (Appendix A), Thresholds 3 and 4 are not included in the analysis below, as it was determined that the proposed project would not result in any impacts related to changes in air traffic patterns or increases in hazards because of a design feature or incompatible use. Those conclusions and the rationale that supports them are summarized in Chapter 6, *Additional Consequences of Project Implementation*. As such, only Thresholds 1, 2, 5, 6, and 7 are discussed in the impact analysis that follows.

4.10.4.3 Project Impacts and Mitigation Measures

Threshold 1: Implementation of the proposed project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

Impact Discussion

For the purposes of this Draft EIR, the special event guidelines for the cities of National City and Chula Vista serve as the applicable plans, ordinances, or policies establishing measures of effectiveness for the performance of the circulation system, as these documents provide requirements to ensure effective circulation during special events such as fireworks display events. Impacts would be considered significant if the proposed project would conflict with these guidelines.

Fourth of July Fireworks Display Events

Sample Fourth of July Fireworks Display Event

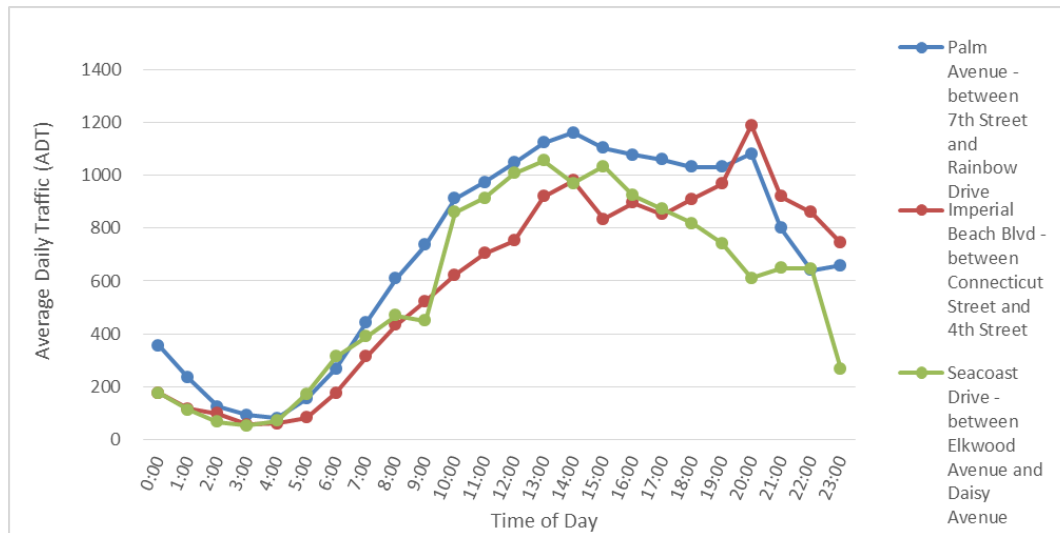
To capture the most conservative scenario for evaluating potential traffic impacts associated with the proposed new Fourth of July fireworks display events along the National City and Chula Vista Bayfronts, the observed changes in travel patterns during the sample Fourth of July Imperial Beach Fireworks Show, an existing annual Fourth of July fireworks display event, were documented. The Fourth of July Imperial Beach Fireworks Show takes place along the Imperial Beach Oceanfront, off the middle of Imperial Beach Pier. The travel-related data from this display were then compared to a typical Saturday (baseline, August 22, 2015) to determine changes in travel patterns with and without a fireworks display event. The magnitude of changes in travel patterns observed during this display was used to understand potential travel pattern-related impacts associated with the proposed new Fourth of July fireworks display events. The changes in travel patterns observed during the sample Fourth of July Imperial Beach Fireworks Show are detailed below.

The City of Imperial Beach is the southernmost beach city on the West Coast of the United States, and is in the South Bay area of San Diego County. The sample Fourth of July Imperial Beach Fireworks Show was viewed by thousands of people from the beach.

Roadway Segments

Figure 4.10-3 displays roadway segment daily traffic volumes during the event day along the main roadways that provide vehicular access to the area.

Figure 4.10-3. Roadway Segment ADT on Sample Fourth of July Fireworks Display Event Day



As shown, the highest traffic volumes on the majority of roadways were experienced between 8:00 p.m. and 9:00 p.m. just prior to the start of the event. High traffic volumes along the majority of roadways persisted for 2 hours after the event between 9:00 p.m. and 11:00 p.m., as viewers vacated the viewing areas.

Table 4.10-4 provides a comparison of the roadway segment average daily traffic (ADT) within the Imperial Beach area during both the event day and non-event day conditions.

Table 4.10-4. Sample Fourth of July Fireworks Display Event and Non-Event Day Roadway Segment ADT Comparisons

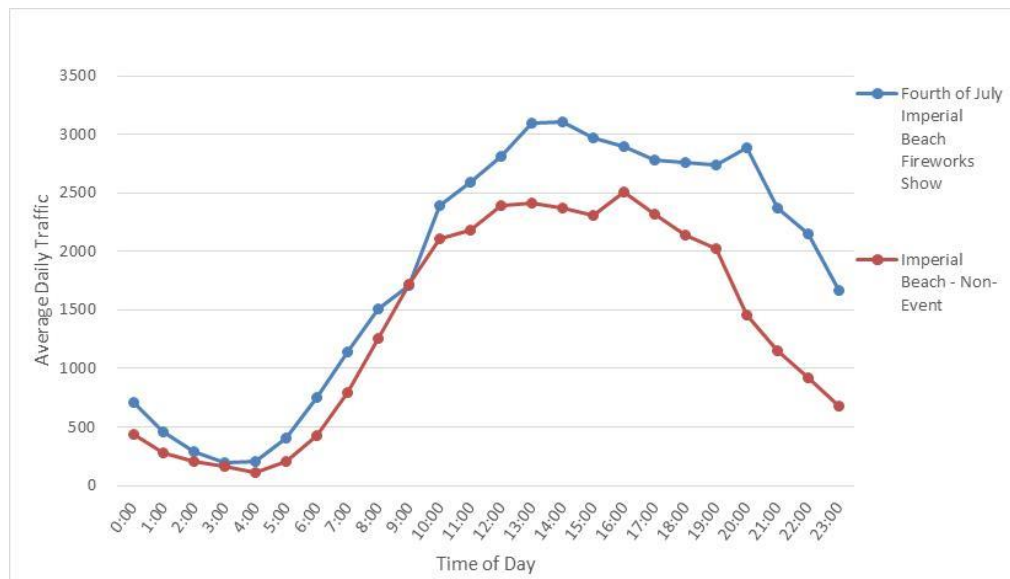
Roadway	Segment	ADT		
		Event Day	Non-Event Day (Aug. 22)	Change in Volume %
Palm Avenue	Between 7 th Street and Rainbow Drive	16,800	14,693	14%
Imperial Beach Boulevard	Between Connecticut Street and 4 th Street	14,184	10,762	32%
Seacoast Drive	Between Elkwood Avenue and Daisy Avenue	13,638	7,121	92%
Total Change for the Area¹				37%

Source: Appendix J

¹ Total change for the area is based on the total of the event condition volumes compared to the total of the non-event day condition volumes.

As shown in Table 4.10-4 above, the Imperial Beach area experienced an average increase of 37 percent in average daily vehicular traffic during the event day.

Figure 4.10-4 compares hourly traffic volumes, combined across all observed roadways, between the event day and non-event day conditions in the Imperial Beach area.

Figure 4.10-4. Roadway Segment ADT during Sample Fourth of July Fireworks Display Event and Non-Event Day Conditions

As shown on Figure 4.10-4, the observed change in roadway segment vehicular traffic volumes on the event day were moderate and consistently higher throughout the day compared to non-event day conditions, with an average increase in traffic volumes of 37 percent observed on surrounding roadways. These higher traffic volumes likely resulted in additional traffic congestion and delays along roadways that provide access to the viewing sites for the sample fireworks display event.

Intersections

Table 4.10-5 displays vehicular, pedestrian, and bicyclist volumes at key intersections in the Imperial Beach area during both event and non-event day conditions.

Table 4.10-5. Sample Fourth of July Fireworks Display Event and Non-Event Day Intersection Volumes (7:00 p.m. to 11:00 p.m.)

Intersection	Event Day			Non-Event Day (August 22)			Change in Volume %		
	Auto	Peds	Bikes	Auto	Peds	Bikes	Auto	Peds	Bikes
Palm Avenue and Seacoast Drive	1,822	6,171	181	1,487	317	37	23%	1,847%	389%
Evergreen Avenue and Seacoast Drive	1,860	8,463	357	1,258	510	43	48%	1,559%	730%
Imperial Beach Boulevard and Seacoast Drive	2,228	6,610	215	1,314	188	31	70%	3,416%	594%
Total Change for the Area¹							46%	1,993%	578%

Source: Appendix J

¹ Total change for the area is based on the total of the event condition volumes compared to the total of the non-event day condition volumes.

As shown in Table 4.10-5 above, key intersections in the Imperial Beach area experienced an average increase of 46 percent in vehicular traffic, an average increase of 1,993 percent in pedestrian activity, and an average increase of 578 percent in bicyclist activity during the event. The significant increases in pedestrian and bicycle traffic were observed crossing intersections adjacent to the viewing sites for the sample fireworks display event. Because these pedestrian and bicycle volumes are not typical, the intersections and pedestrian and bicycle facilities adjacent to the sample viewing sites may not have been designed to accommodate these levels of traffic. These higher traffic volumes likely resulted in additional traffic congestion and delays at intersections that provide access to the viewing sites for the sample fireworks display event.

Freeway Facilities

As mentioned, freeway count data for State Route 75 and I-5 were not available for the Imperial Beach area. However, freeway segment counts for the Fourth of July were obtained from the Caltrans PeMS database for segments of I-8 and I-5, each of which provide regional access to San Diego Bay and the Imperial Beach Oceanfront. Because of the regional nature of Fourth of July fireworks display events, these data can be used to correlate potential project-related freeway traffic volumes that could be expected on the freeways that would provide access to the National City and Chula Vista Bayfronts. Table 4.10-6 displays freeway volumes for different freeway segments along I-8 and I-5 during both the event day and non-event day conditions.

Table 4.10-6. Sample Fourth of July Fireworks Display Event and Non-Event Day Freeway Segment Volumes

Freeway	Segment	Direction ¹	Event	Event Day	Non-Event	Non-	Change in	Change in 9 p.m.
			Day All	9 p.m. to 12 a.m.	Day All	Event Day		
			Day ADT	ADT	Day ADT	9 p.m. to 12 a.m. ADT	All Day Traffic Volume %	to 12 a.m. Traffic Volume %
I-8	Between Sports Arena Boulevard and I-5 Junction	EB	49,502	11,718	59,283	7,350	-16%	59%
		WB	56,055	3,798	61,920	4,064	-9%	-7%
	Between I-5 Junction and Hotel Circle	EB	80,186	16,541	101,849	11,366	-21%	46%
		WB	88,552	5,050	104,700	5,529	-15%	-9%
I-5	Between Washington Street and Sassafras Street	NB	71,616	8,860	78,878	7,009	-9%	26%
		SB	65,701	11,607	73,370	7,432	-10%	56%
	Between Sassafras Street and Front Street	NB	88,339	8,281	99,118	6,609	-11%	25%
		SB	69,298	16,633	78,335	10,343	-12%	61%
Total Change for Area ²							-13%	38%

Source: Appendix J

¹ EB = eastbound; WB = westbound; NB = northbound; SB = southbound.² Total change for the area is based on the total of the event condition volumes compared to the total of the non-event day condition volumes.

As shown in Table 4.10-6 above, freeway volumes experienced an average decrease of 13 percent in average vehicular traffic during the sample Fourth of July fireworks display event day. This decrease could potentially be a result of fewer community members accessing restaurant and commercial establishments in downtown San Diego and the Imperial Beach Oceanfront because of the Fourth of July holiday, and may not be directly related to the actual event. However, increased traffic volumes of 38 percent were also observed on the freeway facilities that serve the sample viewing areas between 9:00 p.m. and 12:00 a.m. following the end of the display. Traffic congestion was observed on the freeway facilities serving the sample existing Fourth of July fireworks display event viewing areas up to 3 hours after the conclusion of the event.

Proposed New Fourth of July Fireworks Display Events

As mentioned, changes in transportation demand and travel patterns that occurred during an existing Fourth of July fireworks display event were applied to the proposed new fireworks display events along the National City and Chula Vista Bayfronts to assess the potential transportation-related impacts associated with these displays. For this analysis, it was assumed that similar levels of additional vehicular, pedestrian, and bicycle activity can be anticipated to occur during the proposed new Fourth of July fireworks display events as those observed during the sample Fourth of July fireworks display event. There is no metric or thresholds for determining whether a certain percentage change in traffic volumes associated with a temporary special event, such as a fireworks display event, is significant. As a result, impacts are analyzed qualitatively by determining whether the changes in transportation demand and travel patterns associated with the proposed new fireworks display events, as applied from the observed changes during the sample Fourth of July display, would conflict with the special event guidelines of the cities of National City or Chula Vista, which serve as the applicable plans, ordinances, and policies establishing measures of effectiveness for the performance of the circulation system for the purposes of this analysis.

While only a moderate temporary increase in vehicle activity was observed on the day of the sample existing Fourth of July fireworks display event, the substantial temporary increase in bicycle and pedestrian activity that was observed indicates that the proposed new fireworks display events would likely result in additional temporary congestion on the roadways, as well as on the pedestrian and bicycle facilities that serve the viewing locations along the National City and Chula Vista Bayfronts, potentially resulting in higher conflicts between these varying modes of transportation. However, the proposed new Fourth of July fireworks display events would be required to comply with the applicable special event guidelines of their respective cities. These special event guidelines require that fireworks display events obtain any necessary special event and/or related permits, and include requirements to implement traffic control plans as necessary. As discussed in Section 4.9, *Public Services and Facilities*, both the National City and Chula Vista police departments implement operational and traffic control plans during special events such as fireworks display events if required as part of the special event permit. Consistent with their current operational practices, the National City and Chula Vista police departments would implement these plans during the proposed new fireworks display events. Therefore, because the proposed new Fourth of July fireworks display events would comply with the special event guidelines of the cities of National City and Chula Vista, including any traffic control requirements of the special event permits, the proposed project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. Impacts would be less than significant.

Furthermore, the proposed ordinance includes a condition of approval that requires implementation of an Event Transportation and Parking Management Plan for the proposed new Fourth of July fireworks display events, which would further reduce potential conflicts between different modes of transportation by facilitating the movement of vehicular, pedestrian, and bicycle traffic and improving circulation.

Other Non-Fourth of July Fireworks Display Events

Sample Other Non-Fourth of July Fireworks Display Event

To capture the most conservative scenario for evaluating potential traffic impacts associated with the two proposed new other non-Fourth of July fireworks display events along the Chula Vista Bayfront, the observed changes in travel patterns during the End of WWII 70th Anniversary event were documented. The sample End of WWII 70th Anniversary event was held on the flight deck of the U.S.S. Midway Museum, in the North Embarcadero area in downtown San Diego, with the purpose of honoring WWII veterans. The End of WWII 70th Anniversary event was selected for evaluation because it was a publicly advertised fireworks display event that was open to the public. Because this display was advertised and fully open to the public, it is representative of the two proposed other non-Fourth of July fireworks display events along the Chula Vista Bayfront. The sample event took place on Saturday, August 15, 2015, and consisted of a live musical show, a fireworks display, and a dance, with the event commencement and closure occurring at 6:00 p.m. and 10:00 p.m., respectively. The fireworks display occurred in the middle of the event around 8:00 p.m. Data were collected during the sample End of WWII 70th Anniversary event in order to correlate the observed changes in travel and parking patterns associated with this sample event with the two proposed new other non-Fourth of July fireworks display events.

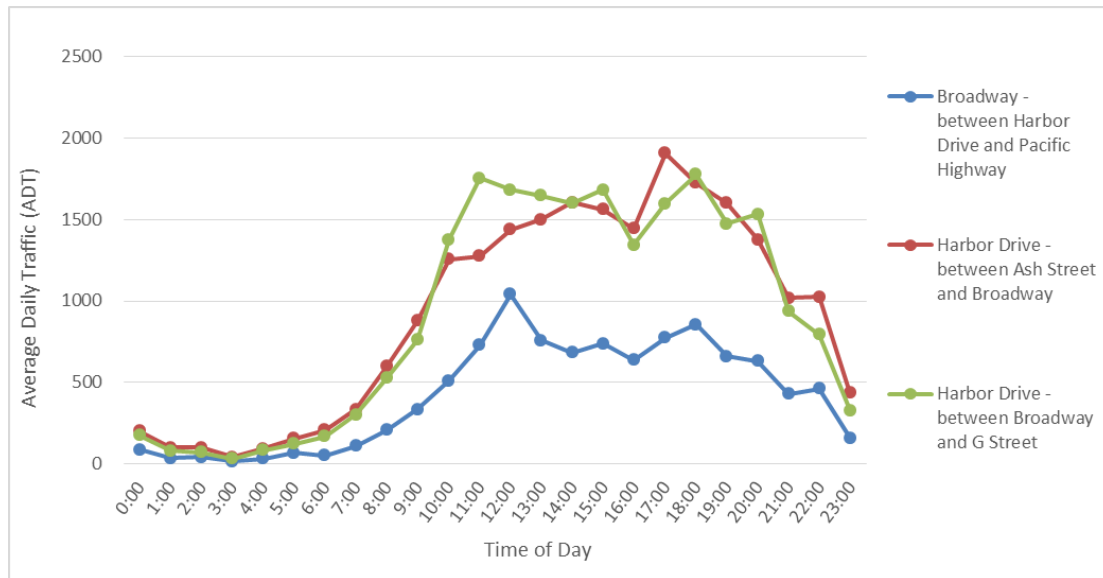
Unlike the sample Fourth of July fireworks display event, which provides for a number of different viewing areas due to the magnitude of the fireworks display, the study area for the sample other non-Fourth of July fireworks display event only included three areas that are adjacent to the U.S.S. Midway Museum. Because the sample End of WWII 70th Anniversary event took place in a single location with only one fireworks launch site, key study roadway segments and intersections were selected only in the North Embarcadero, Central Embarcadero (Seaport Village), and South Embarcadero viewing areas, all of which are adjacent to the U.S.S. Midway Museum.

North Embarcadero

Roadway Segments

Figure 4.10-5 displays roadway segment daily traffic volumes on the event day along the main roadways providing vehicular access to the sample other non-Fourth of July fireworks display event.

Figure 4.10-5. Roadway Segment ADT on Sample Other Non-Fourth of July Fireworks Display Event Day: North Embarcadero



As shown, the highest traffic volumes for the majority of roads occurred between 5:00 p.m. and 6:00 p.m. just prior to the start of the sample End of WWII 70th Anniversary event. Substantial traffic volumes were also maintained for approximately 3 hours after the event, from 9:00 p.m. to 12:00 a.m.

Table 4.10-7 provides a comparison of the roadway segment ADT in the North Embarcadero area during both the sample End of WWII 70th Anniversary event and non-event day conditions.

Table 4.10-7. Sample Other Non-Fourth of July Fireworks Display Event and Non-Event Day Roadway Segment ADT Comparisons: North Embarcadero

Roadway	Segment	ADT		
		Other Event Day	Non-Event Day (Aug. 22)	Change in Volume %
Harbor Drive	Between Ash Street and Broadway	21,886	18,526	18%
	Between Broadway and G Street	21,846	17,115	28%
Broadway	Between Harbor Drive and Pacific Highway	10,055	8,639	16%
Total Change for the Area¹				21%

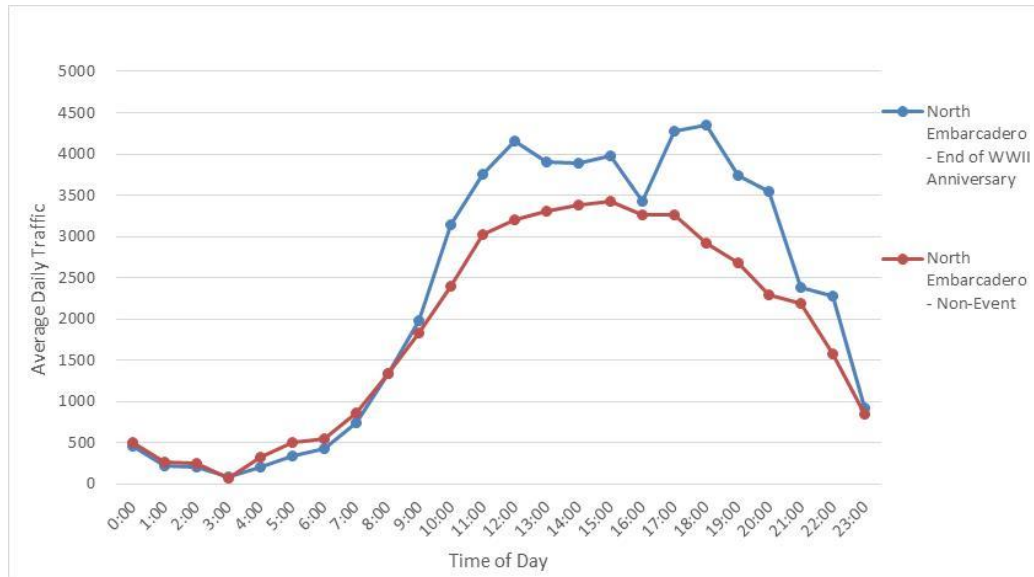
Source: Appendix J

¹ Total change for the area is based on the total of the event condition volumes compared to the total of the non-event day condition volumes.

As shown in Table 4.10-7 above, the North Embarcadero area experienced an average increase of 21 percent in average daily vehicular traffic during the day of the sample other non-Fourth of July fireworks display event.

Figure 4.10-6 displays roadway segment daily traffic volumes that occurred during the sample other non-Fourth of July fireworks display event, as well as under non-event day conditions, in the North Embarcadero area.

Figure 4.10-6. Roadway Segment ADT during Sample Other Non-Fourth of July Fireworks Display Event and Non-Event Day Conditions: North Embarcadero Area



As shown, the traffic volumes during the sample other non-Fourth of July fireworks display event day were consistently higher compared to a typical summer Saturday between 9:00 a.m. and 12:00 a.m., with a moderate (21 percent) increase in vehicular traffic observed. This increase in traffic likely resulted in some additional vehicular congestion on the roadway facilities providing access to the viewing site for the sample other non-Fourth of July fireworks display event.

Intersections

Table 4.10-8 displays vehicular, pedestrian, and bicyclist volumes at key intersections in the North Embarcadero area during both the sample End of WWII 70th Anniversary event and non-event day conditions. Both study locations are on bicycle/pedestrian facilities; therefore, only bicycle and pedestrian counts were conducted.

Table 4.10-8. Sample Other Non-Fourth of July Fireworks Display Event and Non-Event Day Intersection Volumes (5:00 p.m. to 11:00 p.m.): North Embarcadero

Intersection	Other Event Day			Non-Event Day (August 22)			Change in Volume %		
	Auto	Peds	Bikes	Auto	Peds	Bikes	Auto	Peds	Bikes
Harbor Drive and Broadway (Embarcadero)	-	3,198	354	-	2,257	300	-	42%	18%
Harbor Drive and Tuna Lane	-	3,371	335	-	2,631	310	-	28%	8%
Total Change for the Area¹							N/A	34%	13%

Source: Appendix J

¹ Total change for the area is based on the total of the event condition volumes compared to the total of the non-event condition volumes.

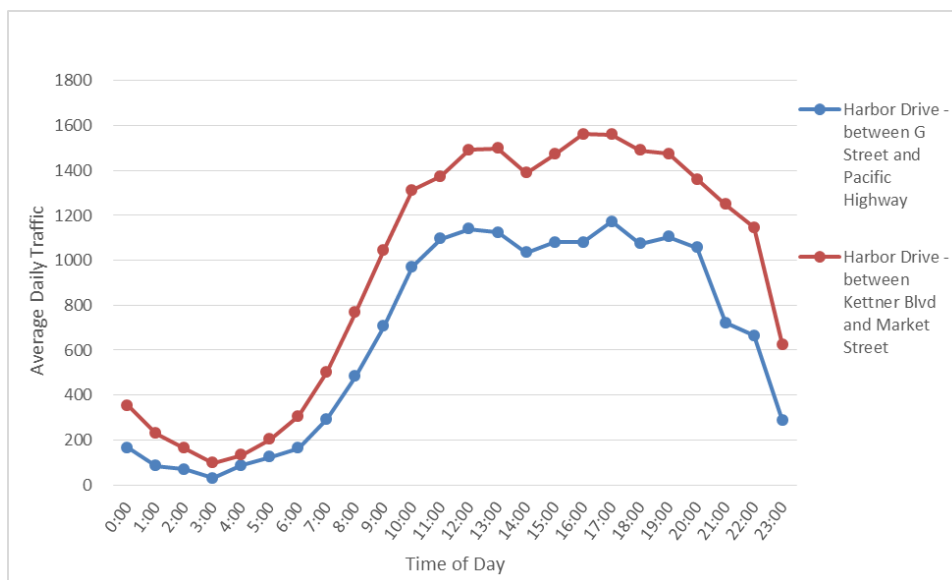
As shown in Table 4.10-8, key intersections in the North Embarcadero area experienced increases in pedestrian activity and bicyclist activity during the sample End of WWII 70th Anniversary event. A moderate increase of 34 percent in pedestrian activity was observed on the day of the sample other non-Fourth of July fireworks display event. Additionally, a small increase of 13 percent in bicycle activity was observed on the day of the sample other non-Fourth of July fireworks display event. Because only moderate and small increases in pedestrian activity and bicycle activity, respectively, were observed on the day of the sample other non-Fourth of July fireworks display event, it is difficult to anticipate whether the two proposed new other non-Fourth of July fireworks display events would potentially affect pedestrian and bicycle facilities adjacent to and accessing the viewing areas along the Chula Vista Bayfront. However, to be conservative, it is assumed that this increase would affect pedestrian and bicycle facilities around the event site on a temporary basis, and additional precautions should be made to accommodate and anticipate these increases.

Central (Seaport Village) and South Embarcadero

Roadway Segments

Figure 4.10-7 displays roadway segment daily traffic volumes during the sample other non-Fourth of July fireworks display event day along the main roadways that provide vehicular access to the area.

Figure 4.10-7. Roadway Segment ADT on Sample Other Non-Fourth of July Fireworks Display Event Day: Central (Seaport Village) and South Embarcadero



As shown, the highest traffic volumes during the sample other non-Fourth of July fireworks display event occurred between 4:00 p.m. and 5:00 p.m. just prior to the start of the End of WWII 70th Anniversary event.

Table 4.10-9 provides a comparison of roadway segment ADT within the Central (Seaport Village) and South Embarcadero during both the sample End of WWII 70th Anniversary event and non-event conditions.

Table 4.10-9. Sample Other Non-Fourth of July Fireworks Display Event and Non-Event Day Roadway Segment ADT Comparisons: Central (Seaport Village) and South Embarcadero

Roadway	Segment	ADT		
		Other Event Day	Non-Event Day (Aug. 22)	Change in Volume %
Harbor Drive	Between G Street and Pacific Highway	15,793	13,912	14%
	Between Kettner Boulevard and Market Street	22,789	21,985	4%
Total Change for the Area ¹				7%

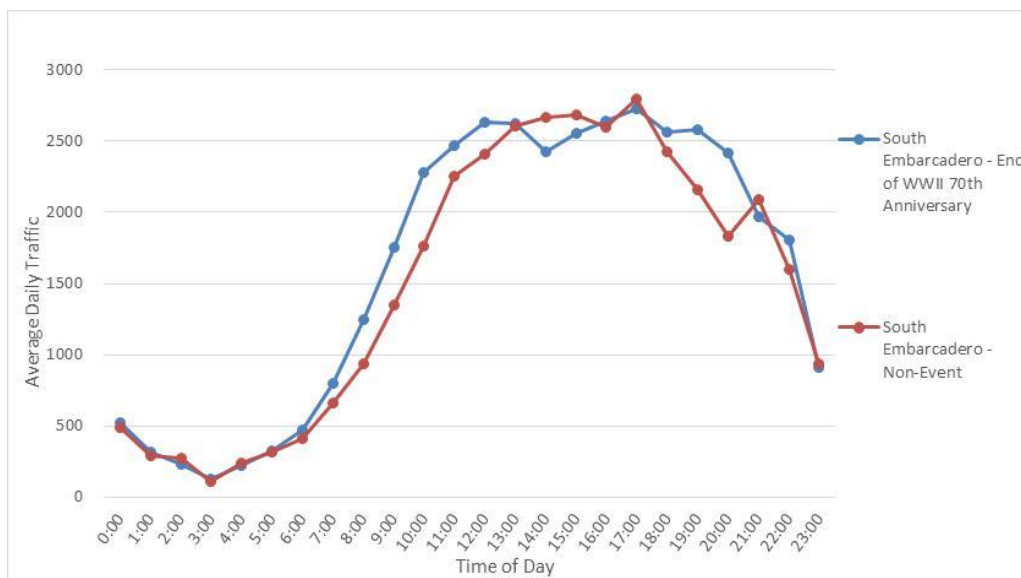
Source: Appendix J

¹ Total change for the area is based on the total of the event condition volumes compared to the total of the baseline condition volumes.

As shown in Table 4.10-9, Harbor Drive in the Central (Seaport Village) and South Embarcadero area experienced an average increase of 7 percent in vehicular traffic during the sample other non-Fourth of July fireworks display event.

Figure 4.10-8 displays roadway segment daily traffic volumes during the sample event day, as well as during non-event conditions, in the Central (Seaport Village) and South Embarcadero area.

Figure 4.10-8. Roadway Segment ADT Sample Other Non-Fourth of July Fireworks Display Event and Non-Event Day Conditions: Central (Seaport Village) and South Embarcadero



As shown, ADT on the event day was slightly higher (7 percent increase) compared to non-event day conditions between 6:00 a.m. and 12:00 p.m. This increase most likely represents patrons accessing the additional WWII celebratory activities around the site during the day. Additionally, there was an increase in vehicular traffic between 6:00 p.m. and 9:00 p.m., which is most likely associated with patrons accessing the sample End of WWII 70th Anniversary event, which occurred between 6:00 p.m. and 10:00 p.m. The fireworks display occurred in the middle of the event around 8:00 p.m. While only a slight increase in vehicular traffic was observed, this additional traffic likely resulted in some additional vehicular congestion on the roadway facilities providing access to the viewing site for the sample other non-Fourth of July fireworks display event.

Intersections

It was assumed that patrons coming in from this location would park in either Seaport Village or on the G Street Mole and would use the Embarcadero to access the site. Therefore, no intersections were analyzed at this location.

Freeway Facilities

Freeway segment counts were obtained from the Caltrans PeMS database for the segments of I-5 that provide regional access to the viewing areas. Table 4.10-10 displays freeway volumes for freeway segments along I-5.

Table 4.10-10. Sample Other Non-Fourth of July Fireworks Display Event and Non-Event Day Freeway Segment Volumes

Freeway	Segment	Direction	Other Event Day ADT	Non- Event Day ADT	Change in Traffic Volume %
I-5	Between Washington Street and Sassafras Street	NB	79,197	78,878	0.4%
		SB	73,029	73,370	-0.5%
	Between Sassafras Street and Front Street	NB	100,156	99,118	1.0%
		SB	78,325	78,335	0.0%
			Total Change in Area ¹		0.3%

Source: Appendix J

¹Total change for the area is based on the total of the event condition volumes compared to the total of the baseline condition volumes.

NB = northbound; SB = southbound

As shown in Table 4.10-10 above, a minimal average increase of 0.3 percent in traffic volumes at freeway facilities serving the sample non-Fourth of July fireworks display viewing areas was observed during the event. This increase in traffic may not be directly related to the actual event, and would represent a negligible increase in vehicle traffic on freeway facilities.

Proposed New Non-Fourth of July Fireworks Display Events

As mentioned, changes in transportation and travel patterns that occurred during an existing non-Fourth of July fireworks display event were applied to the proposed new fireworks display events along the Chula Vista Bayfront to assess the potential transportation-related impacts associated with these fireworks display events. For this analysis, it was assumed that similar levels of additional vehicular, pedestrian, and bicycle activity can be anticipated to occur during the proposed new non-Fourth of July fireworks display events as those observed during the sample End of WWII 70th Anniversary event. There is no metric or thresholds for determining whether a certain percentage change in traffic volume associated with a temporary special event, such as a fireworks display event, is significant. As a result, impacts are analyzed qualitatively by determining whether the changes in transportation demand and travel patterns associated with the proposed new fireworks display events, as applied from the observed changes during the sample other non-Fourth of July display, would conflict with the special event guidelines of the City of Chula Vista, which serves as the applicable plan, ordinance, and policy establishing measures of effectiveness for the performance of the circulation system for the purposes of this analysis.

While only a small to moderate temporary increase in vehicle, pedestrian, and bicycle activity was observed on the day of the sample other non-Fourth of July fireworks display event, there is a potential that the proposed new non-Fourth of July fireworks display events would still result in additional congestion on the roadways, as well as on the pedestrian and bicycle facilities that serve the viewing locations along the Chula Vista Bayfront. This additional congestion could result in higher conflicts between these varying modes of transportation. However, the proposed new other non-Fourth of July fireworks display events would be required to comply with the applicable special event guidelines of the City of Chula Vista. These special event guidelines require that fireworks display events obtain any necessary special event and/or related permits, and include requirements to implement traffic control plans as necessary. As discussed in Section 4.9, *Public Services and*

Facilities, the Chula Vista Police Department implements operational and traffic control plans during special events such as fireworks display events if required as part of the special event permit. The transportation operational plan as required by the Chula Vista Special Event Guidelines would require traffic control in order to facilitate vehicular, bicycle, and pedestrian movement on City streets and public rights-of-way. In accordance with the City's Special Event Guidelines, transportation operational plans specific to each proposed new fireworks display event would be implemented by the Chula Vista Police Department if deemed necessary. Therefore, because the proposed new non-Fourth of July fireworks display events would comply with the special event guidelines of the City of Chula Vista, including any traffic control requirements of the special event permit, the proposed project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. Impacts would be less than significant.

Furthermore, the proposed ordinance includes a condition of approval that requires implementation of an Event Transportation and Parking Management Plan for the proposed new non-Fourth of July fireworks display events, which would reduce potential conflicts between different modes of transportation by facilitating the movement of vehicular, pedestrian, and bicycle traffic and improving circulation.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. However, the proposed ordinance contains several conditions of approval to reduce potential environmental impacts, including implementation of an Event Transportation and Parking Management Plan for all publicly advertised fireworks display events. The Event Transportation and Parking Management Plan will include transportation demand and parking management strategies, such as providing event traffic control and promoting the use of public transit. This would help to reduce potential conflicts between different modes of transportation by facilitating the movement of vehicular, pedestrian, and bicycle traffic and improving circulation. Additionally, the Event Transportation and Parking Management Plan would promote the use of alternative modes of transportation, thus reducing the number of vehicles accessing the freeway facilities serving the existing fireworks display event viewing areas. Compliance with the proposed ordinance would improve the existing condition by improving circulation and safety on the roadway network surrounding the existing fireworks display events. Therefore, the effects of the proposed ordinance on existing fireworks display events would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. No significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not result in conflicts with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. Therefore, no significant adverse impacts would occur.

Mitigation Measures**Proposed New Fireworks Display Events**

No mitigation is required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation**Proposed New Fireworks Display Events**

Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impacts would occur.

Threshold 2: Implementation of the proposed project would not conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

Impact Discussion**Proposed New Fireworks Display Events**

As described in Section 4.10.3.2, *Regional*, SANDAG is the lead agency for congestion management compliance for the San Diego region. In 2009, the San Diego region elected to be exempt from the state CMP and, since this decision, SANDAG has been abiding by 23 CFR 450.320 to ensure the region's continued compliance with the federal congestion management process. SANDAG's Regional Plan, the region's RTP and SCS, meets the requirements of 23 CFR 450.320.

Therefore, to determine if the proposed project would conflict with an applicable congestion management program, the proposed project was reviewed for consistency with the Regional Plan, which is a land use and transportation planning document that discusses land use policy at a very general level. The Regional Plan mostly incorporates the land use policies of local jurisdictions and focuses on transportation infrastructure and management programs to support those policies. No directly applicable land use policies were identified that pertain to the proposed project because the project does not involve any landside or waterside construction and the project is not proposing changes in land use designations of the project sites. Additionally, the proposed project would not

result in any changes to existing transportation infrastructure. Moreover, the proposed project consists of periodic and infrequent special events of very short duration and would not interfere with the policies or projects identified in the Regional Plan. Therefore, the proposed new fireworks display events would not conflict with an applicable congestion management program, and impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events and does not contain any conditions related to congestion management programs; therefore, the proposed ordinance would not result in any changes to the existing condition in terms of these programs. As such, the effects of the proposed ordinance on existing fireworks display events would not conflict with applicable congestion management programs. No significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events would not conflict with an applicable congestion management program including, but not limited to, LOS standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways. Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not result in conflicts with an applicable congestion management program. Therefore, no significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

No mitigation is required.

Proposed Ordinance Changes to Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation

Proposed New Fireworks Display Events

Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impacts would occur.

Threshold 5: Implementation of the proposed project would not result in inadequate emergency access.**Impact Discussion****Proposed New Fireworks Display Events**

As discussed under Threshold 1, both the sample Fourth of July and non-Fourth of July fireworks display events were observed to generate increased levels of vehicle, pedestrian, and bicycle traffic. For the sample Fourth of July fireworks display event, there was a moderate temporary increase in vehicular traffic observed on surrounding roadway segments during the event when compared to non-event conditions, with an average increase of 37 percent. In addition, a moderate temporary increase in vehicular volumes and significant temporary increases in pedestrian and bicycle activity were observed on the intersections adjacent to the event location both before and after the sample Fourth of July fireworks display event, with an average 46 percent increase in vehicular traffic, 1,993 percent increase in pedestrian traffic, and 578 percent increase in bicycle traffic. For this analysis, it was assumed that similar levels of additional pedestrian and bicycle traffic can be anticipated to occur during the proposed new Fourth of July fireworks display events along the National City and Chula Vista Bayfronts as those observed during the sample Fourth of July fireworks display event. Because these pedestrian and bicycle volumes are not typical, the intersections and pedestrian and bicycle facilities adjacent to the new fireworks display event viewing areas may not be designed to accommodate this level of conflict between the modes of travel. These higher volumes were typically observed before and after the sample Fourth of July fireworks display event and, therefore, would likely result in additional temporary traffic congestion and delays along roadways and at intersections that provide access to the event locations for the proposed new Fourth of July fireworks display events. As a result, there is a potential that pedestrian and bicycle traffic could overflow into adjacent roadways and intersections, which in turn could temporarily impede vehicle circulation and temporarily impair emergency access.

For the sample other non-Fourth of July fireworks display event, there was a small to moderate temporary increase in vehicular traffic observed on surrounding roadways during the event when compared to non-event conditions, ranging between a 7 percent and 21 percent increase. Regarding bicycle and pedestrian activity, a small temporary increase of 13 percent in bicycle traffic and a moderate temporary increase of 34 percent in pedestrian traffic were observed both before and after the sample other non-Fourth of July fireworks display event. For this analysis, it was assumed that similar levels of additional traffic can be anticipated to occur during the proposed new non-Fourth of July fireworks display events along the Chula Vista Bayfront as those observed during the sample other non-Fourth of July fireworks display event. While only a small to moderate temporary increase in vehicle, pedestrian, and bicycle activity was observed during the sample other non-Fourth of July fireworks display event, the increase in traffic would still likely result in some additional temporary congestion on the roadways and pedestrian and bicycle facilities adjacent or providing access to the viewing areas for the proposed new non-Fourth of July fireworks display events. Therefore, this analysis conservatively assumes there is a potential that the temporary increase in traffic could result in additional temporary congestion on the roadways and pedestrian and bicycle facilities that would serve the viewing locations along the Chula Vista Bayfront, which in turn could temporarily impede vehicle circulation and emergency access.

As discussed in Section 4.5, *Hazards and Hazardous Materials*, and Section 4.9, *Public Services and Facilities*, the National City and Chula Vista fire departments would provide fire protection and emergency services during the proposed new fireworks display events on the barges and within the landside viewing areas in their respective cities. The City of National City requires Temporary Use Permits for special events, which are forwarded to City departments such as the fire department for review and emergency planning purposes (Hernandez pers. comm.). A fireworks permit from the National City Fire Department would also be required for the proposed new fireworks display event. The National City Fire Department has absolute authority, control, and decisions over all fireworks and/or pyrotechnic displays for which it issues a permit. In addition, the National City Police Department implements an operational plan and a traffic plan to respond to any emergencies during special events, such as a fireworks display event. Consistent with its current practice, the National City Police Department would implement an operational plan and a traffic plan during the proposed new Fourth of July fireworks display event in National City. The City of Chula Vista maintains Special Event Guidelines, which outline the Special Event Permit process, any special event-related permit types, and any requirements for the special event, such as an operational plan. There are multiple types of operational plans that may be required as part of the Special Event Permit issued by the City, including medical and transportation operational plans.

The Chula Vista Police Department in conjunction with the City of Chula Vista Public Works/Traffic Engineering staff determines if a transportation operational plan is required. The transportation operational plan would require traffic control in order to facilitate vehicular, bicycle, and pedestrian movement on City streets and public rights-of-way that would potentially be affected by the event. A firework/pyrotechnic/special effect/laser permit is one of the special event-related permits outlined in the City of Chula Vista's Special Event Guidelines. This permit is required for all activities associated with the use of pyrotechnics and open flames and must be reviewed and approved by the Chula Vista Fire Department in compliance with the California Fire Code as amended by the State of California and City of Chula Vista. Additionally, the proposed new fireworks display events along the National City and Chula Vista Bayfronts would be required to comply with all federal, state, and local laws and regulations governing fireworks, including, but not limited to, the laws and regulations set forth in the *Fireworks in California* handbook (Appendix C of this Draft EIR), which is enforced by the responsible city fire department with jurisdiction over each display, as well as any special event permit requirements of the National City and Chula Vista Fire Departments. The existing procedures of these agencies are in place for maintaining effective response times and ensuring that adequate emergency access is provided during special events such as a fireworks display event.

Within San Diego Bay, other emergency response would be provided by the San Diego Harbor Police Department (HPD), which would employ special patrol vessels to ensure safety on the water during these new fireworks display events, as necessary. HPD currently provides police protection, law enforcement, and marine firefighting services in and around San Diego Bay for the District. It is anticipated that HPD would provide additional police protection services, which would involve employing landside patrols and special patrol vessels to provide law enforcement on the water. HPD has indicated that it currently provides adequate law enforcement service and response times during existing individual fireworks display events through the strategic placement of units on tidelands and major patrol areas (Brick pers. comm.). Consistent with its current practice, HPD would continue to provide adequate law enforcement services and response times for fireworks display events, including the four proposed new fireworks display events along the National City and Chula Vista Bayfronts. In addition, HPD would implement traffic plans and plans for emergency

response through an Emergency Operations guide for each proposed new fireworks display event (Brick pers. comm.). During existing Fourth of July fireworks display events, HPD increases personnel staffing in patrol versus normal personnel staffing in patrol, thereby ensuring effective response times (Brick pers. comm.). Consistent with its current operational practices, HPD would continue to increase personnel staffing as necessary during fireworks display events, including the proposed new fireworks display events along the National City and Chula Vista Bayfronts. Additionally, HPD provides marine firefighting services in and around San Diego Bay for the District. In addition to watercraft enforcement, HPD patrol boats can also serve as firefighting boats that respond to fire emergencies in the Bay. Consistent with its current operational practices during existing fireworks display events, HPD would continue to provide both of these services for the proposed new fireworks display events along the National City and Chula Vista Bayfronts.

Event-specific regulatory and enforcement services within San Diego Bay are provided by the U.S. Coast Guard (USCG). USCG facilitates events that occur on federal waterways by receiving, analyzing, and reviewing Applications for Marine Event for each fireworks display event. During the proposed new fireworks display events within San Diego Bay, USCG would enforce regulatory Safety Zones around the barge to ensure public safety and clearance of the area as well as provide enforcement of the Navigation Rules. Additionally, consistent its current operational practices, USCG would continue to increase staffing on the night of the fireworks display event as necessary, with additional patrol units providing specific event command and control, and multiple active duty and auxiliary vessel assets to ensure effective response times. If deemed necessary, a “normal duty watch” would also be provided, consisting of a command center, search and rescue and law enforcement vessels, and search and rescue aircraft. Furthermore, for all fireworks display events that occur within San Diego Bay, USCG would also coordinate closely with HPD on the position and location of personnel and assets. This coordination with HPD is in addition to USCG’s normal requirements and duties for operations related to safety and security within its area of responsibility (Cole pers. comm.). Therefore, both proposed new Fourth of July and other non-Fourth of July fireworks display events would result in less-than-significant impacts on emergency access.

Furthermore, the proposed ordinance includes a condition of approval that requires implementation of an Event Transportation and Parking Management Plan before, during, and after each proposed new fireworks display event, which would further improve circulation around the viewing locations by employing traffic control personnel to facilitate the movement of vehicular, pedestrian, and bicycle traffic, thereby ensuring that adequate emergency access is provided.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District’s tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. However, the proposed ordinance contains several conditions of approval to reduce potential environmental impacts, including implementation of an Event Transportation and Parking Management Plan for all publicly advertised fireworks display events. The Event Transportation and Parking Management Plan will include transportation demand and parking management strategies, such as providing event traffic control and promoting the use of public transit. This would improve circulation around the viewing locations by employing traffic control personnel to facilitate the movement of vehicular, pedestrian, and bicycle traffic around the locations of the individual existing displays and reduce the potential for delay that might impede emergency access. Compliance with the proposed ordinance would

improve the existing condition by improving circulation and emergency access on the roadway network surrounding the existing fireworks display events. As such, the effects of the proposed ordinance on existing fireworks display events would not result in inadequate emergency access. No significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events would not result in inadequate emergency access. Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not result in inadequate emergency access. No significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

No mitigation is required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation

Proposed New Fireworks Display Events

Impacts would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impacts would occur.

Threshold 6: Implementation of the proposed project would conflict with adopted policies, plans, or programs regarding roadway, public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Impact Discussion

Impacts on pedestrian, bicycle, and public transit facilities would occur if the proposed project would either conflict with the adopted policies, plans, or programs that support these alternate modes of transportation or otherwise decrease the performance or safety of such facilities.

Proposed New Fireworks Display Events

Public Transit Facilities

Existing light-rail transit stops along south San Diego Bay include the Harborside, Pacific Fleet, 8th Street, 24th Street, E Street, H Street, Palomar Street, and Palm Avenue Stations. However, it is anticipated that only the 24th Street Station in National City and the E Street and H Street Stations in Chula Vista would provide access to the viewing areas for the proposed new fireworks display events due to their proximity to the Bayfronts. Transit ridership data were collected to understand changes in transit ridership associated with the existing Fourth of July fireworks display events. The changes in transit ridership that occurred during existing fireworks display events were applied to the proposed new fireworks display events along the Chula Vista Bayfront and National City Bayfront to identify potential project-related impacts on public transit. The fireworks organizer and the District, in collaboration with MTS, the local public transit service provider, encourage people to abstain from driving on the Fourth of July and instead utilize public transit (Trolley) to access the viewing locations for Fourth of July fireworks display events. Because MTS does not monitor daily trolley ridership by station location, total system-wide ticket sales were obtained from MTS in lieu of ticket sales by specific station for previous Fourth of July holidays, as well as typical weekend ridership. Table 4.10-11 displays system-wide trolley ticket sales during a previous Fourth of July holiday (Thursday, July 4, 2013), as well as during a typical weekday and a typical weekend day.

Table 4.10-11. System-Wide Trolley Ticket Sales During Sample Previous Fourth of July Holiday, Typical Weekday, and Typical Weekend

Type of Ticket	Fourth of July	Typical Weekday	Typical Weekend	Change in Ticket Sales Weekday	Change in Ticket Sales Weekend
Senior/Disabled One-Way	2,094	2,501	2,167	-16%	-3%
Adult One-Way	9,963	7,624	6,949	31%	43%
Day Pass	9,145	7,560	6,051	21%	51%
Total¹	21,202	17,685	15,167	20%	40%

Source: Appendix J

¹ Total change for the area is based on the total of the event condition volumes compared to the total of the baseline condition volumes.

As demonstrated in Table 4.10-11 above, the sample Fourth of July holiday experienced an increase of 20 percent in ticket sales when compared to typical weekday ticket sales and an increase of 40 percent in ticket sales when compared to a typical weekend day. It is important to note that on major holidays, MTS offers the “Friends Ride Free” promotion, which allows two passengers to ride on one valid fare of any type. This promotion could contribute to an increase in ticket sales during the Fourth of July. In addition, the increased trolley ticket sales and associated transit ridership could also be a result of the Fourth of July holiday in general, and not necessarily the fireworks display event itself. As such, while there was an observed increase in transit ridership during the sample Fourth of July holiday, it is not anticipated that the proposed new Fourth of July fireworks display events would generate increased transit ridership to an extent that would conflict with the adopted policies, plans, or programs that support these alternate modes of transportation or otherwise decrease the performance or safety of such facilities. Furthermore, the proposed new

Fourth of July fireworks display events would be temporary in nature and only occur once a year, and would typically cater to local and regional populations. As a result, the proposed new fireworks display events would not facilitate a permanent growth in population that would substantially increase the use of existing public transit facilities. Therefore, impacts of the proposed new Fourth of July fireworks display events on public transit would be less than significant.

Transit ridership data were not available for the sample non-Fourth of July fireworks display event day, August 15, 2015. However, because it is anticipated that less-than-significant impacts on transit would occur during the proposed new Fourth of July fireworks display events, it can be assumed that other non-Fourth of July fireworks display events would also result in less-than-significant impacts on public transit, because these events are isolated and will have lower attendees than the proposed new Fourth of July fireworks display events. Therefore, the proposed new non-Fourth of July fireworks display events would not conflict with adopted policies, plans, or programs regarding public transit, or otherwise decrease the performance or safety of such facilities.

Pedestrian and Bicycle Facilities

As discussed under Threshold 1, the proposed project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, including pedestrian and bicycle facilities. As such, the proposed project would not conflict with adopted policies, plans, or programs regarding bicycle or pedestrian facilities. The sample Fourth of July fireworks display event was observed to temporarily generate moderately increased levels of vehicle traffic and significantly increased levels of pedestrian and bicycle traffic, with a 1,993 percent increase in pedestrian traffic and 578 percent increase in bicycle traffic observed crossing intersections adjacent to the sample existing Fourth of July fireworks display event location. For this analysis, it was assumed that similar levels of additional pedestrian and bicycle traffic can be anticipated to occur during the proposed new Fourth of July fireworks display events along the National City and Chula Vista Bayfronts as those observed during the sample Fourth of July fireworks display event. Because these pedestrian and bicycle volumes are not typical, the intersections and pedestrian and bicycle facilities adjacent to the new fireworks display event viewing areas may not be designed to accommodate this level of conflict between the modes of travel. In the event that pedestrian and bicycle volumes exceed the capacity of such facilities, there is a potential that pedestrian and bicycle traffic could overflow into adjacent roadways and intersections, which would temporarily decrease the safety of such facilities and result in potential safety hazards to pedestrians and bicyclists. In addition, significant temporary increases in pedestrian and bicycle activity like those observed during the sample Fourth of July fireworks display events would likely cause additional conflicts between the modes of travel at intersection points, resulting in temporary congestion, ultimately affecting vehicle circulation on adjacent roadway facilities. As a result, this temporary congestion could potentially temporarily decrease the performance of such facilities.

Similarly, the observed changes in travel patterns during the sample other non-Fourth of July fireworks display event were also applied to the proposed new other non-Fourth of July fireworks display events along the Chula Vista Bayfront. While only a small to moderate temporary increase in vehicle, pedestrian, and bicycle activity was observed on the day of the sample other non-Fourth of July fireworks display event, there is a potential that the proposed new non-Fourth of July fireworks display events would still result in additional congestion on the roadways, as well as on pedestrian

and bicycle facilities that serve the viewing locations along the Chula Vista Bayfront. This additional congestion could also temporarily decrease the performance and safety of such facilities.

As discussed under Threshold 1, the proposed new fireworks display events would be required to comply with the applicable special event guidelines of their respective cities. These special event guidelines require that fireworks display events obtain any necessary special event and/or related permits, and require the implementation of traffic control plans as necessary. Traffic control would be conducted by either police department staff or individuals certified in traffic control by the police department. These existing procedures are in place to facilitate vehicular, bicycle, and pedestrian movement and ensure that pedestrians and bicyclists are safely accommodated, thus reducing the potential for conflicts between the modes of travel at intersection points. As such, because of the existing procedures in place for special events, the proposed new fireworks display events would not decrease the safety of such facilities or result in potential safety hazards to pedestrians, bicyclists, or motorists. Impacts on pedestrian, bicycle, and roadway facilities associated with decreased safety would be less than significant. However, because of the increase in vehicular, pedestrian, and bicycle volumes and temporary congestion, the proposed new fireworks display events would have the potential to temporarily decrease the performance of roadway, bicycle, and pedestrian facilities. Potential impacts of decreased performance on roadway, pedestrian, and bicycle facilities associated with the proposed new fireworks display events would be significant (**Impact-TRA-1**).

Mitigation measure **MM-TRA-1** requires implementation of the transportation-related conditions of the proposed ordinance, which require an approved Event Transportation and Parking Management Plan for each proposed new fireworks display event. Implementation of an Event Transportation and Parking Management Plan would facilitate the movement of vehicular, pedestrian, and bicycle traffic, which would further help to safely accommodate the additional vehicular, pedestrian, and bicycle traffic accessing the individual event locations and reduce potential conflicts between different modes of transportation, thereby improving the safety of roadway, bicycle, and pedestrian facilities. In addition, implementation of an Event Transportation and Parking Management Plan, as required by **MM-TRA-1**, would improve vehicle, bicycle, and pedestrian circulation, consequently improving the performance of roadway, bicycle and pedestrian facilities.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. However, the proposed ordinance contains several conditions of approval to reduce potential environmental impacts, including implementation of an Event Transportation and Parking Management Plan for publicly advertised fireworks display events. The Event Transportation and Parking Management Plan will include transportation demand and parking management strategies, such as providing event traffic control and promoting the use of public transit. This would help to safely accommodate additional pedestrian and bicycle traffic accessing the viewing areas for existing fireworks display events and reduce potential conflicts between different modes of transportation by providing event traffic control. Compliance with the proposed ordinance would result in minimal, if any, changes to the existing condition in relation to public transit, as MTS currently promotes the use of public transit on major holidays such as the Fourth of July through its "Friends Ride Free" program. However, compliance with the proposed ordinance would improve vehicle, bicycle, and pedestrian circulation,

consequently improving the performance and safety of bicycle and pedestrian facilities. As such, the proposed ordinance would improve the existing condition by improving circulation and safety on the roadway network surrounding the existing fireworks display events. Therefore, the effects of the proposed ordinance on existing fireworks display events would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. No significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events have the potential to decrease the performance of roadway, pedestrian, and bicycle facilities (**Impact-TRA-1**). Potentially significant impact(s) include:

Impact-TRA-1: Decrease in the Performance of Roadway, Pedestrian, and Bicycle Facilities from Proposed New Fireworks Display Events. The proposed new fireworks display events have the potential to temporarily decrease the performance of roadway, pedestrian, and bicycle facilities as a result of increased levels of vehicular, pedestrian, and bicycle activity. Potential impacts would be significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Therefore, no significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

MM-TRA-1: Implementation of the Transportation-Related Conditions of the Proposed Ordinance. The fireworks organizer of each proposed new fireworks display event shall comply with the following transportation-related condition of the proposed ordinance.

Section X.07 – Permits – Conditions of Approval

(h) Event Transportation and Parking Management Plans. For all Fourth of July fireworks display events and for non-Fourth of July fireworks display events that are advertised to the public, the Fireworks Organizer shall prepare and submit an event transportation and parking management plan to the Executive Director for approval as part of the Application, which shall be designed to ensure safe and convenient access to public viewing areas while limiting conflicts between transportation modes and reducing impacts on surrounding transportation facilities to the maximum extent feasible. The Event Transportation and Parking Management Plan shall take into account anticipated attendance, existing transportation and parking facilities, and other concurrent public events in the surrounding areas, and shall include but is not limited to the following:

1. Transportation management strategies, including but not limited to a public awareness program, traffic management and enforcement, incident management, and public transit and alternative modes of transportation management, which shall be implemented for the fireworks display event; and
 2. Parking management strategies, including but not limited to a public awareness program, coordination with parking vendors, offsite parking arrangements, designated areas for taxi and rideshare pick-up/drop-off, promotional programs with rideshare vendors, joint event ticketing programs with public transit agencies, and expanded shuttle operations.
- (j) Compliance with Other Required Permits: Prior to the Executive Director's issuance of a Permit pursuant to this article, the Applicant shall demonstrate that it has obtained and shall comply with all other permits and approvals required by federal, state, and local laws and regulations including, without limitation, such permits and approvals as are required by the United States Coast Guard, California Coastal Act, the District Code, including Article 10 (Stormwater Management and Discharge Control), and the fire marshal of any city that has jurisdiction over all or any part of the activity allowed under said Permit.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation

Proposed New Fireworks Display Events

While there was an observed increase in transit ridership during the sample Fourth of July holiday, it is not anticipated that the proposed new Fourth of July fireworks display events would generate increased transit ridership to an extent that would conflict with the adopted policies, plans, or programs that support these alternate modes of transportation or otherwise decrease the performance or safety of such facilities. Therefore, impacts on public transit would be less than significant. In addition, the proposed project would not conflict with adopted policies, plans, or programs regarding bicycle or pedestrian facilities, and impacts would be less than significant.

Moderate temporary increases in vehicle volumes and significant temporary increases in pedestrian and bicycle volumes were observed on the day of the sample Fourth of July fireworks display event, while a small to moderate temporary increase in vehicle, pedestrian, and bicycle activity was observed on the day of the sample other non-Fourth of July fireworks display event. Applying these observed changes, similar levels of additional pedestrian and bicycle traffic can also be anticipated to occur during the proposed new fireworks display events along the National City and Chula Vista Bayfronts. As a result, the proposed new fireworks display events have the potential to temporarily increase congestion on surrounding roadway facilities as a result of increased pedestrian and bicycle volumes. This additional congestion, associated with the conflicts between the various modes, has the potential to decrease the performance of roadway, bicycle, and pedestrian facilities. **(Impact-TRA-1)**. Mitigation measure **MM-TRA-1** requires implementation of the transportation-related conditions of the proposed ordinance, which require the fireworks organizer for each proposed new fireworks display event to implement an approved Event Transportation and Parking Management Plan. The Event and Transportation Parking Management Plan includes transportation management strategies, including but not limited to a public awareness program, traffic

management and enforcement personnel, incident management, and public transit and alternative modes of transportation management. The Event Transportation and Parking Management Plan would improve circulation around the viewing locations by employing traffic control personnel to facilitate the movement of vehicular, pedestrian, and bicycle traffic, thereby reducing the potential for conflicts between these varying modes of transportation, as well as delay and congestion. Implementation of an approved Event Transportation and Parking Management Plan, as required by **MM-TRA-1**, would reduce congestion to the extent practicable and would improve the performance of roadway, pedestrian, and bicycle facilities serving the various viewing areas. It is anticipated that the Event Transportation and Parking Management Plan would reduce impacts to less-than-significant levels. However, there are no metrics or tools available to quantify the effectiveness of the Event Transportation and Parking Management Plan in reducing congestion. Consequently, because the extent to which impacts would be reduced cannot be quantified, it cannot be determined with certainty that impacts would be reduced to less-than-significant levels. Therefore, this analysis conservatively assumes that **Impact-TRA-1** is significant and unavoidable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impacts would occur.

Threshold 7: Implementation of the proposed project would result in inadequate parking supply.

Impact Discussion

Fourth of July Fireworks Display Events

Sample Fourth of July Fireworks Display Event

For the sample Fourth of July fireworks display event, parking occupancy counts were conducted at four parking facilities. Parking facilities that either directly serve or are within a quarter of a mile of the event location were counted during the afternoon and evening (at 1:00 p.m., 3:00 p.m., 5:00 p.m., and 7:00 p.m.) to determine whether and when they reached capacity. Imperial Beach features four parking lots with low capacity that reached their full capacity quickly. People tended to park on adjacent residential streets, reaching out as far east as 5th Street, approximately half a mile away from the Pier Plaza. Table 4.10-12 displays parking occupancy observed at different times during the afternoon.

Table 4.10-12. Sample Fourth of July Fireworks Display Event and Non-Event Day Parking Occupancy: Imperial Beach

Parking Lot	1 p.m. to 2 p.m.		3 p.m. to 4 p.m.		5 p.m. to 6 p.m.		7 p.m. to 8 p.m.	
	Event	Non-Event	Event	Non-Event	Event	Non-Event	Event	Non-Event
Daisy Avenue Parking Lot	100%	95%	100%	100%	100%	100%	100%	100%
Elm Avenue Parking Lot	Closed	99%	Closed	100%	Closed	95%	Closed	95%
Seacoast Drive Parking Lot	100%	80%	100%	90%	100%	95%	100%	100%
Imperial Beach Boulevard Parking Lot	100%	100%	100%	100%	100%	70%	100%	100%

Source: Appendix J

As shown in Table 4.10-12, all of the available parking lots observed were at full capacity (100 percent) during the four observation periods during the event day and between 70 percent and 100 percent in capacity during non-event conditions.

Proposed New Fourth of July Fireworks Display Events

As mentioned, potential parking impacts associated with the proposed new Fourth of July fireworks display events along the National City and Chula Vista Bayfronts were determined based on the data collected during the sample Fourth of July Imperial Beach Fireworks Show, which were then correlated to the locations of the proposed new fireworks display events. Most of the observed parking facilities serving the viewing areas reached capacity on both the sample Fourth of July fireworks display event day and the non-event day, including daytime hours well in advance of the time of the fireworks display; therefore, the sample event's effect on parking could not be determined. However, because there was an observed increase in vehicular traffic at some locations on the day of the sample Fourth of July fireworks display event, it can be assumed that the parking demand increased as well. As such, it is anticipated that the proposed new Fourth of July fireworks display events would likely result in significant temporary impacts on parking facilities that would serve the viewing areas along the National City and Chula Vista Bayfronts (**Impact-TRA-2**).

As required with the implementation of **MM-TRA-1**, the proposed ordinance includes a condition of approval that would require implementation of an approved Event Transportation and Parking Management Plan for each proposed new Fourth of July fireworks display event to reduce potential congestion and parking impacts. The Event Transportation and Parking Management Plan, as required by **MM-TRA-1**, would include measures and tools to deal with parking, such as offsite parking arrangements, promotional programs with rideshare vendors, a joint event/transit ticketing program with MTS, and expanded shuttle operations, among others. With the implementation of an approved Event Transportation and Parking Management Plan, potential impacts on parking would be reduced.

Other Non-Fourth of July Fireworks Display Events

Sample Other Non-Fourth of July Fireworks Display Event

For the sample other non-Fourth of July fireworks display event, parking occupancy counts were conducted at six parking facilities within a quarter of a mile of the event location during the afternoon and evening (between 1:00 p.m. and 8:00 p.m.) to determine whether and when they reached capacity. Parking occupancy data were also obtained from the parking management companies who operate the paid public parking facilities within the area to provide a more substantial sample size for the data collection effort.

North Embarcadero

Parking at the North Embarcadero area is available in various public parking lots and along streets such as Harbor Drive to Pacific Highway. Table 4.10-13 displays parking occupancy observed at different times during the afternoon during both the sample other non-Fourth of July fireworks display event day and a typical summer Saturday.

Table 4.10-13. Sample Other Non-Fourth of July Fireworks Display Event and Non-Event Day Parking Occupancy: North Embarcadero

Parking Lot	1 p.m. to 2 p.m.		3 p.m. to 4 p.m.		5 p.m. to 6 p.m.		7 p.m. to 8 p.m.	
	Event	Non-Event	Event	Non-Event	Event	Non-Event	Event	Non-Event
Harbor Drive Surface Parking (in front of Solar Turbines)	100%	100%	100%	80%	100%	100%	100%	95%
Harbor Drive Surface Parking (in front of County Admin. Center)	100%	100%	100%	100%	100%	100%	100%	90%
G Street Pier Parking Lot	100%	100%	100%	100%	100%	100%	100%	80%
Navy Pier Parking Lot	100%	100%	100%	100%	100%	100%	100%	100%
Source: Appendix J								

As shown in Table 4.10-13 above, all of the parking lots observed remained at full capacity (100 percent) during the four observation periods during the sample other non-Fourth of July fireworks display event, and ranged between 80 percent and 100 percent of capacity during non-event conditions.

Central (Seaport Village) and South Embarcadero

Parking was available at Seaport Village and in the Convention Center parking lots. Table 4.10-14 displays parking occupancy observed at different times during the afternoon during both the sample other non-Fourth of July fireworks display event day and non-event conditions.

Table 4.10-14. Sample Other Non-Fourth of July Fireworks Display Event and Non-Event Day Parking Occupancy: Central (Seaport Village) and South Embarcadero

Parking Lot	1 p.m. to 2 p.m.		3 p.m. to 4 p.m.		5 p.m. to 6 p.m.		7 p.m. to 8 p.m.	
	Event	Non-Event	Event	Non-Event	Event	Non-Event	Event	Non-Event
Seaport Village Parking Lot	100%	100%	100%	100%	100%	100%	100%	100%
Convention Center Parking Lot	85%	100%	85%	100%	85%	100%	85%	100%

Source: Appendix J

As shown in Table 4.10-14, the Seaport Village parking lot was observed at full capacity (100 percent) during the four observation periods, both during the event and under non-event conditions, while the Convention Center parking lot was observed at 85 percent capacity during the sample other non-Fourth of July fireworks display event day and at full capacity (100 percent) under non-event conditions.

Proposed New Other Non-Fourth of July Fireworks Display Events

As mentioned, potential parking impacts associated with the proposed new other non-Fourth of July fireworks display events along the Chula Vista Bayfront were determined based on the data collected during the sample other non-Fourth of July fireworks display event, which were then correlated to the locations of the proposed new displays. Most of the observed parking facilities serving the viewing areas reached capacity on both the sample other non-Fourth of July fireworks display event day and the non-event day; therefore, the sample event's effect on parking could not be determined. However, because there was an observed increase in vehicular traffic on the day of the sample other non-Fourth of July fireworks display event, it can be assumed that the parking demand increased as well. As such, it is anticipated that the proposed new other non-Fourth of July fireworks display events would likely result in significant temporary impacts on the parking facilities that would serve the viewing areas (**Impact-TRA-2**).

As required with the implementation of **MM-TRA-1**, the proposed ordinance includes a condition of approval that would require implementation of an Event Transportation and Parking Management Plan for each proposed new other non-Fourth of July fireworks display event to reduce potential congestion and parking impacts. The Event Transportation and Parking Management Plan, as required by **MM-TRA-1**, would include measures and tools to deal with parking, such as offsite parking arrangements, promotional programs with rideshare vendors, a joint event/transit ticketing program with MTS, and expanded shuttle operations, among others. With the implementation of an Event Transportation and Parking Management Plan, potential impacts on parking would be reduced.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. The proposed ordinance does not propose any change in the number or nature of the existing fireworks display events. However, the proposed ordinance contains several conditions of approval to reduce potential environmental impacts,

including implementation of an Event Transportation and Parking Management Plan for public advertised fireworks display events. The Event Transportation and Parking Management Plan would assist in the provision of adequate parking during existing fireworks display events by including measures and tools to deal with parking, such as offsite parking arrangements, promotional programs with rideshare vendors, a joint event/transit ticketing program with MTS, and expanded shuttle operations, among others. Compliance with the proposed ordinance would improve the existing condition by reducing potential effects on parking during existing fireworks display events. As such, the effects of the proposed ordinance on existing fireworks display events would not result in an inadequate supply of parking. Therefore, no significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events have the potential to result in an inadequate supply of parking. Potentially significant impact(s) include:

Impact-TRA-2: Inadequate Parking Supply During Proposed New Fireworks Display Events. The proposed new fireworks display events have the potential to result in a temporary inadequate supply during the displays due to an increased demand on parking facilities serving the viewing locations. Potential impacts would be temporary, but are considered significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not result in an inadequate supply of parking. Therefore, no significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

Implement **MM-TRA-1** as described under Threshold 6.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation

Proposed New Fireworks Display Events

All parking-related significant impacts associated with the proposed new fireworks display events would be temporary in nature and would only occur on the day of the event (**Impact-TRA-2**). Mitigation measure **MM-TRA-1** requires implementation of the transportation-related conditions of the proposed ordinance, which require the fireworks organizer for each proposed new fireworks display event to implement an approved Event Transportation and Parking Management Plan to reduce potential congestion and parking impacts associated with the proposed new fireworks display events. The Event Transportation and Parking Management Plan, as required by **MM-TRA-1**, would include measures and tools to deal with parking, such as offsite parking arrangements,

promotional programs with rideshare vendors, a joint event/transit ticketing program with MTS, and expanded shuttle operations, among others. With implementation of an approved Event Transportation and Parking Management Plan, potential impacts on parking would be reduced. However, there are no metrics or tools available to quantify the effectiveness of the Event Transportation and Parking Management Plan in reducing parking impacts. Therefore, because the extent to which impacts would be reduced cannot be quantified, it cannot be determined with certainty that the impacts would be reduced to less-than-significant levels. Therefore, this analysis conservatively assumes that **Impact-TRA-2** is significant and unavoidable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No significant adverse impacts would occur.

5.1 Overview

This chapter considers the cumulative effects of past, present, and reasonably foreseeable future fireworks display events, development projects, and temporary special events and the proposed project's contribution to these effects. Past development projects are defined as those that were recently completed and are now operational. Past and present fireworks display events and temporary special events are defined as those that occurred during the year 2015, unless noted otherwise. Present development projects are defined as those that are under construction but not yet operational. Reasonably foreseeable future fireworks display events and temporary special events are defined as those that have historically reoccurred annually, and therefore are anticipated to continue to reoccur in the future. Reasonably foreseeable future development projects are defined as those for which a development application has been submitted or credible information is available to suggest that project development is a probable outcome at the time the Notice of Preparation was issued (September 2015).

Fourth of July Fireworks Display Events

With the incorporation of mitigation measures, the proposed new Fourth of July fireworks display events would result in less than cumulatively considerable contributions to impacts from past, present, and reasonably foreseeable future projects for the following resources.

- Air quality
- Biological resources

However, even with mitigation incorporated, the proposed new Fourth of July fireworks display events would result in cumulatively considerable and unavoidable contributions to impacts for the following resources.

- Water quality

The contribution of the proposed new Fourth of July fireworks display events to all other cumulative impacts would not be cumulatively considerable.

Non-Fourth of July Fireworks Display Events

With the incorporation of mitigation measures, non-Fourth of July fireworks display events associated with the proposed project would result in less than cumulatively considerable contributions to impacts from past, present, and reasonably foreseeable future projects for the following resources.

- Air quality
- Biological resources

However, even with mitigation incorporated, the proposed new non-Fourth of July fireworks display events would result in cumulatively considerable and unavoidable contributions to impacts for the following resources.

- Water quality

The contribution of the proposed new non-Fourth of July fireworks display events to all other cumulative impacts would not be cumulatively considerable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The incremental contribution of the effects of the proposed ordinance on existing fireworks display events for all cumulative impacts would not be cumulatively considerable.

Table 5-1 summarizes the significant cumulative impacts and mitigation measures discussed in Section 5.3, *Cumulative Impact Analysis*, below.

Table 5-1. Summary of Significant Cumulative Impacts and Mitigation Measures

Summary of Potentially Significant Impact(s)	Summary of Mitigation Measure(s)	Level of Significance After Mitigation	Rationale for Finding After Mitigation
Air Quality and Health Risk			
Impact-C-AQ-1: Emissions in Excess of Cumulative PM2.5 Thresholds During Combined National City Bayfront and Chula Vista Bayfront Fourth of July Fireworks Display Events	MM-AQ-1: Limit the Size of Overlapping New Fireworks Display Events with the Conditions of the Proposed Ordinance, which require the new Fourth of July fireworks display events to not exceed 400 pounds each. MM-AQ-2: Implementation of Air Quality-Related Conditions of the Proposed Ordinance, which require truck delivery to not exceed 3 minutes of idling.	Less than Cumulatively Considerable	Mitigation would reduce project-related emissions below cumulative thresholds.
Biological Resources			
Impact-C-BIO-1: Contribute to a Cumulatively Considerable Accumulation of Trash and Debris in Upland and Marine Habitats	MM-BIO-1: Implementation of the Biological Resources-Related Conditions of the Proposed Ordinance for Direct Impacts, which require specific packaging material, best management practices, compliance with San Diego Regional Water Quality Control Board General Permit, and compliance with other required permits	Less than Cumulatively Considerable	Mitigation would ensure that trash and debris are collected and disposed of and that the use of non-biodegradable fireworks components is limited. In addition, implementation of the cleanup, security, signage, and education measures would reduce the potential effects of human trespass and boating activity. Mitigation would reduce potential

Summary of Potentially Significant Impact(s)	Summary of Mitigation Measure(s)	Level of Significance After Mitigation	Rationale for Finding After Mitigation
	MM-BIO-2: Implementation of the Biological Resources–Related Conditions of the Proposed Ordinance for Indirect Impacts, which require cleanup, security, signage, and education measures		biological resources impacts to less than cumulatively considerable levels.
Hydrology and Water Quality			
Impact-C-WQ-1: Contribute to a Cumulatively Considerable Water Quality Impact from an Accumulation of Fireworks Debris	MM-WQ-1: Implementation of the Water Quality–Related Conditions of the Proposed Ordinance, which require the use of alternative fireworks, specific packaging material, best management practices, compliance with San Diego Regional Water Quality Control Board General Permit, and compliance with other required permits	Cumulatively Considerable and Unavoidable	Mitigation would ensure that fireworks-generated debris is collected and disposed of to reduce potential water quality impacts. However, uncontrollable factors such as weather conditions, amount of paper incinerated, sunken material, or material that is blown onto land may affect the ability to recover all post-show debris. Impacts related to fireworks on surface waters would remain cumulatively considerable and unavoidable.
Impact-C-WQ-2: Contribute to a Cumulatively Considerable Water Quality Impact from an Accumulation of Human-Generated Trash and Litter	MM-WQ-2: Implementation of the Water Quality–Related Conditions of the Proposed Ordinance for Human-Generated Trash and Litter, which require additional trash receptacles and cleanup at major viewing areas during publicly advertised fireworks display events	Less than Cumulatively Considerable	Mitigation would ensure that human-generated trash and litter are collected and disposed of to reduce potential water quality impacts to less than cumulatively considerable levels.

5.2 Cumulative Methodology

According to Section 15130(b) of the State CEQA Guidelines, cumulative impact analysis may be conducted using one of two methods: the List Method, which includes “a list of past, present, and probable future projects producing related or cumulative impacts”; or the Plan Method, which uses

“a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact.” Because of the unique nature of the proposed project, which consists of both project- and program-level components, the cumulative impact analysis methodology employs both the List and Plan Methods, as further discussed below. Additionally, due to the regional effects of fireworks display events, which typically cater to local and visiting regional populations, utilization of the Plan Method is applicable, as the regional growth projections can be correlated to a potential increase in future spectators for the proposed new fireworks display events associated with the proposed project.

The proposed project consists of (1) an ordinance establishing a District Code section to govern existing and proposed new fireworks display events that require a discretionary action by the District or that are operated by the District’s tenants that occur within San Diego Bay and the Imperial Beach Oceanfront, and (2) four proposed new fireworks display events, which would be located adjacent to the National City and Chula Vista Bayfronts and are anticipated to require a future discretionary action by the District.

5.2.1 Application of the List Method

As explained in Section 15130(b) of the State CEQA Guidelines, when utilizing the List Method, factors to consider when determining whether to include a related project should include the nature of each environmental resource being examined, the location of the project, and its type. Location may be important, for example, when water quality impacts are an issue because projects outside the watershed probably would not contribute to a cumulative effect. Project type may be important when the impact is specialized, such as a particular air pollutant or mode of traffic. For a landside development project, the List Method generally involves consulting with the appropriate public agency having land use jurisdiction over the project site to obtain a list of the past, present, and reasonably foreseeable future development projects that would have the potential to contribute to cumulatively considerable related impacts when combined with the proposed project. The proposed new fireworks display events that would occur along the National City Bayfront and Chula Vista Bayfront do not require the construction of any landside or waterside support facilities. As such, the types of projects that would have the greatest potential to contribute to a cumulative effect when combined with the proposed project would be other fireworks display events that occur in and around San Diego Bay in the vicinity of the proposed new fireworks display events. Because of the regional effects of fireworks display events, this may also include other fireworks display events that occur in neighboring jurisdictions just outside of San Diego Bay, such as the Fourth of July fireworks display event that occurs along the Imperial Beach Oceanfront.

Through the Port Act, the State of California delegated its authority to the District to manage and control certain tidelands and submerged waters within five incorporated cities, including San Diego, Coronado, National City, Chula Vista, and Imperial Beach. Fireworks display events are conducted at various locations within and/or adjacent to District-controlled areas that are surrounded by these five cities. These fireworks display events occur throughout the year within and/or adjacent to the District’s jurisdiction in San Diego Bay and the Imperial Beach Oceanfront. In order to identify the existing fireworks display events, the District obtained copies of permits issued for all fireworks display events for the year 2015 that occurred in and around San Diego Bay and the Imperial Beach Oceanfront through consultation with the District’s five member cities. Agencies contacted include

the cities of San Diego, Coronado, National City, Chula Vista, and Imperial Beach, as well as the San Diego Regional Water Quality Control Board (SDRWQCB). Additionally, fireworks organizers for known fireworks display events were contacted, including the San Diego Symphony, NASSCO, and U.S.S. Midway Museum. As a result of this process, a total of 53 fireworks display events were identified that occurred in and around San Diego Bay and the Imperial Beach Oceanfront in 2015, all of which could contribute to a cumulative effect when combined with the proposed new fireworks display events. As such, these fireworks display events represent past and present fireworks displays for the purposes of this cumulative impact analysis. In addition, because some of these fireworks display events reoccur on an annual basis, they also represent reasonably foreseeable future displays. Each of these fireworks display events were issued a permit, such as a Special Event Permit from one of the District's five member cities, including their respective fire departments, and/or were granted coverage under the General National Pollutant Discharge Elimination System Permit for Residual Fireworks Pollutant Waste Discharges to Waters of the United States in the San Diego Region from the Public Display of Fireworks (No. R9-2011-0022) (General Permit) by SDRWQCB.

A majority of the existing fireworks display events that were identified during the consultation process either require a discretionary action by the District or are operated by the District's tenants. Some of the more prominent fireworks display events that were identified include the Big Bay Boom, Fourth of July Imperial Beach Fireworks Show, and Fireworks Show Over Glorietta Bay, along with other events sponsored by the District, the District's tenants, and other organizations. These other fireworks display events include those associated with the San Diego Symphony's Summer Pops concert series, U.S.S. Midway Museum, NASSCO Ship Repair Facility, and Our Lady of Rosary Church annual procession. It should be noted that these fireworks display events are also identified in Chapter 2, *Environmental Setting*, as the existing fireworks display events that would be governed by the proposed ordinance. These displays comprise 49 of the 53 total fireworks display events that were identified during the consultation process and considered in the cumulative impact analysis. In addition to the aforementioned displays, three other fireworks display events were identified that also occurred within San Diego Bay in 2015, as well as one display that occurred in 2014.¹ However, none of these displays required a discretionary action by the District. The 53 total fireworks display events are detailed in Tables 5-2 and 5-3, and were considered in the cumulative impact analysis provided in Section 5.3 below. It should be noted that the actual number of fireworks display events may fluctuate from year to year, as any number of additional fireworks display events could occur in San Diego Bay that are outside of the District's regulatory authority.

Additionally, there are a number of temporary special events that do not include a fireworks display that occur throughout the year around San Diego Bay and the Imperial Beach Oceanfront. These temporary special events occur within the District's jurisdiction and/or involve the use of District facilities around San Diego Bay and Imperial Beach. Temporary special events include, but are not limited to, 5K runs/walks, parades, fishing tournaments, fairs, and film, food, and music festivals. While no fireworks display events are included with these temporary special events, there is a potential that these events could occur on the same day as a proposed new fireworks display. As

¹ One barge-based fireworks display event associated with the Loew's Coronado Resort occurred in 2014. There were no events reported for 2015. However, this display was included because Loew's Coronado Resort historically has had fireworks display events in the past.

such, temporary special events that occur around San Diego Bay and Imperial Beach have the potential to produce related or cumulative impacts when combined with the proposed project in the event there is an overlap with the proposed new fireworks display events.

As mentioned, the proposed project does not require the construction of any landside or waterside support facilities to operate the proposed new fireworks display events along the National City Bayfront and Chula Vista Bayfront. However, although the proposed project does not involve any construction, either on land or in the water, there is a potential that past, present, and reasonably foreseeable development projects within the land use jurisdiction of the District or one of its five member cities surrounding San Diego Bay and Imperial Beach could produce related or cumulative impacts when combined with the proposed new fireworks display events. Consequently, the District's five member cities were consulted in order to obtain a list of cumulative development projects, with a specific focus on those projects that are located along the waterfront surrounding the Bay, as they would have the most potential to result in related or cumulative impacts due to their similar location as the proposed new fireworks display events. The list of past, present, and reasonably foreseeable development projects provides some context as to the development potential for all waterfront property surrounding San Diego Bay and along the Imperial Beach Oceanfront that could potentially contribute to a cumulative impact when combined with the proposed project. A list of these cumulative development projects is included in Appendix K. The List Method was applied to the cumulative impact analysis for aesthetics and visual resources; air quality and health risk; biological resources; greenhouse gas emissions, climate change, and energy; hazards and hazardous materials; hydrology and water quality; land use and planning; noise and vibration; public services and facilities; and transportation, circulation, and parking.

5.2.2 Application of the Plan Method

The Plan Method uses “a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact.” In the San Diego region, the San Diego Association of Governments (SANDAG) serves as the regional transportation planning agency responsible for forecasting the region's population growth. These growth projections serve as the foundation for regional planning documents such as water supply management plans and general plans, and also provide the basis for determining housing, infrastructure, and transportation needs across the San Diego region. On October 13, 2013, the Series 13: 2050 Regional Growth Forecast was accepted by the SANDAG Board of Directors for planning purposes. The Series 13 Regional Growth Forecast represents a combination of economic and demographic projections, existing land use plans and policies, and potential land use plan changes that may occur in the region between 2030 and 2050. According to the Series 13 forecast, SANDAG projects the region's population will grow by approximately 710,000 people by 2035 and nearly one million people by 2050 (SANDAG 2013). The growth in population will drive job growth and housing demand within the region, adding nearly 500,000 jobs and more than 330,000 housing units by 2050. Over half of the growth in new housing is anticipated to occur in the City of San Diego, with growth continuing to thrive in the downtown area and spilling over into the neighboring Barrio Logan, Golden Hill, and Uptown communities (SANDAG 2013). The Plan Method was applied to the cumulative impact analysis for public services and facilities and transportation, circulation, and parking.

5.2.3 Cumulative Project Lists

Based on information obtained through consultation with SDRWQCB and the cities of San Diego, Coronado, National City, Chula Vista, and Imperial Beach, a total of 53 existing fireworks display events were identified for this analysis. The cumulative fireworks display events listed in Tables 5-2 and 5-3 all occurred in and around San Diego Bay and Imperial Beach during the year 2015 and were issued permits by the appropriate public agency (i.e., a Special Event Permit). The list of cumulative fireworks display events provided in Tables 5-2 and 5-3 represents the best estimate possible based on the current information available and accounts for only those fireworks display events for which the District received copies of permits as a result of consultation with the aforementioned agencies. However, given the uncertainty surrounding special events in general, the number of actual future fireworks display events in and around San Diego Bay and Imperial Beach may fluctuate from year to year depending on various factors such as the state of the economy and population growth. Nothing would preclude the occurrence of an additional number of future cumulative fireworks display events with those provided in Tables 5-2 and 5-3, as these fireworks display events are outside of the District's control. The cumulative analysis assumes that all event sponsors complied with any and all applicable federal, state, and local regulations and requirements governing fireworks display events, and that all fireworks display event organizers applied for, and received, all necessary permits from the appropriate regulatory agency.

The list for development projects was assembled based on the proposed ordinance and the new proposed fireworks display events. The ordinance has application baywide, so the District obtained a list of past, present, and reasonably foreseeable development projects from the cities of San Diego, Coronado, National City, Chula Vista, and Imperial Beach. However, because the proposed new fireworks display events would only occur along the National City and Chula Vista Bayfronts, the cumulative analysis considers impacts on all development projects geographically located within 1 mile of the Bayfronts of these cities. While the proposed new fireworks display events associated with the proposed project do not require the construction of any landside support facilities, there is a potential that these cumulative development projects could result in related or cumulative impacts when combined with the proposed project. A list of the cumulative development projects is provided in Appendix K.

Generally speaking, the geographic scope of the area affected by cumulative effects varies according to the issue area. The cumulative study area for each issue area is described further under the respective resource headings that follow.

Table 5-2. Cumulative Fireworks Display Events

Time of Year	Approximate Number of Cumulative Fireworks Display Events	Location(s) of Fireworks Display Event	Approximate Duration of Each Fireworks Display Event (minutes)	Approximate Shell Size (inches)
January–March	7	<ul style="list-style-type: none"> • North Embarcadero 	4–10	2–6-inch
April–June	9	<ul style="list-style-type: none"> • South Embarcadero • North Embarcadero • NASSCO Ship Yard 	2–10	2–5-inch
July–September	31	<ul style="list-style-type: none"> • Shelter Island • Harbor Island • South Embarcadero • Central Embarcadero • North Embarcadero • Glorietta Bay • NASSCO Ship Yard • Imperial Beach Oceanfront 	15–20 (Fourth of July events) 2–10 (other non-Fourth of July events)	2–6-inch (other non-Fourth of July events)
October–December	6	<ul style="list-style-type: none"> • North Embarcadero • Loews Coronado Resort² 	3–10	2.5–6-inch
TOTAL	53¹			

¹ The total number of cumulative fireworks display events includes all displays that occurred in and around San Diego Bay and the Imperial Beach Oceanfront in 2015. The list of cumulative fireworks display events is based on consultation with the cities of San Diego, Coronado, National City, Chula Vista, and Imperial Beach, and SDRWQCB.

² Loews Coronado Resort did not have a fireworks display event in 2015; however, one barge-based fireworks display occurred in 2014.

Table 5-3. Characteristics of Cumulative Fireworks Display Events

Fireworks Display Event	Day of Event	No. of events	Duration (minutes)	Approximate Shell Size (inches)	No. of barges used per event
Big Bay Boom	Fourth of July	1	20	3–10	4
Fireworks Show Over Glorietta Bay	Fourth of July	1	15	3–10	1
Fourth of July Imperial Beach Fireworks Show	Fourth of July	1	19	3–10	0
Symphony Summer Pops Concert Display	non-Fourth of July	20	3–5	2–5	1
Our Lady of Rosary Church Annual Procession	non-Fourth of July	1	3	2.5	0
U.S.S. Midway Museum	non-Fourth of July	23	4–10	2–6	1
NASSCO Ship Repair Facility	non-Fourth of July	2	10	3–5	0
–Fireworks & Stage FX America, Inc./Allied PRA	non-Fourth of July	1	7	2.5–5	1
Walt Disney Studios Special Event ¹	non-Fourth of July	1	45 ²	2.5–6	1
Admiral Kidd Catering and Conference Center	non-Fourth of July	1	2	2–3	1
Loew's Coronado Resort	non-Fourth of July	1	3	2.5–5	1

¹ This fireworks display event was one-time event sponsored by Walt Disney Studios in conjunction with Comic-Con, which is an annual convention held at the San Diego Convention Center. San Diego Symphony sub-leased Embarcadero Marina Park South for this event during its regular concert season (June–September). The display consisted of a single barge positioned off Embarcadero Marina Park South in San Diego Bay.

² 45-minute duration provided in City of San Diego Special Event Permit Application; the actual duration of the fireworks display event wasn't specified.

5.3 Cumulative Impact Analysis

The discussion below evaluates the potential for the proposed project, including both Fourth of July fireworks display events and non-Fourth of July fireworks display events, to contribute to a cumulative adverse impact on the environment. For each resource area, an introductory statement is made regarding what would amount to a significant cumulative impact in a particular resource area.

The analysis that follows considers two separate impacts: (1) the significance of the cumulative effect from past, present, and reasonably foreseeable future fireworks display events, development projects, and temporary special events; and (2) in the event a cumulative effect is identified, the proposed project's incremental contribution to the identified cumulative effect. If it is determined

that the proposed project's contribution to the cumulative effect is considerable, a cumulatively significant impact is identified, and mitigation is imposed.

Based on the analysis provided in the Initial Study/Environmental Checklist (Appendix A), it was determined that the proposed project would not result in any significant impacts on agriculture and forestry resources, cultural resources, geology and soils, mineral resources, population and housing, recreational facilities, and utilities and service systems. In addition, it was determined that the proposed project would not have a significant impact on one or more aspects of the following resources: aesthetics; hazards and hazardous materials; hydrology and water quality; land use and planning; and transportation, circulation, and parking. Consequently, the proposed project would not have the potential to contribute to cumulative impacts related to these resources, and they are not discussed in the cumulative impact analysis below. Therefore, the cumulative analysis that follows addresses the incremental contribution of the proposed project to cumulative impacts associated with aesthetics and visual resources; air quality and health risk; biological resources; greenhouse gas emissions, climate change, and energy; hazards and hazardous materials; hydrology and water quality; land use and planning; noise and vibration; public services and facilities; and transportation, circulation, and parking. All of the aforementioned issue areas were analyzed using the List Method; however, the cumulative impact analysis for public services and facilities and transportation, circulation, and parking also utilized the Plan Method due to the potential additional cumulative effects of regional population growth on these resources.

5.3.1 Aesthetics and Visual Resources

A cumulatively considerable impact on aesthetics and visual resources would occur if the proposed project would contribute to a significant cumulative impact from the addition of a substantial amount of light and/or glare.

Geographic Scope

The geographic scope of analysis for cumulative aesthetics and visual resources impacts to which the proposed project may contribute includes the Port Master Plan (PMP) designated vista areas, or key public viewpoints, from which views of the proposed new fireworks display events and existing fireworks display events are available around San Diego Bay and the Imperial Beach Oceanfront, whether as part of a single view or a series of related views (e.g., a scenic route). The proposed new displays along the Chula Vista Bayfront would be visible from multiple designated vista points. The National City Bayfront only has one PMP designated vista area, located at Pepper Park adjacent to the Sweetwater Channel. In addition, the existing fireworks display events provided in Table 5-3 are visible from multiple designated vista points situated in the northern portion of San Diego Bay, as well as the Imperial Beach Oceanfront. As such, the visual impact analysis area generally encompasses public viewing sites along the Coronado Bayfront, San Diego Bayfront, Chula Vista Bayfront, National City Bayfront, and Imperial Beach Oceanfront.

Cumulative Effects

Fireworks Display Events

As noted in Table 5-2, a total of 53 past, present, and reasonably foreseeable future fireworks display events occur within and adjacent to San Diego Bay and along the Imperial Beach Oceanfront, not including the four proposed new displays associated with the proposed project, with the highest concentration of these (a total of 31) occurring during July through September. Fireworks are launched to a height where their light considerably exceeds the normal ambient lighting levels and creates brief, but very bright, flashes of light for the duration of the display and particularly during the finales when higher concentrations of fireworks are set off at one time. While some of these fireworks display events may overlap on the Fourth of July, most of these are single non-Fourth of July fireworks display events of short duration (no more than 10 minutes long) and involve the use of smaller shell sizes that reach shorter heights and result in smaller overall explosions when compared to the larger Fourth of July displays. While the light and glare generated by these fireworks displays is visible from nearby uses, including some residential uses and parks, the light and glare do not result in substantial spillover light onto nearby uses because they would not be so intense as to intrude into the structures to the point that typical nighttime activities would be disturbed (such as sleeping, watching television, etc.). In addition, light and glare generated by the fireworks diminish almost immediately, and any momentary interruption of nighttime views is almost immediately restored such that those uses are not permanently adversely affected. Therefore, a cumulatively significant aesthetics and visual resources impact from past, present, and reasonably foreseeable future fireworks display events would not occur.

Development Projects

Past development projects have changed the land in and around San Diego Bay and the surrounding downtown area, as well as the Imperial Beach Oceanfront, from a natural and undeveloped setting to an urban setting defined by high-rise structures with varying architectural finishes, ornamental landscaping, and lighting elements as seen today. Past development projects, along with present and future development projects, have and continue to include development at or near the waterfront that has cumulatively contributed to permanent sources of increased light pollution. Compliance with the District's PMP, Civic San Diego's design guidelines and Downtown Community Plan, the City of San Diego's Land Development Code, and the applicable design guidelines of the cities of Coronado, National City, Chula Vista, and Imperial Beach, including requirements to contain spillover light such that it does not affect adjacent land uses, would limit future glare and light impacts.

Therefore, although cumulative development projects have continued to change the Bayfront and downtown area to more urbanized settings, and reasonably foreseeable future projects would continue this path of development, changes from past, present, and reasonably foreseeable future projects have been and will continue to be designed in accordance with the existing viewshed regulations and design guidelines to limit glare and light impacts. Consequently, a cumulatively significant aesthetics and visual resources impact from past, present, and reasonably foreseeable future projects would not occur.

Temporary Special Events

Temporary special events within the geographic scope for aesthetics and visual resources include those occurring within the public parks and other public spaces, including roadways, adjacent to San Diego Bay and the Imperial Beach Oceanfront. To varying degrees depending on the event, special events would require setting up temporary structures, such as vendor kiosks, crowd control barricades, traffic cones, temporary stages, décor, etc. These temporary structures would generally be small structures that would not interfere with established vista areas or key observation points in the cumulative study area. While most of these events would occur during the day with all temporary structures being dismantled and removed before the nighttime hours, some of the events may require additional temporary nighttime lighting to be brought in. Depending on the location, some temporary nighttime light fixtures may result in some spillover onto adjacent uses, such as parks, residential uses, or roadways; however, nighttime lighting may be required to be down-shielded, and given the generally dense development of the areas surrounding San Diego Bay and the Imperial Beach Oceanfront, high levels of nighttime lighting already exist. The addition of temporary lighting for special events would not result in a substantial change in lighting, and, as such, a cumulatively considerable significant impact would not occur.

Summary of Combined Cumulative Effects

Even though the three sources of cumulative effects (fireworks display events, development projects, and temporary special events) do not individually contribute to a cumulatively considerable light and glare impact, the combined contribution of the three sources to lighting and glare conditions within the cumulative study area has the potential to be cumulatively considerable. However, the cumulative study area is located in an area with high levels of existing nighttime lighting, and the addition of these three sources would not result in a substantial change in lighting conditions in the study area. As noted above, light and glare associated with fireworks display events and development projects would not spill over onto adjacent land uses and, as such, do not have the potential to make a cumulatively considerable contribution to light and glare conditions. In addition, while lighting features associated with temporary special events were determined to have the potential for some spillover onto adjacent land uses, these light sources would be concentrated within a relatively small area and would be located at ground level, and any potential light spillover would occur on a temporary and infrequent basis. As such, they would not make a substantial contribution to light sources generated by development projects and fireworks display events such that a cumulatively considerable impact from the three sources combined would occur. As such, a cumulatively considerable significant impact from the combined cumulative effects would not occur.

Project Contribution

Proposed New Fireworks Display Events

The proposed new fireworks display events would result in less-than-significant impacts on aesthetics and visual resources, including light and glare. Light and glare from fireworks associated with the proposed new displays would not be sufficient enough to create a cumulatively significant impact where one does not currently exist. As discussed, the proposed new fireworks display events would be temporary and infrequent in nature and would not require the construction of any permanent structures that would block views in the area. Any light and glare created by the

fireworks dissipate almost immediately. Additionally, no existing fireworks display events occur in San Diego Bay adjacent to or along the National City Bayfront or Chula Vista Bayfront. As such, the less-than-significant contribution of light and glare produced by the proposed new fireworks display events would not rise to a level of being cumulatively considerable in combination with the cumulative fireworks display events, cumulative development projects, or any other temporary special events occurring in the vicinity of the new displays.

In addition, while it is possible for proposed new fireworks display events to overlap with temporary nighttime special events, additional sources of nighttime lighting for special events would be concentrated at the ground level near pedestrian activity. For safety reasons, fireworks display events would be located at a considerable distance from these ground-level lights and the light and glare produced by fireworks display events would occur at elevated heights. Therefore, given the distance between additional lighting provided for special events and the light produced by fireworks, there would not be any overlap in these sources of light and the combination of these temporary less-than-significant impacts on lighting would not rise to the level of being cumulatively considerable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance does not propose any changes in the number or nature of existing fireworks display events that would create a cumulatively considerable new source of substantial light or glare. In addition, there are no cumulatively considerable significant light and glare impacts in the cumulative study area. Therefore, the effects of the proposed ordinance on existing fireworks display events would not contribute to cumulative aesthetics and visual resources impacts, and no cumulatively significant adverse impacts on lighting or glare would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The contribution of the proposed new fireworks display events to cumulative aesthetics and visual resources impacts would be less than cumulatively considerable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not contribute to cumulative aesthetics and visual resources impacts, and therefore would be less than cumulatively considerable.

Mitigation Measures

Proposed New Fireworks Display Events

No mitigation is required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation

Proposed New Fireworks Display Events

The incremental contribution of the proposed new fireworks display events to cumulative aesthetics and visual resources impacts would not be cumulatively considerable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative aesthetics and visual resources impacts, and therefore would not be cumulatively considerable. Therefore, no cumulatively significant adverse impacts would occur.

5.3.2 Air Quality and Health Risk

Potential cumulative air quality impacts would result when cumulative projects' emissions would combine to degrade air quality conditions below attainment levels for the San Diego Air Basin (SDAB), delay attainment of air quality standards, affect sensitive receptors, or subject surrounding areas to objectionable odors. Neither the District nor the San Diego Air Pollution Control District (SDAPCD) has established quantitative thresholds to determine whether a project's incremental contribution to emissions would be cumulatively considerable. Therefore, the County of San Diego screening level thresholds (SLTs) for cumulative air quality impacts, based on the SDAPCD Rule 20.1 for non-major stationary sources, are used for the analysis of impacts related to emissions from the proposed project evaluated within the context of past, present, and reasonably foreseeable future projects. The substantial evidence for using the County's and SDAPCD's threshold levels for this project is contained within Section 4.2.4.2 of this Draft EIR.

Geographic Scope

Cumulative impacts on air quality and health risk can be regional or more localized at the neighborhood level. The SDAB, which covers 4,260 square miles of Southern California and is contiguous with San Diego County, represents the cumulative geographic scope for regional air quality impacts related to consistency with air quality plans and air quality threshold levels because plans and mass emission thresholds (e.g., County of San Diego SLTs in pounds per day) are established at the air basin-wide level to attain air quality standards that are assigned for the entire air basin, which in this case is the entire County. The geographic scope for cumulative impacts on sensitive receptors for both pollutant concentrations (e.g., National Ambient Air Quality Standards [NAAQS] and California Ambient Air Quality Standards [CAAQS]), health risk (e.g., from exposure to air toxics), and odors are considered at a more localized level (e.g., at specific receptor locations or the neighborhood level) due to the more limited area of dispersion, and include the surrounding neighborhoods and areas close to the source of the emission and odor sources, respectively. For example, specific receptor locations and neighborhoods immediately downwind of specific fireworks display events are potentially exposed to localized effects, including exceedances of ambient air quality standards as well as potential health risk from exposure to known air toxics.

Cumulative Effects

Fireworks Display Events

Past, present, and reasonably foreseeable future fireworks display events within the SDAB have involved the emissions of various criteria pollutants, consisting mostly of particulate matter 10 microns or less in diameter (PM₁₀), particulate matter 2.5 microns or less in diameter (PM_{2.5}), and minor amounts of ozone precursors (reactive organic gases [ROG] and nitrogen oxides [NO_x]) contributing to nonattainment status for 8-hour ozone under the NAAQS and nonattainment status for ozone, PM₁₀, and PM_{2.5} under the CAAQS. Therefore, the criteria pollutant emissions of concern within the SDAB are ozone precursors (ROG and NO_x), PM₁₀, and PM_{2.5}. The nonattainment status for the entire County is a consequence of all past and present projects and activity, including fireworks display events, and is potentially subject to continued nonattainment status by the cumulative contribution of reasonably foreseeable future fireworks display events within the project area, such as those listed in Table 5-2.

Past, present, and reasonably foreseeable future fireworks display events within the SDAB have also involved the emissions of various air toxics, including diesel particulate matter (DPM) from diesel-powered trucks for fireworks materials deliveries and tugs, volatile organic compounds (VOC) (including acetaldehyde, acrolein, and formaldehyde), polycyclic aromatic hydrocarbons, and metals (including chromium, copper, and lead) that are directly emitted from the various fireworks displays, contributing to background pollution levels near fireworks activities that represent some of the worst air quality in the state, as represented in the California Communities Environmental Health Screening Tool (CalEnviroScreen). Therefore, the toxic air contaminants (TACs) of concern near the cumulative study area are DPM, acetaldehyde, acrolein, formaldehyde, polycyclic aromatic hydrocarbons, chromium, copper, and lead. The existing pollution levels near (e.g., immediately downwind of) the cumulative study area are partially a consequence of past and present fireworks display events and experience increases from the cumulative contribution of reasonably foreseeable future fireworks display events within the cumulative study area, including those listed in Table 5-2.

Each of the past and present fireworks display events potentially contributes to short-term and localized criteria pollutants and air toxics (e.g., NAAQS and CAAQS exceedance and acute impact). Therefore, because past and present fireworks display events have contributed to the current nonattainment status for ozone (ROG and NO_x), PM₁₀, and PM_{2.5}, contribute to a portion of the background pollution in neighboring communities (e.g., immediately downwind of fireworks display events) resulting in air quality among the worst in the state, and reasonably foreseeable future fireworks display events would continue to contribute to the nonattainment status and potentially affect sensitive receptors, impacts related to the cumulative contribution of nonattainment pollutants (ozone precursors, PM₁₀, and PM_{2.5}) and the exposure of sensitive receptors to substantial pollutant concentrations and potentially adverse health effects would be considered cumulatively significant.

Development Projects

Past and present development projects within the SDAB have involved the emissions of various criteria pollutants contributing to current nonattainment status, resulting in pollution levels in the immediate vicinity of the project area that represent some of the worst air quality in the state. These

air quality conditions are a consequence of all past and present projects and activity, including nearby development projects, and are subject to continued nonattainment status from the cumulative contribution of reasonably foreseeable future development projects within the County, such as those provided in Appendix K.

As noted in Appendix K, there are various past, present, and reasonably foreseeable development projects in and around San Diego Bay, the surrounding downtown area, and the Imperial Beach Oceanfront. Therefore, because past and present projects have contributed to the current nonattainment status for ozone (ROG and NO_x), PM₁₀, and PM_{2.5}, and background pollution in neighboring communities, resulting in air quality among the worst in the state, and reasonably foreseeable development projects would continue to contribute to the nonattainment status and potentially affect sensitive receptors, impacts related to the cumulative contribution of nonattainment pollutants (ozone precursors, PM₁₀, and PM_{2.5}) and the exposure of sensitive receptors to substantial pollutant concentrations and potentially adverse health effects would be considered cumulatively significant.

Temporary Special Events

Temporary special events within the geographic scope for air quality and health risk would include those occurring within the public parks and other public spaces, including roadways, adjacent to San Diego Bay and the Imperial Beach Oceanfront. To varying degrees, special events require setting up temporary structures, such as vendor kiosks, crowd control barricades, traffic cones, and temporary stages, that generally result in minimal to no effects on regional and localized air quality. Some events may result in a few delivery truck trips to deliver and remove event equipment and minor traffic redistribution, but overall it is assumed that emissions and related air quality effects on both an individual and cumulative basis (e.g., all special events combined) are minor because they are limited to infrequent and temporary events. Thus, past and present special events do not contribute to the current nonattainment status for ozone (ROG and NO_x), PM₁₀, and PM_{2.5}. While air quality conditions in neighboring communities are among the worst in the state, past, present, and reasonably foreseeable special events would continue to contribute minor amounts of nonattainment pollutants (ozone precursors, PM₁₀, and PM_{2.5}) and the exposure of sensitive receptors to substantial pollutant concentrations and potentially adverse health effects would be considered less than cumulatively significant.

Summary of Combined Cumulative Effects

Past and present fireworks display events, development projects, and temporary special events have combined to contribute to the nonattainment status for 8-hour ozone, PM₁₀, and PM_{2.5} on a regional scale as well as the poor air quality on a localized scale within proximity of San Diego Bay, particularly the neighborhoods downwind (east/southeast) of terminal and shipbuilding operations in the central and southern portions of San Diego Bay. The largest cumulative fireworks display events, particularly those that currently occur on the Fourth of July, result in a short-term and localized contribution of criteria pollutants and air toxics (e.g., NAAQS and CAAQS exceedances and acute exposure to air toxics) similar to the proposed project's effects. These effects are infrequent and only last during and immediately after the fireworks display events, which occur mostly at night during the summer months.

The majority of the cumulative development projects shown in Appendix K would require construction and operations that would contribute emissions to the air quality setting. Construction of these development projects would be temporary and typically occur during daytime hours only and are thus unlikely to overlap with peak fireworks display event activity, which is mostly at night during the summer months. Each of these development projects potentially results in emissions that contribute both regional and localized effects in their vicinity, although the exact effects may be different than those associated with fireworks display events. For example, terminal operations at the Tenth Avenue Marine Terminal include mostly diesel-powered equipment, vehicles, and vessels that contribute nonattainment pollutants and air toxics (e.g., ozone precursors, PM10, PM2.5, and DPM) that have an effect on the region and nearby communities over the long term (e.g., all day, every day), whereas fireworks displays are short-term events that contribute nonattainment pollutants and air toxics (e.g., ozone precursors, PM10, PM2.5, and copper) that have an effect on the region and nearby communities infrequently for short durations (e.g., few days per year, few minutes per event). Similarly, temporary special events are generally short term and infrequent and result in minimal to no effects on regional and localized air quality, limited to some delivery truck trips to deliver and remove event equipment and minor traffic redistribution but, similar to the past and present fireworks display events, these special events tend to occur during off-peak times (e.g., nights and weekends) and do not involve the construction of permanent emission sources. However, because current air quality conditions (nonattainment status regionally and background TAC concentrations locally) are the result of all past and present emissions sources, past and present fireworks display events, development projects, and temporary special events all contribute to existing nonattainment and background TAC conditions.

Project Contribution

Proposed New Fireworks Display Events

As discussed under Threshold 2 of Section 4.2, *Air Quality and Health Risk*, and shown in Table 4.2-13, the proposed new Fourth of July fireworks display events would contribute emissions to the cumulative condition. The proposed new displays would result in an increase in criteria pollutant and air toxic emissions over existing conditions. The effects from past, present, and reasonably foreseeable future projects, including combined fireworks display events, development projects, and temporary special events effects, are considered cumulatively significant, and the proposed new fireworks display events' incremental contribution from operational emissions would result in a net increase in nonattainment pollutants when more than one proposed new display occurs on the Fourth of July. Consequently, the proposed new Fourth of July fireworks display events' incremental contribution to cumulative air quality impacts would be cumulatively considerable before mitigation (**Impact-C-AQ-1**). However, proposed project-related emissions associated with proposed new non-Fourth of July displays would be well below regional threshold levels for all pollutants. Therefore, the proposed project's incremental contribution during non-Fourth of July fireworks display events would be less than cumulatively considerable.

As discussed under Threshold 4 of Section 4.2, *Air Quality and Health Risk*, the proposed new Fourth of July and non-Fourth of July fireworks display events would contribute air toxics that would result in acute health effects far below the acute hazard threshold. Moreover, because health risk is a localized effect, these proposed new displays are in a different location than existing large events in the northern and central portions of San Diego Bay, as well as the existing Fourth of July fireworks

display event along the Imperial Beach Oceanfront. Therefore, any adverse effects from these proposed new displays would be experienced by a different set of receptors, and those effects are likely to be less than adverse. Consequently, the proposed project's incremental contribution to cumulative health risk impacts would not be cumulatively considerable.

As discussed under Threshold 1 of Section 4.2, *Air Quality and Health Risk*, the proposed new displays would not result in unanticipated growth, a change in land use designations, or emissions that would be inconsistent with the goals and strategies within the Regional Air Quality Strategy (RAQS) and State Implementation Policy (SIP), which are designed to bring the SDAB into attainment status for state and federal ozone standards. Therefore, although there is a cumulative impact from past, present, and reasonably foreseeable future fireworks display events, development projects, and special events resulting in nonattainment status for some criteria pollutants in the air basin, the proposed new fireworks display events' incremental contribution to cumulative air emissions would not conflict with progress toward attainment of the air quality standards described in the RAQS and SIP.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance does not propose any changes in the number or nature of existing fireworks display events and, therefore, would not cause or contribute to a cumulatively considerable air quality or health risk impact. The proposed ordinance includes several conditions of approval pertaining to limiting emissions related to air quality, which would improve air quality relative to the existing condition. Therefore, although there is a cumulative impact from past, present, and reasonably foreseeable future fireworks display events, development projects, and temporary special events resulting in nonattainment status for some criteria pollutants in the air basin, the effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative air emissions and would not conflict with progress toward attainment of the air quality standards described in the RAQS and SIP because it would improve the existing condition. No cumulatively significant adverse impacts would occur.

Furthermore, the proposed ordinance includes conditions pertaining to reducing copper content in the fireworks, which would help to reduce acute health risk associated with the Big Bay Boom that would potentially affect new receptor locations. Compliance with the proposed ordinance would improve the existing condition by reducing copper in the fireworks of all applicable display events. Therefore, although there is a cumulative impact from past, present, and reasonably foreseeable future projects resulting in adverse health effects during the largest displays, the effects of the proposed ordinance on existing fireworks display events would not cause or contribute to cumulative health risk impacts, and would not be cumulatively considerable. No cumulatively significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The contribution of the proposed new Fourth of July fireworks display events to cumulative air quality and health risk impacts would be cumulatively considerable.

Impact-C-AQ-1: Emissions in Excess of Cumulative PM2.5 Thresholds During Combined National City Bayfront and Chula Vista Bayfront Fourth of July Fireworks Display Events.

Project emissions generated when the new National City Bayfront and Chula Vista Bayfront Fourth of July fireworks display events occur at the same time, before mitigation, would exceed the daily San Diego County SLTs for PM2.5. The contribution of project-related emissions is considered significant because the project emissions would exceed the daily threshold that has been set by SDAPCD to attain the PM2.5 NAAQS and CAAQS.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not contribute to cumulative air quality and health risk impacts, and would be less than cumulatively considerable.

Mitigation Measures**Proposed New Fireworks Display Events**

For proposed new Fourth of July fireworks display events, the following mitigation measures shall be implemented.

Implement **MM-AQ-1: Limit the Size of Overlapping New Fireworks Display Events with Compliance with the Conditions of the Proposed Ordinance** and **MM-AQ-2: Implementation of Air Quality-Related Conditions of the Proposed Ordinance** as described in Section 4.2, *Air Quality and Health Risk*.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation**Proposed New Fireworks Display Events**

The contribution of the proposed new Fourth of July fireworks display events to cumulative air quality and health risk impacts would be less than cumulatively considerable with the implementation of **MM-AQ-1** and **MM-AQ-2** because mitigation would ensure that fireworks display event sizes would be limited to a level that would ensure the project's cumulative contribution of PM2.5 emissions would be below thresholds and require compliance with air quality-related conditions that would provide some reduction in emissions. The exact amount of emissions reduction provided by these conditions cannot be quantified due to many variables (precise existing and future idling times, etc.) but the reductions would be modest and would further reduce the less-than-significant impact after the implementation of mitigation measure **MM-AQ-1**.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not contribute to cumulative air quality and health risk impacts, and would be less than cumulatively considerable.

5.3.3 Biological Resources

A significant cumulative impact on biological resources would occur if the proposed project would contribute to cumulative impacts related to sensitive habitat or species, sensitive habitat/natural communities, federally protected wetlands, or wildlife movement corridors. The information contained in this section is based on the *Biological Technical Study for the San Diego Bay and Imperial Beach Oceanfront Fireworks Display Events Project* prepared by Merkel & Associates (February 2017) found in Appendix F.

Geographic Scope

The geographic area for cumulative terrestrial biological resources impacts to which the proposed project may contribute includes all habitats adjacent to, or otherwise linked to, San Diego Bay. The geographic area for cumulative marine biological resources impacts includes San Diego Bay in its entirety. Past, present, and reasonably foreseeable future projects that could contribute to cumulative impacts on terrestrial and aquatic biological resources include fireworks display events, waterfront development projects with grading, paving, landscaping, road, and building construction of undeveloped land or otherwise with habitat present, and temporary special events adjacent to habitat around San Diego Bay. Marine organisms could be directly affected by fireworks display events that occur within San Diego Bay, as well as construction and/or operation activities in or along the water, including dredging, filling, and wharf demolition/construction. Untreated runoff from construction or operation activities on land into harbor waters via storm drains or sheet runoff also has the potential to contribute to cumulative impacts.

Cumulative Effects

Fireworks Display Events

A total of 53 past, present, and reasonably foreseeable future fireworks display events within San Diego Bay and along the Imperial Beach Oceanfront have occurred at various times throughout the year, with the greatest concentration of these displays (a total of 31) occurring from July through September. As such, a majority of the existing fireworks display events occur within the peak or end of the general avian breeding season, which extends from February 15 to September 15. With the exception of the Fourth of July Imperial Beach Fireworks Show, the 31 past, present, and reasonably foreseeable future fireworks display events that occur from July through September take place in the central and northern portions of San Diego Bay, which are generally characterized by deep (greater than -20 feet mean lower low water) and moderately deep (-12 to -20 feet mean lower low water) waters that are generally devoid of sensitive marine habitats such as eelgrass. As a result, any barge-based fireworks display events that occur in the central and northern portions of the Bay would not contribute to cumulative impacts associated with eelgrass habitat degradation or nursery habitat functions. In addition, because no fireworks display events currently occur in south San Diego Bay, where a majority of the eelgrass habitat of the Bay is located, there would be no cumulative effects on eelgrass or its nursery habitat functions from barge-based displays.

The fireworks display events that take place from July through September range in duration anywhere from 15 to 20 minutes for Fourth of July displays, and 2 to 10 minutes for non-Fourth of July displays. Large Fourth of July fireworks display events such as the Big Bay Boom, Fireworks

Show Over Glorietta Bay, and Fourth of July Imperial Beach Fireworks Show occur in the vicinity of sensitive nesting areas for four federally listed avian species. The various nesting sites for these federally listed species are within audible and visible range of these fireworks display events. In addition, the Big Bay Boom occurs in the vicinity of marine mammal haul-out areas in the northern portion of San Diego Bay. Some indirect effects of fireworks display events include spectator trespass into sensitive nesting habitats, such as those present within Silver Strand State Beach and along the beach of the Tijuana River National Estuarine Research Reserve, as well as vessel strikes with marine mammals from increased boating activities during the displays. These potential indirect effects are most common during Fourth of July fireworks display events due to their large spectator attendance and multiple viewing areas. Because these events only occur once a year, any potential indirect effects would occur temporarily and on an infrequent basis, and therefore would not contribute to cumulatively considerable indirect effects on federally listed species of the Bay. Similarly, any direct and indirect effects on sensitive species and habitat within any preserves and/or refuges designated in adopted habitat conservation plans, natural community conservation plans, or other approved local, regional, or state habitat conservation plans would not be cumulatively considerable.

While fireworks display events have been ongoing in San Diego Bay and the Imperial Beach Oceanfront for many years, the sound and light exposure on avian species and marine mammals from ongoing fireworks display events potentially results in disturbances to these species. Stress from long-term and continuous cumulative sound exposures can potentially result in permanent behavior modification (e.g., avoidance of or abandonment of haul-out and nesting areas), as well as physiological effects on reproduction, metabolism, and general health. However, fireworks display events are short in duration and intensity, and there have been no studies completed that indicate injury or mortality of sensitive wildlife or decreased production associated with fireworks display events. Additionally, marine mammals and birds that utilize the northern portions of the Bay and Imperial Beach Oceanfront are habituated to high levels of human activity and regular loud noises from both commercial and military airports, as well as military and recreational watercraft. As such, because fireworks display events are infrequent and short term, and no substantial adverse long-term effects such as injury or mortality occur, the cumulative effects of fireworks noise and light on wildlife from past, present, and reasonably foreseeable future fireworks display events is considered less than cumulatively significant.

Other cumulative effects from past, present, and reasonably foreseeable future fireworks display events include an accumulation of trash and debris within the waters surrounding the display. Although the debris generated by the fireworks themselves is a contributor to the overall waste generated by fireworks display events, the primary source of trash and debris comes from secondary sources such as spectators. The high public presence in the area surrounding fireworks display events results in discharges of all forms of paper, plastic, food, and metal wastes. This secondary waste is coupled with the small contribution from fireworks-generated waste, which is composed of paper, aluminum, and plastic. The combination of trash and debris generated by fireworks themselves and spectators both on land and in the water can cause harm to fish, marine reptiles, birds, and marine mammals if ingested. Additionally, fireworks- and human-generated trash and debris could result in the degradation of sensitive habitat and wetlands if it accumulates within these areas. Due to the large number of past, present, and reasonably foreseeable future fireworks display events, the combined effect of all displays considered together would result in a cumulatively considerable waste load in the uplands and water due to the intensity of use of public

spaces. As such, the cumulative effects of past, present, and reasonably foreseeable future fireworks display events on biological resources related to fireworks- and human-generated trash and debris are cumulatively significant.

Development Projects

Past development projects have changed the land in and around San Diego Bay and surrounding downtown area, as well as the Imperial Beach Oceanfront, from a natural and undeveloped setting to a highly urbanized setting with high military, commercial, industrial, and recreational usage. The areas surrounding the Bay and the Imperial Beach Oceanfront continue to see an increase in urban density and intensity from recent past and present projects, and future projects appear to continue the area's urbanization. In addition, past development projects, along with present and future development projects, have and continue to include development at or near the waterfront that has cumulatively contributed to direct and indirect impacts on habitat and species of the Bay.

Consequently, the vast majority of sensitive habitat along the Bayfront, particularly in the northern and central portions of the Bay, is no longer present. However, there are still areas in the southern portion of the Bay that contain undeveloped wetlands and sensitive habitat. These areas include the Sweetwater River, Otay River, Chula Vista Wildlife Reserve, South San Diego Bay National Wildlife Refuge, and Telegraph Creek. As shown in Appendix K, there are a number of past, present, and reasonably foreseeable future development projects in south San Diego Bay, all of which could further reduce the amount and quality of available habitat surrounding the Bay.

However, present and future projects would be required to be consistent with the applicable city's Multiple Species Conservation Program (MSCP) Subarea Plan (if within the city's jurisdiction), the Chula Vista Bayfront Master Plan Natural Resources Management Plan (for future projects along the Chula Vista Bayfront) and the District's and U.S. Navy's Integrated Natural Resources Management Plan (INRMP), which identify important sensitive species and habitats in San Diego and in San Diego Bay targeted for preservation. Moreover, present and future projects also would comply with requirements of the Endangered Species Act, Migratory Bird Treaty Act, and Marine Mammal Protection Act, which contain regulations for the take of any listed species, migratory birds, and marine mammals, and would require that present and future projects avoid and/or mitigate potential impacts on these species.

Present and future projects do have the potential to further degrade water quality within the area and thus the existing marine habitat. However, specific regulations such as the Municipal Permit and the Industrial General Permit are in place that would minimize continued degradation of the existing marine habitat. For example, projects over 1 acre in size are required to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP), while projects smaller than 1 acre are still required to comply with the applicable water quality regulations and the District's Jurisdictional Runoff Management Plan (JRMP), depending on the jurisdiction within which the project would be located. The SWPPPs would identify short-term, project-specific best management practices (BMPs) for each project to minimize pollutants and/or sediments traveling via runoff, and long-term BMPs would be implemented based on the required Water Quality Control Plans using a combination of Site Design BMPs, Source Control BMPs, and Treatment Control BMPs. Implementation of both construction and operational BMPs would minimize harm to marine habitat from water runoff.

Therefore, cumulative biological resource impacts from past, present, and future development projects are considered less than cumulatively significant in the cumulative study area.

Temporary Special Events

There are a number of temporary special events that do not include a fireworks display that occur throughout the year around San Diego Bay and the Imperial Beach Oceanfront. These temporary special events occur within the District's jurisdiction and/or involve the use of District facilities. Temporary special events within the geographic scope for biological resources include those occurring adjacent to, or in the vicinity of, sensitive habitat surrounding San Diego Bay and along the Imperial Beach Oceanfront. To varying degrees depending on the event, special events would require setting up temporary structures, such as vendor kiosks, crowd control barricades, traffic cones, temporary stages, décor, etc. Through the required permitting process for each of these temporary special events, it is expected that these temporary structures would not be sited within any adjacent sensitive habitat. Because no fireworks display events are included with these temporary special events, the only source of nighttime lighting may include temporary nighttime light fixtures, depending on the location of the event, which may result in some spillover onto adjacent areas. However, the use of any nighttime lighting would be temporary and would not result in any adverse long-term effects on wildlife within any adjacent habitat. Therefore, cumulative biological resource impacts from past, present, and future temporary special events are considered less than cumulatively significant.

Summary of Combined Cumulative Effects

As noted above, past, present, and reasonably future development projects are required to be consistent with the applicable city's MSCP Subarea Plan (if within the city's jurisdiction), the Chula Vista Bayfront Master Plan Natural Resources Management Plan (for future projects along the Chula Vista Bayfront), and the District's and U.S. Navy's INRMP. These development projects also have been or would be required to comply with federal and state regulations protecting biological resources, including but not limited to the Endangered Species Act, Migratory Bird Treaty Act, and Marine Mammal Protection Act. Other specific regulations such as the Municipal Permit and the Industrial General Permit minimize the continued degradation of the existing marine habitat. Additionally, there are no aspects of temporary special events that would contribute to cumulative biological resources impacts, as these events are temporary and infrequent in nature and typically do not involve any activities that would substantially disturb habitat or wildlife. Therefore, past, present, and reasonably foreseeable future development projects and temporary special events do not contribute to a cumulatively considerable impact on biological resources. However, past, present, and reasonably foreseeable future fireworks display events result in an accumulation of trash and debris from both the fireworks themselves and secondary indirect sources such as spectators. Due to the large number of past, present, and reasonably foreseeable future fireworks display events, the combined effect of all displays considered together would result in a cumulatively considerable waste load in the adjacent uplands and in the water. Therefore, cumulative effects from past, present, and reasonably foreseeable future fireworks display events is cumulatively considerable.

Project Contribution

Proposed New Fireworks Display Events

The proposed new fireworks display events would occur in south San Diego Bay, adjacent to the National City and Chula Vista Bayfronts. The vast majority of the National City Bayfront is occupied by either U.S. Navy shipyards or the National City Marine Terminal. There are other industrial uses such as metal working businesses and boat repair facilities on the Bayfront. While there is no sensitive habitat along the National City Bayfront, it is close to the Sweetwater Marsh Unit of the San Diego Bay National Wildlife Refuge, across from Sweetwater Channel. Large portions of the Chula Vista Bayfront are dedicated to wildlife reserves and marshes. Other uses include public parks, marinas, a recreational vehicle campground, a salt works operation, and a boat repair facility. Due to the relatively undeveloped nature of the southern portion of San Diego Bay, particularly in the vicinity of the Chula Vista Bayfront, wildlife species in this area are not likely as habituated to human activity compared to wildlife species present in the northern portion of the Bay. Other sensitive habitat in south San Diego Bay includes Otay River, Chula Vista Wildlife Reserve, and Telegraph Creek, as well as Silver Strand State Beach, which is used as nesting habitat by sensitive avian species such as the California least tern and western snowy plover.

As discussed under Thresholds 1, 2, and 3 of Section 4.3, *Biological Resources*, the proposed new fireworks display events would potentially result in direct impacts on marine reptiles, avian species, sensitive habitat, and wetlands present in south San Diego Bay from fireworks-generated trash and debris, and indirect impacts from increased human and boating activity. Additionally, the positioning of fireworks barges over the shallow flats during the proposed new displays could result in direct impacts on eelgrass and its nursery habitat functions, particularly at low tides. Additional impacts could occur from propeller wash or propeller drag from tugboats during barge maneuvering. However, because a vast majority of the past, present, and reasonably foreseeable future fireworks display events occur in the central and northern portions of the Bay, which is generally devoid of sensitive eelgrass habitat, the proposed new fireworks display events would not contribute to cumulatively considerable impacts on eelgrass habitat and its nursery habitat functions when considered together with the cumulative fireworks display events.

As mentioned, the debris from the fireworks themselves typically constitute a small contribution to the overall solid waste discharge associated with fireworks display events. Rather, the discharges result from a combination of factors, including high public presence in the area, and discharge of all forms of paper, plastic, food, and metal wastes. This secondary waste source is coupled with the added input from fireworks waste of paper, aluminum, and plastics. Collectively, these sources of waste create a discharge to the terrestrial and marine environment that can include some wastes that have been identified as having potentially high risk of harm to fish, birds, marine reptiles, and marine mammals, such as some larger plastic wastes like six-pack holders, plastic bags, and balloons. Based on the limited presence of marine mammals and lack of haul-out areas in the southern portion of the Bay, the proposed new fireworks display events are not expected to result in direct impacts from fireworks-generated trash and debris or result in disturbances to these species from increased noise and light associated with the displays, nor are they expected to result in indirect impacts from human and boating activity. Because a vast majority of the existing fireworks display events identified in Tables 5-2 and 5-3 occur in the northern portion of the Bay, the incremental contribution of the proposed new fireworks display events to cumulative impacts on

marine mammals would be less than cumulatively considerable. The additional four proposed new fireworks displays in south San Diego Bay would not be a significant waste contributor due to the infrequency of events, low volume of waste produced, small scale of waste remnants, and predominance of naturally degrading components like cardboard. However, the proposed new displays, when considered together with the 53 past, present, and reasonably foreseeable future fireworks display events, would result in a cumulatively considerable waste load in upland habitat areas and water due to the intensity of use of public spaces both on and off the water. As such, the proposed project's contribution to cumulatively considerable accumulation of trash and debris when combined with past, present, and reasonably foreseeable future projects is considered significant (**Impact-C-BIO-1**).

In addition, as discussed under Thresholds 5 and 6 of Section 4.3, *Biological Resources*, the proposed new fireworks display events would potentially conflict with the MSCP Subarea Plans for the cities of San Diego and Chula Vista, as well as the San Diego Bay National Wildlife Refuge Comprehensive Conservation Plan. These potential conflicts would occur due to the potential direct and indirect impacts on wildlife and sensitive habitat associated with the proposed new fireworks display events. However, these potential direct and indirect impacts would be isolated to the preserves/refuges in the southern portion of the Bay, and would not contribute to any cumulative effects on any preserves/refuges in the central or northern portions of the Bay, where a majority of the 53 past, present, and reasonably foreseeable future fireworks display events are located. Therefore, the contribution of the proposed new fireworks display events to conflicts with adopted habitat conservation plans, natural community conservation plans, or other approved local, regional, or state habitat conservation plans would not be cumulatively considerable.

Mitigation measures **MM-BIO-1** and **MM-BIO-2** require implementation of the biological resources-related conditions of the proposed ordinance for direct and indirect impacts. For **MM-BIO-1**, these conditions of approval require the fireworks operator to remove and properly dispose of all packaging, a reduction in the amount of non-biodegradable fireworks components that can be used, implementation of BMPs, and compliance with SDRWQCB's General Permit, including post-fireworks display event cleanup of debris and solid waste. **MM-BIO-1** also requires the fireworks organizer, with the assistance of the fireworks operator, to prepare and implement a comprehensive Fireworks Best Management Practices Plan pursuant to SDRWQCB's General Permit. **MM-BIO-2** requires implementation of the cleanup, security, signage, and education conditions of approval of the proposed ordinance. Implementation of **MM-BIO-1** and **MM-BIO-2** would reduce potential cumulatively significant direct impacts on habitat from fireworks-generated trash and debris and cumulatively significant indirect impacts on habitat from human trespass, increased boat traffic, and human-generated trash and debris to less-than-significant levels. Accordingly, the contribution of the proposed new fireworks display events to cumulative biological resources impacts when combined with past, present, and reasonably foreseeable fireworks display events, development projects, and temporary special events would be less than cumulatively considerable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance does not propose any changes in the number or nature of existing fireworks display events and therefore would not cause or contribute to a cumulatively considerable biological resources impact. The proposed ordinance includes several conditions of approval that would reduce potential impacts on biological resources. These conditions include implementation of

post-display cleanup practices consistent with the requirements of the General Permit, a reduction in the amount of non-biodegradable fireworks components that can be used, and security, signage, and education measures. In addition, the proposed ordinance includes conditions of approval that would reduce potential effects of fireworks-related noise and light. Compliance with the proposed ordinance would improve the existing condition by ensuring that fireworks-generated trash and debris are collected and disposed of and that the use of non-biodegradable fireworks components is limited, as well as reducing potential impacts of trespass, increased boat traffic, and human-generated trash and debris during fireworks display events on wildlife species, sensitive habitat, and wetlands. Additionally, compliance with the proposed ordinance would improve the existing condition by minimizing the disturbance experienced by wildlife species during fireworks display events and ensuring that noise and light from fireworks displays would not have any substantial adverse direct effects on wildlife. Therefore, the effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative biological resources impacts, and would not be cumulatively considerable. No cumulatively significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The incremental contribution of the proposed new fireworks display events to cumulative biological resources impacts would be cumulatively considerable.

Impact-C-BIO-1: Cumulatively Considerable Accumulation of Trash and Debris in Upland and Marine Habitats. The proposed new fireworks display events have the potential to directly and indirectly contribute to a cumulatively considerable accumulation of trash and debris in upland and marine habitats when combined with past, present, and reasonably foreseeable future projects.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative biological resources impacts, and therefore would not be cumulatively considerable.

Mitigation Measures

Proposed New Fireworks Display Events

For proposed new Fourth of July fireworks display events, the following mitigation measures shall be implemented.

Implement **MM-BIO-1: Implementation of the Biological Resources–Related Conditions of the Proposed Ordinance for Direct Impacts** and **MM-BIO-2: Implementation of the Biological Resources–Related Conditions of the Proposed Ordinance for Indirect Impacts** as described in Section 4.3, *Biological Resources*, of this Draft EIR.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation

Proposed New Fireworks Display Events

Implementation of mitigation measure **MM-BIO-1** requires implementation of the biological resources-related conditions of the proposed ordinance for direct impacts. These conditions of approval require the fireworks operator to remove and properly dispose of all packaging, a reduction in the amount of non-biodegradable fireworks components that can be used, implementation of BMPs, and compliance with SDRWQCB's General Permit, including post-fireworks display event cleanup of debris and solid waste. **MM-BIO-1** also requires the fireworks organizer, with the assistance of the fireworks operator, to prepare and implement a comprehensive Fireworks Best Management Practices Plan pursuant to SDRWQCB's General Permit. Implementation of **MM-BIO-1** would ensure that fireworks-generated trash and debris are collected and disposed of. Additionally, **MM-BIO-2** requires implementation of the cleanup, security, signage, and education conditions of approval of the proposed ordinance. Implementation of **MM-BIO-2** would ensure that significant indirect impacts from increased boat traffic, trespass, and human-generated trash and debris are reduced. With the implementation of mitigation measure **MM-BIO-1** and **MM-BIO-2**, the incremental contribution of the proposed new fireworks display events to cumulative biological resource impacts would be less than cumulatively considerable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative biological resources impacts, and therefore would not be cumulatively considerable. No cumulatively significant adverse impacts would occur.

5.3.4 Greenhouse Gas Emissions, Climate Change, and Energy

There would be the potential for a cumulatively considerable greenhouse gas (GHG)-related impact if the project would be inconsistent with the District's Climate Action Plan (CAP) reduction targets; inconsistent with regulatory programs outlined in the Scoping Plan and adopted by the California Air Resources Board (ARB) or other California agencies to reduce GHG emissions in 2020; inconsistent with the post-2020 reduction targets set forth through Senate Bill (SB) 32 and California Executive Order (EO) S-03-05; or inconsistent with plans, policies, and regulations promulgated to reduce GHG emissions post-2020. There would be the potential for a cumulatively considerable climate change impact if the project would expose property and persons to the physical effects of climate change including, but not limited to, flooding, public health risk, wildfire risk, or other impacts resulting from climate change. Finally, there would be the potential for a cumulatively considerable energy use-related impact if the project would contribute to a cumulatively significant impact related to the wasteful, inefficient, and unnecessary usage of direct or indirect energy.

Geographic Scope

Climate change is a cumulative issue, and the geographic scope for cumulative GHG emission impacts is global. Because climate change is the result of cumulative global emissions, no single project, when taken in isolation, can cause climate change—a single project's emissions are insufficient to change the radiative balance of the atmosphere. Because climate change is the result of GHG emissions, and GHGs are emitted by innumerable sources worldwide, cumulative GHG emissions that contribute to global climate change will have a significant cumulative impact on the natural environment as well as on human development and activity. The global increase in GHG emissions that has occurred and will occur in the future is the result of the actions and choices of individuals, businesses, local governments, states, and nations. Furthermore, although climate change impacts will likely vary by geography and intensity, the impacts that will result from cumulative global emissions will be felt worldwide. The GHG and climate change analysis within Section 4.6, *Greenhouse Gas Emissions, Climate Change, and Energy*, is inherently a cumulative analysis. A summary of the discussion is provided below. Energy use is a regional issue and the geographic scope includes the service area of San Diego Gas and Electric (SDG&E).

Cumulative Effects

Fireworks Display Events

Past and present fireworks display events throughout the region, state, nation, and world, including but not limited to those fireworks display events within the SDAB listed in Table 5-2, have contributed to and will continue to contribute to the cumulative impacts of global climate change. As with the proposed project, all the fireworks display events in Table 5-2, along with all other development projects, special events, and fireworks display events within the county, state, and region, would be required to comply with all applicable federal, state, and local policies and regulations regarding GHG emission reductions (e.g., Assembly Bill [AB] 32, Pavley 1, Low Carbon Fuel Standard, SB 350) and adapting to climate change (e.g., sea-level rise [SLR]). As noted previously, GHG emissions from fireworks display events are minor and result in only a few metric tons of carbon dioxide equivalent per display. However, although minor, changes from past, present, and reasonably foreseeable future fireworks display events have contributed to and will continue to contribute to a cumulatively significant impact in the project vicinity.

In addition, past, present, and reasonably foreseeable fireworks display events throughout the region, state, nation, and world, including but not limited to those fireworks display events within the nearby area, have contributed to and will continue to contribute to cumulative impacts of energy demand. As with the proposed project, all fireworks display events, along with all other development projects and special events within the county, state, and region, would be required to comply with all applicable federal, state, and local policies and regulations regarding the wasteful, inefficient, or unnecessary use of energy. The energy use of the fireworks display events would be temporary and periodic. However, changes from past, present, and reasonably foreseeable future fireworks display events have contributed to and will continue to contribute to a cumulatively significant impact in the project vicinity.

Development Projects

Past, present, and reasonably foreseeable development projects throughout the region, state, nation, and world, including but not limited to those development projects within the SDAB and nearby areas provided in Appendix K, have contributed to and will continue to contribute to the cumulative impacts of global climate change. As with the proposed project, all the development projects in Appendix K, along with all other development projects, special events, and fireworks display events within the county, state, and region, would be required to comply with all applicable federal, state, and local policies and regulations regarding GHG emission reductions and climate change. However, changes from past, present, and reasonably foreseeable future development projects have contributed to and will continue to contribute to a cumulatively significant impact in the project vicinity.

Energy demand will continue to increase as accounts increase in SDG&E's service area and fuel demand increases in the region. However, on a project-by-project basis, energy demand is decreasing because of advances in energy technology and the cost-saving effects of using energy-efficient measures. Moreover, SDG&E will continue to increase its renewable energy mix as a percentage of its overall energy production, which will continue to provide reliable energy to present and future projects, and fuel supplies in the region will continue to increase as demand increases. Therefore, energy impacts from past, present, and reasonably foreseeable future development projects are not cumulatively significant.

Temporary Special Events

Past, present, and reasonably foreseeable special events throughout the region, state, nation, and world, including but not limited to those special events within the nearby area, have contributed to and will continue to contribute to the cumulative impacts of global climate change. As with the proposed project, all the special events, along with all other development projects and fireworks display events within the county, state, and region, would be required to comply with all applicable federal, state, and local policies and regulations regarding GHG emission reductions and climate change. However, changes from past, present, and reasonably foreseeable future special events have contributed to and will continue to contribute to a cumulatively significant impact in the project vicinity.

In addition, past, present, and reasonably foreseeable special events throughout the region, state, nation, and world, including but not limited to those special events within the nearby area, have contributed to and will continue to contribute to cumulative impacts of energy demand. As with the proposed project, all the special events, along with all other development projects and fireworks display events within the county, state, and region, would be required to comply with all applicable federal, state, and local policies and regulations regarding the wasteful, inefficient, or unnecessary use of energy. However, changes from past, present, and reasonably foreseeable future special events have contributed to and will continue to contribute to a cumulatively significant impact in the project vicinity.

Summary of Combined Cumulative Effects

Past, present, and reasonably foreseeable future fireworks display events, development projects, and special events have contributed to and will continue to contribute to the cumulative impacts of global climate change. GHG emissions are generated worldwide by all activities, including but not

limited to fireworks display events, development projects, and special events. All fireworks display events, development projects, and special events within the county, state, and region are required to comply with all applicable federal, state, and local policies and regulations regarding GHG emission reductions and climate change. The contribution from certain activities, including development projects, is larger than other activities, such as fireworks displays and special events.

In addition, past, present, and reasonably foreseeable fireworks display events, development projects, and special events have contributed to and will continue to contribute to cumulative impacts of energy demand. Energy is consumed worldwide by all activities, including but not limited to fireworks display events, development projects, and special events. All fireworks display events, development projects, and special events within the county, state, and region are required to comply with all applicable federal, state, and local policies and regulations regarding the wasteful, inefficient, or unnecessary use of energy. The contribution from certain activities, including development projects, is larger than other activities, such as fireworks displays and special events.

Project Contribution

Proposed New Fireworks Display Events

As discussed under Threshold 1 of Section 4.6, *Greenhouse Gas Emissions, Climate Change, and Energy*, the proposed new Fourth of July and non-Fourth of July National City and Chula Vista Bayfronts fireworks display events would contribute GHG emissions to the cumulative condition. However, annual project emissions would be minimal and result in emissions far below applicable screening thresholds, and would be consistent with plans, policies, and regulatory programs outlined in the Scoping Plan and adopted by ARB or other California agencies for the purpose of reducing the emissions of GHGs to meet 2020 targets. Furthermore, the project would be consistent with the state's overall post-2020 reduction targets identified in SB 32 and EO S-03-05, and would be in compliance with all plans, policies, and regulatory programs adopted by ARB or other California agencies for post-2020 for the purpose of reducing the emissions of GHGs. The effects from past, present, and reasonably foreseeable future projects are considered cumulatively significant, but the proposed new fireworks display events' incremental contribution of GHG emissions toward global climate change would be less than cumulatively considerable given that the project would result in minimal emissions and would be consistent with all local, regional, and state GHG reduction plans.

With respect to climate change impacts, the proposed project does not propose the construction of any structures that would redirect potential SLR flood flows, does not propose any significant increase in water consumption, aside from temporary consumption associated with spectators for the displays (restroom use, drinking), and viewing locations associated with the proposed project would only be inhabited temporarily. As such, the project's incremental contribution to cumulative SLR impacts would be less than significant.

With respect to energy, the proposed project would increase energy use primarily associated with fuel combustion from tug and delivery truck sources. However, no aspects of the proposed project would result in the use of energy in a wasteful, inefficient, and unnecessary manner, as sources are temporary, infrequent, and minor. Therefore, the project's incremental contribution to cumulative energy impacts would not be cumulatively considerable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

As discussed in Section 4.4, the proposed ordinance would govern fireworks display events that require a discretionary action by the District or are operated by the District's tenants. Also, the proposed ordinance does not propose any changes in the number or nature of existing fireworks display events and therefore would not cause or contribute to a cumulatively considerable GHG, climate change, or energy impact. The proposed ordinance includes a condition of approval that limits idling emissions and the use of alternative fireworks that burn cleaner, which would reduce emissions relative to the existing condition. Therefore, although there is a cumulative impact from past, present, and reasonably foreseeable future cumulative fireworks display events, development projects, and special events resulting in global climate change, the effect of the proposed ordinance on existing fireworks display events would ensure that the proposed project's incremental contribution of GHG emissions toward cumulative climate change would not impede progress toward long-term reduction targets and would be consistent with plans, policies, and regulations aimed at achieving reduction targets, would not redirect potential SLR flood flows, and would not result in the wasteful, inefficient, and unnecessary consumption of energy. Therefore, the effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative GHG and climate change impacts, and would not be cumulatively considerable. No cumulatively significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The incremental contribution of the proposed new fireworks display events to cumulative GHG emissions, climate change, and energy would be less than cumulatively considerable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative GHG emissions, climate change, and energy, and therefore would not be cumulatively considerable. No cumulatively significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

No mitigation is required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation

Proposed New Fireworks Display Events

The incremental contribution of the proposed new fireworks display events to cumulative GHG emissions, climate change, and energy would be less than cumulatively considerable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative GHG emissions, climate change, and energy, and therefore would be less than cumulatively considerable. No cumulatively significant adverse impacts would occur.

5.3.5 Hazards and Hazardous Materials

Cumulative impacts associated with fireworks-related hazards and hazardous materials could result when past, present, and reasonably foreseeable future projects, including fireworks display events, development projects, and temporary special events, combine to create a significant hazard to the public or environment and/or interfere with an adopted emergency response plan.

Geographic Scope

Cumulative impacts for fireworks-related hazards and hazardous materials are based on a list of past, present, and reasonably foreseeable fireworks display events that occur within and/or adjacent to San Diego Bay and the Imperial Beach Oceanfront, development projects that are currently underway, approved, or proposed and likely to be implemented in the area surrounding the Bay and Imperial Beach Oceanfront, and temporary special events not including a fireworks display.

Cumulative Effects

Fireworks Display Events

A total of 53 cumulative fireworks display events take place in locations around San Diego Bay and the Imperial Beach Oceanfront. These events are listed in Table 5-2, *Cumulative Fireworks Display Events*, above. These past, present, and reasonably foreseeable fireworks display events are required to comply with all applicable federal (including U.S. Department of Transportation Hazardous Materials Regulations [49 CFR 100–185]), state (including Title 19 of the CCR), and local regulations related to fireworks. In addition, each display occurs under the oversight of licensed firework operators and the responsible city's fire department to ensure that all hazardous materials associated with fireworks are used, stored, and disposed of properly. Furthermore, all fireworks display events are required to maintain a safety zone around the fireworks launch sites, which delineate the area in which public access is prohibited for safety purposes. Similarly, the ongoing implementation and updating of relevant Emergency Operations Plans and other existing procedures for special events such as fireworks displays ensures adequate response to emergencies and evacuation plans as firework display events occur, and reduces the potential for interfering with emergency response plans. Therefore, required compliance with existing federal, state, and local laws and regulations would ensure that the potential for a significant fireworks-related hazards and

hazardous materials impacts from past, present, and reasonably foreseeable future fireworks display events would be less than cumulatively significant.

Development Projects

Past development projects within the cumulative study area could have created a new source of hazardous materials or hazardous conditions during operations depending on the use and type of project, such as an industrial facility. Present and reasonably foreseeable future development projects could disrupt or result in the exposure of hazardous materials during construction activities; however, the risk for exposure to hazardous materials would be analyzed during the environmental review process for each individual project. For projects having the potential to disrupt or result in the exposure of hazardous materials, mitigation measures during construction would be included to reduce potential impacts to a level below significance. These projects are required to comply with all federal, state, and local laws and regulations regarding hazards and hazardous materials, including the Resource Conservation and Recovery Act of 1976, the U.S. Department of Transportation Hazardous Materials Regulations, and the local Certified Unified Program Agency regulations, which would reduce potential releases of hazardous materials into the environment. Types of development projects that have the potential to result in exposure of hazards and hazardous materials during operations include industrial and marine terminal projects proposed along the San Diego Bayfront. Because past, present, and reasonably foreseeable future cumulative development projects with potential to expose hazardous materials during construction and operation would be subject to federal, state, and local hazardous materials laws, cumulative effects related to hazardous materials from these projects would be less than cumulatively significant.

Temporary Special Events

There are a number of temporary special events that do not include a fireworks display that occur throughout the year around San Diego Bay and the Imperial Beach Oceanfront. These temporary special events occur within the District's jurisdiction and/or involve the use of District facilities. Because no fireworks display events are included with these temporary special events, there is a low potential that they would involve the use of hazardous materials that could result in exposure to the public or environment. While hazardous materials impacts would likely not occur, there is a potential that these types of events could generate vehicle, bicycle, and pedestrian traffic or result in roadway closures that could impair implementation of or physically interfere with emergency response near the special event areas. However, the ongoing implementation and updating of relevant Emergency Operations Plans and other existing procedures for special events would ensure adequate response to emergencies and evacuation plans as these special events occur, and reduce the potential for interfering with emergency plans. Additionally, depending on the type and magnitude of these special events, there is a potential that they would be required to implement some form of Event Transportation and Parking Management Plan to ensure adequate emergency response around the individual event location. Therefore, hazards and hazardous materials impacts from special events would be less than cumulatively significant.

Summary of Combined Cumulative Effects

As discussed above, hazardous material use associated with the sources of cumulative effects, including fireworks display events, development projects, and temporary special events, are governed by federal, state, and local regulations regarding transport, use, and disposal of hazardous materials. As such, cumulative effects related to hazardous materials from past, present, and reasonably foreseeable future projects would be less than cumulatively significant. In addition, as noted above, events such as fireworks display events and temporary special events implement procedures to ensure the protection and safety of the public during the events, and would not contribute to any existing cumulatively considerable safety hazard impact. Based on the above, a cumulatively considerable significant impact from the combined cumulative effects would not occur for hazards and hazardous materials.

Project Contribution

Proposed New Fireworks Display Events

The proposed project would result in less-than-significant impacts related to hazards and hazardous materials, including significant hazards to the public or environment and interference with an adopted emergency response plan. The new fireworks display events associated with the proposed project, including both Fourth of July and non-Fourth of July fireworks display events, would comply with all applicable laws and regulations such as the California Department of Forestry and Fire Protection's *Fireworks in California* handbook, and would occur under the oversight of licensed firework operators and the National City or Chula Vista fire department. Additionally, the proposed new fireworks display events would be governed by the proposed ordinance, which includes several conditions of approval such as post-display cleanup practices consistent with the General Permit, including collecting any unexploded fireworks and floating debris from spent fireworks. Fireworks displays are temporary in nature and would not require the construction of any permanent landside support facilities or residential structures. As such, it is not anticipated that the cumulative development projects identified in Appendix K would result in related or cumulative impacts when combined with the proposed new fireworks display events. While it is possible that gasoline, oil, and other vehicle-related fluids could be released by trucks on land during the transportation of pyrotechnic devices or by tugboats or other vessels in the water during operation of the proposed new fireworks display events, compliance with federal (including U.S. Department of Transportation Hazardous Materials Regulations [49 CFR 100–185]), state (including Title 19 of the CCR), and local regulations, in combination with oversight by licensed fireworks operators and responsible city fire departments, would ensure that all hazardous materials associated with fireworks are used, stored, and disposed of properly. Therefore, compliance with applicable laws and regulations would ensure that the proposed new fireworks display events would not result in hazardous emissions or the routine handling of hazardous or acutely hazardous materials, substances, or waste. Potential fireworks-related hazardous materials impacts from the proposed new displays would be minimized through existing regulations, limited use of hazardous materials, and oversight by licensed fireworks operators and the responsible city's fire department.

Regarding emergency response, both the National City and Chula Vista Fire Departments have existing procedures in place for ensuring adequate emergency access during special events such as a fireworks display event. While there are a number of cumulative fireworks display events that also

occur on the Fourth of July, including the Big Bay Boom, Fourth of July Imperial Beach Fireworks Show, and Fireworks Show Over Glorietta Bay, all of which could require emergency response services, the proposed new Fourth of July fireworks display events are located in different jurisdictions than these cumulative displays. As such, any potential impairment of emergency response within the cities of National City and Chula Vista as a result of the proposed new Fourth of July fireworks display events would not have an effect on emergency response in the cities of San Diego, Coronado, or Imperial Beach during their respective displays. Additionally, the San Diego Harbor Police Department (HPD) and U.S. Coast Guard (USCG) provide safety on the water during fireworks display events that occur in San Diego Bay, which would provide assistance to the emergency response providers of the District's member cities. Furthermore, the proposed ordinance includes a condition of approval that would require implementation of an Event Transportation and Parking Management Plan before, during, and after each proposed new fireworks display event, which would further alleviate congestion around the viewing locations and reduce the potential for delay that might impede emergency response times. However, there is a potential that temporary special events could overlap with the proposed new fireworks display events. These types of special events could generate vehicle, bicycle, and pedestrian traffic or result in roadway closures near the special event areas. In the event these temporary special events overlap with, and occur in the vicinity of, the proposed new fireworks display events, there is a potential that the overlap could impair implementation of or physically interfere with emergency response. As mentioned, the ongoing implementation and updating of relevant Emergency Operations Plans and other existing procedures for special events would ensure adequate response to emergencies and evacuation plans as these temporary special events occur, and reduce the potential for interfering with emergency plans. Additionally, depending on the type and magnitude of these special events, there is a potential that they would also be required to implement some form of Event Transportation and Parking Management Plan before, during, and after each temporary special event to further reduce impacts on emergency response around the individual event location.

Therefore, the proposed new fireworks display events' incremental contribution to cumulative fireworks-related hazards and hazardous materials impacts from past, present, and reasonably foreseeable future fireworks display events, development projects, or special events would not be cumulatively considerable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance does not propose any changes in the number or nature of existing fireworks display events and does not include any conditions pertaining to fireworks-related hazards or hazardous materials above and beyond the federal, state, and local laws and regulations that currently exist and, therefore, would not make a cumulatively considerable contribution to an existing cumulative impact. The proposed ordinance does include several other conditions of approval, including implementation of an Event Transportation and Parking Management Plan, which would relate to public safety and emergency response by helping to alleviate congestion around existing displays and reduce the potential for delays for emergency response times. As such, the effects of the proposed ordinance on existing fireworks display events would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, the effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative fireworks-related hazards and hazardous

materials impacts, and would not be cumulatively considerable. No cumulatively significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events' incremental contribution to cumulative impacts associated with fireworks-related hazards and hazardous materials would not be cumulatively considerable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative impacts associated with fireworks-related hazards and hazardous materials, and therefore would not be cumulatively considerable. Therefore, no cumulatively significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

No mitigation is required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events' incremental contribution to cumulative impacts associated with fireworks-related hazards and hazardous materials would not be cumulatively considerable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative impacts associated with fireworks-related hazards and hazardous materials, and therefore would not be cumulatively considerable. As such, no cumulatively significant adverse impacts would occur.

5.3.6 Hydrology and Water Quality

A significant cumulative impact on hydrology and water quality would result if the proposed project were to contribute to impacts related to water quality standard violations, depletion of groundwater supplies or interference with recharge, increased runoff in excess of available capacity, and alterations to drainage patterns leading to erosion or flooding evaluated within the context of past,

present, and reasonably foreseeable future projects, including fireworks display events, development projects, and temporary special events.

Geographic Scope

The geographic scope of analysis for cumulative impacts on hydrology and water quality includes the Pueblo San Diego, Sweetwater River, and Otay River hydrologic units of the San Diego Bay watershed, as well as the Tijuana Valley hydrologic unit of the Tijuana River watershed, which contributes pollutants to the Pacific Ocean Shoreline along Imperial Beach.

Cumulative Effects

Fireworks Display Events

Potential Impacts of Fireworks Chemical Residues on Surface Waters

A total of 53 past, present, and reasonably foreseeable future fireworks display events take place in locations around San Diego Bay and along the Imperial Beach Oceanfront. These fireworks displays events are listed in Table 5-2, *Cumulative Fireworks Display Events*, above. As discussed in Section 4.6, *Hydrology and Water Quality*, the results of the 4-year voluntary water quality monitoring program of the Big Bay Boom fireworks show indicate that perchlorate is the only chemical of concern that has shown a slight enrichment over ambient levels. Studies show that cumulative buildup of perchlorate can cause sublethal effects on freshwater fish in the 10 to 100 milligrams per liter (mg/L) range. However, concentrations of perchlorate measured in both Big Bay Boom and SeaWorld monitoring programs for the years 2013–2015 were generally in the 0.01–0.02 mg/L range, with the highest ambient levels of perchlorate measured in the 2016 Big Bay Boom at 6.4 mg/L, which is well below the 10 to 100 mg/L range found to cause sublethal effects on freshwater fish in laboratory tests. In addition, perchlorate is unlikely to accumulate in San Diego Bay and the Pacific Ocean Shoreline along Imperial Beach because the marine environment, with a mixing of tides and currents, is unlike enclosed environments (i.e., lakes) in which perchlorate has been shown to accumulate. Studies have also shown that perchlorate related to fireworks display events over land can build up in groundwater over time. However, groundwater is not a beneficial use in the fireworks display event areas.

SeaWorld has been performing extensive water and sediment quality monitoring, as well as a comprehensive assessment of the aquatic environment, since 2008. The results indicate that the fireworks fallout zone is not degraded in comparison with the reference sites. Although there appears to be enrichment of metals, this enrichment has not resulted in toxicity or benthic community degradation within the fallout zone.

The Big Bay Boom and SeaWorld fireworks display events are the most conservative from a water quality-monitoring standpoint (i.e., longest duration, most frequent, and greatest explosive weight) and both have been monitored extensively. The other fireworks display events are smaller in size and duration. Because neither of these studies has identified any long-term impacts on water quality or biological communities, and due to the limited and temporary nature of the other displays, impacts on surface water quality from these fireworks display events would be minimal. These additional fireworks display events are also required to comply with the conditions and BMPs set forth in the General Permit, which would ensure that fireworks-generated debris is properly cleaned

up and disposed of, thereby reducing the amount of unrecovered fireworks debris that could create or contribute substantial additional sources of polluted runoff and substantially degrade water quality. In addition, the existing fireworks display events that require a discretionary action by the District or are operated by the District's tenants would be required to comply with the conditions of the proposed ordinance, which include the additional cleanup of fireworks-generated debris from existing fireworks display events. However, uncontrollable factors such as weather conditions, amount of paper incinerated, sunken material, or material that is blown onto land may affect the ability to recover all post-show debris related to fireworks on surface waters. Therefore, cumulative fireworks debris-related hydrology and water quality impacts from past, present, and reasonably foreseeable future fireworks display events would be cumulatively significant.

Potential Indirect Impacts of Increased Human-Generated Trash on Surface Waters

Increased human activity within the public viewing areas such as parks during a fireworks display event may result in an increase in human-generated trash and litter that if not properly disposed of and cleaned up can enter San Diego Bay and degrade the water quality. The District currently maintains parks and other public areas within its jurisdiction following large events such as a fireworks display event. This includes increased/additional trash cleanup and other maintenance services at affected parks within 24 hours following Fourth of July fireworks display events to minimize impacts from increased use of the parks that serve as viewing locations. Therefore, cumulative fireworks human-generated trash and litter-related hydrology and water quality impacts from past, present, and reasonably foreseeable future fireworks display events would be cumulatively significant.

Development Projects

Past projects within the Pueblo San Diego, Sweetwater River, and Otay River hydrologic units have contributed pollutants to San Diego Bay, while past projects within the Tijuana Valley hydrologic unit of the Tijuana River watershed have contributed pollutants to the Pacific Ocean Shoreline along Imperial Beach, as evidenced by the Clean Water Act Section 303(d) List of Water Quality Limited Segments Requiring Total Maximum Daily Loads. Current and future development projects would be subject to state and local regulatory standards that must be achieved during construction and operation to reduce or avoid polluted runoff to the maximum extent practicable. These current and reasonably foreseeable future projects also could contribute pollutants such as oil and grease, suspended solids, metals, gasoline, pesticides, and pathogens into the stormwater conveyance system and receiving waters.

Some of the projects listed in Appendix K, *Cumulative Development Projects*, would involve at least 1 acre of grading. These projects would be required to comply with the National Pollution Discharge Elimination System Construction General Permit, which requires preparation of a SWPPP by a Qualified SWPPP Developer and implementation of BMPs by a Qualified SWPPP Practitioner to ensure runoff from individual projects meet current water quality standards. For projects under 1 acre, the Municipal Permit requires minimum BMPs for all construction and grading projects. The minimum BMPs are required to ensure a reduction of potential pollutants from the project site to the maximum extent practicable and to effectively prohibit non-stormwater discharges from construction sites to the municipal separate storm sewer system.

Also, present and reasonably foreseeable future projects would be subject to regulations that require compliance with water quality standards, including state and local water quality regulations and the District's JRMP and local BMP Design Manual (for projects within the District's jurisdiction) and any water quality BMP requirements of the District's member cities (for projects within that city's jurisdiction) to reduce the risk of non-stormwater discharges and pollutant discharges.

Because San Diego Bay and the Pacific Ocean Shoreline along Imperial Beach are currently impaired water bodies and have been for some time, the cumulative effect of past, present, and reasonably foreseeable future projects may result in a cumulatively significant water quality impact. However, the incremental increase in contaminant inputs to surface waters from development projects is minimal when compared to these other existing sources and would be less than cumulatively considerable.

Temporary Special Events

There are a number of temporary special events that do not include a fireworks display event that occur throughout the year around San Diego Bay and the Imperial Beach Oceanfront. These temporary special events occur within the District's jurisdiction and/or involve the use of District facilities. While no fireworks display events are included with these temporary special events, there is a potential that these types of events could produce polluted runoff or increased amounts of trash entering surface waters, which may contribute to a cumulatively significant water quality impact. These special events would be required to comply with all applicable laws and regulations. Additionally, due to the limited and temporary nature of these events, the cumulative impacts on surface water quality from these additional events would be minimal and would be less than cumulatively considerable.

Summary of Combined Cumulative Effects

As discussed above, the sources for cumulative effects are regulated by existing state and local water quality regulations that require the implementation of BMPs and other measures that would reduce water quality impacts. However, while each of the sources above individually would not constitute a cumulatively considerable impact, with the exception of fireworks debris, a cumulatively significant impact on hydrology and water quality presently exists because of the status of San Diego Bay and the Pacific Ocean Shoreline along Imperial Beach as impaired water bodies.

Project Contribution

Proposed New Fireworks Display Events

The proposed project includes up to four new fireworks display events conducted over water adjacent to the National City and Chula Vista Bayfronts, which have the potential to affect surface water quality in a number of ways, including through chemical residues that might fall back into surface waters during and after the fireworks display events and discharge of fireworks-related debris into surface waters from the launch sites and following shell detonation. Portions of San Diego Bay are currently considered impaired water bodies due to chemical contamination, toxicity, high bacteria levels, benthic impairments, and/or bioaccumulation in the water column and/or sediments. Cumulative water quality impacts could potentially occur if an incremental increase in chemicals that results from the proposed new fireworks display events contribute to or exacerbate

the impairments of these 303(d)-listed waterbodies. An analysis of the Big Bay Boom and SeaWorld water quality monitoring indicates that these proposed new fireworks display events likely do not result in a cumulative impact on surface waters in the 303(d)-listed segments. These two displays are the most conservative from a water quality-monitoring standpoint (i.e., longest duration, most frequent, and greatest explosive weight) and both have been monitored extensively. Neither of these studies has identified any long-term effects on water quality or biological communities.

Consequently, the incremental increase in contaminants to surface waters from the proposed new fireworks display events would be minimal when compared to other sources, such as surface runoff or legacy contamination. In addition, the four proposed new fireworks display events would not be expected to result in any negative effects on surface waters because of the relatively small weight of fireworks that are being proposed as well as the long distance from other fireworks display events (e.g., Big Bay Boom). While the incremental increase in contaminants to surface waters would not be cumulatively considerable, there is a potential that the proposed new fireworks display events could contribute to an accumulation of fireworks debris when combined with multiple past, present, and foreseeable future fireworks display events that occur in San Diego Bay throughout the year, which could degrade surface water quality if fireworks debris is not properly cleaned up (**Impact-C-WQ-1**).

However, implementation of mitigation measure **MM-WQ-1** as identified in Section 4.6, *Hydrology and Water Quality*, which requires compliance with the water quality-related conditions of the proposed ordinance, would ensure that fireworks-generated debris is properly cleaned up and disposed of, thereby reducing the amount of unrecovered fireworks debris that could create or contribute substantial additional sources of polluted runoff and substantially degrade water quality. However, uncontrollable factors such as weather conditions, amount of paper incinerated, sunken material, or material that is blown onto land may affect the ability to recover all post-show debris related to fireworks on surface waters.

In addition, the proposed fireworks display events, when combined when combined with past, present, and foreseeable future fireworks display events that occur in San Diego Bay throughout the year, have a potential to increase human-generated trash and litter at major viewing areas that if not properly disposed of or cleaned up could enter San Diego Bay and degrade water quality (**Impact-C-WQ-2**). Implementation of mitigation measure **MM-WQ-2**, which requires compliance with the water quality-related conditions of the proposed ordinance, would require additional trash receptacles and cleanup at the major viewing areas during publicly advertised fireworks display events to ensure that trash is properly disposed of and cleaned up, thereby reducing the amount of human-generated trash and litter entering San Diego Bay that could degrade the water quality. Furthermore, the District currently maintains parks and other public areas within its jurisdiction following large events such as a fireworks display event. This includes increased/additional trash cleanup and other maintenance services at affected parks within 24 hours following Fourth of July fireworks display events to minimize impacts from increased use of the parks that serve as viewing locations. As with existing fireworks display events, the District would continue to provide these maintenance services following the proposed new Fourth of July fireworks display events.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance does not propose any changes in the number or nature of existing fireworks display events and includes several conditions of approval that would reduce impacts on

water quality, including requiring the use of alternative fireworks that replace perchlorate with other oxidizers and propellants that burn cleaner, produce less smoke, and reduce pollutant waste; removal of packaging; inclusion of biodegradable inner components; implementation of BMPs; compliance with SDRWQCB's General Permit requirements and other required permits; and implementation of post-display cleanup practices consistent with the requirements of SDRWQCB's General Permit. These conditions would require additional cleanup of fireworks-generated debris from existing fireworks display events, thereby reducing the potential for water quality degradation. Therefore, the effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative hydrology and water quality impacts, and would not be cumulatively considerable. No cumulatively significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The proposed new fireworks display events' incremental contribution to cumulative impacts related to hydrology and water quality would be cumulatively considerable.

Impact-C-WQ-1: Contribute to a Cumulatively Considerable Water Quality Impact from an Accumulation of Debris. There is a potential that the proposed new fireworks display events could contribute to an accumulation of fireworks debris when combined with multiple past, present, and foreseeable future fireworks display events that occur in San Diego Bay throughout the year, which could degrade surface water quality if fireworks debris is not properly recovered. Potential impacts on water quality would be cumulatively considerable.

Impact-C-WQ-2: Contribute to a Cumulatively Considerable Water Quality Impact from an Accumulation of Trash and Litter. There is a potential that the proposed new fireworks display events could contribute to an accumulation of trash and litter in San Diego Bay when combined with multiple past, present, and foreseeable future fireworks display events that occur in San Diego Bay throughout the year, which could degrade water quality. Potential impacts on water quality would be cumulatively considerable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative impacts related to hydrology and water quality, and therefore would not be cumulatively considerable. As such, no cumulatively significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

For proposed new Fourth of July fireworks display events, the following mitigation measures shall be implemented.

MM-WQ-1: Implementation of the Water Quality-Related Conditions of the Proposed Ordinance and MM-WQ-2: Implementation of the Water Quality-Related Conditions of the

Proposed Ordinance for Human-Generated Trash and Litter as described in Section 4.6, *Hydrology and Water Quality*.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation

Proposed New Fireworks Display Events

Implementation of mitigation measure **MM-WQ-1** requires compliance with the water quality-related conditions of the proposed ordinance, and would ensure that fireworks-generated debris is properly cleaned up and disposed of, thereby reducing the amount of unrecovered fireworks debris that could create or contribute substantial additional sources of polluted runoff and substantially degrade water quality. However, uncontrollable factors such as weather conditions, amount of paper incinerated, sunken material, or material that is blown onto land may affect the ability to recover all post-show debris related to fireworks on surface waters. Therefore, impacts would be cumulatively significant and unavoidable.

The contribution of the proposed new fireworks display events to cumulative degradation of water quality associated with human-generated trash and litter would be less than cumulatively considerable with the implementation of **MM-WQ-2**, because mitigation would require that additional trash receptacles and cleanup at major viewing areas occurs during publicly advertised fireworks display events to minimize impacts on surface waters from trash and litter.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative impacts related to hydrology and water quality, and therefore would not be cumulatively considerable. As such, no cumulatively significant adverse impacts would occur.

5.3.7 Land Use and Planning

Cumulatively considerable impacts from past, present, and reasonably foreseeable future projects, including fireworks display events, development projects, and temporary special events, are determined by whether there are cumulative inconsistencies with the applicable land use plans that have resulted or will result in significant physical impacts or by the past, present, or future physical division of established communities.

Geographic Scope

The geographic scope of analysis for cumulative land use and planning impacts to which the proposed project may contribute includes the PMP Planning Districts adjacent to the past, present, and reasonably foreseeable future fireworks display events, future development projects, and temporary special events located in the areas within and/or adjacent to San Diego Bay and the Imperial Beach Oceanfront.

Cumulative Effects

Fireworks Display Events

A total of 53 cumulative fireworks display events take place in locations around San Diego Bay and the Imperial Beach Oceanfront. These cumulative fireworks display events are listed in Table 5-2, *Cumulative Fireworks Display Events*, above. These fireworks displays originate from piers, flight decks, and/or barges adjacent to and/or in the waters of north San Diego Bay, including adjacent to Shelter Island, Harbor Island, and the Centre City Embarcadero (which includes North Embarcadero, Central Embarcadero, and South Embarcadero), Glorietta Bay in Coronado, NASSCO ship repair facility, and the Imperial Beach Oceanfront. All of these cumulative displays take place either on barges within the waters of San Diego Bay or out over the waters of the Bay and Pacific Ocean from piers and/or flight decks. Fireworks display events within the coastal zone, whether in the California Coastal Commission's (CCC's) or the District's jurisdiction, are subject to the California Coastal Act. Certain aspects of existing fireworks displays occur within the District's jurisdiction (e.g., loading and setup of fireworks on barges), while other aspects of some fireworks displays (e.g., launching fireworks from barges) occur in waters of San Diego Bay, which are primarily outside the District's jurisdiction and are within the jurisdiction of the California State Lands Commission (CSLC). CCC retains coastal permitting authority over waters within CSLC's jurisdiction. Therefore, the District is responsible for determining whether a Coastal Development Permit is required for some fireworks display events, while CCC makes the Coastal Development Permit determination for other fireworks display events. Additionally, fireworks display events do not require the construction of any permanent landside or waterside support facilities that could result in inconsistencies with applicable land use plans, policies, or regulations, including applicable habitat conservation plans and natural community conservation plans, and would not physically divide an established community. As such, impacts from past, present, and reasonably foreseeable future fireworks display events have not been cumulatively significant.

Development Projects

Past development projects have been subject to local regulations governing land use decisions and have resulted in the development of highly urbanized areas surrounding San Diego Bay and along the Imperial Beach Oceanfront. The District's PMP, as amended, has been certified by CCC, and all past development projects within District boundaries have been approved pursuant to the certified PMP, ensuring review and general conformity with the coastal zone management program. Since adoption and certification of the current PMP, there have been cases where PMP amendments were required to implement various development projects. However, these amendments have undergone District review and environmental review and District approval and have been certified by CCC. Moreover, while there have been some projects that have affected upland connections to the waterfront, many have improved the connections. As a result, impacts from past projects have not been cumulatively significant.

Within the District's jurisdiction, public access and use of the waterfront continues to be a priority. Proposed projects are held to strict standards as related to public access and consistency with the PMP, and past development projects have been required to demonstrate adequate public access to the Bay and Imperial Beach. Present and reasonably foreseeable future development projects have been or will be required to demonstrate consistency with public access requirements of the PMP.

Where amendments to the PMP occur, it must be demonstrated that the amendment would result in an additional public benefit, often providing improved access to the waterfront. Therefore, past, present, and reasonably foreseeable future development projects would not result in a cumulatively significant land use and planning impact.

Temporary Special Events

There are a number of temporary special events that do not include a fireworks display event that occur throughout the year around San Diego Bay and the Imperial Beach Oceanfront. These temporary special events occur within the District's jurisdiction and/or involve the use of District facilities. To varying degrees depending on the event, special events would require setting up temporary structures, such as vendor kiosks, crowd control barricades, traffic cones, temporary stages, décor, etc. These temporary structures would generally be small structures that would be taken down following the event, and therefore would not divide an established community. Additionally, because these special events are temporary and infrequent in nature and do not require the construction of any permanent structures or uses, they would not result in any conflicts with applicable land use plans, policies, or regulations, including applicable habitat conservation plans and natural community conservation plans. Therefore, land use and planning impacts as a result of temporary special events would be less than cumulatively considerable.

Summary of Combined Cumulative Effects

Fireworks display events and special events are temporary and infrequent in nature and do not involve the construction of any permanent structures or uses that could physically divide an established community or result in conflicts with applicable land plans, policies, or regulations, including applicable habitat conservation plans and natural community conservation plans. There are no aspects of these types of cumulative projects that, when combined with past, present, and reasonably foreseeable future development projects, would result in cumulatively considerable land use and planning impacts. As such, a cumulatively considerable significant land use and planning impact from the combined cumulative effects would not occur.

Project Contribution

Proposed New Fireworks Display Events

The proposed new National City Bayfront and Chula Vista Bayfront fireworks display events would result in less-than-significant land use and planning impacts. As discussed under Threshold 2 of Section 4.7, *Land Use and Planning*, and shown in Table 4.7-1, the proposed new fireworks display events would be consistent with all applicable land use plans, policies, and regulations of the District, the agency with jurisdiction over the proposed project, adopted for the purposes of avoiding or mitigating an environmental effect. These include the PMP and San Diego Unified Port District Code. The proposed new fireworks display events would also be consistent with the applicable policies of the California Coastal Act, as shown in Table 4.7-2. In addition, as discussed under Threshold 3 of Section 4.7, *Land Use and Planning*, and shown in Tables 4.7-3, 4.7-4, and 4.7-5, the proposed new fireworks display events would be consistent with all applicable habitat conservation plans and natural community conservation plans, which include the Chula Vista Bayfront Master Plan NRMP, San Diego Bay INRMP, and San Diego Bay National Wildlife Refuge

Comprehensive Conservation Plan. In addition, the proposed new fireworks display events do not involve the construction of any permanent structures or uses that could physically divide an established community.

The cumulative effects on land use and planning from past, present, and reasonably foreseeable future projects, including fireworks display events, development projects, and temporary special events, are considered less than cumulatively significant. As such, because the proposed project would not divide an established community and would be consistent with all applicable land use plans, policies, or regulations, including habitat conservation plans and natural community conservation plans, the incremental contribution of the proposed new fireworks display events to cumulative land use and planning impacts would be less than cumulatively considerable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance does not propose any changes in the number or nature of existing fireworks display events and contains several conditions of approval that address issues such as air quality conditions, biological resources, water quality, and traffic that would improve the existing condition related to existing fireworks display events. Because the proposed ordinance would improve the existing condition in terms of the aforementioned resources, among others, it would be consistent with applicable land use plans, policies, and regulations of the District adopted for the purpose of avoiding or mitigating an environmental effect, including the PMP and San Diego Unified Port District Code. In addition, the proposed ordinance would be consistent with applicable habitat conservation plans and natural community conservation plans, including the San Diego Bay INRMP, Chula Vista Bayfront Master Plan NRMP, and San Diego Bay National Wildlife Refuge Comprehensive Conservation Plan. Therefore, the effect of the proposed ordinance on existing fireworks display events would not conflict with an applicable habitat conservation plan or natural community conservation plan. No cumulatively significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The incremental contribution of the proposed new fireworks display events to cumulative land use and planning impacts would not be cumulatively considerable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative land use and planning impacts, and therefore would not be cumulatively considerable. No cumulatively significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

No mitigation is required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation

Proposed New Fireworks Display Events

The incremental contribution of the proposed new fireworks display events to cumulative land use and planning impacts would not be cumulatively considerable and would be less than significant.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative land use and planning impacts, and therefore would not be cumulatively considerable. No cumulatively significant adverse impacts would occur.

5.3.8 Noise and Vibration

Cumulative impacts on noise and vibration could result when past, present, and reasonably foreseeable future fireworks display events, development projects, or temporary special events combine with the proposed project to contribute to impacts related to exceedances of noise standards, groundborne vibration, or ambient noise levels.

Geographic Scope

The study area for the cumulative noise impacts analysis is defined as all areas on or adjacent to the waterfront surrounding the entire San Diego Bay, as well as areas on or adjacent to the Imperial Beach Oceanfront. These areas represent the closest land uses to the existing and proposed fireworks display events that would be subject to the conditions of the proposed new ordinance. This includes large areas of San Diego, National City, Chula Vista, and Imperial Beach, and effectively the entire City of Coronado.

Cumulative Effects

Fireworks Display Events

A number of fireworks display events occur in the San Diego region throughout the year. As shown in Table 5-2, *Cumulative Fireworks Display Events*, a total of 53 past, present, and reasonably foreseeable future fireworks display events occur within and/or adjacent to the San Diego Bay and Imperial Beach Oceanfront, with a vast majority (50 of 53 displays) concentrated in the northern portion of the Bay. Specifically, the displays that occur in north San Diego Bay are in the vicinity of the cities of San Diego and Coronado. All of the past, present, and reasonably foreseeable future fireworks display events would be exempt from the local noise ordinances and their individual and cumulative impacts relative to local noise standards would not be significant. Noise from individual fireworks display events would be brief (generally between 5 and 20 minutes each), but would temporarily cause substantial noise increases at nearby noise-sensitive receptors. The largest noise increases from each display would occur at receivers closest to the launch location. At these most-

affected receivers, the fireworks noise levels would be dominated by the closest display and the cumulative effect of additional fireworks display events (such as those that occur simultaneously on the Fourth of July) would be minimal. Therefore, temporary or periodic noise increases due to past, present, and reasonably foreseeable future fireworks display events would not result in cumulatively considerable impacts.

The Transportation Assessment (Appendix J) indicates that local streets in the vicinity of existing fireworks display events experience modest increases or even small decreases in traffic volumes relative to days without fireworks displays. This includes data for the Fourth of July, when multiple displays occur simultaneously. Therefore, there would be only modest and temporary traffic noise increases, and traffic noise from past, present, and reasonably foreseeable future fireworks display events would not result in any cumulatively considerable impacts.

Development Projects

Construction of new developments would create short-term temporary construction noise that would typically be restricted to daylight hours only. Operational noise from past, present, and reasonably foreseeable future development projects would come from increases in long-term traffic volumes as well as onsite sources such as parking lots and mechanical equipment. Such noise sources could incrementally increase the local ambient noise levels in the vicinity of each development. If two or more development projects with overlapping construction activity or simultaneous operational noise were to occur close to noise-sensitive receptors, their associated noise levels could combine to exceed noise standards or to cause or exacerbate significant increases in ambient noise. Therefore, depending on the location and timing of past, present, and reasonably foreseeable future development projects, they may result in cumulatively considerable impacts.

Temporary Special Events

Temporary special events within the geographic scope for noise include those occurring within the public parks and other public spaces, including roadways, adjacent to San Diego Bay and the Imperial Beach Oceanfront. The days, times, and locations of these events would vary throughout the area. Because the special events do not typically generate very high noise levels, the potential impact distances for each event would be localized to the surrounding area. As a result, noise from multiple special events would not typically overlap to affect the same noise-sensitive receptor(s) simultaneously and past, present, and reasonably foreseeable future temporary special events would not result in any cumulatively considerable noise impacts.

Summary of Combined Cumulative Effects

Past, present, and reasonably foreseeable future fireworks display events are exempt from the local noise ordinances and would not combine to significantly exacerbate noise increases beyond those already experienced due to individual fireworks display events, and therefore do not have the potential to contribute to cumulative noise impacts within the geographic scope for noise. Past, present, and reasonably foreseeable future development projects within the geographic scope for noise may result in cumulatively considerable impacts, depending on the timing of construction and their location relative to other projects and noise-sensitive receptors. Noise from past, present, and reasonably foreseeable future special events would not typically overlap to affect the same noise-

sensitive receptor(s) simultaneously, and would therefore not result in any cumulatively considerable noise impacts.

Project Contribution

Proposed New Fireworks Display Events

The project proposes to add two new Fourth of July fireworks display events in San Diego Bay. The closest existing fireworks display event to the proposed new National City fireworks display event would be the Glorietta Bay (Coronado) display more than 2.5 miles to the northwest. The closest existing fireworks display event to the proposed new Chula Vista fireworks display event would be the Imperial Beach display more than 3 miles to the south. (The two proposed fireworks display events themselves would be separated by a distance of approximately 2 miles.) All of these fireworks display events would be exempt from the local noise ordinances and their individual and combined effects relative to local noise standards would not be cumulatively considerable. Noise from individual fireworks display events would be brief (generally between 5 and 20 minutes each), but would temporarily cause substantial noise increases at nearby noise-sensitive receptors. The largest noise increases from each display would occur at receivers closest to the launch location. At these most-affected receivers, the fireworks noise levels would be dominated by the closest display and the cumulative effect of additional fireworks display events (such as those occurring simultaneously on the Fourth of July) would be minimal. At more distant receivers that are located between launch locations for simultaneous proposed and cumulative fireworks display events, noise levels would be influenced by both. The largest cumulative increase in noise levels would be 3 A-weighted decibels (dBA) and would occur at locations where the noise contribution from the proposed project is equal to that of the simultaneous cumulative projects (refer to Section 4.8.2.1 for an explanation of decibels and how they are added). At other locations, receivers would experience greater direct noise levels from either proposed or cumulative fireworks display events and the increases as a result of combining the two would be smaller. The maximum cumulative increase of 3 dBA is generally considered to be a barely noticeable increase. As a result, the proposed project's contribution to cumulative Fourth of July fireworks noise impacts would be less than cumulatively considerable.

Non-Fourth of July fireworks display events that are proposed as part of the project would only occur in Chula Vista. These display events would be exempt from the local noise ordinances and their cumulative impacts relative to local noise standards would not be significant. Proposed non-Fourth of July fireworks display events are not expected to occur simultaneously with any other large or nearby fireworks display events, in which case there would be no contribution to cumulative impacts. In the event that either of the proposed non-Fourth of July fireworks display events were to coincide with another display, the worst case cumulative noise increase would be 3 dBA, which is generally considered to be a barely noticeable increase. As a result, the proposed project's contribution to cumulative non-Fourth of July fireworks noise impacts would be less than cumulatively considerable.

As discussed above, under *Cumulative Effects*, increases in traffic volumes in the local vicinity of existing fireworks display events are modest, and would not generate substantial noise increases. Assuming similar traffic patterns would occur at proposed fireworks display events, and because the proposed events would occur in distinct new locations, large distances from existing fireworks

display events, the traffic effects from proposed fireworks display events would not combine with those from other fireworks display events and the proposed project's incremental contribution to cumulative traffic noise impacts would be less than cumulatively considerable.

Past, present, and reasonably foreseeable future development projects would not add any fireworks display events or alter the existing or proposed fireworks display events. Construction of new developments would create short-term temporary construction noise, but this would typically occur during daylight hours and would not overlap with any proposed fireworks display events. Operational noise from development projects would be very different in level and nature from fireworks noise and would not share the same sporadic, impulsive, and high noise level characteristics. As a result, the relative effect of noise from development projects at receivers substantially affected by fireworks would be negligible during a fireworks display event. The proposed project's contribution to cumulative noise impacts related to past, present, and reasonably foreseeable future development projects would be less than cumulatively considerable.

Past, present, and reasonably foreseeable future temporary special events do not include fireworks and do not have the same distinctive noise profile (including high short-term noise levels and with large potential impact distances) as the proposed fireworks display events. In addition, many of these special events occur during the daytime and would not overlap at all with fireworks display events that occur in the evening. As a result, the relative effect of any noise from special events at receivers substantially affected by fireworks would be negligible during a fireworks display event and the proposed project's contribution to cumulative noise impacts related to past, present, and reasonably foreseeable temporary special events would be less than cumulatively considerable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance does not propose any changes in the number or nature of existing fireworks display events and contains several conditions of approval intended to limit impacts on sensitive biological resources (refer to Section 4.3, *Biological Resources*, of this Draft EIR) that would result in some reduction of noise associated with the fireworks display events. These conditions would require the fireworks display events to avoid the use of salutes within the first quarter of a fireworks display event and to either be located outside a 1-mile radius from sensitive habitats or to limit maximum shell size to 8 inches. It is not anticipated that any of the existing fireworks display event launch locations would be moved as a result of the ordinance. Consequently, the noise levels from existing fireworks display events would remain largely unchanged except for potential abatement (reduction) that would occur as a result of limiting shell sizes and salutes. As such, compliance with the proposed ordinance would not create any new impacts or worsen any of the impacts that have already been identified, and the contribution of the effects of the proposed ordinance on any cumulative noise impact would be less than cumulatively considerable. No cumulatively significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The contribution of the proposed new fireworks display events to cumulative noise impacts would be less than cumulatively considerable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not contribute to cumulative noise impacts, and therefore would be less than cumulatively considerable.

Mitigation Measures

Proposed New Fireworks Display Events

No mitigation is required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation

Proposed New Fireworks Display Events

The incremental contribution of the proposed new fireworks display events to cumulative impacts related to noise would not be cumulatively considerable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative noise impacts, and would be less than cumulatively considerable. No cumulatively significant adverse impacts would occur.

5.3.9 Public Services and Facilities

Cumulative impacts on public services and facilities—including fire and emergency services, police protection, and other public services and facilities—could result when past, present, and reasonably foreseeable future fireworks display events, development projects, or temporary special events combine with the proposed project to increase demand on public services and facilities such that additional facilities must be constructed to maintain acceptable levels of service, and the construction of such facilities could result in a physical impact on the environment.

Geographic Scope

Cumulative impacts on public services and facilities are based on a list of past, present, and reasonably foreseeable future fireworks display events that occur within and/or adjacent to San Diego Bay and the Imperial Beach Oceanfront, development projects that are currently underway, approved, or proposed and likely to be implemented in the area surrounding the Bay and Imperial Beach Oceanfront, and temporary special events in the vicinity of the proposed new fireworks display events along the National City Bayfront and Chula Vista Bayfront. The geographic scope includes the public services and facilities within the municipalities that provide services for these different cumulative projects and the proposed new fireworks display events associated with the proposed project.

Cumulative Effects

Fireworks Display Events

A total of 53 cumulative fireworks display events take place in locations around San Diego Bay and the Imperial Beach Oceanfront. These events are listed in Table 5-2, *Cumulative Fireworks Display Events*, above. Due to the infrequent and temporary nature of the cumulative fireworks display events, it is likely that the cumulative impacts on public services and facilities from these displays would be minimal. Additionally, each jurisdiction establishes and implements a response plan specific to each fireworks display event in order to maintain effective response times, particularly during Fourth of July events. Furthermore, all fireworks display events are required to comply with all federal, state, and local laws and regulations governing fireworks, including but not limited to the laws and regulations set forth in the *Fireworks in California* handbook (Appendix C), which is enforced by the responsible city fire department with jurisdiction over each display, as well as any special event permit requirements of the individual fire departments. Therefore, impacts on public services and facilities as a result of past, present, and reasonably foreseeable fireworks display events would be less than cumulatively considerable.

Development Projects

Past development projects have required new and expanded facilities as demand for public services has increased. Present and reasonably foreseeable future projects will continue to increase demand on public service providers and the need for new and expanded facilities. The reasonably foreseeable future development projects listed in Appendix K involve similar uses that already exist throughout the cumulative study area; however, development of these could result in thousands of square feet of commercial space (including meeting and convention space) and a significant number of residential units, hotel rooms, commercial space, and institutional uses. As discussed earlier in this section, according to the Series 13 forecast, SANDAG projects that the region's population will grow by approximately 710,000 people by 2035 and nearly one million people by 2050.

Police protection services would increase as present and reasonably foreseeable future projects are implemented. However, unlike fire and emergency services where specific facilities are needed to house equipment, vehicles, and response personnel to adequately respond to fires and emergencies, police services use patrol cars that do not need to have facilities in the immediate vicinity of specific projects. Rather, police departments increase staffing as necessary to maintain acceptable service ratios and response times. Thus, although there may be a need to increase personnel and equipment, there would not be the similar need to increase physical facilities in the cumulative study area. Additionally, development impact fees are often used to offset the external costs imposed by development projects on public services and facilities, including police protection services. Therefore, impacts on police protection services as a result of development projects would be less than cumulatively considerable.

The District's five member cities continue to construct new fire stations to meet increased demands as the population grows. For example, in the City of San Diego, Fire Station 47 was placed in service February 2008 and Fire Station 51 was placed in service August 2015 (City of San Diego 2016). In addition, new residential and non-residential developments are required to pay development impact fees to fund expansion of public facilities such as fire stations in order to maintain existing

levels of service. As such, fire and emergency protection services would potentially require additional facilities as a result of present and reasonably foreseeable future development projects, the construction of which could have significant environmental impacts. Therefore, cumulative fire protection impacts from these projects would potentially be significant.

Potential cumulative impacts could also result when development projects combine to place limitations on existing HPD and USCG facilities, or substantially increase demand on existing HPD and USCG facilities, such that expansion of those facilities would be necessary and result in a physical impact on the environment. Similar to municipal police departments, HPD increases staffing as necessary to maintain acceptable service ratios and response times rather than construct additional facilities. Additionally, USCG is responsible for ensuring the safety and security of navigable waters such as San Diego Bay, as well as along the Pacific Ocean coastline. As such, landside residential, commercial, and industrial development projects would not create a demand on USCG services. Consequently, cumulative impacts on HPD and USCG services and facilities from present and reasonably foreseeable future projects would be less than cumulatively considerable.

Temporary Special Events

There are a number of temporary special events that do not include a fireworks display event that occur throughout the year around San Diego Bay and the Imperial Beach Oceanfront. These temporary special events occur within the District's jurisdiction and/or involve the use of District facilities. While no fireworks display events are included with these temporary special events, there is a potential that these types of events could produce temporary increases in population near the special event areas. However, these special events would be required to comply with all applicable laws and regulations and special response plans, including additional staffing, which are implemented by police and fire to maintain adequate service during these events. Additionally, due to the infrequent and temporary nature of these special events, it is likely that the cumulative impacts on public services would be minimal. Therefore, impacts on public services and facilities as a result of temporary special events would be less than cumulatively considerable.

Summary of Combined Cumulative Effects

The region's population is projected to grow by approximately 710,000 people by 2035 and nearly one million people by 2050. Past development projects have required new and expanded facilities as demand for public services has increased. Present and reasonably foreseeable future projects will continue to increase demand on public service providers and the need for new and expanded facilities, the construction of which could result in significant environmental impacts. Fireworks display events and special events are temporary and infrequent in nature, and do not involve the construction of any permanent landside or waterside support facilities. Therefore, these types of events would not require the permanent construction of any new or expanded police, fire, HPD, or USCG facilities to maintain acceptable service ratios and response times. Although fireworks display events and special events would temporarily increase the demand for public services, they would not result in the same long-term demand created by increased population growth and the past, present, and future development projects to support that growth. However, because cumulative development projects would result in a cumulatively considerable impact on fire and emergency protection services, the combined effect of fireworks display events, development projects, and temporary special events would be cumulatively significant.

Project Contribution

Proposed New Fireworks Display Events

A project's contribution to a cumulative public services impact is relative to the additional demand a project would place on a public service for which a cumulatively considerable impact has been identified, and whether that demand would require the construction of new or expanded facilities that could result in significant environmental impacts.

The proposed project includes up to four proposed new fireworks display events along the National City and Chula Vista Bayfronts. The proposed new fireworks display events would result in temporary increases in population near viewing areas for each proposed new display, which would temporarily increase the demand for police, fire, HPD, and USCG services. However, the proposed new firework displays are infrequent and temporary in nature and would not require the construction of any permanent landside support facilities or residential structures that would permanently increase the demand on public services and facilities. In addition, special response plans, including additional staffing, would be implemented by the National City and Chula Vista police and fire departments to maintain adequate service during the proposed new displays, and new fireworks display events would not require new or expanded facilities, the construction of which could cause significant environmental impacts. Additionally, the proposed new fireworks display events would be required to comply with all federal, state, and local laws and regulations governing fireworks, including but not limited to the laws and regulations set forth in the *Fireworks in California* handbook (Appendix C), which is enforced by the responsible city fire department with jurisdiction over each display, as well as any special event permit requirements of the National City or Chula Vista fire departments. Therefore, while past, present, and reasonably foreseeable future fireworks display events, development projects, and temporary special events may result in cumulatively considerable impacts, the proposed new fireworks display events' incremental contribution to cumulative public services and facilities impacts would not be cumulatively considerable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance does not propose any changes in the number or nature of existing fireworks display events and does not include any conditions related to public services and facilities, including police protection, fire protection, and HPD and USCG services above and beyond the federal, state, and local laws and regulations that currently exist and, therefore, would not result in any effects on the cumulative condition in terms of these services. As such, the effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative public services and facilities impacts and require the construction of new or expanded facilities in order to maintain acceptable service ratios, response times, or other performance objectives. No cumulatively significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The incremental contribution of proposed new fireworks display events to cumulative impacts related to public services and facilities would not be cumulatively considerable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative public services and facilities impacts, and therefore would not be cumulatively considerable. No cumulatively significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

No mitigation is required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation

Proposed New Fireworks Display Events

The incremental contribution of the proposed new fireworks display events to cumulative impacts related to public services and facilities would not be cumulatively considerable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative public services and facilities impacts, and therefore would not be cumulatively considerable. No cumulatively significant adverse impacts would occur.

5.3.10 Transportation, Circulation, and Parking

Cumulative impacts on transportation, circulation, and parking could result when past, present, and reasonably foreseeable future fireworks display events, development projects, and temporary special events combine with the proposed project to result in unacceptable roadway, intersection, or freeway ramp operations; inadequate pedestrian or bicycle facilities; inadequate mass transit capacity and lowered service; or inadequate parking supply.

Geographic Scope

The geographic scope for cumulative transportation, circulation, and parking impacts includes all transportation facilities west of Interstate 5 that provide access to the viewing areas for the

proposed new fireworks display events that would occur adjacent to the National City and Chula Vista Bayfronts.

Cumulative Effects

Fireworks Display Events

A number of fireworks display events occur in the San Diego region throughout the year. As shown in Table 5-2, *Cumulative Fireworks Display Events*, a total of 53 past, present, and reasonably foreseeable future fireworks display events occur within and/or adjacent to San Diego Bay and the Imperial Beach Oceanfront, with a vast majority (50 of 53 displays) concentrated in the northern portion of the Bay. Specifically, the displays that occur in north San Diego Bay are in the vicinity of the cities of San Diego and Coronado, with viewing areas for the fireworks display events within those municipalities. These displays likely contribute to temporary increases in traffic volumes along the roadway facilities and pedestrian and bicycle facilities that provide access to the various fireworks viewing areas. For fireworks display events that occur on the Fourth of July, it is anticipated that the temporary vehicular, pedestrian, and bicycle traffic volumes are substantially increased when compared to a non-Fourth of July fireworks display event. However, there are no past or present fireworks display events along the National City or Chula Vista Bayfronts. In addition, there are no reasonably foreseeable future fireworks display events in these areas other than the fireworks display events included in the proposed project. Because the effects of traffic associated with fireworks display events is typically localized to the transportation facilities in the vicinity of the fireworks viewing areas, past, present, and reasonably foreseeable future fireworks display events do not contribute to cumulative transportation, circulation, and parking impacts in the cumulative traffic study area.

Development Projects

Past development projects have contributed to degraded roadway, intersection, and freeway operations throughout the San Diego region. Present and reasonably foreseeable future projects will continue to increase traffic volumes on transportation facilities. Development of the projects listed in Appendix K could result in thousands of square feet of commercial space (including meeting and convention space) and a significant number of residential units, hotel rooms, commercial space, and institutional uses. As discussed earlier in this section, according to the Series 13 forecast, SANDAG projects that the region's population will grow by approximately 710,000 people by 2035 and nearly one million people by 2050. This projected increase in growth will further contribute to degraded operations on regional transportation facilities.

Within the cumulative traffic study area, past and present development projects in National City have created an area characterized predominantly by industrial, military, and marine-industrial-related uses along the Bayfront. Reasonably foreseeable future development projects in the National City Bayfront area will generally continue the trend of developing marine-related uses; however, the PMP also identifies new public access and water-oriented educational, recreational, and commercial uses along the Bayfront (District 2012). Past, present, and reasonably foreseeable future development projects in the National City Bayfront area, whether industrial or commercial, have and will continue to contribute vehicle trips on the surrounding existing and future roadway network.

In the Chula Vista Bayfront area, past and present development projects have resulted in a mix of uses, including industrial, open-space, parkland, and marine-recreational uses. The Chula Vista Bayfront Master Plan is intended to guide the development of approximately 556 acres of the Bayfront over a 24-year period (District 2012), and identifies the reasonably foreseeable future development projects that would likely be constructed in this area. The plan proposes to redevelop underutilized and vacant areas with a mix of uses, along with a new roadway and infrastructure system throughout the planning district. Future proposed development includes hotel and conference facilities, retail/entertainment, cultural (museums and similar uses), and marine-related office. The certified Chula Vista Bayfront Master Plan EIR identified a number of significant direct and cumulative traffic impacts associated with buildout of the Bayfront, several of which are significant and unavoidable after mitigation (District 2008). As such, development of past and present projects, as well as development of the future projects identified in the Chula Vista Bayfront Master Plan, have and will continue to contribute additional vehicle trips on the surrounding existing and future roadway network.

Therefore, past, present, and reasonably foreseeable future development projects within the cumulative traffic study area have resulted in cumulatively considerable impacts on transportation, circulation, and parking.

Temporary Special Events

Temporary special events within the geographic scope for transportation, circulation, and parking include those occurring within the public parks and other public spaces, including roadways, adjacent to San Diego Bay in the cities of National City and Chula Vista. To varying degrees depending on the event, special events require setting up temporary structures, such as vendor kiosks, crowd control barricades, traffic cones, temporary stages, décor, etc. On some occasions, these special events require the temporary closure of roads, which requires traffic to be redistributed onto other roadways. Temporary special events generate parking demand and vehicle trips as a result of event setup and takedown, as well as from attendees attending and commuting to and from the event. While special events may temporarily generate additional vehicle trips and require the redistribution of traffic, these events are temporary and infrequent in nature and would not create a permanent source of additional congestion on area roadways. In addition, these events are subject to the special event requirements of the cities of National City and Chula Vista, which require traffic control plans if deemed necessary. Therefore, cumulative transportation, circulation, and parking impacts from temporary special events would not be cumulatively considerable.

Summary of Combined Cumulative Effects

Past, present, and reasonably foreseeable future fireworks display events currently do not occur in the vicinity of the National City or Chula Vista Bayfronts, and therefore do not have the potential to contribute to cumulative transportation, circulation, and parking impacts within the cumulative traffic study area. However, past, present, and reasonably foreseeable future development projects within the cumulative traffic study area have resulted in cumulatively considerable impacts on transportation, circulation, and parking within the National City and Chula Vista Bayfronts. As the Chula Vista Bayfront is built out in accordance with the Chula Vista Bayfront Master Plan, future development projects will generate additional daily vehicle trips on the surrounding roadway network. The certified Chula Vista Bayfront Master Plan EIR identified a number of significant direct

and cumulative traffic impacts associated with buildout of the Bayfront, several of which are significant and unavoidable after mitigation. Even though past, present, and reasonably foreseeable future temporary special events within the cumulative traffic study area have and would continue to generate parking demand and vehicle trips, and occasionally require temporary road closures, the traffic added by these events is temporary and infrequent. These types of events are also subject to the special event requirements of the cities of National City and Chula Vista, which require traffic control plans if deemed necessary. Therefore, because of the temporary and infrequent nature of traffic and parking demand generated by past, present, and reasonably foreseeable future temporary special events, temporary special events would not contribute to cumulatively considerable transportation, circulation, and parking impacts when combined with the new permanent, long-term vehicle trips and changes in travel patterns associated with development projects.

Project Contribution

Proposed New Fireworks Display Events

As discussed under Thresholds 1, 6, and 7 of Section 4.10, *Transportation, Circulation, and Parking*, both the proposed new Fourth of July and non-Fourth of July fireworks display events are anticipated to generate increased volumes of vehicle, pedestrian, and bicycle traffic and increased parking demand. The increase in vehicle, pedestrian, and bicycle activity would likely result in higher conflicts between these modes of travel at intersection points, resulting in temporary congestion, ultimately affecting vehicle circulation on adjacent roadway facilities serve the viewing locations along the National City and Chula Vista Bayfronts. In addition, these conflicts between the modes of travel would have the potential to temporarily decrease the performance and safety of the roadway, pedestrian, and bicycle facilities because the intersections and pedestrian and bicycle facilities adjacent to the new fireworks display event viewing areas may not be designed to accommodate this level of conflict between the modes of travel.

As discussed above, projected regional population growth and past, present, and reasonably foreseeable future development projects within the cumulative traffic study area have and will continue to contribute to degraded operations on regional transportation facilities, resulting in cumulatively considerable impacts on transportation, circulation, and parking. The vehicle trips and parking demand generated by cumulative development projects are permanent and result in long-term changes in travel patterns and congestion. These additional trips typically occur during AM and PM peak hours. Although the proposed new fireworks display event would generate additional vehicle trips and parking demand, this increase would be temporary and occur on a very infrequent basis (only four times per year). In addition, the proposed new fireworks display events would occur at night during off-peak hours, and therefore would be outside of the normal commuting period. Furthermore, the proposed new fireworks display events would all be required to comply with the applicable special event guidelines of their respective cities. These special event guidelines require that fireworks display events obtain any necessary special event and/or special event-related permits, and require the implementation of traffic control plans as necessary. Traffic control would be conducted by either police department staff or individuals certified in traffic control by the police department. These existing procedures are in place to facilitate vehicular, bicycle, and pedestrian movement and ensure that pedestrians and bicyclists are safely accommodated, thus reducing the potential for conflicts between the modes of travel at intersection points. Therefore, because the

traffic and parking demand from the proposed new fireworks display events would be short term and infrequent in nature, occur during off-peak travel hours, and comply with the existing special event procedures of the cities of National City and Chula Vista, the contribution of the proposed new displays to cumulative transportation, circulation, and parking impacts would not be cumulatively considerable.

Furthermore, the proposed ordinance includes a condition of approval that requires implementation of an Event Transportation and Parking Management Plan for the proposed new fireworks display events, which would include transportation demand strategies, such as providing event traffic control and promoting the use of public transit. The Event Transportation and Parking Management Plan would further reduce potential conflicts between different modes of transportation by facilitating the movement of vehicular, pedestrian, and bicycle traffic, thereby improving circulation. The Event Transportation and Parking Management Plan would also include measures and tools to deal with parking, such as offsite parking arrangements, promotional programs with rideshare vendors, a joint event/transit ticketing program with Metropolitan Transit System, and expanded shuttle operations, which would further reduce the temporary increase in parking demand.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The proposed ordinance does not propose any changes in the number or nature of existing fireworks display events and includes a condition of approval that addresses transportation, circulation, and parking in relation to fireworks display events. The effects of the proposed ordinance on existing fireworks display events would improve the existing condition by requiring implementation of an Event Transportation and Parking Management Plan. The Event Transportation and Parking Management Plan will include transportation demand and parking management strategies, such as providing event traffic control and promoting the use of public transit. This would help to safely accommodate additional pedestrian and bicycle traffic and alleviate congestion around the individual fireworks displays. Compliance with the proposed ordinance may improve the existing condition by improving circulation and safety on the roadway network surrounding existing fireworks display events. As such, the effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative transportation, circulation, and parking impacts, and therefore would not be cumulatively considerable. No cumulatively significant adverse impacts would occur.

Level of Significance Prior to Mitigation

Proposed New Fireworks Display Events

The incremental contribution of the proposed new fireworks display events to cumulative transportation, circulation, and parking impacts would not be cumulatively considerable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative transportation, circulation, and parking impacts, and therefore would not be cumulatively considerable. No cumulatively significant adverse impacts would occur.

Mitigation Measures

Proposed New Fireworks Display Events

No mitigation is required.

Effects of Proposed Ordinance on Existing Fireworks Display Events

No mitigation is required.

Level of Significance after Mitigation

Proposed New Fireworks Display Events

The incremental contribution of the proposed new fireworks display events to cumulative transportation, circulation, and parking impacts would not be cumulatively considerable.

Effects of Proposed Ordinance on Existing Fireworks Display Events

The effects of the proposed ordinance on existing fireworks display events would not incrementally contribute to cumulative transportation, circulation, and parking impacts, and therefore would not be cumulatively considerable. No cumulatively significant adverse impacts would occur.

Chapter 6

Additional Consequences of Project Implementation

6.1 Introduction

Pursuant to the California Environmental Quality Act (CEQA) Guidelines, Sections 15126.2(c), (d),¹ and 15128, this chapter addresses the potential for additional consequences related to the implementation of the proposed project. Specifically, this chapter (1) addresses significant irreversible changes to the environment that would result from implementation of the proposed project; (2) discusses growth-inducing impacts of the proposed project, including ways in which the proposed project could promote either direct or indirect growth; and (3) discusses the environmental effects of the proposed project that were determined not to be significant during the initial environmental review process. The proposed ordinance would not change the number or nature of existing fireworks display events and, therefore, would not result in any additional consequences. As such, the analysis in this section focuses on the proposed new fireworks display events.

6.2 Significant Irreversible Environmental Changes

The proposed project involves the adoption of an ordinance; therefore, pursuant to State CEQA Guidelines Section 15127, the environmental impact report (EIR) is required to comply with State CEQA Guidelines Section 15126.2(c). Section 15126.2(c) requires that the EIR identify any significant irreversible environmental changes resulting from implementation of the proposed project. Irreversible commitments of resources are also evaluated to ensure that their use is justified. Irreversible environmental changes typically fall into three categories: primary impacts, such as the use of nonrenewable resources; secondary impacts, such as highway improvements that provide access to previously inaccessible areas; and environmental accidents associated with a project.

The proposed project would not include any landside or waterside construction and, therefore, would not require the use of construction materials such as cement, concrete, lumber, and steel. Construction activities typically require a commitment of non-renewable natural resources, primarily from the direct consumption of fossil fuels. These fossil fuels would typically be consumed during construction in the form of the diesel and gasoline fuel used in construction and yard equipment, commute vehicles, and trucks. Electricity is also consumed during construction by power tools, electric equipment, and lighting. However, because no construction is proposed, there would be no irreversible environmental changes or irretrievable commitment of resources that are typically associated with construction as a result of project implementation.

Although no construction-related significant irreversible environmental changes would occur, implementation of the proposed project would result in primary impacts through the commitment of energy and natural resources during operation. The primary energy source would be fossil

¹ The requirements of State CEQA Guidelines Sections 15126.2(a) and (b) are met in Chapter 4, *Environmental Analysis*, under each resource discussion.

fuels, which would be utilized to transport fireworks to the National City and Chula Vista project sites where the proposed new fireworks display events would occur. Fossil fuels would also be used by tugboats during the movement and temporary placement of barges. Additionally, the fireworks themselves contain gunpowder as a charge/motor and require either an open flame or an electrical contact setup to launch. Fireworks also contain paper, cardboard, plastic, cotton, metal, and other similar components. Although the proposed new fireworks display events would occur on a relatively infrequent and temporary basis, some energy consumption is required. As such, the proposed project represents an irreversible commitment of these resources. However, the amount and rate of consumption would not result in a large commitment of these resources or the unnecessary, inefficient, or wasteful use of resources. As discussed in Chapter 3, *Project Description*, of this Draft EIR, the proposed project includes up to four proposed new fireworks display events annually. The proposed new fireworks display events are expected to occur as part of or in conjunction with other civic or entertainment events. Therefore, because of the small amount of resources and infrequent nature of these proposed new fireworks display events, the proposed project would not result in significant primary impacts. Furthermore, the proposed project would not include the extension of any public services or infrastructure into areas that were not previously served and would not induce any permanent population growth in the project area. Therefore, the proposed project would not result in any secondary impacts. For these reasons, operation of the proposed project would not result in an irreversible commitment of nonrenewable resources.

State CEQA Guidelines Section 15126.2(c) also requires a discussion of the proposed project's potential to result in irreversible environmental damage caused by a project-related environmental accident. Operation of the proposed project would involve the use of fireworks, which are a class of low-explosive pyrotechnic device. Typical fireworks constituents include a number of chemicals and heavy metals, which are scattered during combustion. As discussed in Section 4.5, *Hazards and Hazardous Materials*, the proposed project would require the transport, use, and disposal of fireworks, which can be considered hazardous materials because of their explosive nature and chemical composition. However, compliance with federal (including U.S. Department of Transportation Hazardous Materials Regulations [49 Code of Federal Regulations 100–185]), state (including Title 19 of the California Code of Regulations), and local regulations, in combination with oversight by licensed fireworks operators and the responsible city fire departments, would ensure that all hazardous materials associated with fireworks would be used, stored, and disposed of properly. Additionally, the proposed new fireworks display events would be required to comply with the state and local laws set forth in the California Department of Forestry and Fire Protection's (CAL FIRE's) *Fireworks in California* handbook (CAL FIRE 2011), which are enforced by the responsible city fire departments. Therefore, required compliance with existing laws and regulations would ensure that the transport, use, and disposal of hazardous materials associated with fireworks would not result in irreversible environmental damage caused by a project-related environmental accident.

6.3 Growth-Inducing Impacts

State CEQA Guidelines Section 15126.2(d) requires that an EIR discuss the ways in which a proposed project could directly or indirectly foster economic development, population growth, or additional housing and how that growth would affect the surrounding environment. Direct growth

inducement would result if a project, for example, were to involve construction of new housing. Indirect growth might occur if a project were to establish substantial new permanent employment opportunities that would stimulate the need for additional housing, utilities, and public services.

Similarly, a project would indirectly induce growth if it were to remove an obstacle to additional development, such as removing a constraint on a required public service or utility. A project proposing to expand water supply capabilities in an area where limited water supply has historically restrained growth would be considered growth inducing.

This section discusses the characteristics and consequences of the proposed project that may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. However, the following analysis does not assume that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment (State CEQA Guidelines 15126.2(d)). Rather, Chapter 4, *Environmental Analysis*, and Chapter 5, *Cumulative Impacts*, discuss the adverse impacts on resources, including any impacts that would be caused by cumulative conditions.

6.3.1 Economic Growth

One criterion by which growth inducement can be measured involves economic growth. Economic growth considerations include a demand for temporary and permanent employees resulting from new jobs created by a project. The proposed project would not include any construction and, therefore, would not create any temporary construction jobs. Although the proposed project would allow for the occurrence of up to four new fireworks display events annually, it is anticipated that any temporary jobs created to operate these displays would be fulfilled by existing residents who currently live in the San Diego region or already work for the fireworks organizers and/or pyrotechnic companies that currently operate fireworks display events. Additionally, a project could result in economic growth in the form of increased business and tax revenue and indirectly result in increased patronage of surrounding businesses. It is anticipated that two proposed new Fourth of July fireworks display events that would occur under the proposed project would attract visitors from around the San Diego region to cities, communities, and neighborhoods that provide viewing opportunities for the fireworks display events and result in increased income for local businesses as well as increased sales tax revenue for the local governments of National City and Chula Vista. Therefore, the proposed project would indirectly stimulate additional economic growth through increased patronage of surrounding businesses. However, it is anticipated that only large-scale fireworks display events, such as those held on the Fourth of July, would result in a noticeable increase in business and tax revenue, while other smaller fireworks display events, such as the two non-Fourth of July fireworks display events that would occur in Chula Vista, would serve a much more limited number of patrons and would therefore stimulate a smaller amount of additional economic growth through increased patronage of surrounding businesses.

6.3.2 Population Growth

The proposed project would not involve the development of any housing that could increase the stock of available housing in the region and would not increase the region's permanent population. Additionally, the proposed project would not include the construction of any businesses and would not result in the extension of any roads or other infrastructure. As such, the proposed project would not create any temporary construction jobs, nor would it create any permanent jobs associated with new

businesses. The proposed project would include the addition of up to four new proposed fireworks display events per year along the National City and Chula Vista Bayfronts, which could result in a slight increase in the number of temporary jobs for those who operate these displays. However, it is anticipated that any employment opportunities would be fulfilled by existing residents who currently live in the San Diego region or already are employed by the fireworks organizers and/or pyrotechnic companies that currently operate fireworks display events. Therefore, implementation of the proposed project would have little to no effect on the inducement of population growth.

6.3.3 Construction of Additional Housing

The proposed project would not include the construction of housing, which is prohibited on San Diego Unified Port District (District) property under the Public Trust Doctrine, nor would it increase the region's population in a manner that would necessitate the construction of additional housing. It is anticipated that any potential jobs created to operate the additional four proposed new fireworks display events associated with the proposed project would be fulfilled by existing residents in the San Diego region. Therefore, the proposed project would not directly or indirectly stimulate the construction of additional housing.

6.3.4 Removal of Obstacles to Population Growth

As stated above, a project would indirectly induce growth if it were to remove a constraint on a required public service or utility. A project would also indirectly induce growth if it were to establish a precedent-setting action (e.g., an innovation, a change in zoning, or a general plan amendment approval). Implementation of the proposed project would not require an amendment to the Port Master Plan (PMP), which is the District's guiding land use document and, therefore, would not indirectly induce growth through a land use or zoning change. Additionally, because no construction of homes or businesses is proposed, the proposed project would not require any infrastructure upgrades to serve these uses. Therefore, the proposed project would not result in the physical removal of obstacles to growth.

6.3.5 Summary of Growth-Inducing Impacts

The proposed project is expected to indirectly foster economic growth through increased patronage of surrounding businesses during fireworks display events at the National City and Chula Vista Bayfronts. This increase in patronage would result in slight increases in income for local businesses and increased tax revenue for local governments. However, the proposed project would not generate any permanent jobs. Furthermore, it is anticipated that any temporary jobs created to operate the four proposed new fireworks display events annually would be fulfilled by existing residents of the region or persons who already work for the fireworks organizers and/or pyrotechnic companies. Moreover, the proposed project would not include the construction of any housing or an extension of any infrastructure or roadways that could remove obstacles to population growth. Consequently, the proposed project would not directly or indirectly induce population growth or cause the construction of new housing in the region.

6.4 Effects Found Not to Be Significant

An Initial Study/Environmental Checklist (Appendix A) was prepared early in the environmental scoping process. It was determined that the proposed project would not have a significant impact related to one or more aspects of the following resources: aesthetics; agriculture and forestry resources; cultural resources; geology and soils; hazards and hazardous materials; hydrology and water quality; land use and planning; mineral resources; noise and vibration; population and housing; public services; recreation; transportation, circulation, and parking; and utilities and service systems. In accordance with State CEQA Guidelines Section 15128, a brief explanation regarding the reasons why the effects on these resources would not be significant is provided under each subheading below.

6.4.1 Aesthetics

6.4.1.1 Scenic Vistas

Public displays of fireworks are typically conducted as part of national and community celebrations and other special events for aesthetic and entertainment purposes. Generally, fireworks display events are considered to be aesthetically pleasing. There are a number of vista areas around San Diego Bay and the Imperial Beach Oceanfront, as designated in the PMP. As defined in the PMP, vista areas include points of natural beauty, photo vantage points, and other panoramas. Other than Planning District 4 (Tenth Avenue Marine Terminal) and Planning District 9 (South Bay Saltlands), all other PMP planning districts contain designated vista areas, with the majority located within Planning District 1 (Shelter Island), Planning District 2 (Harbor Island), Planning District 3 (Centre City Embarcadero), Planning District 6 (Coronado Bayfront), and Planning District 7 (Chula Vista Bayfront). The designated vista areas within Planning District 5 (National City Bayfront) and Planning District 7 (Chula Vista Bayfront) could serve as prime viewing locations for the proposed new fireworks display events in San Diego Bay. Barges and other vessels and equipment associated with the proposed new fireworks display events would be utilized at the National City and Chula Vista sites. All associated equipment would be put in place shortly before a display and removed promptly after a display. Additionally, the proposed project would not include any landside or waterside construction that could obstruct existing views from any PMP-designated vista areas. Therefore, the proposed project would not have a substantial adverse effect on a scenic vista, and impacts would be less than significant.

6.4.1.2 Scenic Resources

The San Diego-Coronado Bay Bridge (State Route [SR] 75) is a state-designated scenic highway that spans San Diego Bay, connecting the City of San Diego to the City of Coronado. Existing long-distance views of the bayfront from the San Diego-Coronado Bay Bridge are dominated by a mix of high-rise residential, commercial, park, and urban developments as well as a variety of maritime industrial facilities. The National City Bayfront is dominated by the marine-related industrial uses of the National City Marine Terminal, with adjacent industrial uses in the northern portion and a marina, park, and wildlife habitat in the southern portion. The Chula Vista Bayfront includes undeveloped vegetated wildlife habitat in the northern portion; parks, a yacht refit and repair facility, recreational vehicle (RV) park, and marinas in the central portion; and a saltworks operation in the southern portion. Implementation of the proposed project is not anticipated to damage scenic resources along a scenic

highway, such as trees, rock outcroppings, or historic buildings, because the proposed project would not include any landside or waterside construction that could remove or obstruct views of such resources. Visual changes associated with the proposed project would include those associated with the combustion of fireworks; however, these visual effects would be temporary in duration and infrequent. Therefore, no impacts on officially designated scenic highways would occur.

6.4.1.3 Visual Character or Quality

As mentioned, the proposed project would not include any construction that would alter or substantially degrade the existing visual character or quality of the surrounding area. The proposed new fireworks display events would be temporary and would occur only periodically throughout the year. Barges and other vessels and equipment used for the proposed new fireworks display events would be put in place shortly before a display and removed promptly after the display's completion. Additionally, the proposed new fireworks display events would be held during nighttime hours; therefore, any barges, vessels, or other equipment used during an event would most likely not be visible. As such, the proposed project would not substantially degrade the existing visual character or quality of the site or surrounding area, and impacts would be less than significant.

6.4.2 Agriculture and Forestry Resources

6.4.2.1 Important Farmland

The project sites are located at San Diego Bay and, therefore, do not support any agricultural uses. The California Department of Conservation's Farmland Mapping and Monitoring Program designates areas with prime soils and soils of statewide importance, based on soil characteristics and agricultural use. Because the proposed project would occur primarily over water, the project sites do not contain Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency (California Department of Conservation 2015). As such, there is no potential for any actions to convert farmland resources to a non-agricultural use, and no impacts would occur.

6.4.2.2 Williamson Act Contracts or Agricultural Zoning

The project sites and surrounding area are not zoned for agricultural use, nor are they under Williamson Act contract. Therefore, the proposed project would not conflict with existing zoning for agricultural use or a Williamson Act contract, and no impacts related to agricultural resources would occur.

6.4.2.3 Conflict with Forest Land Zoning

The project sites are located at San Diego Bay and, therefore, do not support any forestry uses. No land that has been zoned as forestland or timberland exists within the boundaries of the project sites. Therefore, implementation of the proposed project would not conflict with existing zoning for, or cause rezoning of, forestland, timberland, or timberland zoned Timberland Production, and no impact would occur.

6.4.2.4 Conversion of Forestland to Non-Forest Use

The project sites and surrounding area do not contain any forestlands, as defined in Public Resources Code Section 12220(g); therefore, the proposed project would not result in the loss or conversion of forestland to a non-forest use. In addition, the proposed project is not in the vicinity of off-site forest resources. Therefore, no impact would occur.

6.4.2.5 Conversion of Farmland to Non-Agricultural Use

No agricultural land use, forestland, or timberland exists in the vicinity of the project sites. The proposed project would not result in the conversion of important farmland or the conversion of other agricultural resources to a non-agricultural use because the project sites are located at San Diego Bay, and the surrounding area is mostly developed land. Therefore, the proposed project would not involve a change to the existing environment that, because of its location or nature, would result in the conversion of farmland to non-agricultural use or forestland to non-forest use, and no impact would occur.

6.4.3 Cultural Resources

6.4.3.1 Historical Resources

The proposed project would not include the demolition of any existing structure that could be considered a historical resource. As such, the proposed project would not indirectly or directly affect a historical resource, as defined in Section 15064.5 of the State CEQA Guidelines, that may be located within the project area. Therefore, no impacts would occur.

6.4.3.2 Archaeological Resources

Typically, grading and/or excavation activities have the potential to affect previously undiscovered buried archaeological resources. Because no landside or waterside construction is proposed that would require grading, excavation, or dredging, the proposed project would not cause a substantial change in the significance of an archaeological resource, as defined in Section 15064.5 of the State CEQA Guidelines. Therefore, no impacts would occur.

6.4.3.3 Human Remains

Typically, grading and/or excavation activities have the potential to disturb human remains, including those interred outside of a formal cemetery. Because no landside or waterside construction is proposed that would require grading, excavation, or dredging, the proposed project would not disturb any buried human remains. Therefore, no impacts would occur.

6.4.4 Geology and Soils

6.4.4.1 Seismic-Related Hazards

The project sites encompass areas within San Diego Bay. Although a number of faults traverse San Diego Bay, including the Rose Canyon fault, the proposed project would not include any construction, including the construction of any habitable structures that could be affected by a

seismic event. As such, the proposed project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving the rupture of a known earthquake fault, strong seismic ground shaking, seismically related ground failure, including liquefaction, or landslides. Therefore, no impacts would occur.

6.4.4.2 Substantial Soil Erosion or Loss of Topsoil

The proposed project would not include any construction activities that would require grading, dredging, or any other earthwork. Therefore, no impacts related to soil erosion would occur with implementation of the proposed project.

6.4.4.3 Unstable Geologic Unit or Soil

The proposed project would not include the construction of any habitable structures and, therefore, would not require grading, dredging, or any other earthwork. Because no earthwork would be required, the proposed project would not excavate any geologic units or soils that are unstable or that would become unstable as a result of the proposed project.] Therefore, the proposed project would not have the potential to result in on-site or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse. No impacts would occur.

6.4.4.4 Expansive Soil

There is no construction proposed as part of the proposed project; therefore, the proposed project would not have the potential to place any structures intended for human occupancy on expansive soils, as defined by Table 18-1-B of the Uniform Building Code. As such, the proposed project would not result in substantial risks to life or property as a result of expansive soils. No impacts would occur.

6.4.4.5 Septic Tanks or Alternative Wastewater Disposal Systems

No septic tanks or alternative wastewater disposal systems are proposed because no construction would occur with implementation of the proposed project. Therefore, there would be no impact associated with the on-site soils that are incapable of supporting a septic tank or wastewater disposal system.

6.4.4.6 Paleontological Resources

Paleontological resources are typically uncovered when substantial grading or excavation operations occur in geological formations that have been identified as being sensitive for such resources. As mentioned, the proposed project would not require any grading, dredging, or other earthwork because no physical construction is proposed. Consequently, the proposed project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. No impacts would occur.

6.4.5 Hazards and Hazardous Materials

6.4.5.1 Proximity to Schools

The proposed project is not within 0.25 mile of an existing or proposed school. The nearest school to the proposed National City Bayfront barge is Central Elementary School, located at 933 E Avenue, approximately 2.38 miles away. The nearest school to the proposed Chula Vista Bayfront barge is Mueller Charter School, located at 715 I Street, approximately 1.91 miles away. Therefore, the proposed project would not emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school. Additionally, the proposed new fireworks display events would be located on barges in San Diego Bay. These barge areas are not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

6.4.5.2 Airport Land Use Plans

All airports/airstrips within 10 miles of the proposed project are public or military. None of the proposed new fireworks display events are within 2 miles of San Diego International Airport (SDIA), the U.S. Coast Guard Air Station, or Naval Air Station (NAS) North Island. Based on correspondence with the San Diego County Regional Airport Authority Airport Land Use Commission (ALUC), fireworks display events are considered a temporary event and are exempt from ALUC review and approval (Gowens pers. comm.). In addition, based on correspondence with the Federal Aviation Administration (FAA), a notification to the FAA is required prior to any fireworks display event so that local airports can be notified when they will occur; however, a “no hazard” determination is not issued or required for fireworks display events (Griffin pers. comm.). The proposed new fireworks display events would be handled in compliance with all applicable laws and regulations, including any notification requirements of the FAA. Therefore, implementation of the proposed project would not result in a safety hazard for people residing or working in the project area.

6.4.5.3 Private Airstrip

The proposed project is not within the vicinity of a private airstrip. No hazard impacts related to private airstrips would occur with implementation of the proposed project.

6.4.5.4 Wildland Fires

There are no wildlands or heavily vegetated areas in proximity to the project sites. According to the Very High Fire Hazard Severity Zone maps prepared by CAL FIRE, the Chula Vista Bayfront is neither adjacent to nor intermixed with wildlands or areas that have been designated as Very High Fire Hazard Severity Zones (CAL FIRE 2009). There is no Very High Fire Hazard Severity Zone map for the City of National City; however, the National City General Plan identifies the National City Bayfront as being within an area with a moderate fire hazard level. The project sites are surrounded by commercial, industrial, recreational, and marine-related uses. As such, the potential for wildfires resulting from a fireworks-related accident is extremely low. Additionally, fireworks would be shot from barges in San Diego Bay, further reducing the potential for fire hazards. Therefore, the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including areas where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. No impacts would occur.

6.4.6 Hydrology and Water Quality

6.4.6.1 Groundwater Supplies

The proposed project would not include any landside or waterside construction that would rely on the use of groundwater and does not propose the use of any groundwater. In addition, the proposed project would not interfere substantially with groundwater recharge because no new impervious surfaces would be constructed or developed. As such, the proposed project would not deplete groundwater supplies or interfere with groundwater recharge and result in a net deficit in aquifer volume or a lowering of the local groundwater table level. No impacts on groundwater would occur.

6.4.6.2 On-site and Off-site Drainage

The proposed project would not alter the existing drainage patterns of the project sites because no landside or waterside construction is proposed. As such, the proposed project would not result in substantial erosion or siltation on-site or off-site, nor would it increase the rate or amount of surface runoff associated with the alteration of existing drainage patterns in a manner that would result in flooding on-site or off-site. Therefore, no drainage impacts would occur.

6.4.6.3 100-Year Flood Hazard Areas (Placement of Housing)

Although San Diego Bay is designated under Zones AE, A, B, X, and D (i.e., special flood hazard areas that would be inundated by a 100-year flood) of the Federal Emergency Management Agency's Flood Insurance Rate Maps, the barges and other vessels and equipment that would be utilized for the proposed new fireworks display events would be temporary and would be removed following the completion of such events. Because the proposed project would not include the construction of homes or other habitable structures, the proposed project would not place housing within a 100-year flood hazard area, as delineated on any flood hazard maps, that could impede or redirect floodflows or expose people or structures to a significant risk of loss, injury, or death involving flooding. Therefore, no impacts would occur.

6.4.6.4 Dam or Levee Failure

The proposed project would not include the construction of homes or other habitable structures downstream of a dam or levee. Therefore, the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving flooding as a result of the failure of a levee or dam. Therefore, no impacts would occur.

6.4.6.5 Inundation by Seiche, Tsunami, or Mudflow

The project sites are within San Diego Bay, which may be susceptible to tsunami effects, such as high surf or waves. These low-lying areas may also be susceptible to inundation by projected sea-level rise in the future. However, as stated above, the proposed project would not include any construction of homes or other structures that may be subject to inundation by a tsunami event. Although the project sites and many of the primary viewing areas are within a tsunami inundation area, the barges and other vessels and equipment that would be utilized for the proposed new fireworks display events would be temporary and would be removed following the completion of such events. As a result, the likelihood that a tsunami event would occur during an individual fireworks display event is extremely low. Therefore, no impacts would occur.

6.4.7 Land Use and Planning

6.4.7.1 Physically Divide an Established Community

The proposed project would involve fireworks display events. It would not include any landside or waterside construction, such as industrial or commercial buildings or roadways or highways that could divide an established community. Therefore, the proposed project would not result in any land use impacts associated with dividing an established community.

6.4.8 Mineral Resources

6.4.8.1 Known Mineral Resource

The project sites include multiple locations within the waters of San Diego Bay. No commercial mining operations exist at any of the project locations or in the immediate vicinity. The project sites and surrounding areas are not designated or zoned as land with available mineral resources. In addition, as indicated in the general plans for National City and Chula Vista, the project sites do not contain aggregate resources and are not in a mineral resource zone that contains important resources, as designated per the Surface Mining and Reclamation Act of 1975 (City of National City 2011; City of Chula Vista 2005). Moreover, the proposed project would not include any construction or excavation that could result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. Therefore, no impacts on mineral resources would occur.

6.4.8.2 Important Mineral Resource

The project sites include multiple locations within the waters of San Diego Bay. The project sites and surrounding areas do not contain locally important mineral resources. Therefore, implementation of the proposed project would not result in the loss of availability of a locally important mineral resource recovery site, as delineated on a local general plan, specific plan, or other land use plan. Therefore, no impact would occur.

6.4.9 Noise

6.4.9.1 Excessive Ground-borne Vibration and Ground-borne Noise Levels

Typically, the use of high-impact equipment, such as a pile driver, impact hammer, or large bulldozer, is a significant source of ground-borne vibration or noise during construction. The proposed project would involve fireworks display events in San Diego Bay. It would not include any landside or waterside construction that would require the use of high-impact equipment. In addition, because explosions associated with fireworks are several hundred feet in the air, the sound energy generated by the explosion is substantially dissipated by the time it reaches the ground. As such, the potential for fireworks explosions to generate perceptible ground-borne vibration or ground-borne noise is low. Therefore, no ground-borne vibration or noise impacts would occur.

6.4.9.2 Permanent Increase in Ambient Noise Levels

The proposed new fireworks display events would occur on an infrequent basis and be temporary in nature. Therefore, noise generated by these events would be short in duration and would occur only periodically throughout the year. Furthermore, the proposed project would not include the construction of any uses that would generate noise on an ongoing basis. As such, the proposed project would not result in a substantial permanent increase in ambient noise levels, and no impacts would occur.

6.4.9.3 Airport Land Use Plan Area

All airports/airstrips within 10 miles of the project sites are public or military. None of the proposed new fireworks display events are within 2 miles of SDIA, the U.S. Coast Guard Air Station, or NAS North Island. The closest airport/airstrip to the proposed new fireworks display events is NAS North Island, which is approximately 5 and 6 miles north of the National City and Chula Vista Bayfronts, respectively. As such, people working on barges during the proposed new fireworks display events, as well as members of the public viewing the displays, would not be exposed to excessive noise levels associated with airport operations. Therefore, impacts would be less than significant.

6.4.9.4 Private Airstrip

The proposed new fireworks display events would not be within the vicinity of a private airstrip. All airports/airstrips within 10 miles of the project site are public or military. Therefore, no noise impacts related to private airstrips would occur with implementation of the proposed project.

6.4.10 Population and Housing

6.4.10.1 Population Growth

The proposed project would not include the construction of any homes or businesses and would not result in the extension of any roads or other infrastructure. As such, the proposed project would not create any temporary construction jobs, nor would it create any permanent jobs associated with new businesses. The proposed project would include up to four proposed new fireworks display events per year, which could result in a slight increase in temporary jobs to operate these new displays; however, it is anticipated that any employment opportunities would be fulfilled by existing residents who currently live in the San Diego region or already are employed by the fireworks organizers and/or pyrotechnic companies. Therefore, the proposed project would not directly or indirectly induce substantial population growth, and no impacts would occur.

6.4.10.2 Displacement of Housing

The proposed project would involve the occasional occurrence of proposed new fireworks display events. It would not include any landside or waterside construction. No housing would be displaced with implementation of the proposed project. Therefore, no impacts would occur.

6.4.10.3 Displacement of People

The proposed project would involve fireworks display events from barges within San Diego Bay; therefore, the project sites would not include residential housing. Additionally, the proposed project would not include the construction of any homes, businesses, or other uses that could result in the displacement of existing housing or people or require the construction of replacement housing elsewhere. Therefore, no impacts would occur.

6.4.11 Public Services

6.4.11.1 Schools

The proposed project would not result in adverse impacts on schools. Physical impacts on school facilities and services are usually associated with in-migration and population growth, which increase the demand for schools and result in the need for new or expanded facilities. The proposed project would not result in an increased demand on school facilities because fireworks display events typically cater to local and visiting regional populations and do not facilitate permanent growth in population. Therefore, the proposed project would not result in increased demand that would require the need for new or physically altered school facilities that could cause significant environmental impacts, and no impacts would occur.

6.4.11.2 Parks

The proposed project would involve fireworks display events from barges within San Diego Bay; therefore, the project sites would not contain any parks. However, a number of parks would be adjacent to the proposed new fireworks display events in San Diego Bay and adjacent to the National City and Chula Vista Bayfronts, which could serve as prime viewing areas for the new displays. Although the proposed project would increase the use of these parks from spectator viewing during the proposed new fireworks display events, these events would be temporary and occasional in nature. Furthermore, they typically cater to local and regional populations. As a result, the proposed project would not facilitate permanent growth in population that would increase the demand on existing recreational facilities, requiring the provision of new or physically altered recreational facilities that could cause significant environmental impacts. Therefore, impacts on park services would be less than significant.

6.4.12 Recreation

6.4.12.1 Physical Deterioration of Facilities

An increase in the use of existing parks and recreational facilities typically results from an increase in the number of housing units or residents in an area. A number of parks would be adjacent to the proposed new fireworks display events in San Diego Bay and adjacent to the National City and Chula Vista Bayfronts, including Pepper Park, Chula Vista Bayside and Bayfront Parks, Chula Vista Marina View, Grand Caribe Shoreline Park (in Coronado, across the bay from Chula Vista), and numerous other public areas along the waterfront that could serve as prime viewing areas for the new displays.

Although the proposed project would increase the use of these parks from spectator viewing during the proposed new fireworks display events, these events would be temporary and infrequent in nature. Furthermore, they typically cater to local and regional populations. As a result, the proposed project would not facilitate permanent growth in population that would substantially increase the use of existing recreational facilities. Consequently, because of the infrequent nature of the proposed new fireworks display events that would occur with implementation of the proposed project, the temporary use of these parks as viewing areas would not cause substantial physical deterioration of these facilities to occur or be accelerated. Additionally, the District currently maintains parks and other public areas within its jurisdiction following large events. This includes increased/additional trash cleanup and other maintenance services at affected parks within 24 hours following Fourth of July fireworks display events to minimize impacts from increased use of the parks that serve as viewing locations. As with existing fireworks display events, the District would continue to provide these maintenance services following the proposed new Fourth of July fireworks display events. Therefore, impacts would be less than significant.

6.4.12.2 Construction or Expansion of Recreational Facilities

The proposed project would not include any construction, including construction of any recreational facilities. As mentioned, the proposed project would not result in substantial physical deterioration of existing recreational facilities because of the temporary and periodic nature of the proposed new fireworks display events and continued maintenance by the District. Additionally, the proposed project would not include the construction of any homes or businesses that could foster permanent population growth in the project area. Consequently, the proposed project would not require construction or expansion of recreational facilities that might have an adverse physical effect on the environment. Therefore, no impacts related to recreation would occur.

6.4.13 Transportation and Traffic

6.4.13.1 Air Traffic Patterns

None of the proposed new fireworks display events would occur within 2 miles of SDIA, the U.S. Coast Guard Air Station, or NAS North Island. Although the FAA does not issue or require a “no hazard” determination for fireworks display events, FAA notification is required prior to any events that include fireworks displays so that local airports can be notified as to when they will occur. This ensures that local airports are informed of individual fireworks display events and allows them to make modifications to flight patterns, as necessary, to maintain a safe airspace. The proposed new fireworks display events would be handled in compliance with all applicable laws and regulations, including any notification requirements of the FAA. Therefore, implementation of the proposed project would not result in a safety hazard for people residing or working in the project area, and impacts would be less than significant.

6.4.13.2 Hazardous Design Features

The proposed project would not result in any changes to the landside circulation system that could substantially increase hazards because of a design feature or incompatible use. In regard to marine vessel circulation in San Diego Bay within the District’s jurisdiction, the U.S. Coast Guard and/or State Fire Marshal would establish a safety zone around each of the launch sites during proposed

new fireworks display events within the bay. The safety zone would encompass all navigable waters surrounding the launch sites, within the distance determined appropriate by the U.S. Coast Guard and/or State Fire Marshal. Additionally, all vessels participating in the event must abide by the navigation rules of the U.S. as well as all applicable federal, state, and local regulations when transitioning outside of the established safety zone. Furthermore, the Harbor Police Department provides marine vessel patrols and maritime response within San Diego Bay, its associated waterways, and coastal areas. These vessel patrols are staffed 24 hours a day and in all types of weather. They would be increasingly present at large events such as the proposed new Fourth of July fireworks display events to regulate water safety. As such, the proposed project would not substantially increase hazards because of a design feature or incompatible use. Therefore, impacts would be less than significant.

6.4.14 Utilities and Service Systems

6.4.14.1 Water and Wastewater Treatment

The proposed project would not include the construction of any homes, businesses, or other uses that would result in an increase in water use or generate new sources of wastewater that would require treatment. As a result, implementation of the proposed project would not exceed the wastewater treatment requirements of the San Diego Regional Water Quality Control Board, nor would it require the construction of new water or wastewater treatment facilities or an expansion of existing facilities that could cause significant environmental effects.

Although no permanent uses would be constructed with the proposed project, fireworks display events typically draw large numbers of spectators, particularly on major holidays such as the Fourth of July. There are a number of public parks adjacent to the proposed new fireworks display events, as well as other public areas along the waterfront, that could serve as prime viewing areas for the new displays. Although the proposed project would increase public restroom use by spectators at these parks during the fireworks displays, these proposed new fireworks display events would occur only periodically throughout the year. Furthermore, they typically cater to local and visiting regional populations. As such, these restroom facilities would be utilized by existing residents of the local and regional population during a temporary display. Because these spectators are generally part of the existing local and regional population, the use of public restroom facilities should be accounted for by the existing wastewater treatment provider that currently serves the public parks and other public areas surrounding the project sites. Therefore, no impacts would occur.

6.4.14.2 Stormwater Drainage Facilities

The proposed project would not include any physical construction that would result in an increase in impervious surfaces. As a result, there would be no increase in stormwater runoff to existing stormwater drainage facilities, and the proposed project would not require the construction of new stormwater drainage facilities or an expansion of existing facilities that could cause significant environmental effects. Therefore, no impacts would occur.

6.4.14.3 Water Supplies

As mentioned, the proposed project would not include construction of any homes, businesses, or other uses that would result in a permanent increase in water usage and potentially affect water supplies. Although no permanent uses would be constructed with the proposed project, fireworks display events typically draw large numbers of spectators, particularly on major holidays such as the Fourth of July. There are a number of public parks adjacent to the proposed new fireworks display events as well as other public areas along the waterfront that could serve as prime viewing areas for the new displays. Although the proposed project could increase public water use by spectators (e.g., drinking fountain usage) at these parks during the fireworks display events, these proposed new fireworks display events would occur only periodically throughout the year and typically cater to local and visiting regional populations. Because these spectators are generally part of the existing local and regional population, it is likely that they would be using public water sources elsewhere around San Diego County. Therefore, the proposed project would not require new or expanded water entitlements, and impacts on the water supply would be less than significant.

6.4.14.4 Solid Waste

Assembly Bill 939 requires each city and county in the state to divert at least 50 percent of its solid waste from landfill disposal through measures such as source reduction, recycling, and composting. Assembly Bill 939 mandates the reduction of solid waste disposal in landfills and a minimum 50 percent diversion goal. It also requires cities and counties to prepare Source Reduction Recycling Elements in their general plans.

The proposed project would generate solid waste from the combustion of fireworks. This waste would need to be disposed of following the proposed new fireworks display events. However, the overall solid waste generated from the combustion of fireworks would be minimal because of the infrequent nature of these events. Solid waste, primarily in the form of food and beverage packaging, would also be generated by spectators who utilize the parks and other public areas along the waterfront as viewing areas for the proposed new fireworks display events. As mentioned, the District currently maintains the existing parks and public areas within its jurisdiction following large events, which would continue to occur with implementation of the proposed project. All solid waste generated as a result of the proposed project would be taken to a landfill with sufficient permitted capacity to accommodate the proposed project's solid waste disposal needs, in compliance with federal, state, and local statutes and regulations related to solid waste. Therefore, the proposed project would have a less-than-significant solid waste impact.

Chapter 7

Alternatives to the Proposed Project

7.1 Overview

This chapter describes and analyzes a range of reasonable alternatives that could feasibly attain most of the basic project objectives while avoiding or substantially lessening one or more of the significant effects of the proposed project. The primary purpose of this chapter is to ensure that the comparative analysis provides sufficient detail to foster informed decision-making and public participation in the environmental process.

Three alternatives to the proposed project are analyzed in this chapter and discussed in terms of their merits relative to the proposed project.

- Alternative 1 – No Project Alternative
- Alternative 2 – Quiet Fireworks Display Events Alternative
- Alternative 3 – No Salute Fireworks Alternative

Based on the analysis below, Alternative 2, Quiet Fireworks Display Events Alternative, would be the environmentally superior alternative.

7.2 Requirements for Alternatives Analysis

The State CEQA Guidelines require that an EIR present a range of reasonable alternatives to a project, or to the location of a project, that could feasibly attain a majority of the basic project objectives, but that would avoid or substantially lessen one or more significant environmental impacts of the project. The range of alternatives required in an EIR is governed by a “rule of reason” that requires an EIR to set forth only those alternatives necessary to permit a reasoned choice. An EIR need not consider every conceivable alternative to a project. Alternatives may be eliminated from detailed consideration in the EIR if they fail to meet most of the basic project objectives, are not feasible, or do not avoid or substantially lessen any significant environmental effects (State CEQA Guidelines, Section 15126.6(c)).

In addition to the requirements described above, CEQA requires the evaluation of a No Project Alternative, which analyzes the environmental effects that would occur if the project were not to proceed (State CEQA Guidelines Section 15126.6(e)). Moreover, the EIR is required to identify the environmentally superior alternative. If the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives (State CEQA Guidelines Section 15126.6(e)(2)).

7.3 Selection of Alternatives

In developing alternatives that meet the requirements of CEQA, the starting point is the proposed project's objectives. The proposed project includes the following objectives.

1. To develop a District ordinance that establishes policies, performance standards, and other requirements that would be applied to fireworks display events that occur in and around San Diego Bay and the Pacific Ocean near Imperial Beach that require a discretionary action by the District or are operated by the District's tenants;
2. To allow for the continued occurrence of traditional fireworks display events in and around San Diego Bay and the Pacific Ocean near Imperial Beach that require a discretionary action by the District or are operated by the District's tenants, including on the Fourth of July, which provide a popular and region-wide way to celebrate and express civic pride;
3. To allow for the continued occurrence of existing and future occurrence of proposed new traditional fireworks display events in and around San Diego Bay and the Pacific Ocean near Imperial Beach that require a discretionary action by the District or are operated by the District's tenants in a manner that considers the health, safety and welfare of people, property and the environment; and
4. To continue and enhance the visitor-serving experience of viewing fireworks display events from various vantage points around District tidelands by providing safe, high-quality fireworks display events using existing and new fireworks technologies as they become available.

CEQA also requires that alternatives be feasible. *Feasible* is defined in CEQA as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors" (Public Resources Code Section 21061.1). The State CEQA Guidelines elaborate to state that factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, other plans or regulatory limitations, and jurisdictional boundaries and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (State CEQA Guidelines Section 15126.6).

Finally, the alternatives should also avoid or substantially lessen one or more significant environmental impacts that would occur under the proposed project. Table 7-1 summarizes the proposed project's significant impacts, which have been identified to assist with focusing the analysis of alternatives in Section 7.5.

Table 7-1. Summary of Significant Effects of the Proposed Project

Resource Impact	Significant and Unavoidable	Less than Significant with Mitigation
Section 4.1, Aesthetics and Visual Resources		
N/A	N/A	N/A
Section 4.2, Air Quality and Health Risk		
Emissions in excess of PM _{2.5} thresholds during combined new Fourth of July fireworks display events.		X

Resource Impact	Significant and Unavoidable	Less than Significant with Mitigation
Cumulative emissions in excess of PM2.5 thresholds during combined new Fourth of July fireworks display events.		X
Section 4.3, Biological Resources		
Potential direct impact on marine reptiles from fireworks-generated trash and debris.		X
Potential indirect impacts on marine reptiles from increased human and boating activity.		X
Potential direct impacts on avian species from fireworks-generated trash and debris.		X
Potential indirect impacts on special-status avian species from increased human and boating activity.		X
Potential direct impact on sensitive habitat and wetlands from fireworks-generated trash and debris.		X
Potential direct impacts on sensitive eelgrass habitat from tugs and fireworks barges.		X
Potential indirect impact on sensitive habitat and wetlands from increased human and boating activity.		X
Potential indirect impact on wildlife corridors, movement of resident and migratory species, and usage of nursery sites from increased human and boating activity.		X
Potential conflict with the City of San Diego and Chula Vista Multiple Species Conservation Program Subarea Plans.		X
Potential conflict with the San Diego Bay National Wildlife Refuge Comprehensive Conservation Plan.		X
Section 4.4, Greenhouse Gas Emissions, Climate Change, and Energy		
N/A	N/A	N/A
Section 4.5, Hazards and Hazardous Materials		
N/A	N/A	N/A
Section 4.6, Hydrology and Water Quality		
Potential for the proposed fireworks display events to pollute surface waters if fireworks debris is not properly recovered.	X	
Potential for publicly advertised fireworks display events to pollute surface waters if increased human-generated trash and litter within the public viewing areas is not properly disposed of and cleaned up.		X
Section 4.7, Land Use and Planning		
N/A	N/A	N/A
Section 4.8, Noise and Vibration		
Substantial periodic or temporary increase in ambient noise levels	X	
Section 4.9, Public Services and Facilities		
N/A	N/A	N/A

Resource Impact	Significant and Unavoidable	Less than Significant with Mitigation
Section 4.10, Transportation, Circulation, and Parking		
Decrease in the performance of roadway, bicycle, and pedestrian facilities from proposed new fireworks display events.	X	
Inadequate parking supply during proposed new fireworks display events.	X	

7.4 Alternatives Considered

Seven alternatives were initially considered for evaluation. Based on the criteria described in Section 7.3, in addition to the No Project Alternative scenario, two other alternatives were carried forward for analysis. The other alternatives that were considered, but rejected, included Landside Fireworks Display Events on Port Tidelands, a Laser Light Show, No Fireworks Display Events During the Nesting Season, and Private Fireworks Display Events Only. These alternatives and the basis for which they were rejected are outlined below.

7.4.1 Alternatives Considered but Rejected

7.4.1.1 Landside Fireworks Display Events on Port Tidelands Alternative

Under the Landside Fireworks Display Events on Port Tidelands Alternative, all proposed new fireworks display events would be required to be held on the landside areas under the jurisdiction of the District. Under this alternative, it was assumed that the following landside locations would be used for fireworks display events as opposed to barges in the Bay:

- National City—open storage area just west of Tidelands Avenue
- Chula Vista—adjacent to Quay Avenue in Bayside Park

While this alternative would reduce potential impacts on water quality, it has the potential to result in acute health risks as well as risks to public safety overall because fireworks display events may be located closer to the viewing audiences. This alternative would also reduce public viewing areas because it would use existing public viewing spaces, large areas of which would be restricted during fireworks display events in order to maintain public safety. Furthermore, landside fireworks display events have a greater potential for fire hazards than waterborne fireworks display events and would require additional fire protection services to ensure public safety during the event. Finally, this alternative has the potential to increase traffic impacts because more intersections and roadways that are within a public safety zone may need to be closed. Therefore, this alternative was rejected from further consideration.

7.4.1.2 Laser Light Show Alternative

A Laser Light Show Alternative would eliminate the use of traditional fireworks display events altogether for public celebrations and would replace them with laser light shows. A laser light show would involve the use of flashing or sweeping beams of colored light or animated images that would

be projected onto other surfaces such as building façades or screens rather than into the sky. The Laser Light Show Alternative would be used to replace all proposed new fireworks display events along the National City and Chula Vista Bayfronts in San Diego Bay and, like the proposed project, would be conducted off barges placed in the Bay. This alternative would result in the elimination of impacts related to air quality and health risks, biological resources (fireworks-generated trash and debris but not impacts on eelgrass), hydrology and water quality, and noise, but would substantially limit the available viewing area as light beams would need to be projected onto a screen or other surface rather than into the sky. However, laser light shows have been known to adversely affect the vision of airplane pilots when lasers inadvertently shine into cockpit windows (Federal Aviation Administration 2005). The proposed new fireworks display events are proximal to public use and military airports, in particular North Island Naval Air Station in Coronado, and could result in new hazards and hazardous materials and transportation, circulation, and parking impacts. In addition to being subject to discretionary approval by the District, these laser light shows would also require approval by the Federal Aviation Administration. Furthermore, this alternative would not meet or would only partially meet project Objectives #3 and #4. Therefore, it was eliminated from further consideration.

7.4.1.3 No Fireworks Display Events During Nesting Season Alternative

Under this alternative, proposed new fireworks display events would be prohibited from occurring during the avian nesting season, which is February 15 through September 15. Under this alternative, no new fireworks display events would be allowed to occur during that period, including the Fourth of July fireworks display events along the Chula Vista Bayfront and National City Bayfront, and these events would be scheduled to occur outside of the nesting season. In addition, the two other proposed new fireworks display events would also be required to occur outside of the nesting season. While this alternative would avoid or reduce the potential effects of fireworks on nesting avian species, the proposed project would also result in a less-than significant-impact on nesting bird habitat with the incorporation of mitigation. In addition, this alternative would not meet most of the objectives of the proposed project. Therefore, this alternative was rejected from further consideration.

7.4.1.4 Private Fireworks Display Events Only Alternative

Under this alternative, future proposed new fireworks display events would be private events and would not be open to the public. Because the size or length of a fireworks display event is rarely advertised to the public, changing these parameters would have little to no influence on event attendance for public displays. Therefore, reducing the size or length of a fireworks display event is anticipated to have little or no effect on the transportation-related impacts associated with a public display because these fireworks display events would likely occur in conjunction with another event or holiday celebration and people would stay for the fireworks display events that would occur as part of the primary event; the fireworks display event itself would not generate additional trips. In order to ensure that the identified transportation-related impacts associated with the proposed project are reduced to less-than-significant levels, the proposed new fireworks display events would need to be private events that are not advertised to the general public and are intended for a limited number of attendees. Focusing on a limited audience would provide control over a number of different factors that make the transportation impacts associated with public fireworks events unpredictable:

- Arrival and departure times
- Location of viewing areas
- Maximum capacity of viewing areas
- Transportation mode choice
- Transportation routes accessing the event
- Maximum amount of parking stalls/lots

While this alternative would eliminate or substantially lessen the significant and unavoidable transportation, circulation, and parking impacts associated with the proposed project, it would not meet most of the objectives of the project. In particular, this alternative would eliminate the ability to provide traditional firework displays events, such as those on the Fourth of July, which provide a popular and region-wide way to celebrate and express civic pride. Therefore, this alternative was rejected from further consideration.

7.4.2 Alternatives Selected for Analysis

7.4.2.1 Alternative 1 – No Project Alternative

The No Project Alternative is required by CEQA to discuss and analyze potential impacts that would occur if the proposed project was not implemented. Under the No Project Alternative, the proposed ordinance would not be adopted and no performance standards to regulate the environmental effects of existing fireworks display events occurring in San Diego Bay or the Imperial Beach oceanfront would be implemented. In addition, the four proposed new fireworks display events along the National City and Chula Vista Bayfronts would not occur. However, all existing fireworks display events that require a discretionary approval by the District or are operated by the District's tenants and have obtained all necessary agency permits, such as the General Permit from the Regional Water Quality Control Board, would continue to occur, including but not limited to those listed in Table 5-2, Cumulative Fireworks Display Events, in Chapter 5, *Cumulative Impacts*.

7.4.2.2 Alternative 2 – Quiet Fireworks Display Events Alternative

The Quiet Fireworks Display Events Alternative would require the proposed new fireworks display events along the National City and Chula Vista Bayfronts to be quiet fireworks display events that would not exceed a noise limit of 120 A-weighted decibels (dBA).¹ For this type of fireworks display event, the pyrotechnicians design a fireworks package that relies on the quieter types of fireworks. These fireworks display events would eliminate the use of “salute,” rocket, and mine fireworks altogether (*salute* fireworks, also known as maroon fireworks, are fireworks designed to make a very loud bang and an intense flash of light) and instead focus on rich color effects and tight visual choreography in order to garner similar entertainment value out of the display. Generally, fireworks used in quiet fireworks display events would include fountains, wheels, cakes (such as crossettes,

¹ 120 dBA maximum impulse sound pressure level as measured at a horizontal distance of 15 meters from the testing point at a height of 1 meter above the ground, using a Type 1 sound measuring device with a free-field microphone.

comets, spinners or turbillions, colored stars, fish or bees, and falling leaves), Chinese lanterns, and lanceworks (United Kingdom Fireworks Review 2016). It is important to note that the use of these fireworks would create a quieter, but not a silent, fireworks display event. In addition, quiet fireworks display events would involve fireworks that are concentrated closer to the ground with fewer aerial shells being employed due to the loud noise that can occur during propulsion of an aerial shell. Therefore, while these fireworks display events would be in the same locations as those specified for the proposed project (as detailed in Chapter 3, *Project Description*), i.e., on barges, because quiet fireworks display events would rely on fireworks that cannot achieve the same heights or the same magnitude as traditional fireworks displays, they would not be as prominently visible and the viewing area would be smaller than that which exists for the proposed project. The Quiet Fireworks Display Events Alternative is intended to avoid or substantially lessen the significant noise impacts of the proposed project on nearby sensitive receptors.

7.4.2.3 Alternative 3 – No Salute Fireworks Alternative

Salute fireworks, which are fireworks specifically designed to create a loud bang and intense flash of light, are the loudest type of firework. The primary purpose of salute shells is to announce the beginning and end of the display and produce a loud, percussive effect. From a distance, these shells sound similar to cannon fire when detonated (NMFS 2006). While the noise level of these fireworks varies by type, a typical linear (unweighted) peak noise level directly below a 3-inch salute exploding at its normal altitude is 140 decibels (dB) (Journal of Pyrotechnics, Inc. 2012). The No Salute Fireworks Alternative would have the same characteristics as all of the fireworks display events that compose the proposed project, including the same total pounds of fireworks per event (as outlined in Table 3-2 in Chapter 3, *Project Description*), but would prohibit the use of salute fireworks and limit the noise produced by all fireworks during fireworks display events to a maximum of 140 dB.² Rockets, mines, and all firework types described above under the Section 7.4.2.2, *Quiet Fireworks Display Event Alternative*, would be allowed as long as they do not exceed the 140 dB noise limit. The No Salute Fireworks Alternative is intended to avoid or substantially lessen the significant noise impacts of the proposed project on sensitive receptors.

7.5 Analysis of Alternatives

This section discusses each of the project alternatives and determines whether each alternative would avoid or substantially reduce any of the significant impacts of the proposed project. This section also identifies any additional impacts resulting from the alternatives that would not result from the proposed project and considers the alternatives' respective relationships to the proposed project's basic objectives. A summary comparison of the significant impacts of the proposed project and the alternatives under consideration is included as Table 7-2 at the end of this chapter.

² 140 dB linear (unweighted) peak sound pressure level as measured directly under the shell burst occurring at its normal altitude, using a Type 1 sound measuring device with a free-field microphone at a height of 1 meter above the ground.

7.5.1 Analysis of Alternative 1 – No Project Alternative

7.5.1.1 Aesthetics and Visual Resources

Under the No Project Alternative, the proposed ordinance that would govern fireworks display events would not be adopted and no new fireworks display events would occur. Existing fireworks display events as described in Chapter 2, Section 2.3.1, *Existing Fireworks Display Events*, would continue to occur within San Diego Bay and the Imperial Beach Oceanfront under this alternative. In addition, the four proposed new fireworks display events described in Chapter 3, *Project Description*, would not occur. As discussed in Section 4.1, *Aesthetics and Visual Resources*, the proposed project would result in less-than-significant impacts related to light and glare. Under the No Project Alternative, there would be no increase in light or glare in the project areas related to proposed new fireworks display events and no impacts would occur. Therefore, this alternative would have less impact on aesthetics and visual resources than the proposed project.

7.5.1.2 Air Quality and Health Risk

Under the No Project Alternative, the proposed new fireworks display events would not occur, which would avoid impacts associated with exceedances of thresholds related to particulate matter 2.5 microns or less in diameter (PM_{2.5}) emissions. The No Project Alternative would also not include adoption of the proposed ordinance, and existing fireworks display events would not be subject to its conditions, such as idling limits on delivery trucks, reducing the amount of copper in larger displays, and using alternative fireworks. Without adoption of the ordinance, existing air quality and health risk conditions would not be improved. Nonetheless, because the number of fireworks display events would be reduced under this alternative, it would result in an associated reduction in PM_{2.5} emissions. Therefore, this alternative would result in less air quality impacts than the proposed project.

7.5.1.3 Biological Resources

Under the No Project Alternative, there would be no new fireworks display events occurring on barges in San Diego Bay near the Chula Vista and National City Bayfronts. Therefore, activities that would result in direct and/or indirect impacts on biological resources, including increased boat traffic, damage to eelgrass beds from barges and tugs, fireworks- and human-generated trash and debris, and foot traffic on sensitive habitat areas, would not occur. Furthermore, the proposed ordinance, which includes conditions of approval related to biological resources, would also not be adopted. These conditions of approval would include post-show clean-up requirements, best management practices, eelgrass protection requirements, requirements for reducing the use of non-biodegradable fireworks components, removal of fireworks packaging, and security, signage, and education measures, as well as noise and light reduction measures to protect biological resources during fireworks display events. Without adoption of the ordinance, these conditions of approval would not be applied to existing fireworks display events, and existing biological resources conditions would not be improved. Nonetheless, because no new fireworks display events would occur under this alternative, impacts on biological resources under the No Project Alternative would be less than the proposed project.

7.5.1.4 Greenhouse Gas Emissions, Climate Change, and Energy

Under the No Project Alternative, proposed new fireworks display events would not occur, which would result in a minor reduction in greenhouse gas (GHG) emissions. While the proposed project would result in less-than-significant impacts on GHG emissions, the No Project Alternative would not have any GHG emissions or other climate change impacts, including effects of sea-level rise (SLR), and, as such, impacts under the No Project Alternative would be less than the proposed project.

Regarding energy use, under the No Project Alternative, no tugs would be necessary to tow and hold barges that would be used as launch sites for the proposed new fireworks display events, and no deliveries of firework supplies would be required. Because the No Project Alternative would not require any energy consumption, impacts on energy under this alternative would be less than the proposed project.

7.5.1.5 Hazards and Hazardous Materials

The No Project Alternative would result in no new fireworks display events along the National City and Chula Vista Bayfronts, and no impacts would occur related to hazards or hazardous materials. Although proposed project-related hazards and hazardous materials impacts were identified as being less than significant when conducted in compliance with state and local regulations and under the oversight of a licensed fireworks operator and the Fire Marshal of the responsible city fire department, the No Project Alternative would have no potential for additional hazards, and impacts would be less than the proposed project.

7.5.1.6 Hydrology and Water Quality

Under the No Project Alternative, proposed new fireworks display events would not occur and potential significant water quality impacts related to the proposed project, including surface water contamination from an increase of fireworks debris and human-generated trash, would not occur. Furthermore, the proposed ordinance would also not be adopted under this alternative. The proposed ordinance contains conditions of approval to protect water quality, including preparation of a Fireworks Best Management Practice Plan, pre- and post-display cleanup procedures for fireworks debris and human-generated trash and litter, and a requirement to reduce the amount of non-biodegradable fireworks components. These conditions would ensure that less debris and human-generated trash remains and/or gets in the Bay and oceanfront areas following both existing and proposed new fireworks display events. Without adoption of the ordinance, these conditions of approval would not be applied to existing fireworks display events, and existing water quality conditions would not be improved. While this alternative would avoid potential water quality impacts in National City and Chula Vista, it would also avoid potential water quality improvements throughout San Diego Bay and the Imperial Beach Oceanfront related to existing fireworks display events. Nonetheless, because no new fireworks display events would occur under this alternative, impacts on water quality under the No Project Alternative would be less than the proposed project.

7.5.1.7 Land Use and Planning

Under the No Project Alternative, proposed new fireworks display events would not occur, and the No Project Alternative, like the proposed project, would be consistent with all applicable land use

plans and policies, including applicable habitat conservation plans and natural community conservation plans. The proposed project would result in less-than-significant land use and planning impacts related to the proposed new fireworks display events and no impacts related to the adoption of the proposed ordinance. Nonetheless, the No Project Alternative would result in no land use and planning impacts and thus would have less impact on land use and planning than the proposed project.

7.5.1.8 Noise and Vibration

Under the No Project Alternative, proposed new fireworks display events would not occur and, as such, the significant and unavoidable noise impacts that would occur under the proposed project, including temporary substantial or periodic increases in ambient noise levels, would be avoided. The No Project Alternative would also not include adoption of the proposed ordinance that includes conditions of approval that would result in minor reductions of noise at sensitive receptors. However, the avoidance of noise that would occur under the No Project Alternative would eliminate the significant unavoidable noise impact of the proposed project. Therefore, this alternative would have less impact on noise than the proposed project.

7.5.1.9 Public Services and Facilities

Under the No Project Alternative, proposed new fireworks display events would not occur and, as such, the associated temporary increase in demand on public services, including police and fire departments, as well as the U.S. Coast Guard (USCG) and the Harbor Police Department (HPD), would not occur. As discussed in Section 4.9, *Public Services and Facilities*, the proposed project would result in less-than-significant impacts related to public services. Nonetheless, because the No Project Alternative would result in no impacts on public services, this alternative would have less impact on public services than the proposed project.

7.5.1.10 Transportation, Circulation, and Parking

Under the No Project Alternative, proposed new fireworks display events would not occur and, as such, there would not be a temporary increase in vehicle, pedestrian, and bicycle volumes that could result in conflicts between these modes of transportation, nor would there be significant and unavoidable impacts associated with decreased performance of pedestrian and bicycle facilities and inadequate parking supply. The No Project Alternative would result in no impacts on transportation, circulation, and parking, and this alternative would avoid or substantially reduce impacts compared to the proposed project.

7.5.1.11 Other Impacts

This alternative would not result in any new or greater impacts on other environmental resources than the proposed project. Like impacts under the proposed project, impacts under the No Project Alternative related to the following resources would not be significant: agriculture and forestry resources; cultural resources; geology and soils; mineral resources; population and housing; recreation; and utilities and service systems.

7.5.1.12 Relationship to Project Objectives

The No Project Alternative would not meet most of the project objectives because it would not include the adoption of an ordinance that would include policies, performance standards, or other requirements that could be applied to all fireworks display events requiring discretionary action by the District or are operated by the District's tenants; it would not allow for the continued and future occurrence of traditional fireworks display events in and around San Diego Bay and the Pacific Ocean near Imperial Beach in a manner that considers the health, safety and welfare of people, property, and the environment (because it would not include adoption of an ordinance that could achieve these goals for existing fireworks display events); and it would not enhance the visitor-serving experience of viewing fireworks display events from various vantage points around District tidelands by providing safe, high-quality fireworks display events using existing and new fireworks technologies as they become available. However, the No Project Alternative would meet one of the project objectives, which would be to allow the continued occurrence of the existing traditional fireworks display events in and around San Diego Bay and the Pacific Ocean near Imperial Beach that provide popular and region-wide ways to celebrate and express civic pride.

7.5.2 Analysis of Alternative 2 – Quiet Fireworks Display Events Alternative

7.5.2.1 Aesthetics and Visual Resources

Under the Quiet Fireworks Display Events Alternative, the proposed new fireworks display events would involve the use of fireworks that are quieter, which, generally, are concentrated closer to the ground and do not reach the heights of louder, more traditional fireworks. Because these fireworks would not be launched as high in the air as traditional fireworks, spillover light and glare produced by fireworks would not reach as far as spillover light and glare produced by fireworks under the proposed project. While light and glare impacts were determined to be less than significant under the proposed project, this alternative would result in less impacts.

7.5.2.2 Air Quality and Health Risk

This alternative would use a similar amount of fireworks as the proposed project and could result in similar generation of PM_{2.5} emissions. Also, because quieter fireworks display events tend to be more colorful, this alternative could result in an increased release of copper and other toxic air emissions. Because quiet fireworks are concentrated closer to the ground and do not reach the heights of louder, more traditional fireworks, the dispersal of emissions associated with the projectile components of displays may be reduced because these fireworks are not shot as high into the air, which could result in a smaller dispersal area of particulate emissions and potentially higher pollutant concentrations closer to the fireworks display events. Thus, because fireworks display events occurring under this alternative would likely occur closer to viewing audiences, the concentration of these emissions could be higher for those audiences and could result in significant health risk impacts on nearby spectators given the reduced dispersal of pollutants. Therefore, while the dispersal area would be smaller, because this alternative could result in a higher concentration of particulate emissions closer to viewing audiences, air quality impacts would be similar to the proposed project, but health risk impacts would be greater than those of the proposed project. As such, this alternative would result in greater impacts compared to the proposed project.

7.5.2.3 Biological Resources

Under the Quiet Fireworks Display Events Alternative, the proposed new fireworks display events would make use of quieter types of fireworks, which would be closer to ground level and involve smaller viewing areas. However, these displays would still take place on barges within San Diego Bay near the National City and Chula Vista Bayfronts. While viewership may be slightly decreased, this alternative would likely still result in a substantial number of visitors both at the landside and waterside viewing areas. Direct and indirect impacts on green sea turtles and avian species related to increased boating activity, eelgrass beds from barges and tugs, foot traffic on sensitive habitat areas, and generation of trash and debris by fireworks and visitors could still occur. This alternative would include adoption of an ordinance that includes post-show debris cleanup requirements and security, signage, and education measures, best management practices, eelgrass protection requirements, removal of fireworks packaging, and requirements for reducing the use of non-biodegradable fireworks components that would reduce impacts on these biological resources to less-than-significant levels. Furthermore, the proposed ordinance for this alternative would also include light and noise reduction measures for fireworks display events, which would further reduce disturbances to sensitive avian species from firework-generated light and noise by eliminating the use of salute, rocket, and mine fireworks altogether. Therefore, similar to the proposed project but at a reduced level, this alternative would result in less-than-significant impacts on nesting species. As such, impacts on biological resources under the Quiet Fireworks Display Event Alternative would be less than the proposed project.

7.5.2.4 Greenhouse Gas Emissions, Climate Change, and Energy

Similar to the proposed project, direct and indirect GHG emissions generated under this alternative would not exceed thresholds. GHG emissions and other climate change impacts, such as limited exposure to effects of SLR, occurring under this alternative would be similar to those of the proposed project.

Regarding energy, compared to the proposed project, the Quiet Fireworks Display Event Alternative would result in a similar number of barges, require tugs to tow the barges into place and hold them for that fireworks display event, and require similar deliveries to transport fireworks materials to the displays. This would result in a similar demand for energy (diesel fuel) as compared to the proposed project. In addition, this alternative would include adoption of an ordinance that would place restrictions on truck idling time and would require the use of alternative fireworks technologies. Therefore, this alternative would result in similar less-than-significant energy impacts compared to the proposed project.

7.5.2.5 Hazards and Hazardous Materials

Similar to the proposed project, the Quiet Fireworks Display Event Alternative would require compliance with state and local laws related to fireworks display events, including safety measures, transport, and cleanup measures. Additionally, proposed new fireworks display events under this alternative would require occasional transport, delivery, and placement of fireworks on barges within and/or adjacent to San Diego Bay. The fireworks would be set up at a loading facility yard in accordance with the California Department of Forestry and Fire Protection's *Fireworks in California* handbook, which is enforced by the responsible city fire department with jurisdiction over each show. The Quiet Fireworks Display Event Alternative would also involve oversight by licensed

fireworks operators and the Fire Marshal of the responsible city fire department. Overall, this alternative would result in less-than-significant impacts related to hazards and hazardous materials, similar to the proposed project.

7.5.2.6 Hydrology and Water Quality

The number of proposed new fireworks display events that would occur under the Quiet Fireworks Display Event Alternative would be similar to the proposed project and, as such, this alternative would result in a similar amount of fireworks-generated debris and human-generated trash. Like the proposed project, the Quiet Fireworks Display Event Alternative would include adoption of an ordinance that requires the preparation of a Fireworks Best Management Practices Plan prior to every publicly advertised fireworks display event, use of alternative fireworks, monitoring and recovery of pre- and post-show debris, procedures for human-generated trash and litter, and a reduction in the amount of non-biodegradable fireworks components, such as plastic and aluminum labels and wrapping. As such, the Quiet Fireworks Display Event Alternative has the potential to result in significant and unavoidable impacts on water quality related to fireworks-generated debris falling into the Bay and less-than-significant impacts with mitigation implemented related to human-generated trash and litter. Therefore, this alternative would result in similar impacts on water quality as the proposed project.

7.5.2.7 Land Use and Planning

Under the Quiet Fireworks Display Events Alternative, fireworks display events would be generally less intense from a light and noise perspective compared to the proposed project. Regardless, this alternative, like the proposed project, would be consistent with all applicable land use plans and policies, including the Port Master Plan (PMP) and San Diego Unified Port District Code, as well as applicable habitat conservation plans and natural community conservation plans. Land use and planning impacts would be less than significant under this alternative, and impacts would be similar to the proposed project.

7.5.2.8 Noise and Vibration

The Quiet Fireworks Display Event Alternative would involve the use of quieter fireworks, which, by their nature, would reduce the amount of noise generated by the proposed new fireworks display events. Quiet fireworks display events would involve fireworks that are concentrated closer to the ground, with fewer aerial shells being employed due to the loud noise that can occur during propulsion of an aerial shell. Also, because quiet fireworks would be detonated closer to ground level, sound generated by the fireworks would be better shielded by buildings and other structures so that noise would be more quickly attenuated as it propagates into the surrounding area when compared to the proposed project. Overall, this alternative would substantially reduce noise impacts compared to the proposed project, both by reducing maximum noise levels and by reducing the area over which significant impacts would occur; however, some significant impacts would likely still occur under this alternative because some of the noise generated by these fireworks display events could still result in a substantial periodic or temporary increases in ambient noise levels for nearby sensitive receptors in the cities of National City, Chula Vista, or Coronado. Nonetheless, this alternative would result in less noise impacts than the proposed project.

7.5.2.9 Public Services and Facilities

Under the Quiet Fireworks Display Event Alternative, the overall viewing areas for the proposed new fireworks display events would be smaller than those under the proposed project because quiet fireworks are concentrated closer to the ground and do not reach the heights of louder, more traditional fireworks. However, it is still expected that this alternative would draw substantial numbers of people to the various viewing locations, especially during the Fourth of July fireworks display events. As such, an increased demand on public services, including the National City and Chula Vista police and fire departments, as well as USCG and HPD, would occur under this alternative. Similar to the proposed project, this alternative would be subject to emergency response plans for fireworks display events prepared by public safety agencies. With response plans in place, impacts on public services would be less than significant, similar to the proposed project.

7.5.2.10 Transportation, Circulation, and Parking

As noted above, although the number of available viewing areas would likely be reduced under this alternative compared to the proposed project, the Quiet Fireworks Display Event Alternative would still draw a substantial number of viewers to the various viewing locations. Therefore, there would still be a substantial temporary increase in vehicle, pedestrian, and bicycle volumes that could result in conflicts between these modes of transportation, and significant and unavoidable impacts associated with decreased performance of pedestrian and bicycle facilities and inadequate parking supplies would potentially occur under this alternative. However, the overall number of spectators would be reduced and, as such, impacts on transportation, circulation, and parking would be reduced compared to the proposed project.

7.5.2.11 Other Impacts

This alternative would not result in any new or greater impacts on other environmental resources than the proposed project. Like impacts under the proposed project, impacts under the Quiet Fireworks Display Event Alternative related to the following resources would not be significant: agriculture and forestry resources; cultural resources; geology and soils; mineral resources; population and housing; recreation; and utilities and service systems.

7.5.2.12 Relationship to Project Objectives

The Quiet Fireworks Display Event Alternative would meet Objectives #1 and #3 (partially) because it would include adoption of an ordinance that would establish policies and performance standards that would be applied to fireworks display events occurring in and around San Diego Bay and the Pacific Ocean near Imperial Beach. In addition, it would allow for the continued occurrence of existing and future occurrence of proposed new fireworks display events in and around San Diego Bay and near Imperial Beach that require discretionary action by the District or are operated by the District's tenants in a manner that considers the health, safety, and welfare of people, property, and the environment. However, this alternative would only partially meet Objectives #2 and #3 because these fireworks display events, while providing a popular and region-wide way to celebrate and express civic pride, would differ significantly from traditional fireworks display events because they would not achieve the same heights and sounds as the fireworks used in traditional Fourth of July and other celebrations. This alternative would also not meet Objective #4. A quiet fireworks display event would be concentrated lower to the ground and, as such, it would limit the vantage points

from which these events would be visible and would decrease the number of spectators that would be able to view these events. Therefore, this alternative would not accomplish the objective of enhancing the visitor-serving experience of viewing fireworks display events, nor would the vantage points be enhanced.

7.5.3 Analysis of Alternative 3 – No Salute Fireworks Alternative

7.5.3.1 Aesthetics and Visual Resources

Under the No Salute Fireworks Alternative, salute fireworks, which are fireworks specifically designed to make loud booming noises and generate an intense flash of light, would be prohibited. This would limit some of the types of fireworks that achieve the highest elevations and generate intense flashes of light; however, other types of fireworks, such as rockets and mines, which also reach high elevations, would still be allowed. Therefore, light and glare resulting from fireworks, while prominent, would be brief and infrequent, resulting in less-than-significant impacts. Consequently, light and glare impacts under this alternative would be similar to those of the proposed project.

7.5.3.2 Air Quality and Health Risk

The No Salute Fireworks Alternative would only prohibit a certain type of firework, but the quantity of fireworks that would be detonated during fireworks display events under this alternative would be similar to that under the proposed project. Therefore, this alternative would result in similar impacts related to air quality as the proposed project.

7.5.3.3 Biological Resources

The No Salute Fireworks Alternative would attract a similar number of viewers as the proposed project and result in similar quantities of fireworks- and human-generated trash and debris. Similar to the proposed project, this alternative would also require the use of tugs and barges that could affect sensitive eelgrass beds and would result in similar levels of boat traffic and foot traffic that could affect green sea turtles and avian species. The proposed project includes adoption of an ordinance that includes noise reduction measures (i.e., prohibits “salutes” or “reports” during the initial 25 percent of the duration of any display that occurs between February 15 and September 15 [nesting season]). However, because the loudest types of fireworks would be prohibited during the entire display, disturbances to avian species from noise generated by fireworks would be reduced under this alternative compared to the proposed project. Nonetheless, impacts on biological resources would be less than significant under this alternative, similar to the proposed project.

7.5.3.4 Greenhouse Gas Emissions, Climate Change, and Energy

Similar to the proposed project, direct and indirect GHG emissions generated under this alternative would not exceed thresholds. GHG emissions and other climate change impacts, such as limited exposure to effects of SLR, occurring under this alternative would be similar to those of the proposed project.

Regarding energy use, this alternative would require a similar number of tugs to tow barges into place and hold them for the proposed new fireworks display events in the Bay and a similar size and number of deliveries as under the proposed project. This would result in a similar demand for energy (diesel fuel) as the proposed project. In addition, the No Salute Fireworks Alternative would involve adoption of an ordinance that would place restrictions on truck idling time and would require the use of alternative fireworks technologies. Therefore, this alternative would result in similar less-than-significant energy impacts as the proposed project.

7.5.3.5 Hazards and Hazardous Materials

Similar to the proposed project, the No Salute Fireworks Alternative would require compliance with state and local laws related to fireworks display events, including safety measures, transport, and cleanup measures. Additionally, proposed new fireworks display events under this alternative would require occasional transport, delivery, and placement of fireworks on barges within and/or adjacent to San Diego Bay. The fireworks would be set up at a loading facility yard in accordance with the California Department of Forestry and Fire Protection's *Fireworks in California* handbook, which is enforced by the responsible city fire department with jurisdiction over each show. The No Salute Fireworks Alternative would also involve oversight by licensed fireworks operators and the Fire Marshal of the responsible city fire department. Overall, this alternative would result in less-than-significant impacts related to hazards and hazardous materials, similar to the proposed project.

7.5.3.6 Hydrology and Water Quality

The number of fireworks display events occurring under the No Salute Fireworks Alternative would be similar to the proposed project and, as such, this alternative would result in a similar amount of fireworks-generated debris and human-generated trash and litter within major viewing areas. Like the proposed project, the No Salute Fireworks Alternative would include adoption of an ordinance that requires the preparation of a Fireworks Best Management Practices Plan prior to every publicly advertised fireworks display event, use of alternative fireworks, monitoring and recovery of pre- and post-show debris, procedures for human-generated trash and litter, and a reduction in the amount of non-biodegradable fireworks components, such as plastic and aluminum labels and wrapping. As such, the No Salute Fireworks Alternative has the potential to result in significant and unavoidable impacts on water quality related to fireworks-generated debris falling into the Bay and less-than-significant impacts with mitigation implemented related to human-generated trash and litter. Therefore, this alternative would result in similar impacts on water quality as the proposed project.

7.5.3.7 Land Use and Planning

Under the No Salute Fireworks Alternative, fireworks display events would be generally less intense from a noise perspective compared to the proposed project. However, this alternative, like the proposed project, would be consistent with all applicable land use plans and policies, including the PMP and San Diego Unified Port District Code, as well as applicable habitat conservation plans and natural community conservation plans. Land use and planning impacts would be less than significant under this alternative, and impacts therefore would be similar to the proposed project.

7.5.3.8 Noise and Vibration

The No Salute Fireworks Alternative would prohibit the use of salute fireworks, which are the loudest types of fireworks. Therefore, noise impacts would be reduced under this alternative. However, it is expected that significant and unavoidable impacts related to substantial temporary or periodic increases in ambient noise levels would still occur, particularly during the Fourth of July fireworks display events. Overall, this alternative would result in reduced noise impacts compared to the proposed project.

7.5.3.9 Public Services and Facilities

Under the No Salute Fireworks Alternative, viewing areas for the proposed new fireworks display events would be similar to those of the proposed project, and it is expected that this alternative would draw substantial numbers of people to the various viewing areas during the larger fireworks display events, such as the Fourth of July celebrations. As such, an increased demand on public services, including the National City and Chula Vista police and fire departments, as well as USCG and HPD, would occur under this alternative. Similar to the proposed project, this alternative would be subject to emergency response plans for fireworks display events. With response plans in place, impacts on public services would be less than significant, similar to the proposed project.

7.5.3.10 Transportation, Circulation, and Parking

As noted above, the No Salute Fireworks Alternative would draw a similar number of viewers to the various event viewing areas as the proposed project, especially during the Fourth of July fireworks display events. Therefore, there would still be a substantial temporary increase in vehicle, pedestrian, and bicycle volumes that could result in conflicts between these modes of transportation, and significant and unavoidable impacts associated with decreased performance of pedestrian and bicycle facilities and inadequate parking supplies would potentially occur under this alternative. As such, impacts would be similar to the proposed project.

7.5.3.11 Other Impacts

This alternative would not result in any new or greater impacts on other environmental resources than the proposed project. Like the proposed project, impacts on the following resources would not be significant: agriculture and forestry resources; cultural resources; geology and soils; mineral resources; population and housing; recreation; and utilities and service systems.

7.5.3.12 Relationship to Project Objectives

The No Salute Fireworks Alternative would meet Objectives #1, #3 (partially), and #4 because it would include adoption of an ordinance that would establish policies, performance standards, or other requirements that would be applied to fireworks display events; it would allow for the continued occurrence of existing and future occurrence of proposed new traditional fireworks display events in and around San Diego Bay and near the Imperial Beach Oceanfront in a manner that considers the health, safety, and welfare of people, property, and the environment, albeit at a slightly reduced intensity; and it would continue to enhance the visitor-serving experience of viewing fireworks display events from various vantage points around District tidelands. However, these fireworks display events generally would differ significantly from traditional fireworks display

events because they would not achieve all of the same loud sounds associated with fireworks used in traditional Fourth of July and other celebrations. Therefore, this alternative would not meet Objectives #2 and #3 (partially) to allow for the continued occurrence of traditional fireworks display events in and around San Diego Bay and the Pacific Ocean near Imperial Beach that require a discretionary action by the District, including on the Fourth of July, which provide a popular and region-wide way to celebrate and express civic pride.

7.5.4 Environmentally Superior Alternative

Pursuant to CEQA, the EIR is required to identify the environmentally superior alternative. Although the No Project Alternative reduces the greatest number of significant impacts, CEQA requires that when the environmentally superior alternative is the No Project Alternative, another alternative should be identified. Therefore, as indicated in Table 7-2, the Quiet Fireworks Display Event Alternative would be the environmentally superior alternative. Because it would involve the use of quieter fireworks, the Quiet Fireworks Display Event Alternative would reduce the amount of noise generated by the proposed new fireworks display events, and therefore would reduce significant and unavoidable noise impacts compared to the proposed project. Consequently, as documented throughout this section, impacts associated with other resources, such as light and glare, biological resources, and transportation, circulation, and parking, would also be reduced. However, the Quiet Fireworks Display Events Alternative may not meet fundamental project objectives.

Table 7-2. Summary of Impacts of Alternatives Relative to the Proposed Project

Environmental Resource	Proposed Project	Alternative 1: No Project Alternative	Alternative 2: Quiet Fireworks Display Events Alternative	Alternative 3: No Salute Fireworks Alternative
Aesthetics and Visual Resources	Less than Significant	-2	-1	0
Air Quality and Health Risk	Less than Significant w/Mitigation	-2	+1	0
Biological Resources	Less than Significant w/Mitigation	-1	-1	-1
Greenhouse Gas Emissions, Climate Change, and Energy Use	Less than Significant	-1	0	0
Hazards and Hazardous Materials	Less than Significant	-1	0	0
Hydrology and Water Quality	Significant and Unavoidable	-1	0	0
Land Use and Planning	Less than Significant	-1	0	0
Noise and Vibration	Significant and Unavoidable	-2	-2	-1
Public Services and Facilities	Less than Significant	-2	0	0
Transportation, Circulation, and Parking	Significant and Unavoidable	-2	-1	0
Other Impacts	Less than Significant/No Impact	0	0	0
Total:¹		-15	-4	-2

Legend:

-2 = Substantially Reduced

-1 = Reduced

0 = Similar

+1 = Greater

+2 = Substantially Greater

¹ Lowest score is environmentally superior

Chapter 8

List of Preparers and Agencies Consulted

8.1 Lead Agency—San Diego Unified Port District

Real Estate Development

Shaun D. Sumner	Assistant Vice President
Wileen Manaois	Principal, Development Services

Planning & Green Port

Jason H. Giffen	Assistant Vice President
Mayra Medel	Project Manager/Senior Planner
Eileen Maher	Principal, Environmental Conservation
Brent Eastty	Senior Environmental Specialist
Ashley Wright	Associate Planner

Marketing & Communications

Jim Hutzelman	Manager, Business Development and Recreation Services
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Office of the General Counsel

Rebecca Harrington, Esq.	Deputy General Counsel
Michael Hogan, Esq.	Outside Counsel—Hogan Guiney

8.1 EIR Preparation—ICF

EIR Management

Charlie Richmond	Principal-In-Charge
Kathie Washington	Project Manager/QA-QC

Technical Staff

Kelly Ross	Senior Environmental Planner
Elyssa Figari	Senior Environmental Planner
Tristan Evert	Lead Environmental Planner
Holly Ayala	Environmental Planner
Liane Chen	Environmental Planner

Emily Seklecki	Environmental Planner
Matt McFalls	Senior Air Quality and Greenhouse Gas Specialist
Edward Carr	Technical Director, Air Assessment (Health Risk) (QA/QC)
Jonathan Higginson, INCE	Senior Noise Specialist (QA/QC)
Julian Milone	Noise Specialist
Will Kohn	Senior Biologist
Shannon Crossen	Senior Biologist
Jenn Padilla-Rogers	Marine Biologist/Wetland Scientist
Amanda Zeisler	GIS Specialist
Dave Duncan	GIS Specialist
Brad Stein	GIS Specialist
Matthew Yelin	GIS Specialist
<u>Publication Staff</u>	
Saadia Byram	Editor
Kenneth Cherry	Editor
John Mathias	Editor

8.2 Biological Technical Study—Merkel & Associates

Keith Merkel	Principal Consultant
Holly Henderson	Senior Biologist

8.3 Water Quality Technical Report—Amec Foster Wheeler Environment & Infrastructure, Inc.

Barry J. Snyder, M.S.	Principal Marine Scientist
Chris Stransky, M.S.	Associate Marine Scientist
Kimberly Gobbi, M.S.	Senior Marine Scientist

8.4 Transportation Assessment—Chen Ryan Associates

Stephen Cook, P.E.	Project Engineer
Jonathan Sanchez	Project Engineer

8.5 Agencies, Organizations, and Persons Consulted

Agency/Company Name	Contact
California Department of Fish and Wildlife, Region 5	Gail K. Sevens
California Department of Transportation (Caltrans), District 11	Jacob M. Armstrong
California State Lands Commission	Cy R. Oggins, Randy Collins
Chula Vista Fire Department	Henry Muns
Chula Vista Police Department	Don Redmond
City of San Diego Fire Department	Doug Perry
City of San Diego Police Department	Tom Underwood
Coast Law Group, LLP	Marco Gonzalez, Sara S. Kent
Coronado 4 th of July Committee	David Szymanski
Coronado Fire Department	Mike Blood
Coronado Police Department Support Services	Mary Ann Castellano
Federal Aviation Administration	Mark Griffin
Federal Emergency Management Agency, Region 9	Gregor Blackburn
Imperial Beach Fire-Rescue Department	Tom Santos
National City Fire Department	Robert Hernandez
National City Police Department	Chris Sullivan
San Diego Air Pollution Control District	Bill Reeve
San Diego County Regional Airport Authority	Ed Gowens
San Diego County Sheriff's Department	Herbert Taft
San Diego Fire-Rescue Department	Karl Becker
San Diego Harbor Police Department	Donald Brick
San Diego Zoological Society	R. T. Patton
State of California, Governor's Office of Planning and Research, State Clearinghouse and Planning Unit (SCH)	N/A
U.S. Coast Guard	Robert Cole
U.S. Fish and Wildlife Service, Region 8	Karen A. Goebel, Sandy Vissman

I hereby certify that the statements furnished above present the data and information required for this report to the best of my ability, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Signature:  Date: March 17, 2017

Kathie Washington, Project Manager, ICF

9.1 Chapter 1, Introduction

9.1.1 Personal Communications

Collins, Randy. Public land management specialist. California State Lands Commission, Land Management Division. August 24, 2016—call between District and ICF regarding NOP comments.

9.2 Chapter 2, Environmental Setting

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