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## Appendix G Air Quality Supplemental Information, Emission Calculations, and Record of Non-Applicability



**Environmental Impact Statement/  
Overseas Environmental Impact Statement  
Hawaii-California Training and Testing**

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## **Appendix G      Air Quality Supplemental Information, Emissions Calculations and Record of Non-Applicability**

This appendix discusses supplemental information, emission factor development, calculations, and assumptions used in the air quality analyses presented in Section 3.1 (Air Quality and Climate Change) of the Hawaii-California Training and Testing EIS/OEIS. Records of Non-applicability for the affected area are also included.

### **G.1      Air Quality Supplemental Information and Emission Calculations**

Air pollution can damage the health of people, plants, animals, and water bodies as well as the exteriors of buildings, monuments, and statues. It also creates haze or smog that reduces visibility and interferes with aviation. A region's air quality is influenced by many factors, including the type and emission rate of pollutants, local meteorology, the size and topography of the air basin, and atmospheric chemistry. Wind speed and direction, the vertical temperature gradient of the atmosphere, and precipitation patterns affect the dispersal, dilution, and removal of air pollutant emissions from the atmosphere. Most air pollutants originate from human-made sources, including mobile sources (e.g., gasoline- or diesel-fueled vehicles) and stationary sources (e.g., power plants, refineries, etc.), as well as indoor sources (e.g., some building materials and cleaning solvents). Air pollutants are also released from natural sources such as volcanic eruptions and wildfires. Ambient air quality is reported as the atmospheric concentrations of specific air pollutants at a particular time and location. The units of measure are expressed as a mass per unit volume (e.g., micrograms per cubic meter of air) or as a volume fraction (e.g., parts per million [ppm] by volume).

#### **G.1.1      Emission Sources**

Criteria air pollutants and HAPs are generated by the combustion of fuel by surface vessels and by fixed-wing and rotary-wing aircraft. They also are generated by the combustion of explosives and propellants in various types of munitions. Propellants used to fire small-, medium-, and large-caliber projectiles generate pollutants when detonated. Nonexplosive practice munitions may contain spotting charges and propellants that generate air pollutants when they function. Powered targets require fuel, generating air pollutants during their operation, and towed targets generate air pollutants secondarily because another aircraft or vessel is required to provide power. Stationary targets may generate air pollutants if all or portions of the item burn in a high-order detonation. Chaff cartridges used by ships and aircraft are launched by an explosive charge that generates small quantities of air pollutants. Chaff itself may also be a particles with aerodynamic diameters less than or equal to a nominal 10 micrometers (PM<sub>10</sub>)/ particles with aerodynamic diameters less than or equal to a nominal 2.5 micrometers (PM<sub>2.5</sub>) pollutant, depending on its size. Countermeasure flares, decelerators/parachute flares, and smoke floats are designed to burn for a prescribed period, emitting pollutants in the process. Emissions from activities related to modernization and sustainment of ranges are also estimated and the impacts analyzed.

#### **G.1.2      Emissions Estimates**

The emissions calculations performed for each alternative conservatively assume that each training and testing activity is separately conducted. In practice, a testing activity may be conducted during a training flight. It is also probable that two or more training activities may be conducted during one flight or one vessel movement (e.g., chaff or flare exercises may occur during electronic warfare activities; or air-to-surface gunnery and air-to-surface bombing activities may occur during a single flight operation, or ship

may conduct large-, medium-, and small-caliber surface-to-surface gunnery exercises during one vessel movement). Conservative assumptions may produce elevated emissions calculations but account for the possibility, however remote, that each aircraft training and testing activity is separately conducted.

#### **G.1.2.1 Aircraft Activities**

Aircraft emissions were estimated based on the methodology described in the 2018 HSTT EIS/OEIS. Fleet training and Naval Air Systems Command testing use various aircraft, including the E/A-18G, P-8, and CH-60. Aircraft operations of concern are those that occur from ground level up to 3,000 feet (ft.) above ground level (AGL). The 3,000 ft. AGL altitude was assumed to be the ceiling of the mixing zone (known as the atmospheric mixing height) above which any pollutant generated would not contribute to increased pollutant concentrations at ground level. Pollutants emitted by aircraft above 3,000 ft. AGL are excluded from the analysis of compliance with National Ambient Air Quality Standards. The pollutant emission rate is a function of the aircraft engine's fuel flow rate and efficiency. Emissions for one complete training activity for a particular aircraft are calculated by knowing the specific engine pollutant emission factors for each mode of operation.

Emission factors for most military engines were obtained from the Navy's Aircraft Environmental Support Office memoranda. For those aircraft for which engine data were unavailable from Aircraft Environmental Support Office, emission factors from Air Emissions Guide for Air Force Mobile Source, June 2024 (U.S. Department of the Air Force, 2024), were used. Using these data, as well as the number of sorties, pollutant emissions for each aircraft were calculated by applying the equation below.

$$Emissions = N \times FF \times EF \times ENG \times CF$$

Where:

*Emissions = annual aircraft emissions (pounds [lb.]/yr.)*

*N = Hours of operation of aircraft operations per year for each type of aircraft per activity (hr./yr.)*

*FF = fuel flow at a specified power setting (gal./hr./engine)*

*EF = pollutant emission factor by engine type and power setting (lb./1,000 gal. of fuel used)*

*ENG = number of engines per aircraft*

*CF = conversion factor (0.001)*

Hazardous Air Pollutant (HAP) emissions were estimated based on June 2024 Air Emissions Guide for Air Force Mobile Sources, Table 2-10 (Volatile Organic Compound and HAP Emission Factors for Select Engines) (Air Force Civil Engineer Center, 2023). HAP emissions from activities in the range areas occur well offshore and far from any publicly accessible areas. HAP emissions from activities that occur within 12 nautical miles (NM) may impact the publicly accessible areas on shore.

#### **G.1.2.2 Military Vessel Activities**

Military vessel traffic in the Study Area includes military ships and vessels providing security for military training and testing activities during transit from the pier to the range and back. Fleet training activities use a variety of marine vessels, including cruisers, destroyers, frigates, carriers, submarines, amphibious vessels, and small boats. Testing activities use a variety of marine vessels, including various testing support vessels, work boats, torpedo recovery vessels, unmanned surface vehicles, and small boats.

These vessels use diverse propulsion methods, including marine outboard engines, diesel engines, and gas turbines.

Emissions from military vessels and small boats are estimated based on the type of vessel, the anticipated activity, and the average operating hours in each operational area, both within state waters and beyond state waters. The types of military ships and boats as well as the numbers of activities for Alternatives 1 and 2 are derived from range records and Navy subject matter experts regarding ship participant data. Estimates of future military vessel activities are based on anticipated evolutionary changes in the military's force structure and mission assignments.

Emission factors for small surface craft involved in amphibious training and testing activities were obtained from the Navy and Military Sealift Command Marine Engine Fuel Consumption & Emission Calculator database Version October 2024. Emissions for surface craft using outboard engines were calculated using Navy and Military Sealift Command emission factors which are provided in terms of Vessel Emission Total per hour and multiplied by the hours of operation.

$$\text{Emissions} = \text{HR/YR} \times \text{EF}$$

Where:

Emissions = surface craft emissions (*pounds [lb.]/yr*)

HR/YR = hours per year per vessel per activity (*hr/yr*)

EF = emission factor for specific vessel (*lb./hr*)

Large vessel emissions were calculated in a similar fashion using emission factors from the Naval Sea Systems Command Navy and Military Sealift Command Marine Engine Fuel Consumption and Emission Calculator for the propulsion system and the supplemental ship service generator(s).

To obtain the total criteria pollutant emissions for the Proposed Action, emissions were calculated for each training or testing activity, type of surface vessel, and criteria pollutant. These individual estimates of emissions, in units of tons per year, were then summed by criteria pollutant to obtain the aggregate emissions for surface vessel emissions activities.

HAP emissions were estimated based on the speciation factors in the U.S. Environmental Protection Agency (USEPA) Methodologies for Estimating Port-Related and Goods Movement Mobile Source Emissions (U.S. Environmental Protection Agency, 2022).

#### **G.1.2.3 Munitions**

Naval gunfire, missiles, bombs, and other types of munitions used in training and testing activities emit air pollutants. To estimate the amounts of air pollutants emitted by munitions, the numbers and types of munitions used during training or testing activities are first totaled. Then generally accepted emissions factors, such as those from USEPA AP-42, *Compilation of Air Pollutant Emission Factors* Section 15, for criteria air pollutants and HAPs are applied to the total amounts. These factors are multiplied by the net weight of the explosive and the number of items that were used per year. This calculation provides estimates of annual emissions.

$$\text{Emissions} = \text{EXP/YR} \times \text{EF} \times \text{Net Wt}$$

Where:

*Emissions = annual ordnance emissions*

*EXP/YR = number of explosives, propellants, and pyrotechnics items used per year*

*EF = air pollutant emissions factor per item*

*Net Wt = net weight of explosive, propellant, or pyrotechnics per ordnance item*

### **G.1.3 Port Damage Repair**

The Proposed Action includes Port Damage Repair, conducted at Naval Base Ventura County Port Hueneme. The repair activities would include the use of diesel-fired construction equipment, including cranes, air compressors, and concrete pumps. Small boats would also be used for the duration of the repair. California Air Resources Board Off-Road Diesel Emission Factors were used to estimate the emissions.

### **G.1.4 Modernization and Sustainment of Ranges**

The Proposed Action also includes modernization and sustainment of ranges activities that involve Navy and contractor vessels. These activities include the SOAR modernization; the installation, testing, maintenance, and use of two SWTRs; Additional activities include Maintenance of Underwater Platforms, Mine Warfare, and Other Training Areas.

### **G.1.5 Greenhouse Gas Emissions**

The Proposed Action is anticipated to release greenhouse gases into the atmosphere. These emissions are quantified using the aircraft and vessel emission calculation methodologies described in Section G.1.2. The potential effects of proposed greenhouse gas emissions are by nature global and may result in cumulative impacts because most individual sources of greenhouse gas emissions are not large enough to have any noticeable effect on climate change. Therefore, the impact of proposed greenhouse gas emissions on climate change is discussed in the context of cumulative impacts. For the analysis of the effects on global climate change, all emissions of greenhouse gases from aircraft and vessels participating in training and testing activities, as well as targets and munitions expended, are applicable regardless of altitude. The Greenhouse Gas emissions from aircraft activities at Naval Air Station Lemoore were previously analyzed in the 2014 EIS for U.S. Navy F-35C West Coast Homebasing (U.S. Department of the Navy, 2014) and are therefore not included in this analysis.

### **G.1.6 Meteorological Conditions and Topography of the Study Area**

Pollution dispersion in the air is influenced by meteorological conditions, such as temperature, wind speed and wind direction, and atmospheric stability. Warmer air traps cooler air near the surface and can slow dispersion, whereas unstable atmospheric conditions can facilitate dispersion. Topography is another factor that influences pollutant dispersion. Urban areas with tall buildings can disrupt wind patterns and trap pollutants. Mountains and valleys can channel air and promote dispersion or trap pollutants during inversions. Wind direction determines the dispersion path pollutants take. Higher wind speeds disperse pollutants over a larger area; stagnant conditions or light winds allow pollutant concentrations to build up due to a more coherent plume. A wind rose for a particular location provides a view of how wind speed and direction are typically distributed. The wind rose represents the directions around a compass, and the length of the petal or spoke indicates wind direction and frequency toward the center point. Individual segments of the spoke represent the frequency of winds for defined wind speed categories, with the slowest winds closest to and the fastest winds furthest from

the center of the diagram. The Pacific Ocean and adjacent land areas are influenced by the temperatures of the surface waters and water currents as well as by wind blowing across the water. Offshore areas seldom have extreme seasonal variations because the ocean is slow to change temperature. Ocean currents move warm and cold water between regions. Adjacent land areas are affected by the wind that is cooled or warmed when blowing over these currents.

Atmospheric stability and mixing height provide measures of the amount of vertical mixing of pollutants. Over water, the atmosphere tends to be neutral to slightly unstable. Over land, atmospheric stability is more variable, being unstable during the day, especially in summer due to rapid surface heating, and stable at night, especially under clear conditions in winter. The mixing height over water typically ranges from 1,640 to 3,281 ft. with a slight diurnal (daytime) variation (U.S. Environmental Protection Agency, 1972). The air quality analysis presented in this EIS/OEIS assumes that 3,000 ft. (40 Code of Federal Regulations [CFR] 93.153(c)(2)(iii)) AGL is the typical maximum afternoon mixing height, and thus criteria pollutants and HAPs emitted above this altitude do not affect ground-level air pollutant concentrations.

Studies indicate that extreme weather events are likely to become more frequent or more intense with human-induced climate change (U.S. Environmental Protection Agency, 2024). Climate change can also have an influence on El Niño and La Niña cycles, which are natural climate phenomena in the Pacific Ocean. During El Niño, the surface winds across the entire tropical Pacific are weaker than usual and ocean temperatures in the central and eastern tropical Pacific Ocean are warmer than average. During La Niña, the surface winds across the entire tropical Pacific are stronger than usual, and most of the tropical Pacific Ocean is cooler than average. These cycles can influence meteorological conditions that affect pollutant dispersion.

#### **G.1.6.1 Wind Roses**

Figure G-1 through G-10 depict wind roses for data collected from January 2019 to December 2023 by the weather stations close to regions where the proposed activities would occur.

Winds and currents in the Pacific Ocean flow predominantly from east to west. Above the equator Pacific Ocean trade winds blow from the northeast. Figure G-11 depicts an example of the prevailing wind direction and intensity in the Pacific Ocean.

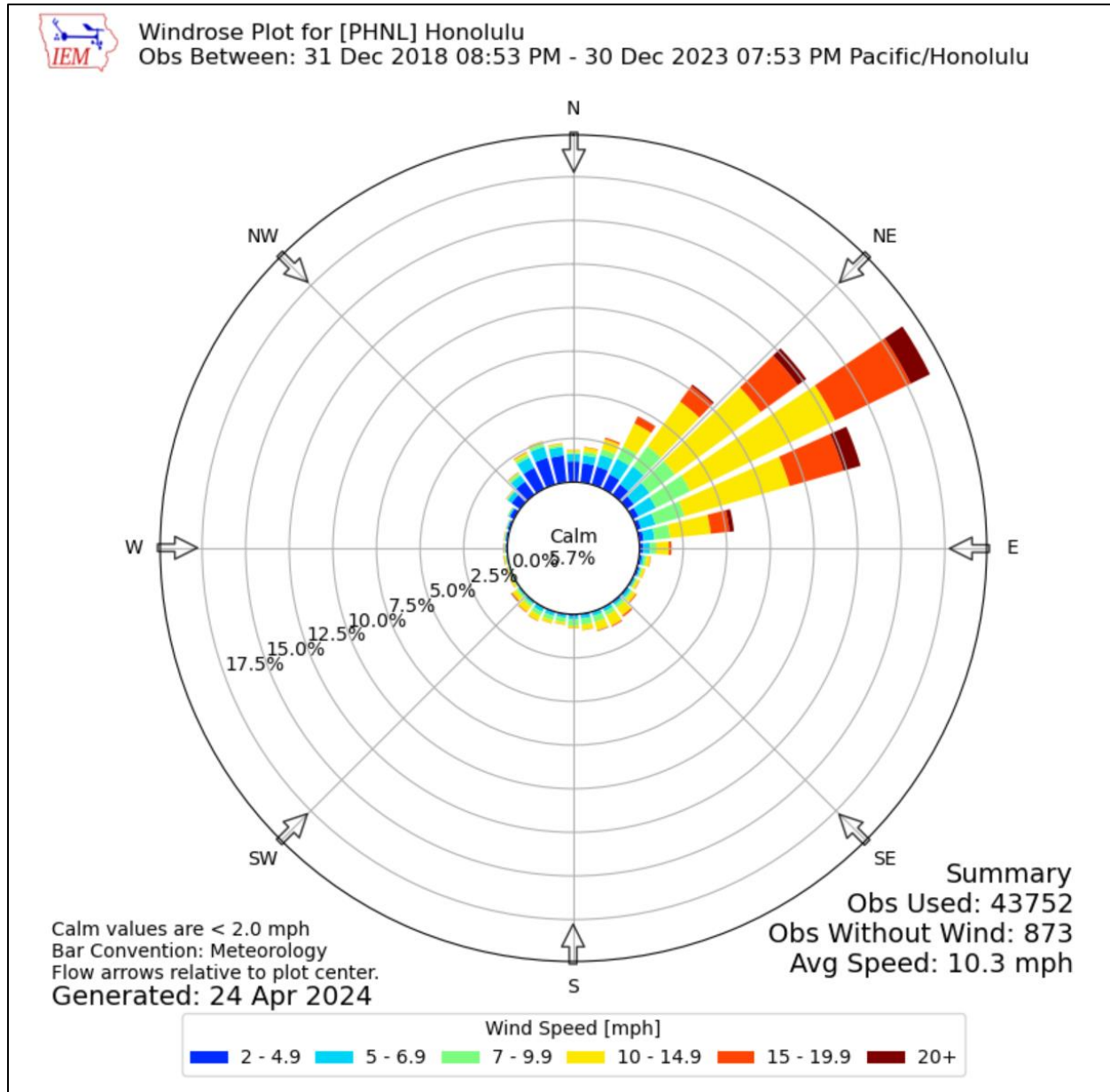


Figure G-1: Honolulu Wind Rose, PHNL Weather Station

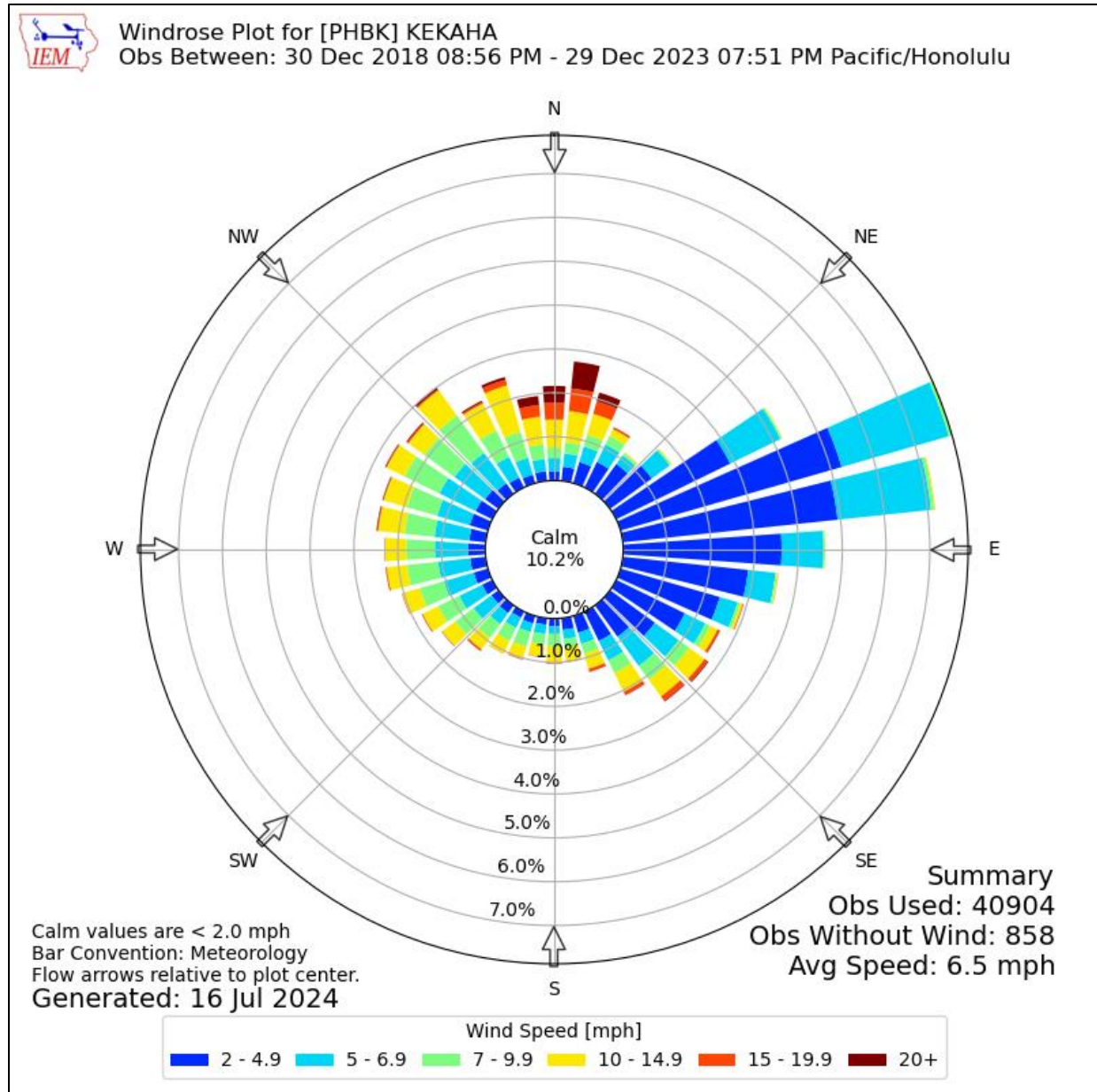


Figure G-2: Kauai Wind Rose, Kekaha Weather Station

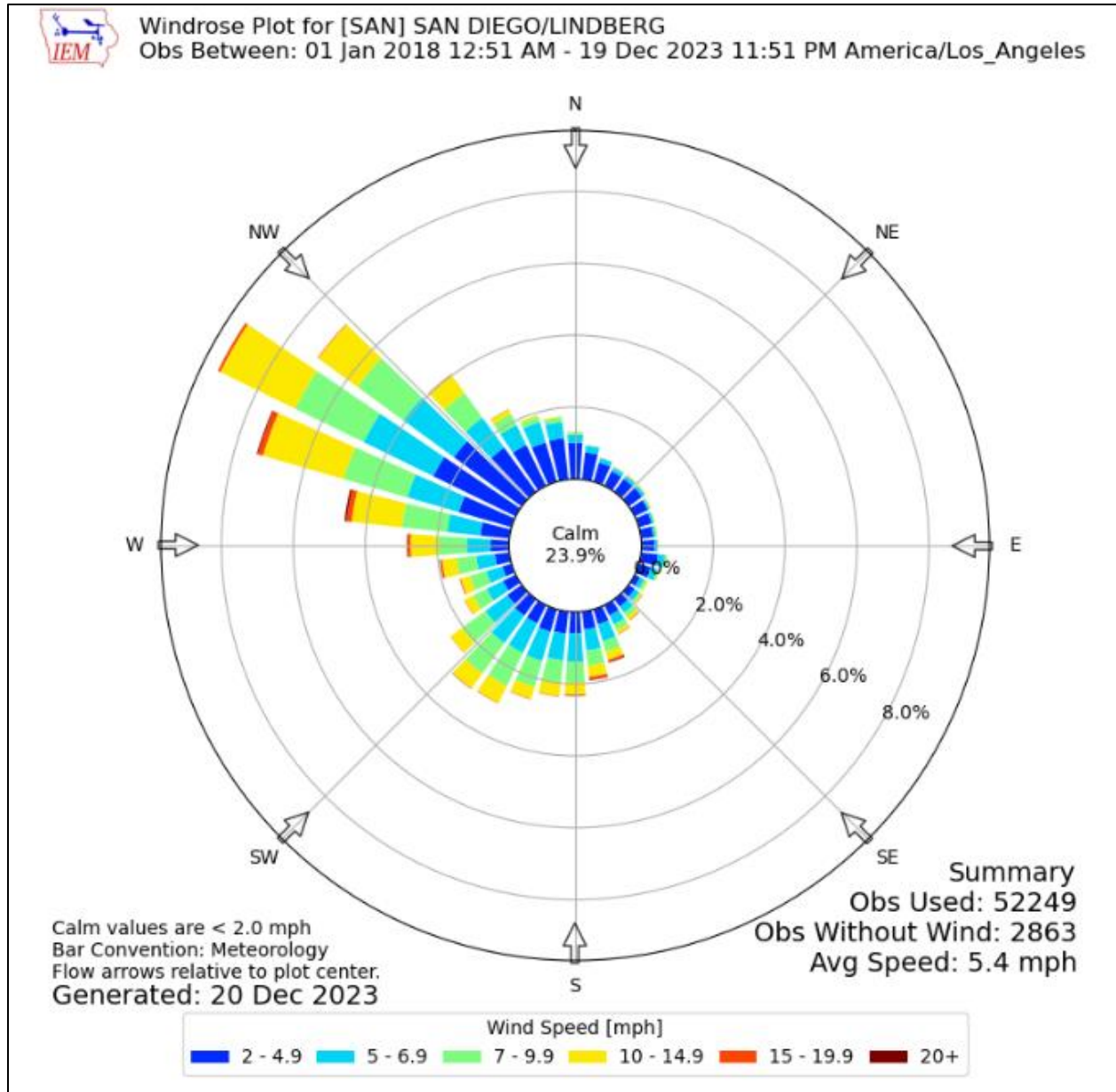


Figure G-3: San Diego Wind Rose, Lindberg Station

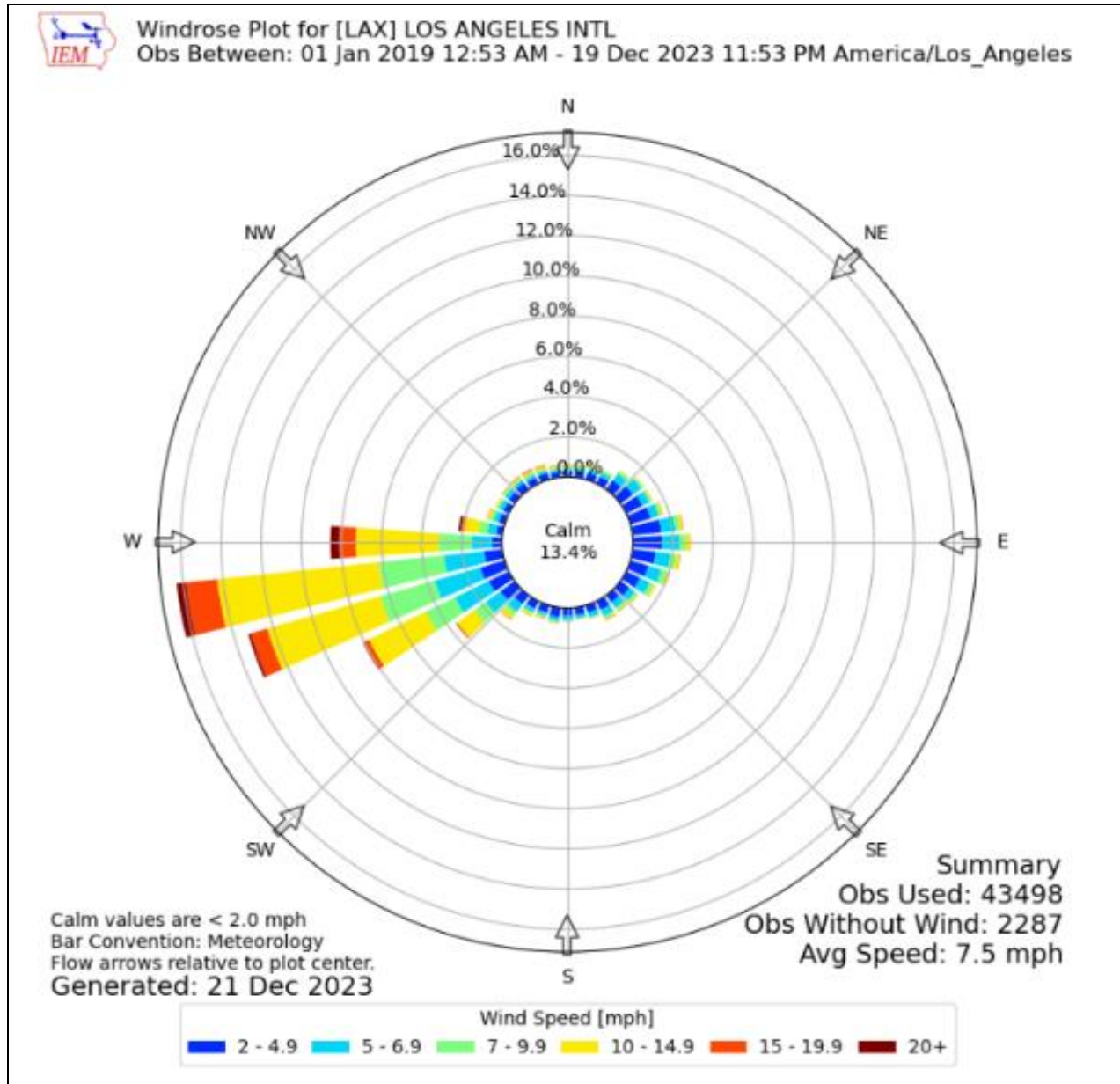


Figure G-4: Los Angeles Wind Rose, Los Angeles International Airport

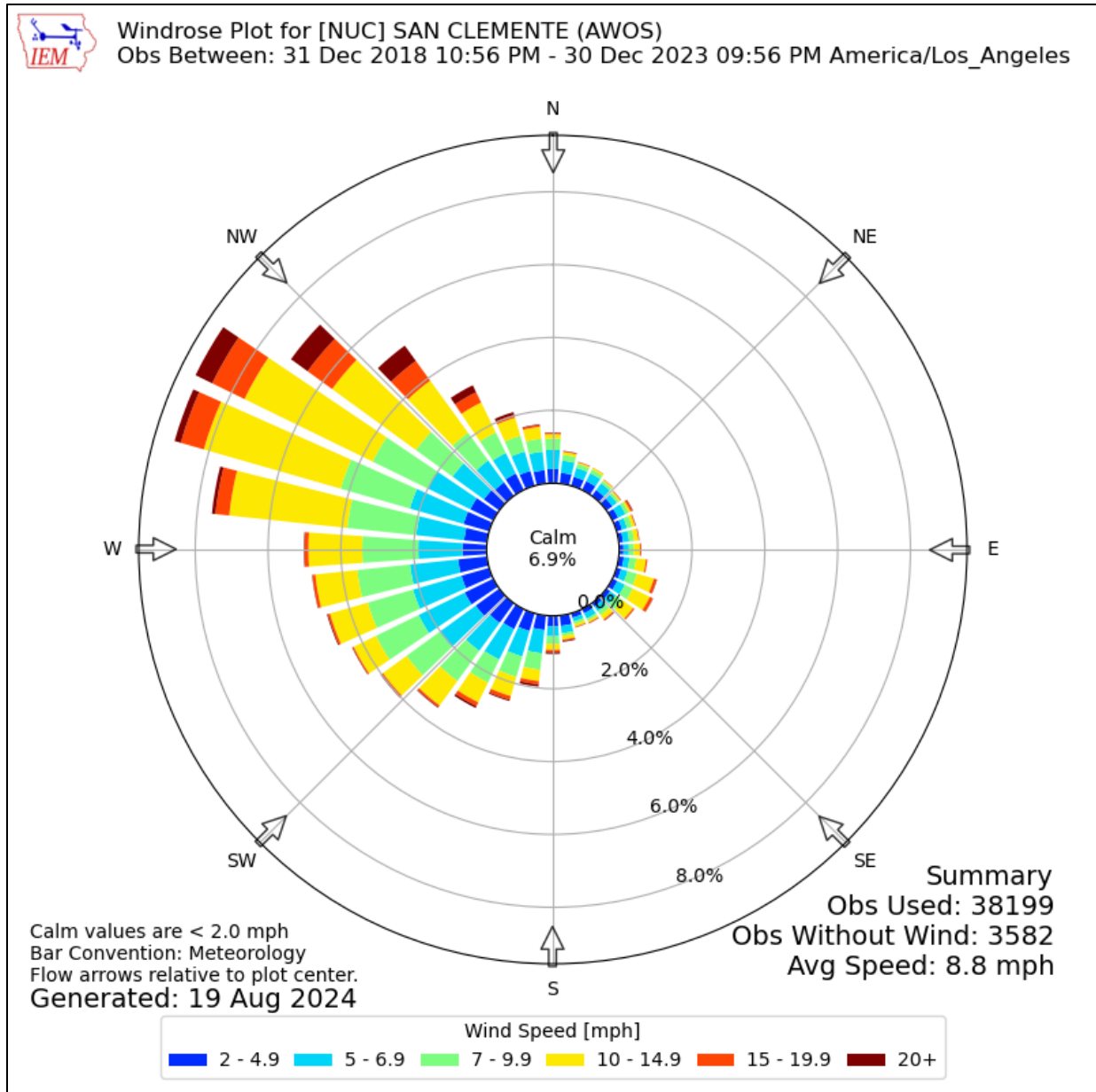


Figure G-5: San Clemente Island Wind Rose, San Clemente Island Airport

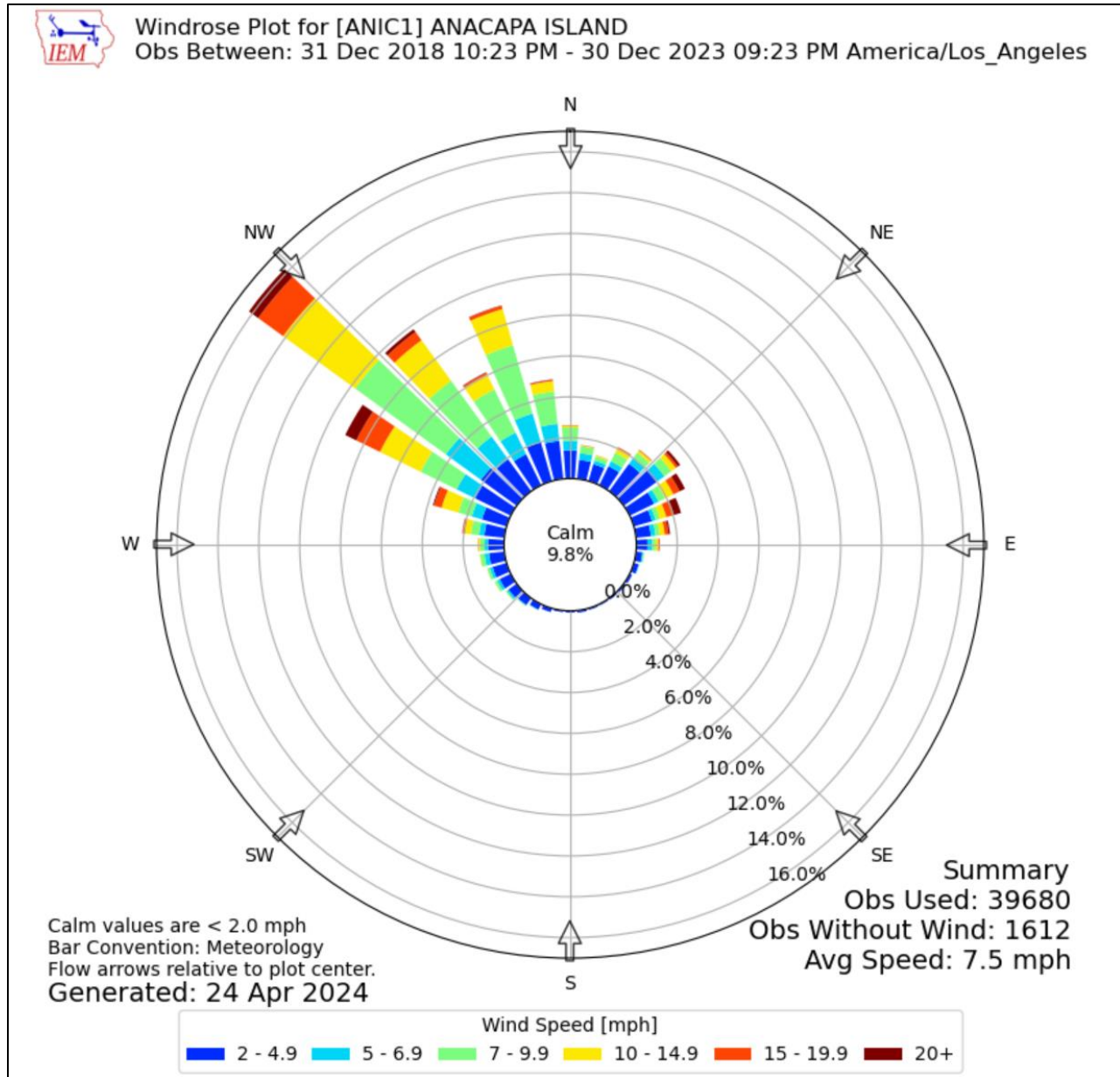


Figure G-6: Anacapa Island Wind Rose

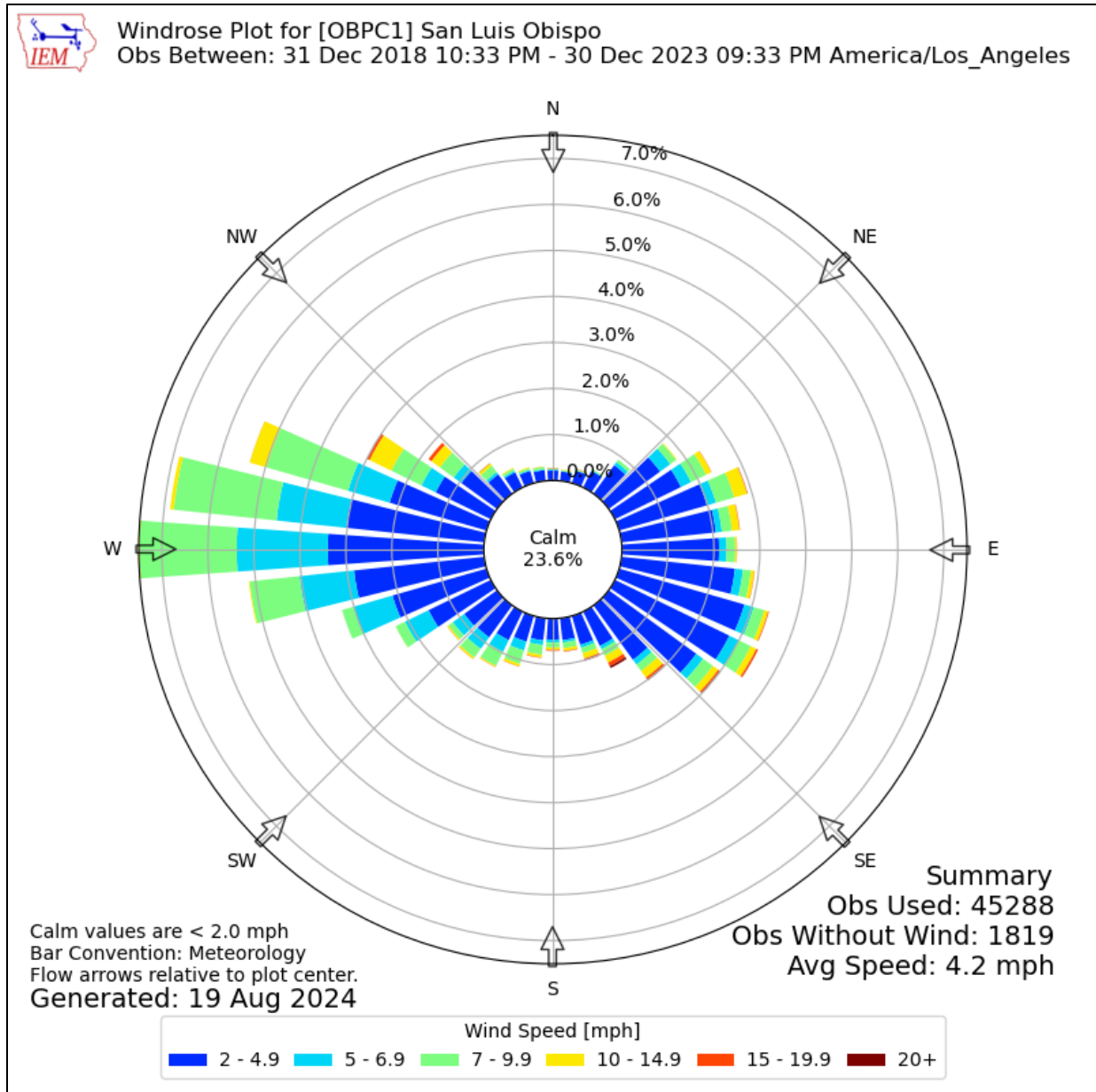


Figure G-7: San Luis Obispo Wind Rose - Rancho San Simeon Airport

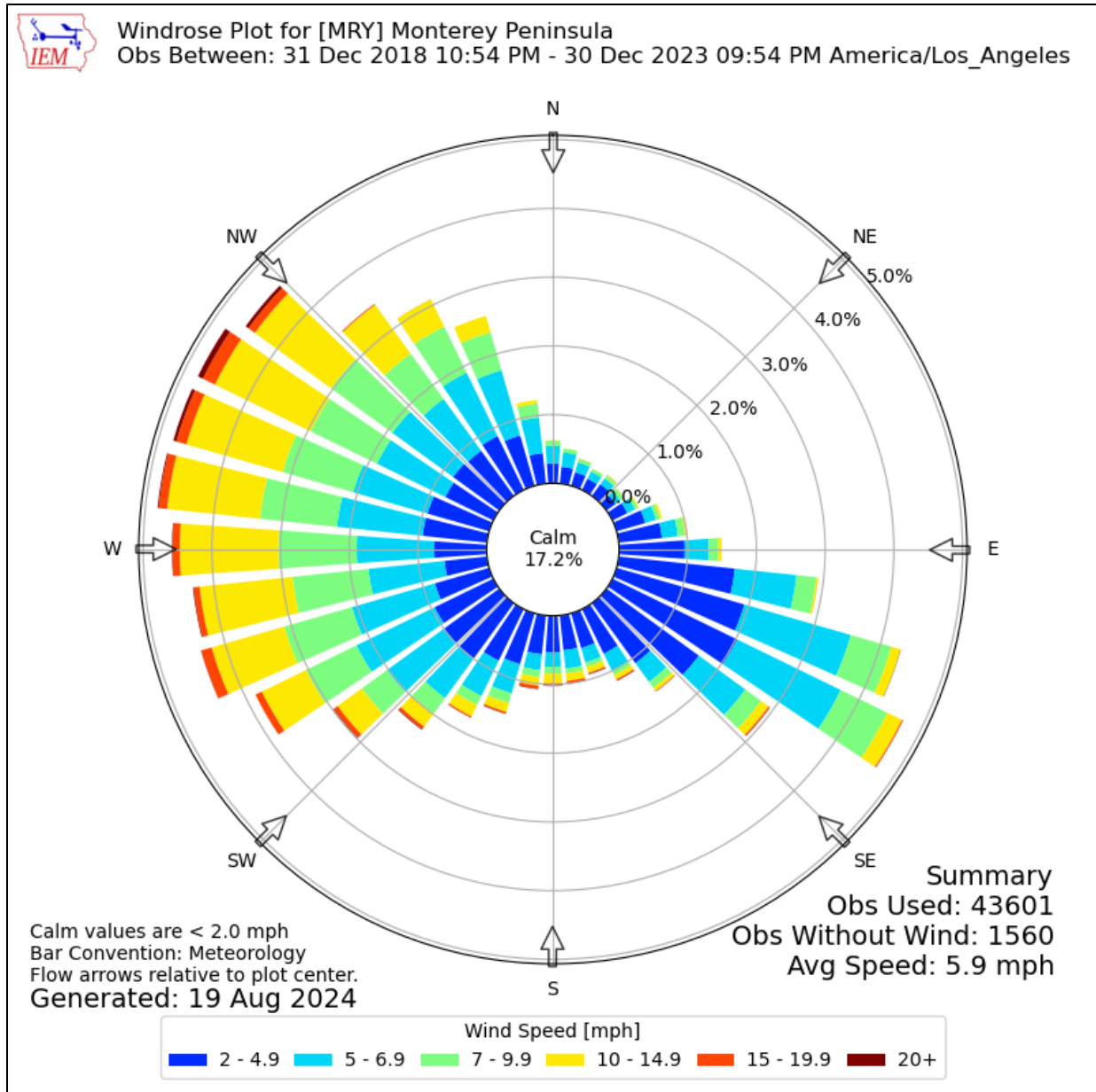


Figure G-8: Monterey Wind Rose - Monterey Regional Airport

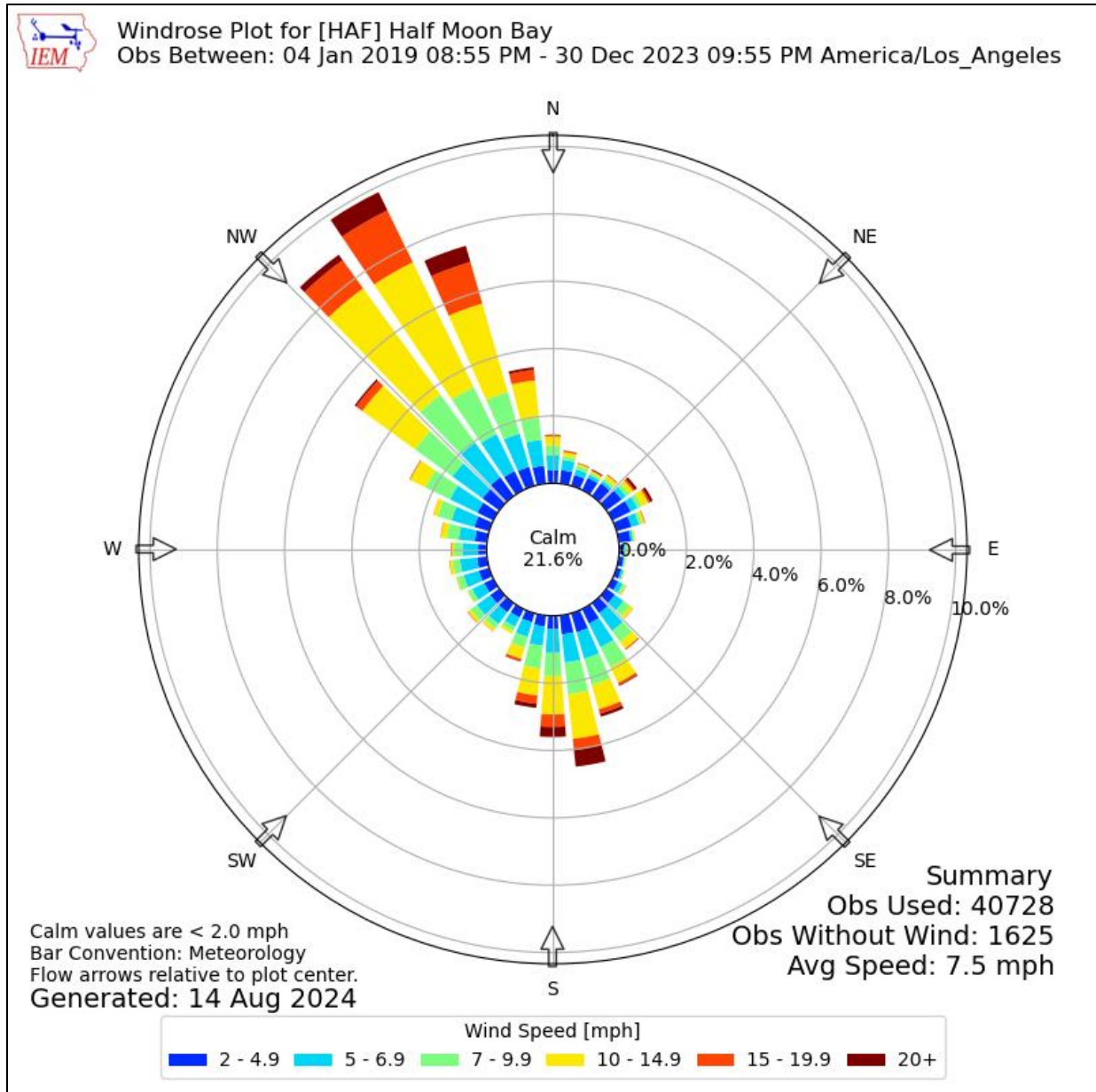


Figure G-9: Half Moon Bay Airport Wind Rose

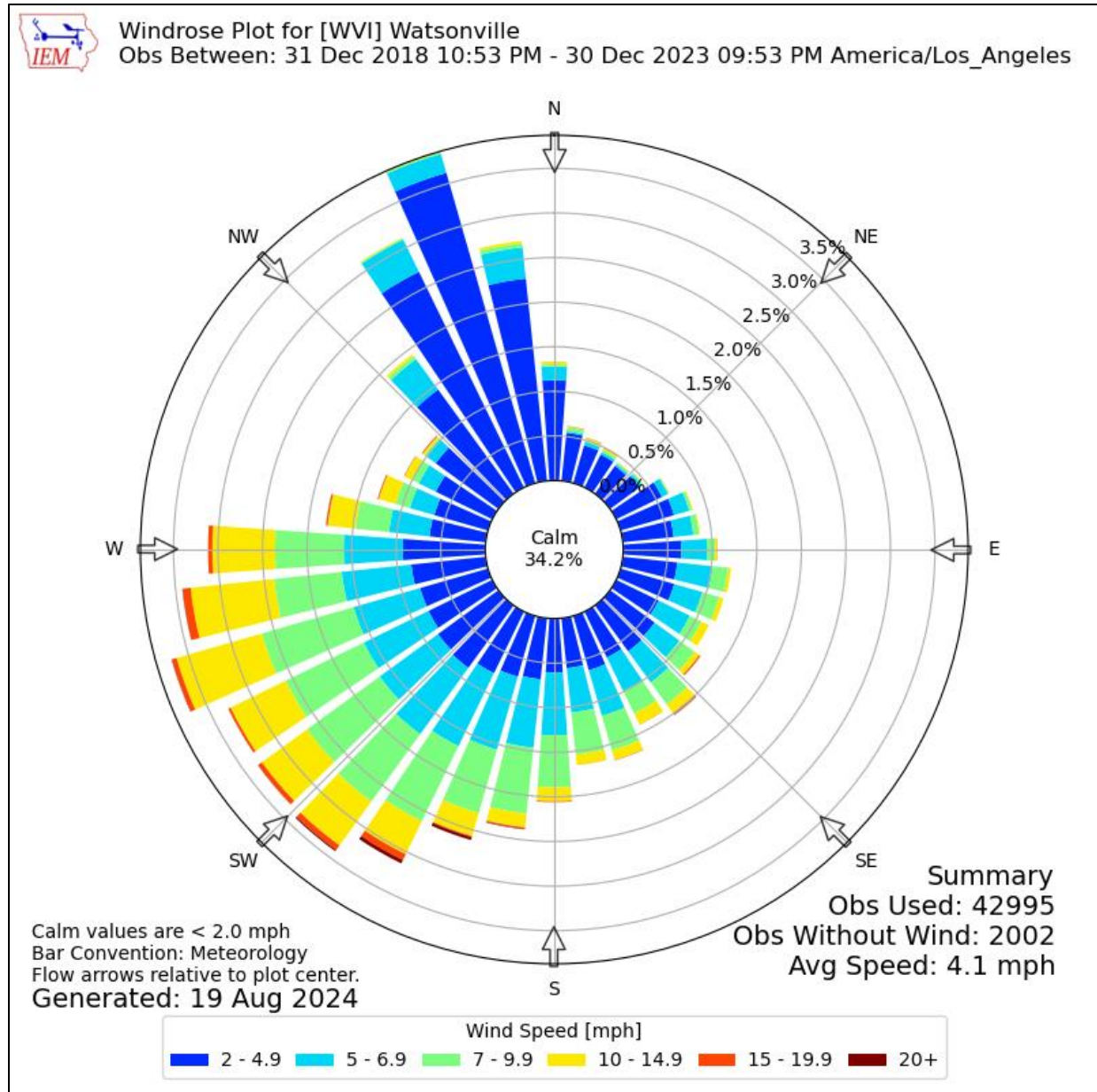
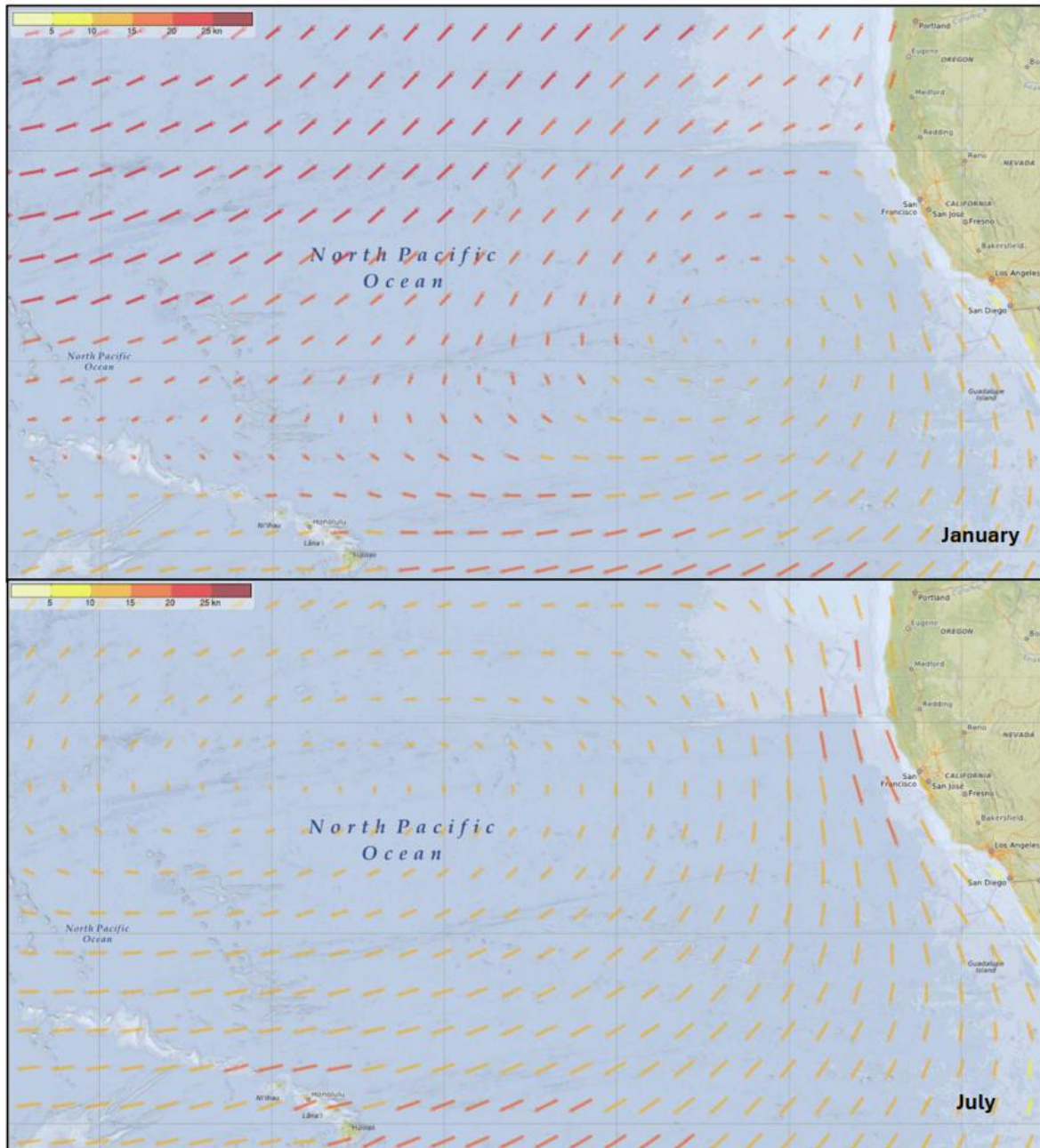


Figure G-10: Watsonville Municipal Airport Wind Rose



Source: <https://www.pitufa.at/oceanwinds/>

**Figure G-11: Prevailing Wind Direction and Intensity in the Pacific Ocean**

## G.1.7 Existing Air Quality

### G.1.7.1 Hawaii

With the exception of short-term SO<sub>2</sub> measurements recorded in 2023 near volcanic activity, none of the air quality monitoring stations in Hawaii recorded criteria air pollutant concentrations that exceeded the Ambient Air Quality Standards (AAQS) (Hawaii Department of Health, 2016).

Table G-1 shows the 2022 Design Value for Honolulu, available via USEPA's Interactive Design Value Tool or from the State of Hawaii 2023 Air Monitoring Network Plan (State of Hawaii Department of Health, 2023). A design value is a statistic that describes the air quality status of a given location relative to the level of the National Ambient Air Quality Standards (NAAQS).

**Table G-1: Comparison of 2022 Honolulu Design Values with AAQS**

Pollutant	Averaging Time	Most Stringent AAQS	Maximum Design Values (Station)	% of AAQS
CO	1-hour	9 ppm (State)	0.9 ppm (Honolulu)	10
	8-hour	4.4 ppm (State)	1.5 ppm (Honolulu)	34
NO <sub>2</sub>	1-hour	0.100 ppm (NAAQS)	0.023 ppm (Kapolei)	23
	Annual	0.04 ppm (State)	0.003 ppm (Kapolei)	8
PM <sub>10</sub>	24-hour	150 µg/m <sup>3</sup> (NAAQS)	51 µg/m <sup>3</sup> (Kapolei)	34
PM <sub>2.5</sub>	24-hour	35 µg/m <sup>3</sup> (NAAQS)	6 µg/m <sup>3</sup> (Pearl City)	17
	Annual	9 µg/m <sup>3</sup> (NAAQS)	3.7 µg/m <sup>3</sup> (Kapolei)	41
O <sub>3</sub>	8-hour	0.075 ppm (NAAQS)	0.044 ppm (Kapolei)	59
SO <sub>2</sub>	1-hour	0.075 ppm (NAAQS)	0.004 ppm (Kapolei)	5
	3-hour	0.5 ppm (State)	0.003 ppm (Kapolei)	<1

Source: (State of Hawaii Department of Health, 2023).

Notes: Lead monitoring ended December 31, 2018, with EPA approval. Concentrations of Pb measured from 2012 to 2018 were approximately 1–2 percent of the standard. µg/m<sup>3</sup> = microgram per cubic meter; AAQS = ambient air quality standards; CO = carbon monoxide; mg/m<sup>3</sup> = milligram per cubic meter; NAAQS = National Ambient Air Quality Standards; NO<sub>2</sub> = nitrogen dioxide; PM<sub>10</sub> = particles with aerodynamic diameters less than or equal to a nominal 10 micrometers; PM<sub>2.5</sub> = particles with aerodynamic diameters less than or equal to a nominal 2.5 micrometers; ppm = parts per million; O<sub>3</sub> = ozone; SO<sub>2</sub> = sulfur dioxide.

Table G-2 shows the total criteria pollutant and top 10 HAP emissions for Honolulu based on the 2020 calendar year data for stationary, nonroad and mobile sources. Most of the criteria pollutant emissions are due to fuel combustion for electricity generation and mobile source operations.

**Table G-2: Total Honolulu County Air Emissions for 2020**

Criteria Pollutant and Precursors	Emissions, Tons/Year	HAP	Emissions, Tons/Year
Carbon Monoxide	77,700	Methanol	1,157
Nitrogen Oxides	20,652	Toluene	885
PM <sub>10</sub> Primary	14,553	Formaldehyde	555
PM <sub>2.5</sub> Primary	4,369	Xylenes (Mixed Isomers)	577
Sulfur Dioxide	11,446	Acetaldehyde	358
Volatile Organic Compounds	37,295	2,2,4-Trimethylpentane	260
		Hexane	252
		Ethyl Benzene	127
		Ethylene Glycol	309

Source: USEPA 2020 National Emissions Inventory (NEI) Data

Notes: PM<sub>10</sub> = particles with aerodynamic diameters less than or equal to a nominal 10 micrometers; PM<sub>2.5</sub> = particles with aerodynamic diameters less than or equal to a nominal 2.5 micrometers

The Air Toxics Screening Assessment (AirToxScreen) is USEPA's screening tool to provide communities with information about health risks from air toxics. AirToxScreen gives a snapshot of outdoor air quality with respect to emissions of air toxics and is used as a screening tool for air agencies to prioritize pollutants and emission source types. Based on the 2019 emissions, the total cancer risk for Honolulu

County (including the airport) is 50 per million, with formaldehyde, hexavalent chromium, benzene, and carbon tetrachloride contributing to over 90 percent of the risk. The total non-cancer chronic respiratory hazard index for Honolulu County is one, with formaldehyde, acetaldehyde, and acrolein comprising over 90 percent of the risk. The hazard index is a ratio that compares a person's potential exposure to a chemical to the amount that could cause adverse health effects. A hazard index of one or lower means chronic adverse noncancer effects are unlikely.

#### G.1.7.2 South Coast Air Basin

In the 2018-2020 design value period, the South Coast Air Basin (SCAB) exceeded the 8- and 1-hour O<sub>3</sub> and annual PM<sub>2.5</sub> NAAQS, as shown in Figure G-12 (South Coast Air Quality Management District, 2022). Design values for CO, NO<sub>2</sub>, lead and SO<sub>2</sub>, obtained from USEPA's Interactive Design Value Tool are presented in Table G-3. Table G-4 presents the estimated 2020 emissions inventory for the SCAB in tons per day. In 2020, 31,144 tons of HAPs were emitted in the SCAB counties within the HCTT Study Area. Table G-5 presents the percentage of the top 10 HAPs that comprise 87 percent of the total HAPs emitted. USEPA AirToxScreen data indicate that Formaldehyde, carbon tetrachloride, benzene, and acetaldehyde are the main drivers for cancer risk in this air basin.

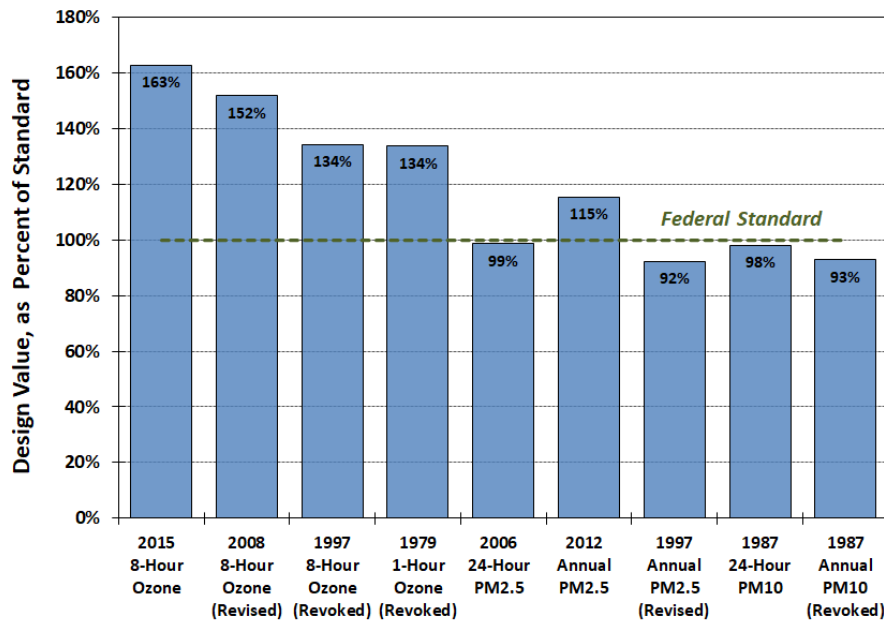


Figure G-12: South Coast Air Basin 2018–2020 3-Year Design Values for Ozone, PM<sub>10</sub>, and PM<sub>2.5</sub>

**Table G-3: Maximum 2022 Design Values for CO, NO<sub>2</sub>, Pb and SO<sub>2</sub> NAAQS**

Pollutant	Averaging Time	NAAQS	Maximum Design Values (Station)	% of NAAQS
CO	8-hour	9 ppm	3.4 ppm (Compton)	38
NO <sub>2</sub>	1-hour	0.100 ppm	0.08 ppm (Long Beach)	80
Pb	Annual	0.15 µg/m <sup>3</sup>	0.06 µg/m <sup>3</sup> (Rehrig -Exide)	40
SO <sub>2</sub>	1-hour	75 ppb	3 ppb (Los Angeles)	<1

Source: USEPA Interactive Design Value Tool, 2024.

Notes: µg/m<sup>3</sup> = microgram per cubic meter; NAAQS = National Ambient Air Quality Standards; CO = carbon monoxide; NO<sub>2</sub> = nitrogen dioxide; ppb = parts per billion; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide.

**Table G-4: 2020 Estimated Annual Average Emissions, Tons per Day, South Coast Air Basin**

Source Type	TOG	ROG	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	NH <sub>3</sub>
Total Stationary Sources	907.8	90.0	85.0	43.9	9.3	27.1	18.7	13.2	22.4
Total Areawide Sources	199.8	141.9	58.1	23.1	0.4	273.3	143.4	35.6	36.8
Total Mobile Sources	190.4	168.7	1574.7	288.1	5.5	31.2	30.5	16.2	18.7
Total Natural Sources	187.5	161.7	255.0	5.9	2.2	27.2	26.2	22.2	6.5
<b>Grand Total for South Coast Air Basin</b>	<b>1485.5</b>	<b>562.3</b>	<b>1972.9</b>	<b>360.9</b>	<b>17.4</b>	<b>358.9</b>	<b>218.8</b>	<b>87.1</b>	<b>84.3</b>

Source: CEPAM2019v1.03 Emission Projection Data (California Air Resources Board, 2024); CO = carbon monoxide; NH<sub>3</sub> = ammonia; NO<sub>x</sub> = oxides of nitrogen; PM = particulate matter; PM<sub>10</sub> = particles with aerodynamic diameters less than or equal to a nominal 10 micrometers; PM<sub>2.5</sub> = particles with aerodynamic diameters less than or equal to a nominal 2.5 micrometers; ROG = reactive organic gases; TOG = total organic compounds; SO<sub>x</sub> = oxides of sulfur.

**Table G-5: Top 10 HAPs Emitted in 2020 in Los Angeles and Orange Counties**

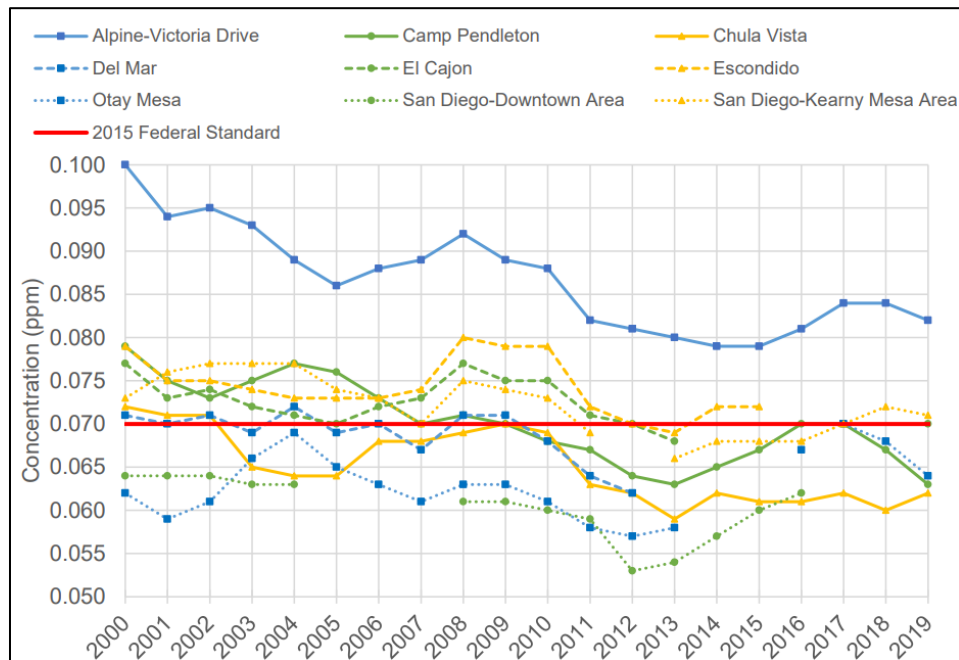
Pollutant	Percentage of Total HAP Emitted in 2020
Methanol	19%
Toluene	15%
Formaldehyde	14%
Xylenes (Mixed Isomers)	11%
Acetaldehyde	9%
Benzene	5%
Hexane	4%
Ethylene Glycol	3%
2,2,4-Trimethylpentane	3%
Ethylbenzene	2%

Source: USEPA 2020 NEI Data Retrieval Tool

#### G.1.7.3 San Diego Air Basin

Figure G-13 presents the San Diego County ozone design values compared to the 2015 ozone NAAQS from 2000 to 2019. Design values for the attainment criteria pollutants, obtained from USEPA's Interactive Design Value Tool, are presented in Table G-6. Table G-7 presents the estimated 2020 emissions inventory for the San Diego Air Basin in tons per day. In 2020, 10,163 tons of HAPs were emitted in San Diego County. Table G-8 presents the percentage of the top 10 HAPs, which comprise more than 88 percent of the total HAPs emitted. Similar to the SCAB, USEPA AirToxScreen data indicate

that formaldehyde, carbon tetrachloride, benzene, and acetaldehyde are the main drivers for cancer risk in this air basin.



Source: (San Diego County Air Pollution Control District, 2022)

**Figure G-13: San Diego Air Basin Ozone Design Values, 2000–2019**

**Table G-6: Maximum 2022 Design Values for Attainment Pollutants in San Diego County**

Pollutant	Averaging Time	NAAQS	Maximum Design Values (Station)	% of NAAQS
CO	8-hour	9 ppm	1.3 ppm (Rancho Carmel)	14
NO <sub>2</sub>	1-hour	0.100 ppm	0.05 ppm (Donovan)	50
Pb	Annual	0.15 µg/m <sup>3</sup>	0.02 µg/m <sup>3</sup> (Palomar Airport)	13
PM <sub>10</sub>	24-hour	150 µg/m <sup>3</sup>	4 µg/m <sup>3</sup> (Donovan)	<1
PM <sub>2.5</sub>	• 24-hour	• 35 µg/m <sup>3</sup>	• 30 µg m <sup>3</sup>	• 86
	• Annual	• 9 µg/m <sup>3</sup>	• 14.6 µg/m <sup>3</sup> (Donovan)	• 162
SO <sub>2</sub>	1-hour	75 ppb	1 ppb (Carlsbad)	<1

Source: USEPA Interactive Design Value Tool, 2024.

Notes: µg/m<sup>3</sup>=microgram per cubic meter; NAAQS = National Ambient Air Quality Standards; CO = carbon monoxide; mg/m<sup>3</sup>= milligram per cubic meter; NO<sub>2</sub> = nitrogen dioxide; PM<sub>10</sub> = particles with aerodynamic diameters less than or equal to a nominal 10 micrometers; PM<sub>2.5</sub> = particles with aerodynamic diameters less than or equal to a nominal 2.5 micrometers; ppm = parts per million; O<sub>3</sub> = ozone; SO<sub>2</sub> = sulfur dioxide.

**Table G-7: 2020 Estimated Annual Average Emissions, Tons per Day, San Diego Air Basin**

Source Type	TOG	ROG	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	NH <sub>3</sub>
Total Stationary Sources	300.7	26.6	14.1	4.2	0.3	17.4	8.5	2.8	1.2
Total Areawide Sources	62.6	39.3	17.4	3.5	0.2	123.6	65.4	11.9	8.8
Total Mobile Sources	49.4	44.5	359.4	75.5	1.0	8.3	8.1	5.1	3.7
Total Natural Sources	91.8	80.2	110.1	4.5	1.5	13.3	12.8	10.8	2.7
<b>Grand Total for San Diego Air Basin</b>	<b>504.4</b>	<b>190.5</b>	<b>501.0</b>	<b>87.7</b>	<b>3.0</b>	<b>162.7</b>	<b>94.8</b>	<b>30.6</b>	<b>16.4</b>

Source: CEPAM2019v1.03 Emission Projection Data

Notes: CO = carbon monoxide; NH<sub>3</sub> = ammonia; NO<sub>x</sub> = oxides of nitrogen; PM = particulate matter; PM<sub>10</sub> = particles with aerodynamic diameters less than or equal to a nominal 10 micrometers; PM<sub>2.5</sub> = particles with aerodynamic diameters less than or equal to a nominal 2.5 micrometers; ROG = reactive organic gases; TOG = total organic compounds; SO<sub>x</sub> = oxides of sulfur.

**Table G-8: Top Ten HAPs Emitted in 2020 in San Diego County**

Pollutant	Percentage of Total HAP Emitted in 2020
Methanol	23%
Toluene	14%
Formaldehyde	14%
Xylenes (Mixed Isomers)	11%
Acetaldehyde	8%
Benzene	5%
Ethylene Glycol	3%
2,2,4-Trimethylpentane	3%
Hexane	3%
Ethylbenzene	2%

Source: USEPA 2020 NEI Data Retrieval Tool

#### G.1.7.3.1 San Diego Portside Environmental Justice Neighborhoods

Table G-9 summarizes the Sources of Criteria Pollutants in the Portside Community based on the 2018 emissions presented in the 2021 Community Emission Reductions Plan (CERP). Table G-10 presents selected TAC emissions by percentage and source, as presented in the 2021 CERP. These include Diesel PM, which the state has identified as a carcinogen, and hexavalent chromium, which can cause localized elevated cancer risk. Currently, Diesel PM is not identified as a HAP. Diesel PM from offroad and onroad mobile sources contributes 84 percent of cancer risk in the Portside Community. Diesel PM, manganese, nickel, and benzene are the largest contributors to non-cancer chronic risk. Nickel, benzene, formaldehyde, and acrolein are the largest contributors to non-cancer acute risk. The potential air quality impacts on the Portside Community that could result from implementing the proposed alternative will be analyzed in the Environmental Consequences section.

**Table G-9: Sources of Criteria Pollutants in the Portside Community (2018 baseline)**

Source Category	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Off-road mobile	317.8 (25.5%)	922.4 (63.1%)	36.2 (5.0%)	34.4 (17.7%)
On-road mobile	259.9 (20.8%)	462.8 (31.6%)	69.5 (9.5%)	32.1 (16.6%)
Stationary Source	215.1 (17.2%)	50.6 (3.5%)	33.2 (4.6%)	8.5 (4.4%)
Area Sources	455.0 (36.5%)	26.6 (1.8%)	589.2 (80.9%)	118.9 (61.3%)
<b>Total, Tons per Year</b>	<b>1,247.8</b>	<b>1,462.4</b>	<b>728.1</b>	<b>193.9</b>

Source: (San Diego County Air Pollution Control District, 2022)

Notes: NO<sub>x</sub> = oxides of nitrogen; PM<sub>10</sub> = particles with aerodynamic diameters less than or equal to a nominal 10 micrometers; PM<sub>2.5</sub> = particles with aerodynamic diameters less than or equal to a nominal 2.5 micrometers;  
ROG = reactive organic gases

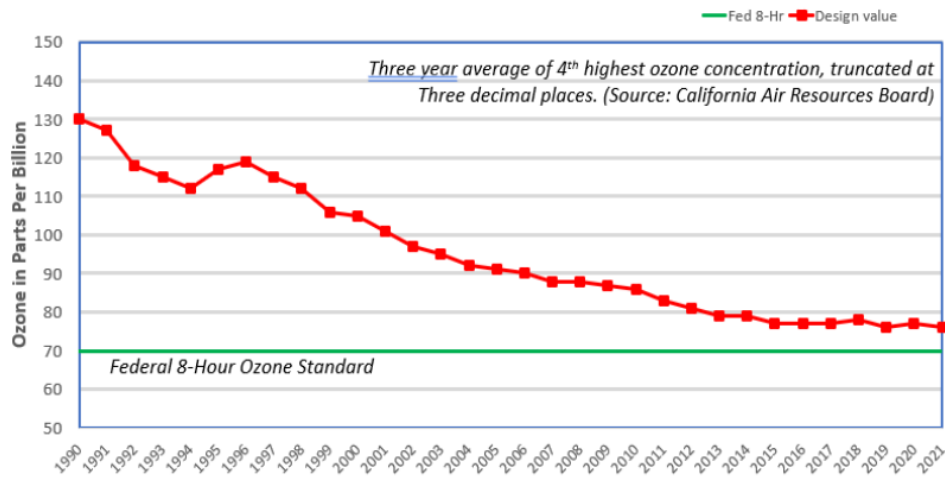
**Table G-10: Portside Community Selected Toxic Air Contaminants, Pounds per Year**

Source Category	Arsenic	Benzene	1,3-Butadiene	Hexavalent chromium	DPM
Off-road mobile	0.08 (0.2%)	17,196 (52.8%)	3,462 (63.3%)	0.56 (25.3%)	44,150 (78.0%)
On-road mobile	1.1 (2.9%)	14,601 (44.8%)	1,756 (32.2%)	0.21 (9.5%)	10,904 (19.3%)
Stationary Source	0.9 (2.4%)	409 (1.3%)	84 (1.5%)	1.40 (63.3%)	1,472 (2.7%)
Area Sources	37 (94.4%)	372 (1.1%)	164 (3.0%)	0.04 (1.8%)	0 (0%)
<b>Total, Pounds per Year</b>	<b>39</b>	<b>32,578</b>	<b>5,466</b>	<b>2.21</b>	<b>56,526</b>

Source: (Ventura County Air Pollution Control District, 2022)

#### G.1.7.4 South Central Coast Air Basin

Figure G-14 presents the Ventura County ozone design value for the 2015 eight-hour ozone NAAQS. Available design values for the attainment criteria pollutants, obtained from USEPA's Interactive Design Value Tool, are presented in Table G-11. Table G-12 presents the estimated 2020 emissions inventory for the South Central Coast Air Basin in tons per day. In 2020, 14,494 tons of HAPs were emitted in the South Central Coast Air Basin. Table G-13 presents the top 10 HAPs, which comprised 94 percent of the total HAPs emitted. USEPA AirToxScreen data indicate that formaldehyde, carbon tetrachloride, benzene, and acetaldehyde are the main drivers for cancer risk in this air basin.



Source: VCAPCD, 2022

**Figure G-14: Ventura County APCD 2015 8-Hour Ozone Design Values**

**Table G-11: Maximum 2022 Design Values for Attainment Pollutants in Ventura County**

Pollutant	Averaging Time	NAAQS	Maximum Design Values (Station)	% of NAAQS
NO <sub>2</sub>	1-hour	0.100 ppm	0.03 ppm (Simi Valley)	30
PM <sub>10</sub>	24-hour	150 µg/m <sup>3</sup>	1 µg/m <sup>3</sup> (Oxnard)	<1
PM <sub>2.5</sub>	24-hour	35 µg/m <sup>3</sup>	2.1 µg m <sup>3</sup> (Thousand Oaks)	60
	Annual	9 µg/m <sup>3</sup>	9.0 µg/m <sup>3</sup> (Ojai)	100

Source: USEPA Interactive Design Value Tool, 2024

Notes: µg/m<sup>3</sup> = microgram per cubic meter; NAAQS = National Ambient Air Quality Standards; CO = carbon monoxide; mg/m<sup>3</sup> = milligram per cubic meter; NO<sub>2</sub> = nitrogen dioxide; PM<sub>10</sub> = particles with aerodynamic diameters less than or equal to a nominal 10 micrometers; PM<sub>2.5</sub> = particles with aerodynamic diameters less than or equal to a nominal 2.5 micrometers; ppm = parts per million; O<sub>3</sub> = ozone; SO<sub>2</sub> = sulfur dioxide.

**Table G-12: 2020 Estimated Annual Average Emissions, Tons per Day, California South Central Coast Air Basin**

Source Type	TOG	ROG	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	NH <sub>3</sub>
Total Stationary Sources	106.7	20.6	8.2	7.1	0.8	2.9	1.6	0.9	2.7
Total Areawide Sources	54.9	29.6	44.6	3.1	0.2	71.9	38.7	10.5	9.0
Total Mobile Sources	24.9	22.7	184.9	27.5	0.7	3.5	3.4	2.0	1.6
Total Natural Sources	282.4	192.6	212.1	5.3	2.0	22.9	22.0	18.7	5.8
<b>Grand Total for South Central Coast Air Basin</b>	<b>468.9</b>	<b>265.5</b>	<b>449.9</b>	<b>42.9</b>	<b>3.6</b>	<b>101.2</b>	<b>65.8</b>	<b>32.0</b>	<b>19.0</b>

Source: CEPAM2019v1.03 Emission Projection Data

Notes: (1) Numbers may not add up due to rounding. (2) CO = carbon monoxide; NH<sub>3</sub> = ammonia; NO<sub>x</sub> = oxides of nitrogen; PM = particulate matter; PM<sub>10</sub> = particles with aerodynamic diameters less than or equal to a nominal 10 micrometers; PM<sub>2.5</sub> = particles with aerodynamic diameters less than or equal to a nominal 2.5 micrometers; ROG = reactive organic gases; TOG = total organic compounds; SO<sub>x</sub> = oxides of sulfur.

**Table G-13: Top 10 HAPs Emitted in 2020 in South Central Air Basin**

Pollutant	Percentage of Total HAP Emitted in 2020
Methanol	52%
Formaldehyde	14%
Acetaldehyde	10%
Toluene	6%
Xylenes (Mixed Isomers)	4%
Benzene	2%
2,2,4-Trimethylpentane	2%
Hexane	2%
Ethylene Glycol	1%
Ethylbenzene	1%

Source: USEPA 2020 NEI Data Retrieval Tool

**G.1.7.5 North Central Coast Air Basin**

Table G-14 presents the estimated 2020 emissions inventory for the North Central Coast Air Basin in tons per day. In 2020, 46,564 tons of HAPs were emitted in North Central Coast Air Basin. Table G-15 presents the top 10 HAPs that comprised 95 percent of the total HAPs emitted. USEPA AirToxScreen data indicate that formaldehyde is the main driver for cancer risk in this air basin.

**Table G-14: 2020 Estimated Annual Average Emissions, Tons per Day, California North Central Coast Air Basin**

<i>Source Type</i>	<i>TOG</i>	<i>ROG</i>	<i>CO</i>	<i>NO<sub>x</sub></i>	<i>SO<sub>x</sub></i>	<i>PM</i>	<i>PM<sub>10</sub></i>	<i>PM<sub>2.5</sub></i>	<i>NH<sub>3</sub></i>
Total Stationary Sources	266.8	10.9	12.6	17.4	1.0	8.7	4.8	1.7	2.1
Total Areawide Sources	47.8	22.8	22.4	1.7	0.1	75.6	38.3	8.2	10.7
Total Mobile Sources	13.1	11.9	96.9	13.5	0.1	1.5	1.5	0.9	0.7
Total Natural Sources	169.1	145.8	596.5	3.6	2.8	57.2	55.0	46.6	8.3
<b>Grand Total for South Central Coast Air Basin</b>	<b>496.8</b>	<b>191.4</b>	<b>728.4</b>	<b>36.2</b>	<b>4.1</b>	<b>143.0</b>	<b>99.5</b>	<b>57.4</b>	<b>21.8</b>

Source: CEPAM2019v1.03 Emission Projection Data; CO = carbon monoxide; NH<sub>3</sub> = ammonia; NO<sub>x</sub> = oxides of nitrogen; PM = particulate matter; PM<sub>10</sub> = particles with aerodynamic diameters less than or equal to a nominal 10 micrometers; PM<sub>2.5</sub> = particles with aerodynamic diameters less than or equal to a nominal 2.5 micrometers; ROG = reactive organic gases; TOG = total organic compounds; SO<sub>x</sub> = oxides of sulfur.

**Table G-15: Top 10 HAPs Emitted in 2020 in North Central Coast Air Basin**

<b>Pollutant</b>	<b>Percentage of Total HAP Emitted in 2020</b>
Methanol	30%
Formaldehyde	24%
Acetaldehyde	16%
Acrolein	4%
Naphthalene	4%
Benzene	4%
Toluene	4%
Xylenes (Mixed Isomers)	3%
Acetonitrile	3%
1,3-Butadiene	2%

Source: USEPA 2020 NEI Data Retrieval

## **G.2 Emissions Estimates Spreadsheets**

Tables G-16 through G-31 provide proposed changes to training and testing activities, emissions factors, and example emissions summaries for aircraft, vessels, and ordnance for the Baseline and Alternatives 1 and 2.

**Table G-16: Proposed Changes to Training Activities**

Category		Activity Name		VESSELS				AIRCRAFT							Proposed Annual # of Events		Difference in Annual # of Events	
				Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)									
					0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activity Level	ALT 1	ALT 2	ALT 1	ALT 2
Anti-Submarine Warfare		Independent Deployer Certification Exercise/Tailored Surface Warfare Training		72	0%	5%	95%	72	0%	5%	95%	Navy/MC	NOCAL	0	1	1	1	1
Anti-Submarine Warfare		Independent Deployer Certification Exercise/Tailored Surface Warfare Training		72	0%	5%	95%	72	0%	5%	95%	Navy/MC	PMSR	0	1	1	1	1
Anti-Submarine Warfare		Independent Deployer Certification Exercise/Tailored Surface Warfare Training		72	0%	5%	95%	72	0%	5%	95%	Navy/MC	SCAB	0	6	8	6	8
Anti-Submarine Warfare		Independent Deployer Certification Exercise/Tailored Surface Warfare Training		72	0%	5%	95%	72	0%	5%	95%	Navy/MC	SDAB	0	6	8	6	8
Anti-Submarine Warfare		Medium Coordinated Anti-Submarine Warfare		24	0%	0%	100%	24	0%	0%	100%	Navy/MC	Hawaii	2	15	17	13	15
Anti-Submarine Warfare		Medium Coordinated Anti-Submarine Warfare		24	0%	0%	100%	24	0%	0%	100%	Navy/MC	SOCAL	2	10	13	8	11
Anti-Submarine Warfare		Small Joint Coordinated Anti-Submarine Warfare		16	10%	10%	80%	16	10%	10%	80%	Navy/MC	Hawaii	2	1	1	-1	-1
Anti-Submarine Warfare		Small Joint Coordinated Anti-Submarine Warfare		16	0%	0%	100%	16	0%	0%	100%	Navy/MC	SOCAL	12	7	9	-5	-3

		VESSELS				AIRCRAFT							Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name	Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)			Service	Location	Current Activity Level	ALT 1	ALT 2	ALT 1	ALT 2
			0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore							
Anti-Submarine Warfare	Composite Training Unit Exercise – Amphibious Ready Group/Marine Expeditionary Unit <i>Emissions analyzed as unit-level training (gunnery, missile exercise, etc.)</i>															
Anti-Submarine Warfare	Innovation and Demonstration Exercise	2	10%	10%	80%	2	10%	10%	80%	Navy/MC	Hawaii	0	1	1	1	1
Anti-Submarine Warfare	Innovation and Demonstration Exercise	2	10%	10%	80%	2	10%	10%	80%	Navy/MC	PMSR	0	1	1	1	1
Anti-Submarine Warfare	Innovation and Demonstration Exercise	2	10%	10%	80%	2	10%	10%	80%	Navy/MC	SCI	0	1	1	1	1
Anti-Submarine Warfare	Innovation and Demonstration Exercise	2	10%	10%	80%	2	10%	10%	80%	Navy/MC	SDAB	0	1	1	1	1
Anti-Submarine Warfare	Innovation and Demonstration Exercise	2	0%	0%	100%	2	10%	10%	80%	Navy/MC	Transit Corridor	0	1	1	1	1
Anti-Submarine Warfare	Integrated Air Missile Defense Exercise	8	0%	0%	100%	8	0%	0%	100%	Navy/MC	Hawaii	0	1	1	1	1
Anti-Submarine Warfare	Large-Scale Amphibious Exercise	72	20%	40%	40%	72	80%	20%	0%	Navy/MC	Hawaii	0	1	1	1	1
Anti-Submarine Warfare	Large-Scale Amphibious Exercise	72	20%	40%	40%	72	80%	20%	0%	Navy/MC	SDAB	0	1	1	1	1
Anti-Submarine Warfare	Large-Scale Amphibious Exercise	72	20%	40%	40%	72	80%	20%	0%	Navy/MC	SCI	0	1	1	1	1
Anti-Submarine Warfare	Large-Scale Amphibious Exercise	72	20%	40%	40%	72	80%	20%	0%	Navy/MC	PMSR	0	1	1	1	1
Anti-Submarine Warfare	Multi-Warfare Exercise <i>Emissions analyzed as unit-level training</i>		0													

Category		Activity Name		VESSELS			AIRCRAFT						Proposed Annual # of Events		Difference in Annual # of Events	
				Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)							
					0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activity Level	ALT 1	ALT 2
		(gunnery, missile exercise, etc.)														
Air Warfare	Air Combat Maneuvers	1	0%	0%	100%	1	0%	0%	100%	Navy/MC	Hawaii	814	2314	2314	1500	1500
Air Warfare	Air Combat Maneuvers	1	0%	0%	100%	1	0%	0%	100%	Navy/MC	NOCAL	2000	3657	3800	1657	1800
Air Warfare	Air Combat Maneuvers	1	0%	0%	100%	1	0%	0%	100%	Navy/MC	PMSR	2000	3657	3800	1657	1800
Air Warfare	Air Combat Maneuvers					1	0%	0%	100%	Navy/MC	SOCAL	2000	3657	3800	1657	1800
Air Warfare	Air Defense Exercise	1	0%	0%	100%	2	0%	0%	100%	Navy/MC	Hawaii	185	46	50	-139	-135
Air Warfare	Air Defense Exercise	1	0%	0%	100%	2	0%	0%	100%	Navy/MC	NOCAL	183	183	183	0	0
Air Warfare	Air Defense Exercise	1	0%	0%	100%	2	0%	0%	100%	Navy/MC	PMSR	183	183	183	0	0
Air Warfare	Air Defense Exercise	1	0%	0%	100%	2	0%	0%	100%	Navy/MC	SOCAL	183	183	183	0	0
Air Warfare	Gunnery Exercise Air-to-Air Medium-Caliber	2	0%	0%	100%	2	0%	0%	100%	Navy/MC	Hawaii	0	2	3	2	3
Air Warfare	Gunnery Exercise Air-to-Air Medium-Caliber	2	0%	0%	100%	2	0%	0%	100%	Navy/MC	SOCAL	5	2	2	-3	-3
Air Warfare	Gunnery Exercise Air-to-Air Medium-Caliber	2	0%	0%	100%	2	0%	0%	100%	Air Force	Hawaii	0	12	12	12	12
Air Warfare	Gunnery Exercise Air-to-Air Small-Caliber	2	0%	0%	100%	2	0%	0%	100%	Navy/MC	Hawaii	0	5	5	5	5
Air Warfare	Gunnery Exercise Air-to-Air Small-Caliber	2	0%	0%	100%	2	0%	0%	100%	Navy/MC	SOCAL	0	5	5	5	5
Air Warfare	Gunnery Exercise Surface-to-Air Large-Caliber	2	0%	0%	100%					Navy/MC	Hawaii	51	25	25	-26	-26
Air Warfare	Gunnery Exercise Surface-to-Air Large-Caliber	2	0%	0%	100%					Navy/MC	SOCAL	165	55	55	-110	-110

Category		Activity Name		VESSELS				AIRCRAFT				Service			Location			Current Activity Level			Proposed Annual # of Events		Difference in Annual # of Events	
				Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)												ALT 1	ALT 2	ALT 1	ALT 2
					0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore													
Air Warfare	Gunnery Exercise Surface-to-Air Large-Caliber	2	0%	0%	100%					Coast Guard	Hawaii	15	15	15	0	0								
Air Warfare	Gunnery Exercise Surface-to-Air Large-Caliber	2	0%	0%	100%					Coast Guard	SOCAL	45	45	45	0	0								
Air Warfare	Gunnery Exercise Surface-to-Air Medium-Caliber	2	0%	0%	100%					Navy/MC	Hawaii	72	79	79	7	7								
Air Warfare	Gunnery Exercise Surface-to-Air Medium-Caliber	2	0%	0%	100%					Navy/MC	SOCAL	195	85	85	-110	-110								
Air Warfare	Gunnery Exercise Surface-to-Air Medium-Caliber	2	0%	0%	100%					Coast Guard	Hawaii	19	19	19	0	0								
Air Warfare	Gunnery Exercise Surface-to-Air Medium-Caliber	2	0%	0%	100%					Coast Guard	SOCAL	70	70	70	0	0								
Air Warfare	Medium Range Interceptor Capability <a href="#">Establishment of and impacts from land based firing points covered in separate NEPA. Not analyzed here.</a>																							
Air Warfare	Missile Exercise Air-to-Air	3	0%	0%	100%	3	0%	0%	100%	Navy/MC	Hawaii	62	26	28	-36	-34								
Air Warfare	Missile Exercise Air-to-Air	3	0%	0%	100%	3	0%	0%	100%	Navy/MC	NOCAL	1	40	40	39	39								
Air Warfare	Missile Exercise Air-to-Air	3	0%	0%	100%	3	0%	0%	100%	Navy/MC	SOCAL	2	40	40	38	38								
Air Warfare	Missile Exercise Air-to-Air	3	0%	0%	100%	3	0%	0%	100%	Navy/MC	PMSR	1	43	43	42	42								
Air Warfare	Missile Exercise Man-portable Air Defense System	2	0%	0%	100%					Navy/MC	SCI	4	10	10	6	6								
Air Warfare	Missile Exercise Man-portable Air Defense System	2	0%	0%	100%					Navy/MC	PMRF	0	7	7	7	7								
Air Warfare	Missile Exercise Man-portable Air Defense System	2	0%	0%	100%					Army	PMRF	0	2	2	2	2								

Category		Activity Name		VESSELS			AIRCRAFT			Service			Location			Current Activity Level			Proposed Annual # of Events		Difference in Annual # of Events			
				Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)										ALT 1	ALT 2	ALT 1	ALT 2		
					0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore														3-12 nm from Shore	>12 nm from Shore
Air Warfare	Missile Exercise Surface-to-Air	2	0%	0%	100%					Navy/MC	Hawaii	30	30	30	0	0								
Air Warfare	Missile Exercise Surface-to-Air	2	0%	0%	100%					Navy/MC	PMSR	18	18	18	0	0								
Air Warfare	Missile Exercise Surface-to-Air	2	0%	0%	100%					Navy/MC	SOCAL	18	18	18	0	0								
Amphibious Warfare	Amphibious Assault	1	37.5%	37.5%	25.0%	1	100%	0%	0%	Navy/MC	Hawaii	12	48	48	36	36								
Amphibious Warfare	Amphibious Assault	1	37.5%	37.5%	25.0%	1	100%	0%	0%	Navy/MC	NOCAL	4	5	5	1	1								
Amphibious Warfare	Amphibious Assault	1	37.5%	37.5%	25.0%	1	100%	0%	0%	Navy/MC	SDAB	5	6	6	1	1								
Amphibious Warfare	Amphibious Assault	1	37.5%	37.5%	25.0%	1	100%	0%	0%	Navy/MC	SCAB	5	5	5	0	0								
Amphibious Warfare	Amphibious Assault	1	37.5%	37.5%	25.0%	1	100%	0%	0%	Navy/MC	PMSR	4	5	5	1	1								
Amphibious Warfare	Amphibious Operations in a Contested Environment	4	50%	25%	25%	4	50%	25%	25%	Navy/MC	Hawaii	0	15	15	15	15								
Amphibious Warfare	Amphibious Operations in a Contested Environment	4	50%	25%	25%	4	50%	25%	25%	Navy/MC	SDAB - SSTC	0	5	5	5	5								
Amphibious Warfare	Amphibious Operations in a Contested Environment	4	50%	25%	25%	4	50%	25%	25%	Navy/MC	SCAB	0	5	5	5	5								
Amphibious Warfare	Amphibious Raid	2	50%	25%	25%	2	50%	25%	25%	Navy/MC	SDAB	2426	2404	2404	-22	-22								
Amphibious Warfare	Amphibious Raid	2	50%	25%	25%	2	50%	25%	25%	Navy/MC	Hawaii	0	24	24	24	24								
Amphibious Warfare	Amphibious Vehicle Maneuvers	4	50%	25%	25%					Navy/MC	Hawaii	0	20	20	20	20								
Amphibious Warfare	Amphibious Vehicle Maneuvers	4	50%	25%	25%					Navy/MC	SCI	0	8	9	8	9								
Amphibious Warfare	Amphibious Vehicle Maneuvers	4	50%	25%	25%					Navy/MC	PMSR	0	8	9	8	9								
Amphibious Warfare	Amphibious Vehicle Maneuvers	4	50%	25%	25%					Navy/MC	NOCAL	0	8	9	8	9								
Amphibious Warfare	Amphibious Vehicle Maneuvers	4	50%	25%	25%					Navy/MC	SDAB	0	8	9	8	9								
Amphibious Warfare	Expeditionary Fires Exercise/Supporting Arms Coordination Exercise	72	0%	100%	0%	3	0%	100%	0%	Navy/MC	SDAB	4	4	4	0	0								
Amphibious Warfare	Expeditionary Fires Exercise/Supporting	72	0%	100%	0%	3	0%	100%	0%	Navy/MC	SCAB	4	4	4	0	0								

		VESSELS				AIRCRAFT							Proposed Annual # of Events		Difference in Annual # of Events	
		Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)									
Category	Activity Name		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activity Level	ALT 1	ALT 2	ALT 1	ALT 2
	Arms Coordination Exercise															
Amphibious Warfare	Naval Surface Fire Support Exercise-At Sea	8	0%	0%	100%					Navy/MC	Hawaii	15	23	25	8	10
Amphibious Warfare	Naval Surface Fire Support Exercise – Land-Based Target	8	10%	60%	30%					Navy/MC	SOCAL	55	67	67	12	12
Amphibious Warfare	Non-Combat Amphibious Operation	12	50%	50%	0%	12	50%	50%	0%	Navy/MC	Hawaii	0	6	6	6	6
Amphibious Warfare	Non-Combat Amphibious Operation	12	50%	50%	0%	12	50%	50%	0%		NOCAL	1	1	1	0	0
Amphibious Warfare	Non-Combat Amphibious Operation	12	50%	50%	0%	12	50%	50%	0%		SCAB	1	1	1	0	0
Amphibious Warfare	Non-Combat Amphibious Operation	12	50%	50%	0%	12	50%	50%	0%		SDAB	1	1	1	0	0
Amphibious Warfare	Shore-to-Surface Artillery Exercise <a href="#">Shore based firing point impacts are addressed in other NEPA documentation.</a>															
Amphibious Warfare	Shore-to-Surface Missile Exercise <a href="#">Shore based firing point impacts are addressed in other NEPA documentation.</a>															
Anti-Submarine Warfare	Anti-Submarine Warfare Torpedo Exercise – Helicopter					2	0%	24%	76%	Navy/MC	Hawaii	6	4	5	-2	-1
Anti-Submarine Warfare	Anti-Submarine Warfare Torpedo Exercise – Helicopter					2	0%	24%	76%	Navy/MC	SCI	104	4	5	-100	-99

		VESSELS				AIRCRAFT							Proposed Annual # of Events		Difference in Annual # of Events	
Category	Activity Name	Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)			Service	Location	Current Activity Level	ALT 1	ALT 2	ALT 1	ALT 2
			0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore							
Anti-Submarine Warfare	Anti-Submarine Warfare Torpedo Exercise – Maritime Patrol Aircraft					6	0%	10%	90%	Navy/MC	Hawaii	10	54	80	44	70
Anti-Submarine Warfare	Anti-Submarine Warfare Torpedo Exercise – Maritime Patrol Aircraft					6	0%	10%	90%	Navy/MC	SCI	25	71	80	46	55
Anti-Submarine Warfare	Anti-Submarine Warfare Torpedo Exercise – Ship	8	0%	10%	90%					Navy/MC	Hawaii	50	34	34	-16	-16
Anti-Submarine Warfare	Anti-Submarine Warfare Torpedo Exercise – Ship	8	0%	10%	90%					Navy/MC	SCI	117	104	104	-13	-13
Anti-Submarine Warfare	Anti-Submarine Warfare Torpedo Exercise – Submarine	8	0%	10%	90%					Navy/MC	Hawaii	48	48	48	0	0
Anti-Submarine Warfare	Anti-Submarine Warfare Torpedo Exercise – Submarine	8	0%	10%	90%					Navy/MC	SCI	13	26	26	13	13
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Helicopter	2	0%	24%	76%	2	0%	24%	76%	Navy/MC	Hawaii	159	128	130	-31	-29
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Helicopter	2	0%	24%	76%	2	0%	24%	76%	Navy/MC	SCI	262	64	65	-198	-197
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Helicopter	2	0%	24%	76%	2	0%	24%	76%	Navy/MC	PMSR	262	64	65	-198	-197
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Long-Range Unmanned Surface Vessel									Navy/MC	SCI					
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Long-Range Unmanned Surface Vessel									Navy/MC						

Category		Activity Name		VESSELS			AIRCRAFT			Service			Location			Current Activity Level			Proposed Annual # of Events		Difference in Annual # of Events			
				Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)										ALT 1	ALT 2	ALT 1	ALT 2		
					0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore														3-12 nm from Shore	>12 nm from Shore
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Maritime Patrol Aircraft					6	0%	10%	90%	Navy/MC	Hawaii	32	179	200	147	168								
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Maritime Patrol Aircraft					6	0%	10%	90%	Navy/MC	SCI	28	100	100	72	72								
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Maritime Patrol Aircraft					6	0%	10%	90%	Navy/MC	PMSR	28	100	100	72	72								
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Ship	2	0%	10%	90%					Navy/MC	Hawaii	224	94	119	-130	-105								
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Ship	2	0%	10%	90%					Navy/MC	SCI	212	189	240	-23	28								
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Ship	2	0%	10%	90%					Navy/MC	PMSR	212	189	240	-23	28								
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Submarine	8	0%	10%	90%					Navy/MC	NOCAL	17	20	20	3	3								
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Submarine	8	0%	10%	90%					Navy/MC	Hawaii	200	205	205	5	5								
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Submarine	8	0%	10%	90%					Navy/MC	PMSR	17	20	20	3	3								
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Submarine	8	0%	10%	90%					Navy/MC	SCI	17	24	24	7	7								
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Exercise – Submarine	8	0%	10%	90%					Navy/MC	Transit Corridor	6	9	9	3	3								
Anti-Submarine Warfare	Training and End-to-End Mission Capability	8	0%	0%	100%	8	0%	0%	100%	Navy/MC	Hawaii	0	2	2	2	2								

Category		Activity Name		VESSELS			AIRCRAFT			Service			Location			Current Activity Level			Proposed Annual # of Events		Difference in Annual # of Events			
				Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)										ALT 1	ALT 2	ALT 1	ALT 2		
					0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore														3-12 nm from Shore	>12 nm from Shore
	Verification – Torpedo																							
Anti-Submarine Warfare	Training and End-to-End Mission Capability Verification – Torpedo	8	0%	0%	100%	8	0%	0%	100%	Navy/MC	SOCAL	1	1	1	0	0								
Electronic Warfare	Counter Targeting Chaff Exercise – Aircraft	2	0%	40%	60%	2	0%	40%	60%	Navy/MC	NOCAL	47	50	51	3	4								
Electronic Warfare	Counter Targeting Chaff Exercise – Aircraft	2	0%	40%	60%	2	0%	40%	60%	Navy/MC	Hawaii	19	29	31	10	12								
Electronic Warfare	Counter Targeting Chaff Exercise – Aircraft	2	0%	40%	60%	2	0%	40%	60%	Navy/MC	PMSR	47	50	51	3	4								
Electronic Warfare	Counter Targeting Chaff Exercise – Aircraft	2	0%	40%	60%	2	0%	40%	60%	Navy/MC	SCI	47	50	51	3	4								
Electronic Warfare	Counter Targeting Chaff Exercise – Ship	2	0%	0%	100%					Navy/MC	Hawaii	37	37	37	0	0								
Electronic Warfare	Counter Targeting Chaff Exercise – Ship	2	0%	0%	100%					Navy/MC	SOCAL	125	125	125	0	0								
Electronic Warfare	Counter Targeting Chaff Exercise – Ship	2	0%	0%	100%					Coast Guard	Hawaii	5	5	5	0	0								
Electronic Warfare	Counter Targeting Chaff Exercise – Ship	2	0%	0%	100%					Coast Guard	SOCAL	20	20	20	0	0								
Electronic Warfare	Counter Targeting Flare Exercise	2	50%	50%	0%	2	50%	50%	0%	Navy/MC	Hawaii	19	105	108	86	89								
Electronic Warfare	Counter Targeting Flare Exercise	2	50%	50%	0%	2	50%	50%	0%	Navy/MC	SCI	130	120	123	-10	-7								
Electronic Warfare	Counter Targeting Flare Exercise	2	50%	50%	0%	2	50%	50%	0%	Coast Guard	SCI	10	10	10	0	0								
Electronic Warfare	Electronic Warfare Operations	2	0%	0%	100%	2	0%	0%	100%	Navy/MC	Hawaii	33	55	60	22	27								
Electronic Warfare	Electronic Warfare Operations	2	0%	0%	100%	2	0%	0%	100%	Navy/MC	NOCAL	117	94	109	-23	-8								
Electronic Warfare	Electronic Warfare Operations	2	0%	0%	100%	2	0%	0%	100%	Navy/MC	PMSR	117	94	109	-23	-8								

		VESSELS				AIRCRAFT							Proposed Annual # of Events		Difference in Annual # of Events	
		Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)									
Category	Activity Name			0-3 nm from shore	3-12 nm from Shore		>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activity Level	ALT 1	ALT 2
Electronic Warfare	Electronic Warfare Operations	2	0%	0%	100%	2	0%	0%	100%	Navy/MC	SOCAL	117	94	109	-23	-8
Expeditionary Warfare	Dive and Salvage Operations	1.0	100%	0%	0%					Navy/MC	Hawaii	12	18	18	6	6
Expeditionary Warfare	Dive and Salvage Operations	1.0	100%	0%	0%					Navy/MC	SCI	0	2	3	2	3
Expeditionary Warfare	Dive and Salvage Operations	1.0	100%	0%	0%					Navy/MC	SDAB	0	2	3	2	3
Expeditionary Warfare	Dive and Salvage Operations	1.0	100%	0%	0%					Navy/MC	Ventura	0	2	3	2	3
Expeditionary Warfare	Underwater Construction Team Training	12	100%	0%	0%					Coast Guard	Hawaii	8	8	8	0	0
Expeditionary Warfare	Underwater Construction Team Training	12	100%	0%	0%					Coast Guard	PMSR	262	262	262	0	0
Expeditionary Warfare	Underwater Construction Team Training	12	100%	0%	0%					Coast Guard	NOCAL	262	262	262	0	0
Expeditionary Warfare	Underwater Construction Team Training	1	100%	0%	0%					Coast Guard	SDAB	474	474	474	0	0
Expeditionary Warfare	Underwater Construction Team Training	1	100%	0%	0%					Coast Guard	SCAB	50	50	50	0	0
Expeditionary Warfare	Gunnery Exercise Ship-to-Shore	1.0	33%	33%	34%					Navy/MC	SCI	0	437	480	437	480
Expeditionary Warfare	Obstacle Loading	1.0	100%	0%	0%					Navy/MC	Hawaii	0	70	70	70	70
Expeditionary Warfare	Obstacle Loading	1.0	100%	0%	0%					Navy/MC	SCI	0	67	78	67	78
Expeditionary Warfare	Obstacle Loading	1.0	100%	0%	0%					Navy/MC	SDAB	0	67	78	67	78
Expeditionary Warfare	Personnel Insertion/Extraction – Air	1.5	50%	40%	10%	1.5	50%	40%	10%	Navy/MC	Hawaii	0	534	534	534	534
Expeditionary Warfare	Personnel Insertion/Extraction – Air	1.5	50%	40%	10%	1.5	50%	40%	10%	Navy/MC	SCI	0	367	389	367	389
Expeditionary Warfare	Personnel Insertion/Extraction – Air	1.5	50%	40%	10%	1.5	50%	40%	10%	Navy/MC	SDAB	0	1101	1166	1101	1166
Expeditionary Warfare	Personnel Insertion/Extraction – Surface and Subsurface	1.5	100%	0%	0%					Navy/MC	Hawaii	182	308	336	126	154

Category		Activity Name		VESSELS				AIRCRAFT							Proposed Annual # of Events		Difference in Annual # of Events	
				Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)									
					0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activity Level	ALT 1	ALT 2	ALT 1	ALT 2
Expeditionary Warfare		Personnel Insertion/Extraction – Surface and Subsurface		1.5	100%	0%	0%					Navy/MC	SCI	112	277	287	165	175
Expeditionary Warfare		Personnel Insertion/Extraction – Surface and Subsurface		1.5	100%	0%	0%					Navy/MC	SDAB	337	830	862	493	525
Expeditionary Warfare		Personnel Insertion/Extraction – Swimmer/Diver		1.5	100%	0%	0%					Navy/MC	Hawaii	495	495	495	0	0
Expeditionary Warfare		Personnel Insertion/Extraction – Swimmer/Diver		1.5	100%	0%	0%					Navy/MC	SCI	83	299	320	216	237
Expeditionary Warfare		Personnel Insertion/Extraction – Swimmer/Diver		1.5	100%	0%	0%					Navy/MC	SDAB	248	896	960	648	712
Expeditionary Warfare		Small Boat Attack		6	10%	10%	80%					Navy/MC	Hawaii	6	6	6	0	0
Expeditionary Warfare		Small Boat Attack		2	10%	10%	80%					Navy/MC	SCI	29	29	29	0	0
Expeditionary Warfare		Small Boat Attack		2	10%	10%	80%					Navy/MC	SDAB	86	86	86	0	0
Mine Warfare		Airborne Mine Countermeasure – Mine Detection						1.5	100%	0%	0%	Navy/MC	Hawaii	0	20	20	20	20
Mine Warfare		Airborne Mine Countermeasure – Mine Detection						1.5	100%	0%	0%	Navy/MC	SCAB	5	10	10	5	5
Mine Warfare		Airborne Mine Countermeasure – Mine Detection						1.5	100%	0%	0%	Navy/MC	SDAB - SSTC	5	10	10	5	5
Mine Warfare		Airborne Mine Laying						1	10%	40%	50%	Navy/MC	Hawaii	0	4	4	4	4
Mine Warfare		Airborne Mine Laying						1	10%	40%	50%	Navy/MC	SCAB	9	3	3	-6	-6
Mine Warfare		Airborne Mine Laying						1	10%	40%	50%	Navy/MC	SDAB	9	3	3	-6	-6
Mine Warfare		Amphibious Breaching Operations		4	80%	20%	0%					Navy/MC	Hawaii	0	100	100	100	100
Mine Warfare		Amphibious Breaching Operations		4	80%	20%	0%					Navy/MC	SDAB	0	481	484	481	484

Category		Activity Name		VESSELS				AIRCRAFT				Service			Location			Current Activity Level			Proposed Annual # of Events		Difference in Annual # of Events	
				Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)												ALT 1	ALT 2	ALT 1	ALT 2
					0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore													
Mine Warfare	Amphibious Breaching Operations	4	80%	20%	0%					Navy/MC	SCI	0	160	161	160	161								
Mine Warfare	Civilian Port Defense – Homeland Security Anti-Terrorism/Force Protection Exercise	24	100%	0%	0%	12	100%	0%	0%	Navy/MC	Hawaii	1	1	2	0	1								
Mine Warfare	Civilian Port Defense – Homeland Security Anti-Terrorism/Force Protection Exercise	24	100%	0%	0%	12	100%	0%	0%	Navy/MC	SCAB	1	1	1	0	0								
Mine Warfare	Civilian Port Defense – Homeland Security Anti-Terrorism/Force Protection Exercise	24	100%	0%	0%	12	100%	0%	0%	Navy/MC	SDAB	1	1	2	0	1								
Mine Warfare	Civilian Port Defense – Homeland Security Anti-Terrorism/Force Protection Exercise	24	100%	0%	0%	12	100%	0%	0%	Navy/MC	NOCAL	1	1	1	0	0								
Mine Warfare	Civilian Port Defense – Homeland Security Anti-Terrorism/Force Protection Exercise	24	100%	0%	0%	12	100%	0%	0%	Navy/MC	Ventura	1	1	1	0	0								
Mine Warfare	Mine Countermeasure Exercise – Ship Sonar	1.5	0%	62%	38%					Navy/MC	Hawaii	30	72	72	42	42								
Mine Warfare	Mine Countermeasure Exercise – Ship Sonar	1.5	0%	62%	38%					Navy/MC	SCAB	46	128	128	82	82								
Mine Warfare	Mine Countermeasure Exercise – Ship Sonar	1.5	0%	62%	38%					Navy/MC	SDAB	46	128	128	82	82								

Category		Activity Name		VESSELS			AIRCRAFT				Service			Location			Current Activity Level			Proposed Annual # of Events		Difference in Annual # of Events		
				Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)											ALT 1	ALT 2	ALT 1	ALT 2	
					0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore														>12 nm from Shore
Mine Warfare	Mine Countermeasures – Mine Neutralization – Remotely Operated Vehicle					1.5	75%	25%	0%	Navy/MC	Hawaii	6	7	8	1	2								
Mine Warfare	Mine Countermeasures – Mine Neutralization – Remotely Operated Vehicle					1.5	75%	25%	0%	Navy/MC	SCI	124	10	11	-114	-113								
Mine Warfare	Mine Countermeasures – Mine Neutralization – Remotely Operated Vehicle					1.5	75%	25%	0%	Navy/MC	SDAB - SSTC	124	10	11	-114	-113								
Mine Warfare	Mine Countermeasures – Mine Neutralization – Remotely Operated Vehicle					1.5	75%	25%	0%	Navy/MC	SCAB	124	10	11	-114	-113								
Mine Warfare	Mine Countermeasures – Towed Mine Neutralization					2	100%	0%	0%	Navy/MC	SCI	170	15	15	-155	-155								
Mine Warfare	Mine Countermeasures – Towed Mine Neutralization					2	100%	0%	0%	Navy/MC	SDAB	170	15	15	-155	-155								
Mine Warfare	Mine Neutralization Explosive Ordnance Disposal	1.5	75%	25%	0%					Navy/MC	Hawaii	20	13	15	-7	-5								
Mine Warfare	Mine Neutralization Explosive Ordnance Disposal	1.5	75%	25%	0%					Navy/MC	SCAB	65	139	145	74	80								
Mine Warfare	Mine Neutralization Explosive Ordnance Disposal	1.5	75%	25%	0%					Navy/MC	SDAB	65	139	143	74	78								
Mine Warfare	Mine Neutralization Explosive Ordnance Disposal	1.5	75%	25%	0%					Navy/MC	Ventura	65	139	143	74	78								
Mine Warfare	Submarine Mine Avoidance Exercise																							

Category		Activity Name		VESSELS				AIRCRAFT				Service			Location			Current Activity Level			Proposed Annual # of Events		Difference in Annual # of Events	
				Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)												ALT 1	ALT 2	ALT 1	ALT 2
					0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore													
Mine Warfare	Submarine Mobile Mine and Mine Laying Exercise	6	100%	0%	0%	6	100%	0%	0%	Navy/MC	Hawaii	1	20	20	19	19								
Mine Warfare	Submarine Mobile Mine and Mine Laying Exercise	6	100%	0%	0%	6	100%	0%	0%	Navy/MC	SCI	1	15	15	14	14								
Mine Warfare	Submarine Mobile Mine and Mine Laying Exercise	6	100%	0%	0%	6	100%	0%	0%	Navy/MC	PMSR	1	15	15	14	14								
Mine Warfare	Surface Ship Object Detection	1	50%	25%	25%					Navy/MC	Hawaii	42	72	72	30	30								
Mine Warfare	Surface Ship Object Detection	1	50%	25%	25%					Navy/MC	SDAB	164	256	256	92	92								
Mine Warfare	Training and End-to-End Mission Capability Verification – Mobile Mine and Mine																							
Mine Warfare	Underwater Demolition Qualification and Certification	8	100%	0%	0%					Navy/MC	Hawaii	25	5	5	-20	-20								
Mine Warfare	Underwater Demolition Qualification and Certification	8	100%	0%	0%					Navy/MC	SDAB	120	40	44	-80	-76								
Mine Warfare	Underwater Demolitions Multiple Charge – Large Area Clearance	8	100%	0%	0%					Navy/MC	SCI	18	6	6	-12	-12								
Mine Warfare	Underwater Mine Countermeasure Raise, Tow, Beach, and Exploitation	2	100%	0%	0%					Navy/MC	Hawaii	0	10	10	10	10								
Mine Warfare	Underwater Mine Countermeasure Raise, Tow, Beach, and Exploitation	2	100%	0%	0%					Navy/MC	SDAB	0	279	279	279	279								
Mine Warfare	Underwater Mine Countermeasure Raise, Tow, Beach, and Exploitation	2	100%	0%	0%					Navy/MC	SCAB	0	93	93	93	93								

Category		Activity Name		VESSELS			AIRCRAFT			Service			Location			Current Activity Level			Proposed Annual # of Events		Difference in Annual # of Events			
				Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)										ALT 1	ALT 2	ALT 1	ALT 2		
					0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore														3-12 nm from Shore	>12 nm from Shore
Surface Warfare	Bombing Exercise Air-to-Surface	1	0%	50%	50%	1	0%	50%	50%	Navy/MC	Hawaii	187	194	194	7	7								
Surface Warfare	Bombing Exercise Air-to-Surface	1	0%	50%	50%	1	0%	50%	50%	Navy/MC	NOCAL	320	331	331	11	11								
Surface Warfare	Bombing Exercise Air-to-Surface	1	0%	50%	50%	1	0%	50%	50%	Navy/MC	SDAB	160	166	166	6	6								
Surface Warfare	Bombing Exercise Air-to-Surface	1	0%	50%	50%	1	0%	50%	50%	Navy/MC	SCAB	160	166	166	6	6								
Surface Warfare	Gunnery Exercise Air-to-Surface Medium Caliber	1	0%	50%	50%	1	0%	50%	50%	Navy/MC	Hawaii	217	197	201	-20	-16								
Surface Warfare	Gunnery Exercise Air-to-Surface Medium Caliber	1	0%	50%	50%	1	0%	50%	50%	Navy/MC	SDAB	182	237	240	55	58								
Surface Warfare	Gunnery Exercise Air-to-Surface Medium Caliber	1	0%	50%	50%	1	0%	50%	50%	Navy/MC	SCAB	182	237	240	55	58								
Surface Warfare	Gunnery Exercise Air-to-Surface Medium Caliber	1	0%	50%	50%	1	0%	50%	50%	Coast Guard	Hawaii	100	100	100	0	0								
Surface Warfare	Gunnery Exercise Air-to-Surface Medium Caliber	1	0%	50%	50%	1	0%	50%	50%	Coast Guard	SDAB	60	60	60	0	0								
Surface Warfare	Gunnery Exercise Air-to-Surface Medium Caliber	1	0%	50%	50%	1	0%	50%	50%	Coast Guard	SCAB	60	60	60	0	0								
Surface Warfare	Gunnery Exercise Air-to-Surface Small Caliber	1	0%	50%	50%	1	0%	50%	50%	Navy/MC	Hawaii	585	343	429	-242	-156								
Surface Warfare	Gunnery Exercise Air-to-Surface Small Caliber	1	0%	50%	50%	1	0%	50%	50%	Navy/MC	SDAB	1020	302	345	-718	-675								
Surface Warfare	Gunnery Exercise Air-to-Surface Small Caliber	1	0%	50%	50%	1	0%	50%	50%	Navy/MC	SCAB	1020	302	345	-718	-675								
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Medium Caliber	1	0%	20%	80%					Navy/MC	Hawaii	10	10	10	0	0								
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Medium Caliber	1	0%	20%	80%					Navy/MC	SDAB	7	7	7	0	0								

Category		Activity Name		VESSELS				AIRCRAFT				Service			Location			Current Activity Level			Proposed Annual # of Events		Difference in Annual # of Events	
				Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)												ALT 1	ALT 2	ALT 1	ALT 2
					0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore													
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Medium Caliber	1	0%	20%	80%					Navy/MC	SCI	7	7	7	0	0								
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Medium Caliber	1	0%	20%	80%					Coast Guard	Hawaii	2	2	2	0	0								
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Medium Caliber	1	0%	20%	80%					Coast Guard	SDAB	79	79	79	0	0								
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Medium Caliber	1	0%	20%	80%					Coast Guard	SCI	79	79	79	0	0								
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Medium Caliber	1	0%	20%	80%					Army	Hawaii	0	4	8	4	8								
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Small Caliber	1	0%	20%	80%					Navy/MC	Hawaii	25	31	31	6	6								
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Small Caliber	1	0%	20%	80%					Navy/MC	SDAB - SSTC	100	173	173	73	73								
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Small Caliber	1	0%	20%	80%					Navy/MC	SCI	100	173	173	73	73								
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Small Caliber	1	0%	20%	80%					Coast Guard	Hawaii	100	100	100	0	0								
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Small Caliber	1	0%	20%	80%					Coast Guard	SDAB - SSTC	63	63	63	0	0								
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Small Caliber	1	0%	20%	80%					Coast Guard	PMSR	63	63	63	0	0								
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Small Caliber	1	0%	20%	80%					Coast Guard	NOCAL	63	63	63	0	0								
Surface Warfare	Gunnery Exercise Surface-to-Surface Boat Small Caliber	1	0%	20%	80%					Army	Hawaii	0	4	8	4	8								

Category		Activity Name		VESSELS				AIRCRAFT							Proposed Annual # of Events		Difference in Annual # of Events	
				Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)									
					0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activity Level	ALT 1	ALT 2	ALT 1	ALT 2
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Large Caliber	3	0%	28%	72%					Navy/MC	Hawaii	32	32	32	0	0		
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Large Caliber	3	0%	28%	72%					Navy/MC	SDAB	100	63	63	-37	-37		
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Large Caliber	3	0%	28%	72%					Navy/MC	SCAB	100	63	63	-37	-37		
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Large Caliber	3	0%	0%	100%					Navy/MC	Transit Corridor	13	13	13	0	0		
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Large Caliber	3	0%	28%	72%					Coast Guard	Hawaii	5	5	5	0	0		
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Large Caliber	3	0%	28%	72%					Coast Guard	SDAB	8	8	8	0	0		
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Large Caliber	3	0%	28%	72%					Coast Guard	PMSR	8	8	8	0	0		
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Large Caliber	3	0%	28%	72%					Coast Guard	NOCAL	8	8	8	0	0		
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Medium Caliber	2	0%	28%	72%					Navy/MC	Hawaii	50	31	50	-19	0		
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Medium Caliber	2	0%	28%	72%					Navy/MC	SDAB	45	28	45	-17	0		
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Medium Caliber	2	0%	28%	72%					Navy/MC	SCAB	45	28	45	-17	0		
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Medium Caliber	2	0%	28%	72%					Navy/MC	PMSR	45	28	45	-17	0		
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Medium Caliber	2	0%	28%	72%					Navy/MC	NOCAL	45	28	45	-17	0		

Category		Activity Name		VESSELS				AIRCRAFT				Service			Location			Current Activity Level			Proposed Annual # of Events		Difference in Annual # of Events	
				Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)												ALT 1	ALT 2	ALT 1	ALT 2
					0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore													
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Medium Caliber	2	0%	0%	100%					Navy/MC	Transit Corridor	40	25	40	-15	0								
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Medium Caliber	2	0%	28%	72%					Coast Guard	Hawaii	20	20	20	0	0								
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Medium Caliber	2	0%	28%	72%					Coast Guard	SCI	18	18	18	0	0								
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Medium Caliber	2	0%	28%	72%					Coast Guard	SDAB	18	18	18	0	0								
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Small Caliber	2	0%	28%	72%					Navy/MC	Hawaii	65	65	65	0	0								
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Small Caliber	1	0%	28%	72%					Navy/MC	SCI	142	142	142	0	0								
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Small Caliber	1	0%	28%	72%					Navy/MC	PMSR	142	142	142	0	0								
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Small Caliber	1	0%	28%	72%					Navy/MC	NOCAL	71	71	71	0	0								
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Small Caliber	1	0%	0%	100%					Navy/MC	Transit Corridor	20	20	20	0	0								
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Small Caliber	2	0%	28%	72%					Coast Guard	Hawaii	100	100	100	0	0								
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Small Caliber	1	0%	28%	72%					Coast Guard	SCI	165	165	165	0	0								
Surface Warfare	Gunnery Exercise Surface-to-Surface Ship Small Caliber	1	0%	28%	72%					Coast Guard	NOCAL	55	55	55	0	0								
Surface Warfare	Laser Targeting – Aircraft					2	0%	0%	100%	Navy/MC	Hawaii	50	79	100	29	50								
Surface Warfare	Laser Targeting – Aircraft					2	0%	50%	50%	Navy/MC	SDAB	455	39	50	-416	-405								

Category		Activity Name		VESSELS			AIRCRAFT			Service			Location			Current Activity Level			Proposed Annual # of Events		Difference in Annual # of Events			
				Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)										ALT 1	ALT 2	ALT 1	ALT 2		
					0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore														3-12 nm from Shore	>12 nm from Shore
Surface Warfare	Laser Targeting – Aircraft					2	0%	50%	50%	Navy/MC	SCAB	455	39	50	-416	-405								
Surface Warfare	Laser Targeting – Ship	2	0%	0%	100%					Navy/MC	Hawaii	0	4	4	4	4								
Surface Warfare	Laser Targeting – Ship	2	0%	50%	50%					Navy/MC	SDAB	0	2	2	2	2								
Surface Warfare	Laser Targeting – Ship	2	0%	50%	50%					Navy/MC	SCAB	0	2	2	2	2								
Surface Warfare	Laser Targeting – Ship	2	0%	0%	100%					Coast Guard	Hawaii	4	4	4	0	0								
Surface Warfare	Laser Targeting – Ship	2	0%	50%	50%					Coast Guard	SDAB	2	2	2	0	0								
Surface Warfare	Laser Targeting – Ship	2	0%	50%	50%					Coast Guard	SCAB	2	2	2	0	0								
Surface Warfare	Maritime Security Operations	2	10%	10%	80%	2	33%	33%	34%	Navy/MC	Hawaii	70	70	70	0	0								
Surface Warfare	Maritime Security Operations	2	0%	0%	100%	2	33%	33%	34%	Navy/MC	NOCAL	63	63	63	0	0								
Surface Warfare	Maritime Security Operations	2	0%	0%	100%	2	33%	33%	34%	Navy/MC	SOCAL	188	188	188	0	0								
Surface Warfare	Maritime Security Operations	2	10%	10%	80%	2	33%	33%	34%	Coast Guard	Hawaii	145	145	145	0	0								
Surface Warfare	Maritime Security Operations	2	0%	0%	100%	2	33%	33%	34%	Coast Guard	NOCAL	89	89	89	0	0								
Surface Warfare	Maritime Security Operations	2	0%	0%	100%	2	33%	33%	34%	Coast Guard	SOCAL	798	798	798	0	0								
Surface Warfare	Missile Exercise Air-to-Surface	1	0%	0%	100%	1	0%	0%	100%	Navy/MC	Hawaii	10	20	22	10	12								
Surface Warfare	Missile Exercise Air-to-Surface	1	0%	0%	100%	1	0%	50%	50%	Navy/MC	PMSR	70	32	33	-38	-37								
Surface Warfare	Missile Exercise Air-to-Surface	1	0%	0%	100%	1	0%	50%	50%	Navy/MC	SDAB	70	32	33	-38	-37								
Surface Warfare	Missile Exercise Air-to-Surface	1	0%	0%	100%	1	0%	50%	50%	Navy/MC	SCAB	70	32	33	-38	-37								
Surface Warfare	Missile Exercise Air-to-Surface Rocket	1	0%	0%	100%	1	0%	0%	100%	Navy/MC	Hawaii	227	120	129	-107	-98								
Surface Warfare	Missile Exercise Air-to-Surface Rocket	1	0%	0%	100%	1	0%	50%	50%	Navy/MC	PMSR	122	130	135	8	13								
Surface Warfare	Missile Exercise Air-to-Surface Rocket	1	0%	0%	100%	1	0%	50%	50%	Navy/MC	SDAB	62	66	68	4	6								

Category		Activity Name		VESSELS				AIRCRAFT				Service			Location			Current Activity Level			Proposed Annual # of Events		Difference in Annual # of Events	
				Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)												ALT 1	ALT 2	ALT 1	ALT 2
					0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore													
Surface Warfare	Missile Exercise Air-to-Surface Rocket	1	0%	0%	100%	1	0%	50%	50%	Navy/MC	SCAB	62	66	68	4	6								
Surface Warfare	Missile Exercise Surface-to-Surface	11	0%	0%	100%	11	0%	0%	100%	Navy/MC	Hawaii	20	30	32	10	12								
Surface Warfare	Missile Exercise Surface-to-Surface	11	0%	0%	100%	11	0%	0%	100%	Navy/MC	SOCAL	10	10	10	0	0								
Surface Warfare	Sinking Exercise (SINKEX)	16	0%	0%	100%	16	0%	0%	100%	Navy/MC	Hawaii	1	2	3	1	2								
Surface Warfare	Sinking Exercise (SINKEX)	16	0%	0%	100%	16	0%	0%	100%	Navy/MC	SOCAL	0	1	1	1	1								
Surface Warfare	Surface Warfare Torpedo Exercise – Submarine	8	10%	10%	80%					Navy/MC	Hawaii	0	30	30	30	30								
Surface Warfare	Surface Warfare Torpedo Exercise – Submarine	8	0%	0%	100%					Navy/MC	SOCAL	0	10	10	10	10								
Surface Warfare	Training and End-to-End Mission Capability Verification – Submarine Missile Maritime	4	0%	0%	100%					Navy/MC	Hawaii	0	2	2	2	2								
Surface Warfare	Training and End-to-End Mission Capability Verification – Submarine Missile Maritime	4	0%	0%	100%					Navy/MC	SOCAL	0	2	3	2	3								
Other Training Exercises	Aerial Firefighting					8	100%			Navy/MC	Hawaii	0	4	4	4	4								
Other Training Exercises	Aerial Firefighting	8	100%			8	100%			Navy/MC	SCI	0	4	4	4	4								
Other Training Exercises	At-Sea Vessel Refueling Training	2	33%	33%	34%					Navy/MC	SDAB	0	5	5	5	5								
Other Training Exercises	At-Sea Vessel Refueling Training	2	33%	33%	34%					Navy/MC	SCAB	0	5	5	5	5								
Other Training Exercises	Combat Swimmer/Diver Training and Certification	4	100%							Navy/MC	Hawaii	0	395	395	395	395								
Other Training Exercises	Combat Swimmer/Diver Training and Certification	4	100%	0%	0%					Navy/MC	SDAB - SSTC	0	320	320	320	320								

Category		Activity Name		VESSELS			AIRCRAFT						Proposed Annual # of Events		Difference in Annual # of Events	
				Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)							
					0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activity Level	ALT 1	ALT 2
Other Training Exercises	Installation and Maintenance of Subsea and Seabed Warfare Training Areas	2	100%							Navy/MC	Hawaii	0	4	4	4	4
Other Training Exercises	Installation and Maintenance of Subsea and Seabed Warfare Training Areas	2	100%							Navy/MC	PMSR	0	2	2	2	2
Other Training Exercises	Installation and Maintenance of Subsea and Seabed Warfare Training Areas	2	100%							Navy/MC	SCI	0	2	2	2	2
Other Training Exercises	Kilo Dip					0.3	0%	24%	76%	Navy/MC	Hawaii	60	30	30	-30	-30
Other Training Exercises	Kilo Dip					0.3	0%	24%	76%	Navy/MC	SDAB	1200	15	15	-1185	-1185
Other Training Exercises	Kilo Dip					0.3	0%	24%	76%	Navy/MC	SCAB	1200	15	15	-1185	-1185
Other Training Exercises	Multi-Domain Unmanned Autonomous Systems	2	100%	0%	0%	2	100%	0%	0%	Navy/MC	Hawaii	0	79	100	79	100
Other Training Exercises	Multi-Domain Unmanned Autonomous Systems	2	100%	0%	0%	2	100%	0%	0%	Navy/MC	SCI	0	79	100	79	100
Other Training Exercises	Multi-Domain Unmanned Autonomous Systems	2	100%	0%	0%	2	100%	0%	0%	Navy/MC	SDAB	0	79	100	79	100
Other Training Exercises	Port Damage Repair									Navy/MC	Ventura	0	6	6	6	6
Other Training Exercises	Precision Anchoring	4	100%	0%	0%					Navy/MC	Hawaii	20	20	20	0	0
Other Training Exercises	Precision Anchoring	4	100%	0%	0%					Navy/MC	SDAB	75	43	48	-32	-27
Other Training Exercises	Precision Anchoring	4	100%	0%	0%					Coast Guard	Hawaii	9	9	9	0	0
Other Training Exercises	Precision Anchoring	4	100%	0%	0%					Coast Guard	SDAB	950	950	950	0	0
Other Training Exercises	Search and Rescue	2	40%	40%	20%	2	40%	40%	20%	Coast Guard	Hawaii	110	110	110	0	0
Other Training Exercises	Search and Rescue	2	40%	40%	20%	2	40%	40%	20%	Coast Guard	SDAB	522	522	522	0	0

Category		Activity Name		VESSELS				AIRCRAFT				Service			Location			Current Activity Level			Proposed Annual # of Events		Difference in Annual # of Events	
				Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)												ALT 1	ALT 2	ALT 1	ALT 2
					0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore													
Other Training Exercises	Search and Rescue	2	40%	40%	20%	2	40%	40%	20%	Coast Guard	SCAB	58	58	58	0	0								
Other Training Exercises	Ship-to-Shore Fuel Transfer Training	12	100%	0%	0%					Navy/MC	Hawaii	0	4	4	4	4								
Other Training Exercises	Ship-to-Shore Fuel Transfer Training	12	100%	0%	0%					Navy/MC	SDAB - SSTC	0	3	3	3	3								
Other Training Exercises	Ship-to-Shore Fuel Transfer Training	12	100%	0%	0%					Navy/MC	SCI	0	3	3	3	3								
Other Training Exercises	Submarine Navigation Exercise	4	100%	0%	0%					Navy/MC	Hawaii	220	220	220	0	0								
Other Training Exercises	Submarine Navigation Exercise	4	100%	0%	0%					Navy/MC	SDAB - SSTC	80	80	80	0	0								
Other Training Exercises	Submarine Sonar Maintenance and Systems Checks	4	33%	33%	34%					Navy/MC	Hawaii	520	520	520	0	0								
Other Training Exercises	Submarine Sonar Maintenance and Systems Checks	4	33%	33%	34%					Navy/MC	SDAB	62	62	62	0	0								
Other Training Exercises	Submarine Sonar Maintenance and Systems Checks	4	33%	33%	34%					Navy/MC	SCAB	62	62	62	0	0								
Other Training Exercises	Submarine Sonar Maintenance and Systems Checks	4	33%	33%	34%					Navy/MC	PMSR	61	61	61	0	0								
Other Training Exercises	Submarine Sonar Maintenance and Systems Checks	4	33%	33%	34%					Navy/MC	Transit Corridor	10	10	10	0	0								
Other Training Exercises	Submarine Under Ice Training and Certification	4	0%	0%	100%					Navy/MC	Hawaii	12	12	12	0	0								
Other Training Exercises	Submarine Under Ice Training and Certification	4	0%	0%	100%					Navy/MC	CA	6	6	6	0	0								
Other Training Exercises	Submarine and UUV Subsea and Seabed Warfare Exercise	4	33%	33%	34%					Navy/MC	Hawaii	0	20	20	20	20								
Other Training Exercises	Submarine and UUV Subsea and Seabed Warfare Exercise	4	33%	33%	34%					Navy/MC	NOCAL	0	6	6	6	6								
Other Training Exercises	Submarine and UUV Subsea and	4	33%	33%	34%					Navy/MC	SDAB	0	8	8	8	8								

Category		Activity Name		VESSELS			AIRCRAFT						Proposed Annual # of Events		Difference in Annual # of Events	
				Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)							
					0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activity Level	ALT 1	ALT 2
	Seabed Warfare Exercise															
Other Training Exercises	Submarine and UUV Subsea and Seabed Warfare Exercise	4	33%	33%	34%					Navy/MC	PMSR	0	6	6	6	6
Other Training Exercises	Surface Ship Sonar Maintenance and Systems Checks	4	33%	33%	34%					Navy/MC	Hawaii	155	155	155	0	0
Other Training Exercises	Surface Ship Sonar Maintenance and Systems Checks	4	100%	0%	0%					Navy/MC	SDAB	500	500	500	0	0
Other Training Exercises	Surface Ship Sonar Maintenance and Systems Checks	4	0%	0%	100%					Navy/MC	Transit Corridor	8	8	8	0	0
Other Training Exercises	Training and End-to-End Mission Capability Verification – Subsea and Seabed Warfare Kinetic Effectors	4	0%	0%	100%					Navy/MC	Hawaii	0	20	20	20	20
Other Training Exercises	Training and End-to-End Mission Capability Verification – Subsea and Seabed Warfare Kinetic Effectors	4	0%	0%	100%					Navy/MC	NOCAL	0	6	6	6	6
Other Training Exercises	Training and End-to-End Mission Capability Verification – Subsea and Seabed Warfare Kinetic Effectors	4	0%	0%	100%					Navy/MC	SOCAL	0	8	8	8	8
Other Training Exercises	Training and End-to-End Mission Capability Verification – Subsea and Seabed Warfare Kinetic Effectors	4	0%	0%	100%					Navy/MC	PMSR	0	6	6	6	6

Category		Activity Name		VESSELS				AIRCRAFT				Service			Location			Current Activity Level			Proposed Annual # of Events		Difference in Annual # of Events	
				Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)												ALT 1	ALT 2	ALT 1	ALT 2
					0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore													
Other Training Exercises	Training and End-to-End Mission Capability Verification – Unmanned Aerial Vehicle (UAV)	4	0%	0%	100%					Navy/MC	Hawaii	0	10	10	10	10								
Other Training Exercises	Training and End-to-End Mission Capability Verification – Unmanned Aerial Vehicle (UAV)	4	0%	0%	100%					Navy/MC	NOCAL	0	3	3	3	3								
Other Training Exercises	Training and End-to-End Mission Capability Verification – Unmanned Aerial Vehicle (UAV)	4	0%	0%	100%					Navy/MC	SOCAL	0	4	4	4	4								
Other Training Exercises	Training and End-to-End Mission Capability Verification – Unmanned Aerial Vehicle (UAV)	4	0%	0%	100%					Navy/MC	PMSR	0	3	3	3	3								
Other Training Exercises	Underwater Survey	4	100%	0%	0%					Navy/MC	Hawaii	0	60	60	60	60								
Other Training Exercises	Underwater Survey	4	100%	0%	0%					Navy/MC	SDAB	0	159	180	159	180								
Other Training Exercises	Underwater Survey	4	100%	0%	0%					Navy/MC	SCI	0	159	180	159	180								
Other Training Exercises	Unmanned Aerial System Training and Certification	4	0%	0%	100%	6	0%	0%	100%	Navy/MC	Hawaii	20	216	234	196	214								
Other Training Exercises	Unmanned Aerial System Training and Certification	4	0%	0%	100%	6	0%	0%	100%	Navy/MC	SOCAL	4	48	48	44	44								
Other Training Exercises	Unmanned Aerial System Training and Certification	4	0%	0%	100%	6	0%	0%	100%	Navy/MC	NOCAL	2	24	24	22	22								
Other Training Exercises	Unmanned Aerial System Training and Certification	4	0%	0%	100%	6	0%	0%	100%	Navy/MC	PMSR	4	48	48	44	44								
Other Training Exercises	Unmanned Aerial System Training and Certification	4	0%	0%	100%	6	0%	0%	100%	Navy/MC	Transit Corridor	0	3	3	3	3								

Category		Activity Name		VESSELS				AIRCRAFT				Service			Location			Current Activity Level			Proposed Annual # of Events		Difference in Annual # of Events	
				Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)												ALT 1	ALT 2	ALT 1	ALT 2
					0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore													
Other Training Exercises	Unmanned Aerial System Training and Certification	4	0%	0%	100%	6	0%	0%	100%	Coast Guard	Hawaii	50	50	50	0	0								
Other Training Exercises	Unmanned Aerial System Training and Certification	4	0%	0%	100%	6	0%	0%	100%	Coast Guard	SOCAL	140	140	140	0	0								
Other Training Exercises	Unmanned Aerial System Training and Certification	4	0%	0%	100%	6	0%	0%	100%	Coast Guard	NOCAL	70	70	70	0	0								
Other Training Exercises	Unmanned Aerial System Training and Certification	4	0%	0%	100%	6	0%	0%	100%	Coast Guard	PMSR	140	140	140	0	0								
Other Training Exercises	Unmanned Underwater Vehicle Training – Certification and Development Exercises	4	50%	25%	25%	2	50%	25%	25%	Navy/MC	Hawaii	25	237	278	212	253								
Other Training Exercises	Unmanned Underwater Vehicle Training – Certification and Development Exercises	4	50%	25%	25%	2	50%	25%	25%	Navy/MC	SCI	3	184	222	181	219								
Other Training Exercises	Unmanned Underwater Vehicle Training – Certification and Development Exercises	4	50%	25%	25%	2	50%	25%	25%	Navy/MC	SDAB - SSTC	8	552	666	544	658								
Other Training Exercises	Unmanned Underwater Vehicle Training – Certification and Development Exercises	8	50%	25%	25%					Coast Guard	Hawaii	200	200	200	0	0								
Other Training Exercises	Unmanned Underwater Vehicle Training – Certification and Development Exercises	4	50%	25%	25%					Coast Guard	SCI	60	60	60	0	0								
Other Training Exercises	Unmanned Underwater Vehicle	4	50%	25%	25%					Coast Guard	SDAB - SSTC	250	250	250	0	0								

Category		Activity Name		VESSELS			AIRCRAFT						Proposed Annual # of Events		Difference in Annual # of Events	
				Time on Range (hr)	Activity Distribution (%)			Time on Range (hr)	Distribution (%)							
					0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore		0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activity Level	ALT 1	ALT 2
	Training – Certification and Development Exercises															
Other Training Exercises	Waterborne Training	4	50%	25%	25%					Navy/MC	Hawaii	500	24	30	-476	-470
Other Training Exercises	Waterborne Training	4	50%	25%	25%					Navy/MC	SDAB	0	503	536	503	536
Other Training Exercises	Waterborne Training	4	50%	25%	25%					Navy/MC	SCAB	0	168	179	168	179
Other Training Exercises	Waterborne Training	4	50%	25%	25%					Coast Guard	Hawaii	69	69	69	0	0
Other Training Exercises	Waterborne Training	4	50%	25%	25%					Coast Guard	SDAB	300	300	300	0	0
Other Training Exercises	Waterborne Training	4	50%	25%	25%					Coast Guard	SCAB	136	136	136	0	0

**Table G-17: Proposed Changes to Testing Activities**

		VESSELS				AIRCRAFT							Proposed Annual # of Events		Difference in Annual # of Events	
		Distribution (%)				Distribution (%)										
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activities	ALT 1	ALT 2	ALT 1	ALT 2
Air Warfare	Air Combat Maneuver Test	3	0%	0%	100%	3	0%	0%	100%	Navy/MC	Hawaii	22	23	24	1	2
Air Warfare	Air Combat Maneuver Test	3	0%	0%	100%	3	0%	0%	100%	Navy/MC	PMSR	55	158	160	103	105
Air Warfare	Air Combat Maneuver Test	3	0%	0%	100%	3	0%	0%	100%	Navy/MC	SOCAL	55	158	161	103	106
Air Warfare	Air Platform – Vehicle Test					4	0%	0%	100%	Navy/MC	Hawaii	0	7	8	7	8
Air Warfare	Air Platform – Vehicle Test					4	0%	0%	100%	Navy/MC	SOCAL	35	52	54	17	19
Air Warfare	Air Platform Weapons Integration Test					2	0%	0%	100%	Navy/MC	Hawaii	0	10	11	10	11
Air Warfare	Air Platform Weapons Integration Test					2	0%	0%	100%	Navy/MC	SOCAL	10	10	11	0	1
Air Warfare	Air-to-Air Missile Test					2	0%	0%	100%	Navy/MC	PMSR	0	49	49	49	49
Air Warfare	Intelligence, Surveillance, and Reconnaissance Test					6	0.0%	0.0%	100.0%	Navy/MC	Hawaii	14	14	15	0	1
Air Warfare	Intelligence, Surveillance, and Reconnaissance Test					6	0.0%	0.0%	100.0%	Navy/MC	SOCAL	254	254	279	0	25
Air Warfare	Surface-to-Air Gunnery Test – Large Caliber	2	0%	0%	100%					Navy/MC	PMSR	0	12	12	12	12
Air Warfare	Surface-to-Air Gunnery Test – Medium Caliber	2	0%	0%	100%					Navy/MC	PMSR	0	12	12	12	12
Air Warfare	Surface-to-Air High-Energy Laser Test	2	0%	0%	100%					Navy/MC	PMSR	0	50	50	50	50
Air Warfare	Surface-to-Air High-Power Microwave Test	2	0%	0%	100%					Navy/MC	PMSR	0	75	75	75	75
Air Warfare	Surface-to-Air Missile Test	2	0%	0%	100%					Navy/MC	PMSR	0	155	155	155	155
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Test (Rotary-Wing)					2	0.0%	24.0%	76.0%	Navy/MC	Hawaii	0	70	73	70	73

		VESSELS				AIRCRAFT							Proposed Annual # of Events		Difference in Annual # of Events	
		Distribution (%)				Distribution (%)										
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activities	ALT 1	ALT 2	ALT 1	ALT 2
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Test (Rotary-Wing)					2	0.0%	24.0%	76.0%	Navy/MC	SCI	44	70	72	26	28
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Test (Rotary-Wing)					2	0.0%	24.0%	76.0%	Navy/MC	PMSR	44	69	73	25	29
Anti-Submarine Warfare	Anti-Submarine Warfare Torpedo Test (Aircraft)					6	10.0%	40.0%	50.0%	NAVAIR	PMRF	20	25	26	5	6
Anti-Submarine Warfare	Anti-Submarine Warfare Torpedo Test (Aircraft)					6	10.0%	40.0%	50.0%	NAVAIR	SCI	28	38	39	10	11
Anti-Submarine Warfare	Anti-Submarine Warfare Torpedo Test (Aircraft)					6	10.0%	40.0%	50.0%	NAVAIR	SDAB	28	38	39	10	11
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Test (Fixed-Wing)					6	0.0%	10.0%	90.0%	Navy/MC	Hawaii	58	64	67	6	9
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Test (Fixed-Wing)					6	0.0%	10.0%	90.0%	Navy/MC	SCI	32	36	38	4	6
Anti-Submarine Warfare	Anti-Submarine Warfare Tracking Test (Fixed-Wing)					6	0.0%	10.0%	90.0%	Navy/MC	PMSR	32	36	38	4	6
Anti-Submarine Warfare	Kilo Dip Test					1.5	0.0%	24.0%	76.0%	Navy/MC	Hawaii	0	6	7	6	7
Anti-Submarine Warfare	Kilo Dip Test					1.5	0.0%	24.0%	76.0%	Navy/MC	SCI	0	3	4	3	4
Anti-Submarine Warfare	Kilo Dip Test					1.5	0.0%	24.0%	76.0%	Navy/MC	PMSR	0	3	3	3	3
Anti-Submarine Warfare	Sonobuoy Lot Acceptance Test					6	100.0%	0.0%	0.0%	Navy/MC	Hawaii	0	35	38	35	38
Anti-Submarine Warfare	Sonobuoy Lot Acceptance Test					6	100.0%	0.0%	0.0%	Navy/MC	SCI	80	169	176	89	96
Anti-Submarine Warfare	Sonobuoy Lot Acceptance Test					6	100.0%	0.0%	0.0%	Navy/MC	PMSR	80	169	176	89	96
Anti-Submarine Warfare	Anti-Submarine Warfare Mission Package Testing					3.6	0.0%	24.0%	76.0%	NAVSEA	Hawaii	22	1	1	-21	-21
Anti-Submarine Warfare	Anti-Submarine Warfare Mission Package Testing					3.6	0.0%	24.0%	76.0%	NAVSEA	SCI	23	1	1	-22	-22

		VESSELS				AIRCRAFT							Proposed Annual # of Events		Difference in Annual # of Events	
		Distribution (%)				Distribution (%)										
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activities	ALT 1	ALT 2	ALT 1	ALT 2
Anti-Submarine Warfare	At-Sea Sonar Testing					10	0.0%	0.0%	100.0%	NAVSEA	Hawaii	17	10	11	-7	-6
Anti-Submarine Warfare	At-Sea Sonar Testing					10	0.0%	0.0%	100.0%	NAVSEA	SCI	21	36	43	15	22
Anti-Submarine Warfare	Pierside Sonar Testing	2	100.0%	0.0%	0.0%					NAVSEA	Hawaii	7	19	24	12	17
Anti-Submarine Warfare	Pierside Sonar Testing	2	100.0%	0.0%	0.0%					NAVSEA	SCI					
Anti-Submarine Warfare	Pierside Sonar Testing	2	100.0%	0.0%	0.0%					NAVSEA	SDAB	7	68	76	61	69
Anti-Submarine Warfare	Surface Ship Sonar Testing/Maintenance	2	90.0%	5.0%	5.0%					NAVSEA	Hawaii	17	6	6	-11	-11
Anti-Submarine Warfare	Surface Ship Sonar Testing/Maintenance	2	90.0%	5.0%	5.0%					NAVSEA	SDAB	6	6	6	0	0
Anti-Submarine Warfare	Torpedo (Explosive) Testing	12	0.0%	0.0%	100.0%	8	0.0%	0.0%	100.0%	NAVSEA	Hawaii	8	1	2	-7	-6
Anti-Submarine Warfare	Torpedo (Explosive) Testing	12	0.0%	0.0%	100.0%	8	0.0%	0.0%	100.0%	NAVSEA	SOCAL	10	1	2	-9	-8
Anti-Submarine Warfare	Torpedo (Non-Explosive) Testing	12	0.0%	0.0%	100.0%	8	0.0%	0.0%	100.0%	NAVSEA	Hawaii	13	7	8	-6	-5
Anti-Submarine Warfare	Torpedo (Non-Explosive) Testing	12	0.0%	0.0%	100.0%	8	0.0%	0.0%	100.0%	NAVSEA	SOCAL	13	8	9	-5	-4
Electronic Warfare	Radar and Other System Testing					12	0.0%	0.0%	100.0%	NAVSEA	Hawaii	10	18	25	8	15
Electronic Warfare	Radar and Other System Testing					12	0.0%	0.0%	100.0%	NAVSEA	PMSR	24	17	22	-7	-2
Electronic Warfare	Radar and Other System Testing					12	0.0%	0.0%	100.0%	NAVSEA	SCI	24	17	22	-7	-2
Electronic Warfare	Chaff Test					3	0.0%	0.0%	100.0%	Navy/MC	Hawaii	5	11	11	6	6
Electronic Warfare	Chaff Test					3	0.0%	0.0%	100.0%	Navy/MC	PMSR	10	15	16	5	6
Electronic Warfare	Chaff Test					3	0.0%	0.0%	100.0%	Navy/MC	SCI	10	15	16	5	6
Electronic Warfare	Electronic Systems Test					6	0.0%	62.0%	38.0%	Navy/MC	Hawaii	0	4	4	4	4
Electronic Warfare	Electronic Systems Test					6	0.0%	62.0%	38.0%	Navy/MC	PMSR	2	102	102	100	100
Electronic Warfare	Electronic Systems Test					6	0.0%	62.0%	38.0%	Navy/MC	SCI	2	102	102	100	100
Electronic Warfare	Flare Test					2	0.0%	0.0%	100.0%	Navy/MC	Hawaii	5	11	11	6	6
Electronic Warfare	Flare Test					2	0.0%	0.0%	100.0%	Navy/MC	PMSR	8	15	16	7	8
Electronic Warfare	Flare Test					2	0.0%	0.0%	100.0%	Navy/MC	SCI	8	15	16	7	8

		VESSELS				AIRCRAFT							Proposed Annual # of Events		Difference in Annual # of Events	
		Distribution (%)				Distribution (%)										
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activities	ALT 1	ALT 2	ALT 1	ALT 2
Mine Warfare	Airborne Dipping Sonar Minehunting Test					2.5	50.0%	30.0%	20.0%	Navy/MC	Hawaii	0	19	20	19	20
Mine Warfare	Airborne Dipping Sonar Minehunting Test					2.5	50.0%	30.0%	20.0%	Navy/MC	SCAB	3	10	10	7	7
Mine Warfare	Airborne Dipping Sonar Minehunting Test					2.5	50.0%	30.0%	20.0%	Navy/MC	SDAB	3	10	10	7	7
Mine Warfare	Airborne Laser Mine Detection System Test					2	50.0%	30.0%	20.0%	Navy/MC	Hawaii	0	21	22	21	22
Mine Warfare	Airborne Laser Mine Detection System Test					2	50.0%	30.0%	20.0%	Navy/MC	SCAB	10	11	11	1	1
Mine Warfare	Airborne Laser Mine Detection System Test					2	50.0%	30.0%	20.0%	Navy/MC	SDAB	10	11	11	1	1
Mine Warfare	Airborne Mine Neutralization System Test					2	50.0%	30.0%	20.0%	Navy/MC	Hawaii	0	38	39	38	39
Mine Warfare	Airborne Mine Neutralization System Test					2	50.0%	30.0%	20.0%	Navy/MC	SCAB	11	41	42	30	31
Mine Warfare	Airborne Mine Neutralization System Test					2	50.0%	30.0%	20.0%	Navy/MC	SDAB	11	41	42	30	31
Mine Warfare	Airborne Sonobuoy Minehunting Test					2	50.0%	30.0%	20.0%	Navy/MC	Hawaii	0	10	10	10	10
Mine Warfare	Airborne Sonobuoy Minehunting Test					2	50.0%	30.0%	20.0%	Navy/MC	SCAB	3	5	5	2	2
Mine Warfare	Airborne Sonobuoy Minehunting Test					2	50.0%	30.0%	20.0%	Navy/MC	SDAB	3	5	5	2	2
Mine Warfare	Mine Laying Test					1	50.0%	30.0%	20.0%	Navy/MC	Hawaii	1	1	1	0	0
Mine Warfare	Mine Laying Test					1	50.0%	30.0%	20.0%	Navy/MC	SCAB	1	1	1	0	0
Mine Warfare	Mine Laying Test					1	50.0%	30.0%	20.0%	Navy/MC	SDAB	1	1	1	0	0
Mine Warfare	Mine Countermeasure and Neutralization Testing	8	50.0%	30.0%	20.0%	8	50.0%	30.0%	20.0%	Navy/MC	SCAB	6	17	23	11	17
Mine Warfare	Mine Countermeasure and Neutralization Testing	8	50.0%	30.0%	20.0%	8	50.0%	30.0%	20.0%	Navy/MC	SDAB	6	17	23	11	17
Mine Warfare	Mine Countermeasure Mission Package Testing					5	50.0%	30.0%	20.0%	Navy/MC	Hawaii	19	16	16	-3	-3

		VESSELS				AIRCRAFT							Proposed Annual # of Events		Difference in Annual # of Events	
		Distribution (%)				Distribution (%)										
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activities	ALT 1	ALT 2	ALT 1	ALT 2
Mine Warfare	Mine Countermeasure Mission Package Testing					5	50.0%	30.0%	20.0%	Navy/MC	PMSR	19	9	9	-10	-10
Mine Warfare	Mine Countermeasure Mission Package Testing					5	50.0%	30.0%	20.0%	Navy/MC	SDAB - SSTC	19	9	9	-10	-10
Mine Warfare	Mine Countermeasure Mission Package Testing					5	50.0%	30.0%	20.0%	Navy/MC	SCI	19	9	9	-10	-10
Mine Warfare	Mine Detection and Classification Testing	12	50.0%	30.0%	20.0%	8	50.0%	30.0%	20.0%	Navy/MC	Hawaii	3	8	10	5	7
Mine Warfare	Mine Detection and Classification Testing	12	50.0%	30.0%	20.0%	8	50.0%	30.0%	20.0%	Navy/MC	PMSR	4	5	7	1	3
Mine Warfare	Mine Detection and Classification Testing	12	50.0%	30.0%	20.0%	8	50.0%	30.0%	20.0%	Navy/MC	SDAB	4	5	7	1	3
Mine Warfare	Mine Detection and Classification Testing	12	50.0%	30.0%	20.0%	8	50.0%	30.0%	20.0%	Navy/MC	SCI	4	5	7	1	3
Surface Warfare	Air-to-Surface Bombing Test					3	0.0%	50.0%	50.0%	Navy/MC	Hawaii	8	9	9	1	1
Surface Warfare	Air-to-Surface Bombing Test					3	0.0%	50.0%	50.0%	Navy/MC	PMSR	5	22	22	17	17
Surface Warfare	Air-to-Surface Bombing Test					3	0.0%	50.0%	50.0%	Navy/MC	SDAB	5	22	22	17	17
Surface Warfare	Air-to-Surface Bombing Test					3	0.0%	50.0%	50.0%	Navy/MC	SCAB	5	22	23	17	18
Surface Warfare	Air-to-Surface Gunnery Test					2	0.0%	50.0%	50.0%	Navy/MC	Hawaii	6	7	7	1	1
Surface Warfare	Air-to-Surface Gunnery Test					2	0.0%	50.0%	50.0%	Navy/MC	PMSR	16	24	25	8	9
Surface Warfare	Air-to-Surface Gunnery Test					2	0.0%	50.0%	50.0%	Navy/MC	SDAB	16	24	25	8	9
Surface Warfare	Air-to-Surface Gunnery Test					2	0.0%	50.0%	50.0%	Navy/MC	SCI	16	24	25	8	9
Surface Warfare	Air-to-Surface High-Energy Laser Test					2	0.0%	0.0%	100.0%	Navy/MC	Hawaii	54	57	59	3	5
Surface Warfare	Air-to-Surface High-Energy Laser Test					2	0.0%	0.0%	100.0%	Navy/MC	PMSR	18	109	110	91	92
Surface Warfare	Air-to-Surface High-Energy Laser Test					2	0.0%	0.0%	100.0%	Navy/MC	SDAB	18	109	110	91	92
Surface Warfare	Air-to-Surface High-Energy Laser Test					2	0.0%	0.0%	100.0%	Navy/MC	SCI	18	109	110	91	92

		VESSELS				AIRCRAFT										
		Distribution (%)				Distribution (%)										
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activities	ALT 1	ALT 2	ALT 1	ALT 2
Surface Warfare	Air-to-Surface High-Power Microwave Test					2	0.0%	0.0%	100.0%	Navy/MC	PMSR	0	25	25	25	25
Surface Warfare	Air-to-Surface Laser Targeting Test					2	0.0%	50.0%	50.0%	Navy/MC	Hawaii	0	6	6	6	6
Surface Warfare	Air-to-Surface Laser Targeting Test					2	0.0%	50.0%	50.0%	Navy/MC	PMSR	2	2	2	0	0
Surface Warfare	Air-to-Surface Laser Targeting Test					2	0.0%	50.0%	50.0%	Navy/MC	SDAB	2	2	2	0	0
Surface Warfare	Air-to-Surface Laser Targeting Test					2	0.0%	50.0%	50.0%	Navy/MC	SCI	2	2	2	0	0
Surface Warfare	Air-to-Surface Missile Test					2	0.0%	0.0%	100.0%	Navy/MC	Hawaii	18	19	20	1	2
Surface Warfare	Air-to-Surface Missile Test					2	0.0%	0.0%	100.0%	Navy/MC	PMSR	27	96	97	69	70
Surface Warfare	Air-to-Surface Missile Test					2	0.0%	0.0%	100.0%	Navy/MC	SOCAL	27	96	97	69	70
Surface Warfare	Long-Range Weapons Delivery Systems (OTH)/ Hypersonic Vehicle Test					2	0.0%	0.0%	100.0%	Navy/MC	PMSR	0	28	28	28	28
Surface Warfare	Long-Range Weapons Delivery Systems (OTH)/ Hypersonic Vehicle Test					2	0.0%	0.0%	100.0%	Navy/MC	SOCAL	0	28	28	28	28
Surface Warfare	Rocket Test					2	0.0%	50.0%	50.0%	Navy/MC	Hawaii	2	2	2	0	0
Surface Warfare	Rocket Test					2	0.0%	50.0%	50.0%	Navy/MC	PMSR	6	10	11	4	5
Surface Warfare	Rocket Test					2	0.0%	50.0%	50.0%	Navy/MC	SCAB	6	10	11	4	5
Surface Warfare	Rocket Test					2	0.0%	50.0%	50.0%	Navy/MC	SDAB	6	10	11	4	5
Surface Warfare	Subsurface-to-Surface Missile Test	2	0.0%	0.0%	100.0%					Navy/MC	PMSR	0	4	4	4	4
Surface Warfare	Surface-to-Surface Gunnery Test – Large-Caliber	2.5	0.0%	100.0%	0.0%					Navy/MC	PMSR	0	10	10	10	10
Surface Warfare	Surface-to-Surface Gunnery Test – Medium-Caliber	2.5	0.0%	100.0%	0.0%					Navy/MC	PMSR	0	26	26	26	26
Surface Warfare	Surface-to-Surface Gunnery Test – Small-Caliber	2.5	0.0%	100.0%	0.0%					Navy/MC	PMSR	0	10	10	10	10

		VESSELS				AIRCRAFT							Proposed Annual # of Events		Difference in Annual # of Events	
		Distribution (%)				Distribution (%)										
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activities	ALT 1	ALT 2	ALT 1	ALT 2
Surface Warfare	Surface-to-Surface High-Energy Laser Test	1	0.0%	50.0%	50.0%	1	0.0%	50.0%	50.0%	Navy/MC	PMSR	54	50	50	-4	-4
Surface Warfare	Surface-to-Surface High-Power Microwave Test	1	0.0%	50.0%	50.0%					Navy/MC	PMSR	0	25	25	25	25
Surface Warfare	Surface-to-Surface Missile Test	3	0.0%	50.0%	50.0%					Navy/MC	PMSR	0	44	44	44	44
Surface Warfare	Gun Testing – Large Caliber	2.5	0.0%	100.0%	0.0%					Navy/MC	PMSR	16	9	11	-7	-5
Surface Warfare	Gun Testing – Large Caliber	2.5	0.0%	100.0%	0.0%					Navy/MC	SDAB	16	9	11	-7	-5
Surface Warfare	Gun Testing – Large Caliber	2.5	0.0%	100.0%	0.0%					Navy/MC	SCAB	16	9	11	-7	-5
Surface Warfare	Gun Testing – Medium Caliber	2.5	0.0%	100.0%	0.0%					Navy/MC	SDAB	16	6	7	-10	-9
Surface Warfare	Gun Testing – Medium Caliber	2.5	0.0%	100.0%	0.0%					Navy/MC	SCAB	16	6	7	-10	-9
Surface Warfare	Gun Testing – Small Caliber	2.5	0.0%	100.0%	0.0%					Navy/MC	SDAB	8	1	3	-7	-5
Surface Warfare	Gun Testing – Small Caliber	2.5	0.0%	100.0%	0.0%					Navy/MC	SCAB	8	1	3	-7	-5
Surface Warfare	Missile and Rocket Testing	3	0.0%	50.0%	50.0%					NAVSEA	Hawaii	27	1	1	-26	-26
Surface Warfare	Missile and Rocket Testing	3	0.0%	50.0%	50.0%					NAVSEA	PMSR	11	78	79	78	79
Surface Warfare	Missile and Rocket Testing	3	0.0%	50.0%	50.0%					NAVSEA	SDAB	11	78	79	78	79
Surface Warfare	Missile and Rocket Testing	3	0.0%	50.0%	50.0%					NAVSEA	SCAB	11	78	79	78	80
Other Testing Activities	Acoustic and Oceanographic Research	8	0.0%	62.0%	38.0%	8	0.0%	62.0%	38.0%	NAVAIR	Hawaii	2	2	2	0	0
Other Testing Activities	Acoustic and Oceanographic Research	8	0.0%	62.0%	38.0%	8	0.0%	62.0%	38.0%	NAVAIR	SDAB	0	3	3	3	3
Other Testing Activities	Acoustic and Oceanographic Research	8	0.0%	62.0%	38.0%	8	0.0%	62.0%	38.0%	NAVSEA	Hawaii	0	5	5	5	5

		VESSELS				AIRCRAFT							Proposed Annual # of Events		Difference in Annual # of Events	
		Distribution (%)				Distribution (%)										
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activities	ALT 1	ALT 2	ALT 1	ALT 2
Other Testing Activities	Acoustic and Oceanographic Research	8	0.0%	62.0%	38.0%	8	0.0%	62.0%	38.0%	NAVAIR	SCAB	0	1	1	1	1
Other Testing Activities	Acoustic and Oceanographic Research	8	0.0%	62.0%	38.0%	8	0.0%	62.0%	38.0%	NAVSEA	SDAB	0	1	1	1	1
Other Testing Activities	Acoustic and Oceanographic Research	8	0.0%	62.0%	38.0%	8	0.0%	62.0%	38.0%	NAVSEA	SCAB	0	1	1	1	1
Other Testing Activities	Air Platform Shipboard Integration Test					6	0.0%	0.0%	100.0%	NAVAIR	Hawaii	7	8	8	1	1
Other Testing Activities	Air Platform Shipboard Integration Test					6	0.0%	0.0%	100.0%	NAVAIR	SOCAL	110	144	150	34	40
Other Testing Activities	Undersea Range System Test	2	0.0%	0.0%	100.0%					NAVAIR	Hawaii	21	32	33	11	12
Other Testing Activities	Undersea Range System Test	2	0.0%	0.0%	100.0%					NAVAIR	SOCAL	0	20	21	20	21
Other Testing Activities	Undersea Range System Testing	2	0.0%	0.0%	100.0%					EXWC	PMSR	0	5	6	5	6
Other Testing Activities	Undersea Range System Testing	2	0.0%	0.0%	100.0%					EXWC	SOCAL	0	5	6	5	6
Other Testing Activities	Countermeasure Testing	2	0.0%	0.0%	100.0%					NAVSEA	Hawaii	0	3	4	3	4
Other Testing Activities	Countermeasure Testing	2	0.0%	0.0%	100.0%					NAVSEA	SOCAL	13	11	14	-2	1
Other Testing Activities	Insertion/Extraction	2	33.0%	33.0%	34.0%					NAVSEA	Hawaii	1	2	2	1	1
Other Testing Activities	Insertion/Extraction	2	0.0%	0.0%	100.0%					NAVSEA	SOCAL	5	2	2	-3	-3
Other Testing Activities	Non-Acoustic Component Testing	2	0.0%	0.0%	100.0%	2	0.0%	0.0%	100.0%	NAVSEA	SOCAL	17	2	4	-15	-13
Other Testing Activities	Semi-Stationary Equipment Testing															
Other Testing Activities	Simulant Testing	8	0.0%	0.0%	100.0%	8	0.0%	0.0%	100.0%	NAVSEA	SOCAL	220	3	5	-217	-215
Other Testing Activities	Underwater Search, Deployment, and Recovery															
Other Testing Activities	Communications	8	100.0%	0.0%	0.0%					NIWC	Hawaii	0	4	4	4	4
Other Testing Activities	Communications	8	100.0%	0.0%	0.0%					NIWC	SCI	5	4	4	-1	-1
Other Testing Activities	Communications	8	100.0%	0.0%	0.0%					NIWC	SDAB	5	4	4	-1	-1

		VESSELS				AIRCRAFT							Proposed Annual # of Events		Difference in Annual # of Events	
		Distribution (%)				Distribution (%)										
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activities	ALT 1	ALT 2	ALT 1	ALT 2
Other Testing Activities	Intelligence, Surveillance, Reconnaissance	6	0.0%	0.0%	100.0%	6	0.0%	0.0%	100.0%	NIWC	Hawaii	13	6	6	-7	-7
Other Testing Activities	Intelligence, Surveillance, Reconnaissance	6	0.0%	0.0%	100.0%	6	0.0%	0.0%	100.0%	NIWC	SCI	17	83	96	66	79
Other Testing Activities	Intelligence, Surveillance, Reconnaissance	6	0.0%	0.0%	100.0%	6	0.0%	0.0%	100.0%	NIWC	SDAB - SSTC	17	83	96	66	79
Other Testing Activities	Intelligence, Surveillance, Reconnaissance	6	0.0%	0.0%	100.0%	6	0.0%	0.0%	100.0%	NIWC	SDAB	17	83	96	82	96
Other Testing Activities	Vehicle Testing	6	100.0%	0.0%	0.0%					NIWC	Hawaii	4	20	23	16	19
Other Testing Activities	Vehicle Testing	6	100.0%	0.0%	0.0%					NIWC	SCI	83	24	26	-59	-57
Other Testing Activities	Vehicle Testing	6	100.0%	0.0%	0.0%					NIWC	SDAB	83	24	26	-59	-57
Other Testing Activities	Vehicle Testing	6	100.0%	0.0%	0.0%					NIWC	Transit Corridor	2	5	7	3	5
Vessel Evaluation	Air Defense Testing	2	0.0%	0.0%	100.0%	2	0.0%	0.0%	100.0%	NAVSEA	Hawaii	4	4	4	0	0
Vessel Evaluation	Air Defense Testing	2	0.0%	0.0%	100.0%	2	0.0%	0.0%	100.0%	NAVSEA	PMSR	5	12	14	7	9
Vessel Evaluation	Air Defense Testing	2	0.0%	0.0%	100.0%	2	0.0%	0.0%	100.0%	NAVSEA	SOCAL	5	12	14	7	9
Vessel Evaluation	In-Port Maintenance Testing	8	100.0%	0.0%	0.0%					NAVSEA	Hawaii	18	5	5	-13	-13
Vessel Evaluation	In-Port Maintenance Testing	8	100.0%	0.0%	0.0%					NAVSEA	PMSR	9	8	8	-1	-1
Vessel Evaluation	In-Port Maintenance Testing	8	100.0%	0.0%	0.0%					NAVSEA	SDAB	9	8	8	-1	-1
Vessel Evaluation	Propulsion Testing	4	0.0%	0.0%	100.0%					NAVSEA	Hawaii	8	23	41	15	33
Vessel Evaluation	Propulsion Testing	4	0.0%	0.0%	100.0%					NAVSEA	SOCAL	18	13	23	-5	5
Vessel Evaluation	Signature Analysis Operations	4	100.0%	0.0%	0.0%					NAVSEA	Hawaii	2	3	4	1	2
Vessel Evaluation	Signature Analysis Operations	4	100.0%	0.0%	0.0%					NAVSEA	SDAB	1	1	1	0	0
Vessel Evaluation	Small Ship Shock Trial	4	0.0%	0.0%	100.0%	4	0.0%	0.0%	100.0%	NAVSEA	SOCAL	0	1	1	1	1
Vessel Evaluation	Submarine Sea Trials – Weapons System Testing	2	0.0%	0.0%	100.0%					NAVSEA	Hawaii	1	3	4	2	3

		VESSELS				AIRCRAFT							Proposed Annual # of Events		Difference in Annual # of Events	
		Distribution (%)				Distribution (%)										
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activities	ALT 1	ALT 2	ALT 1	ALT 2
Vessel Evaluation	Submarine Sea Trials – Weapons System Testing	2	0.0%	0.0%	100.0%					NAVSEA	SOCAL	1	3	4	2	3
Vessel Evaluation	Surface Warfare Testing	2	0.0%	0.0%	100.0%					NAVSEA	Hawaii	45	11	16	-34	-29
Vessel Evaluation	Surface Warfare Testing	2	0.0%	0.0%	100.0%					NAVSEA	SOCAL	26	19	27	-7	1
Vessel Evaluation	Surface Warfare Testing	2	0.0%	0.0%	100.0%					NAVSEA	PMSR	26	19	27	-7	1
Vessel Evaluation	Undersea Warfare Testing	2	0.0%	0.0%	100.0%	2	0.0%	0.0%	100.0%	NAVSEA	Hawaii	16	9	13	-7	-3
Vessel Evaluation	Undersea Warfare Testing	2	0.0%	0.0%	100.0%	2	0.0%	0.0%	100.0%	NAVSEA	SOCAL	20	45	60	25	40
Vessel Evaluation	Vessel Signature Evaluation	2	100.0%	0.0%	0.0%					NAVSEA	PMSR	22	2	3	-20	-19
Vessel Evaluation	Vessel Signature Evaluation	2	100.0%	0.0%	0.0%					NAVSEA	SCI	22	2	3	-20	-19
Unmanned Systems	Ocean Energy and Cable System Research	2	33.0%	33.0%	34.0%					EXWC	Hawaii	0	3	4	3	4
Unmanned Systems	Ocean Energy and Cable System Research	2	33.0%	33.0%	34.0%					EXWC	SOCAL	0	4	6	4	6
Unmanned Systems	Unmanned Surface Vehicle System Testing	2.5	100.0%	0.0%	0.0%					NAVSEA	PMSR	0	4	5	4	5
Unmanned Systems	Unmanned Surface Vehicle System Testing	2.5	100.0%	0.0%	0.0%					NAVSEA	SCI	0	3	5	3	5
Unmanned Systems	Unmanned Underwater Vehicle Testing	2.5	100.0%	0.0%	0.0%					NAVSEA	Hawaii	3	2	2	-1	-1
Unmanned Systems	Unmanned Underwater Vehicle Testing	2.5	100.0%	0.0%	0.0%					NAVSEA	SDAB	146	341	342	195	196
Unmanned Systems	Unmanned Underwater Vehicle Testing	2.5	100.0%	0.0%	0.0%					NAVSEA	SCAB	146	341	343	195	197
Acoustic and Oceanographic Science and Technology	Acoustic, Oceanographic, and Energy Research	2	100.0%	0.0%	0.0%					NIWC	Hawaii	0	2	2	2	2

		VESSELS				AIRCRAFT							Proposed Annual # of Events		Difference in Annual # of Events	
		Distribution (%)				Distribution (%)										
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Acoustic and Oceanographic Science and Technology	Acoustic, Oceanographic, and Energy Research	2	100.0%	0.0%	0.0%					NIWC	SCI	0	48	60	48	60
Acoustic and Oceanographic Science and Technology	Acoustic, Oceanographic, and Energy Research	2	100.0%	0.0%	0.0%					NIWC	SDAB	0	48	60	48	60
Acoustic and Oceanographic Science and Technology	Acoustic, Oceanographic, and Energy Research	2	100.0%	0.0%	0.0%					NIWC	PMSR	0	48	60	48	60
Acoustic and Oceanographic Science and Technology	Large Displacement Unmanned Undersea Vehicle Testing	2	0.0%	62.0%	38.0%					ONR	Hawaii	2	10	11	8	9
Acoustic and Oceanographic Science and Technology	Large Displacement Unmanned Undersea Vehicle Testing	2	0.0%	62.0%	38.0%					ONR	SDAB	1	4	5	3	4
Acoustic and Oceanographic Science and Technology	Large Displacement Unmanned Undersea Vehicle Testing	2	0.0%	62.0%	38.0%					ONR	SCAB	1	4	5	3	4
Acoustic and Oceanographic Science and Technology	Large Displacement Unmanned Undersea Vehicle Testing	2	0.0%	62.0%	38.0%					ONR	NOCAL	1	4	5	3	4
Acoustic and Oceanographic Science and Technology	Long Range Acoustic Communications	2	0.0%	62.0%	38.0%					ONR	Hawaii	3	151	165	148	162
Acoustic and Oceanographic Science and Technology	Mine Countermeasure Technology Research															
Acoustic and Oceanographic Science and Technology	Acoustic and Oceanographic Research	8	0.0%	62.0%	38.0%	8	0.0%	62.0%	38.0%	ONR	Hawaii	2	120	130	118	128
Acoustic and Oceanographic Science and Technology	Acoustic and Oceanographic Research	8	0.0%	62.0%	38.0%	8	0.0%	62.0%	38.0%	ONR	SDAB	0	91	99	91	99

		VESSELS				AIRCRAFT							Proposed Annual # of Events		Difference in Annual # of Events	
		Distribution (%)				Distribution (%)										
Category	Activity Name	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Time on Range (hr)	0-3 nm from shore	3-12 nm from Shore	>12 nm from Shore	Service	Location	Current Activities	ALT 1	ALT 2	ALT 1	ALT 2
Acoustic and Oceanographic Science and Technology	Acoustic and Oceanographic Research	8	0.0%	62.0%	38.0%	8	0.0%	62.0%	38.0%	ONR	SCAB	0	91	99	91	99
Acoustic and Oceanographic Science and Technology	Acoustic and Oceanographic Research	8	0.0%	62.0%	38.0%	8	0.0%	62.0%	38.0%	ONR	NOCAL	0	91	99	91	99

Table G-18: Aircraft Emission Factors

Aircraft Engine Emissions Indices/Factors and Sources																					
General Information							Emission Indices, lb/1,000 lb fuel							Emissions Factors (lb/hr)							References
Aircraft	Engine Model	Engines (#)	Fuel Flow (lb/hr) /Engine	Fuel Flow (lb/hr) /Total	Fuel Flow (gal/hr)	Mode	CO	NOx	HC	VOC	SOx	PM	CO2	CO	NOx	VOC	SOx	PM	CO2	Source of Emissions Indices Information	
AH-1W	T700-GE-401C (2)	2	406	812	121	approach	11.21	5.44		0.57	0.40	4.20	3214.50	9.10	4.42	0.46	0.32	3.41	2,610	AESO Memorandum Report No. 9961, Revision A, November 2009.	
C-130 F/R/T	T56-A-16 Turboprop	4	1125	4500	672	circle	2.07	8.16	0.47	0.54	0.37	3.97	3213.00	9.32	36.72	2.43	1.67	17.87	14,459	AESO Memorandum Report No. 2000-09D, December 2015.	
CH-53	T64-GE-415 (3)	3	1488	4464	666	Cruise	2.13	8.08	0.15	0.17	0.37	2.21	3221.35	9.51	36.07	0.77	1.65	9.87	14,380	AESO Memorandum Report No. 9822, Revision D, November 2009.	
CH-60	T700-GE-401C	2	600	1200	179	Cruise					0.37			7.50	7.68	0.76	0.44	5.04	3,865	AESO Memorandum Report No. 9929 Revision D December 2019 , Table ES-2 VOC = THC x 1.15	
E-2 / E-2C	T56-A-425, -427 (2)	2	1133	2266	338	approach	2.54	10.04	na	0.36	0.37	0.94	3251.78	5.76	22.75	0.82	0.84	2.13	7,369	AESO Memorandum Report No. 9943E, September 2015	
EA-18G	F414-GE-400 (2)	2	3318	6636	990	approach Straight in	2.44	6.74	0.44	0.51	0.37	6.36	3154.00	16.19	44.73	3.36	2.46	42.20	20,930	AESO Memorandum Report No. 9815G, March 2011	
EA-6B	J52-P-408A (2)	2	4227	8454	1262	Approach	5.19	6.77	0.84	0.97	0.37	10.48	3168.84	43.88	57.23	8.17	3.13	88.60	26,789	AESO Memorandum Report No. 9941, Revision B, December 2009.	
F-15E	F100-PW-229 (2)	2	5745	11490	1715	military	0.33	29.29	na	0.31	0.37	1.33	3200.00	3.79	336.54	3.56	4.25	15.28	36,768	Air Emissions Guide for Air Force Mobile Source, July 2016. Assumed fuel flow rate is total for each mode, not per engine.	
FA-18E/F	F414-GE-400 (2)	2	5169	10338	1543	approach	0.72	14.75	0.12	0.14	0.37	6.56	3191.30	7.44	152.49	1.43	3.83	67.82	32,992	AESO Memorandum Report No. 9815 I, June 2017, Table 5	
Learjet	TFE731-2-2B	2	266	532	79	approach	22.38	5.90	4.26	4.90	0.37	0.09	3200.00	11.91	3.14	2.61	0.20	0.05	1,702	Air Emissions Guide for Air Force Mobile Source, July 2024. Assumed fuel flow rate is total for each mode, not per engine.	
MV-22	T406-AD-400	2	1910	3820	570	Cruise					0.37			1.99	53.82	0.05	1.41	6.00	12,259	AESO Memorandum Report No. 9946 Revision G May 2017, Table ES-2  VOC = THC x 1.16 x 1.15	
P-3C	T56-A-14 (4)	4	1025	4100	612	approach	2.51	7.73	0.58	0.67	0.37	3.97	3207.70	10.29	31.69	2.73	1.52	16.28	13,152	AESO Memorandum Report No. 9948, Revision C, March 2010.	
P-8 MMA	Boeing 737-800 Series CFM56-7B27	2	2770	5540	827	approach	1.41	11.00	0.10	0.12	0.37	0.09	3161.00	7.81	60.94	0.64	2.05	0.49	17,512	AESO Memorandum Report No. 2017-09, April 2017	
S-3	TF34-GE-400 (2)	2	1145	2290	342	approach	14.10	4.07	1.86	2.14	0.37	3.62	3200.00	32.29	9.32	4.90	0.85	8.29	7,328	AESO Memorandum Report No. 9915B, May 2010.	
SH-60	T700-GE-401C (2)	2	600	1200	179	circle	6.25	6.40	0.55	0.63	0.37	4.20	3221.36	7.50	7.68	0.76	0.44	5.04	3,866	AESO Memorandum Report No. 9929, Revision B, January 2014.	
Notes:																					
Fuel Sulfur Content is based on AESO Memorandum Report No. 2012-01 Revision H, JP-5, 2020																					
VOC = HC*1.15 (AESO Memoranda)																					
6.7 lb/gal Density of jet fuel																					
		Engines (#)	Fuel Flow (lb/op)		Fuel Flow (gal/op)	Mode	Emissions (lb/op)														
							CO	NOx	HC	VOC	SOx	PM	CO2							Source of Emissions Indices Information	
F-35	F135-PW-400	1	1057		155	Military Takeoff	12.09	8.42	0.02	0.02	0.37	0.13	3336.76							AESO Memorandum Report No. 2017-18 Revision A, December 2017, Table 1	
F-35	F135-PW-400	1	1220		179	Straight In Arrival	13.52	6.43	0.02	0.02	0.37	0.15	3849.45							AESO Memorandum Report No. 2017-18 Revision A, December 2017, Table 1	
F-35	F135-PW-400	1	629		93	Touch and Go - Carrier Pattern	0.47	9.96	0.003	0.003	0.37	0.08	1986.01							AESO Memorandum Report No. 2017-18 Revision A, December 2017, Table 1	
						Sum	26.08	24.81	0.04	0.05	1.11	0.36	9172.22								

Table G-19: Vessel Emission Factors

Vessel		VESSEL SPECIFICATIONS	EMISSIONS FACTORS (LB/HR)							Fuel Consumption at Speed (gal/hr)	CO2, LB/HR	Reference for Fuel Consumption Rate	Fuel Consumption Rate - based on CO2 emissions
			CO	NOx	HC	SOx	PM10	PM2.5	CO2				
Cruiser	CG-72	GE LM 2500	61.51	79.58	4.32	0.23	0.997	0.997	24,188	1159.20	24,188	Fuel flow rate calculated based on the SOx emission factor and	1,075
	CG- 72		27.73	285.54	2.46	0.47	4.38	4.38	69,839	2338.31	69,839		3,103
Destroyer	DDG-100	GE LM 2500	59.72	114.52	4.01	0.27	0.14	0.14	27,565	1323.38	27,565	Fuel flow rate calculated based on the SOx emission factor	1,225
	Not underway		0.36	25.65	0.04	0.02	0.12	0.12	3,669	89.55	3,669		163
	DDG-100 - RW		30.57	374.80	2.39	0.58	0.54	0.54	85,141	2860.70	85,142		3,783
USCG Cutter WHEC715, 378 feet - Hamilton Class	USCG	Fairbanks Morse T88-1-8, 3,600 hp	5.74	57.91	0.88	11.55	0.21	0.21	1778.22	79	79		
Amphibious Assault Ship - Tarawa	LHA-6	Steam Combustion Engineering	8.38	277.87	14.48	0.29	4.94	4.94	35,922	1422.89	35922.08		1,596
	LHA-6 -RW		18.73	199.99	15.15	0.21	3.38	3.38	28,059	1019.90	28059.16		1,247
Landing Helicopter Dock	LHD-2	ALCO 16-251C	8.08	47.83	5.77	0.41	28.58	28.58	47,633	2019.90	47,633	Fuel flow rate calculated based on the SOx emission factor	2,116
	LHD-2 - RW		7.66	45.12	5.72	0.41	28.55	28.55	47,490	2014.93	47,490		2,110
Amphibious Transport Dock	LPD-17	turbocharged marine Colt-Pielstick Diesels	31.61	272.28	16.86	0.16	1.36	1.36	16,767.15	796.02	16767.15	Navy database	745
	LPD-17 - RW		28.08	263.75	14.95	0.14	1.12	1.12	15,025.58	701.49	15025.58		668
Landing Craft, Air Cushion	LCAC-91	TF40B	18.32	114.54	3.49	0.16	2.33	2.33	20,693.35	905.20	20693.35	Navy database	919
		T-62T-40-7											
Mine Counter Measures	MCM -12	ID36SS6V-AM(M)	3.49	28.97	2.61	0.02	0.33	0.33	1,781	74.63	1,781	Fuel flow rate calculated based on the SOx emission factor	79
	MCM - RW		4.17	35.05	3.35	0.02	0.36	0.36	2,174	89.55	2,174		97
Landing Craft Utility	LCU	12V-71 7122-7000	5.06	15.704	1.274	0.009	0.604	0.60	923.57	40.4	923.57		41
	AAV-2	400 hp	0.76	6.22	0.82	0.0135	0.26	0.25	1389.56	67	1389.56	Sox emission factor, in lb/hr, was calculated based on the fuel flow rate and ULS fuel sulfur content.	62
	MK V-2	2,285 hp	3.86	29.49	0.99	4.73	0.40	0.40		14	14		
Rigid Inflatable Boat	RIB-4	QSB5.9M TIER 2	1.88	2.677	0.062	0.002	0.047	0.047	265.182	11.6	265.18	Navy database	12
	CRR-5		0.2242	0.9538	0.0128	0.0005	0.0289	0.03	87.23	3	87.23	Atlantic Fleet Training and Testing Final EIS/OEIS, September 2018	4
	LCS -1	Rolls-Royce MT30 36	46.14	186.77	3.19	0.21	0.41	0.41	25,512	1054.73	25,512	Fuel flow rate calculated based on the SOx emission factor	1,133
	LCS - RW		79.12	152.60	6.12	0.099	0.62	0.62	11,116	492.54	11,116		494
	LSD-52		21.25	334.51	10.84	0.11	0.91	0.91	16263.96	522.39	16,264		723
	LSD-52-RW		40.02	604.28	20.43	0.19	1.68	1.68	21,126	965.17	21,126		939
	AS		3.38	21.34	2.53	0.18	12.57	12.57	20,947	890.55	20,947		931
	AS - RW		3.36	19.90	2.52	0.18	12.57	12.57	20,910	890.55	20,910		929
	SSN		3.24	2.39	0.17	0.00	0.01	0.01	112.62	4.98	112.62		5
	SSN - RW		0.32	0.23	0.02	0.001	0.001	0.00	11.06	4.98	11.06		0.5
	CVN-74		1.23	16.73	0.31	0.006	0.05	0.05	683.62	29.85	683.62	Fuel flow rate calculated based on the SOx emission factor	30
	CVN - RW		0.12	1.65	0.03	0.001	0.005	0.005	67.61	4.98	67.61		3
Notes:													
1. Navy and MSC Marine Engine Fuel Consumption & Emission Calculator was used to update the emission factors.													
2. All SO <sub>x</sub> emission factors are based on F-76 (Marine Diesel) with a sulfur content of 0.0015%.													
3. RW = Restricted Waters													
			EMISSIONS FACTORS (lb/hr)							Fuel Flow (gph)	Fuel Flow (gph)		
VESSEL	ENGINE	MODEL	CO	NO <sub>x</sub>	VOC	SO <sub>2</sub>	PM	PM2.5	CO2				
Mark VI Patrol Boat 78PB1201 (MkVI)	Main	MTU - 16V2000M94	42.42	81.81	1.88	11.73	3.93	3.93	6172.34	135	0		

Table G-20: Munitions Emission Factors

Munitions Information					Reference	Emission Factor Assumptions and Comments	Emission Factor (lb/item)						
Munition Type	Munition	Component	Net Explosive Weight (lb NEW)	Type			CO	NO <sub>x</sub>	VOC	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	CO <sub>2</sub>
BOMB	MK82 INERT	spotting charge	3	Black powder	Hawaii-Southern California Training and Testing Final EIS/OEIS, October 2018	Assume Spotting Charge	0.26						
BOMB	MK82 HE				Hawaii-Southern California Training and Testing Final EIS/OEIS, October 2018	Calculate for 192 lb of PEP, 80% TNT, 20% Aluminum; TNT EF x 80% used; Data available in TR-83-240.	60.00						
C4			1		Hawaii-Southern California Training and Testing Final EIS/OEIS, October 2018		0.02625	0.007875		0.02625	0.01875		
LRG PROJ	155MM ILL		6		AP-42 Chapter 15, Table 15.4.1-1 EMISSION FACTORS FOR THE USE OF DODIC D505, M485A2 155-MM ILLUMINATION ROUND (PROJECTILE)		0.026	0.094	0.0015	3		0.0027	1.8
LRG PROJ	5.56						1.60E-03	8.50E-05		3.90E-05	2.80E-05		8.70E-04
MED PROJ	30MM		0.03		AP 42, Chapter 15, Table 15.2.1-1 EMISSION FACTORS FOR THE USE OF DODIC B129, M789 30-MM HIGH EXPLOSIVE DUAL PURPOSE		0.00086	0.0002		0.0039	0.0025	0	0.0044
SML PROJ	7.62						2.30E-03	9.70E-05		5.10E-05	3.80E-05		1.20E-03
SMOKE POT	ABC-M5 30-POUND HC SMOKE POT		1.10		AP 42, Chapter 15, Table 15.7.6-1, EMISSION FACTORS FOR THE USE OF DODIC K866, ABC-M5 30-POUND HC SMOKE POT	Net Explosive Weight for Smokey Sam is from Hazard Classification of United States Military Explosives and Munitions, Revision 15, June 2012	0.0275	0.0000924	0.000594	1.1	0.616	0.000154	0.0165
MISSILE	AIM-7	Fired well above 3,000 ft			Hawaii-Southern California Training and Testing Final EIS/OEIS, October 2018								
MISSILE	AGM-84		215		AP 42, Chapter 15, Table 15.9.1-1, DODIC M023, M112 Demolition Block Charge	Assume similar to C-4 emissions. Net Explosive Weight for AGM -84 is from Hazard Classification of United States Military Explosives and Munitions, Revision 15, June 2012	4.515	1.3545		4.515	3.225	0.0258	135.45
MISSILE	AGM-114B						0.7224	0.21672	0	0.7224	0.516	0.004128	
MISSILE	AGM-65 Maverick						2.1	0.63	0	2.1	1.5	0.012	
MISSILE	AGM-84						4.515	1.3545	0	4.515	3.225	0.0258	
MISSILE	AGM-88 HARM						1.008	0.3024	0	1.008	0.72	0.00576	
MISSILE	SM-3						630			1200	1200		69.6
Rocket	2.75" RKT HE	warhead			Hawaii-Southern California Training and Testing Final EIS/OEIS, October 2018		0.93	0.0056		0.4	0.29		5.5
Rocket	2.75" RKT Inert	INERT Warhead	Neg.		Hawaii-Southern California Training and Testing Final EIS/OEIS, October 2018		Negligible emissions						
TORPEDO	MK30		No emissions										
	MK46		No emissions										
	MK54		No emissions										
SAM-3													
Reference: MDA provided emissions data from EA for Standard Missile (Naval Ordnance Missile Test Station, 1992). Emissions are multiplied by a factor of three (3), since the reference indicates that the exhaust volume of SM-3 is three time larger than SM-1.													

**Table G-21: ALT 1 - Entire Action Emission Increase**

Scenario	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Training	283	845	34	3	63	62
Testing	-6	1	-0.7	2	11	11
Range Modernization and Sustainment	1.1	14	0.4	1.0	0.4	0.4
Total Military Readiness Activities	278	860	33	6	74	73

**Table G-22: ALT 2 - Entire Action Emission Increase**

Scenario	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Training	379	1,015	40	6	70	69
Testing	5	27	1	3	17	17
Range Modernization and Sustainment	1	14	0	1	0.4	0.4
Total Military Readiness Activities	384	1,042	41	8	87	86

Table G-23: Entire Action Emission Increase by Source Type and Alternative

Mission Readiness- ALT 1							Mission Readiness- ALT 2						
Emission Increase > 12 NM							Emission Increase > 12 NM						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	17	65	2	2	11	11	Aircraft	26	83	3	3	19	19
Vessel	113	359	14	0	8	8	Vessel	193	502	19	1	11	11
Munitions	32	1	0	0	26	25	Munitions	32	1	0	0	26	25
Range Modernization and Sustainment	0.4	4.6	0.1	0.3	0.1	0.1	Range Modernization and Sustainment	0.4	4.6	0.1	0.3	0.1	0.1
Total	161	429	15	3	46	45	Total	252	590	22	5	56	55
Emission Increase, Total Action							Emission Increase, Total Action						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	41	108	4	4	27	27	Aircraft	55	130	5	5	38	38
Vessel	195	736	29	1	18	18	Vessel	287	909	36	3	21	21
Munitions	40	1	0	0	28	27	Munitions	40	1	0	0	28	27
Port Hueneme Repair Activities	1.4	1.3	0.2	0.0	0.0	0.0	Port Hueneme Repair Activities	1.4	1.3	0.2	0.0	0.0	0.0
Range Modernization and Sustainment	1	14	0	1	0	0	Range Modernization and Sustainment	1	14	0	1	0	0
Total	278	860	33	6	74	73	Total	385	1,056	41	9	88	87
	58%	50%	46%	43%	62%	62%							
Training Total -ALT 1 (Emission Increase)							Training Total -ALT 2 (Emission Increase)						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	26	45	2	2	18	18	Aircraft	35	54	3	2	24	24
Vessel	222	798	31	1	18	18	Vessel	309	958	37	3	20	20
Munitions	33	1	0	0	26	26	Munitions	33	1	0	0	26	26
Port Hueneme Repair Activities	1.4	1.3	0.2	0.0	0.0	0.0	Port Hueneme Repair Activities	1.4	1.3	0.2	0.0	0.0	0.0
Total	283	845	34	3	63	62	Total	379	1,015	40	6	70	69
Testing Total -ALT 1 (Emission Increase)							Testing Total -ALT 2 (Emission Increase)						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	15	63	1	2	10	10	Aircraft	20	76	2	3	14	14
Vessel	-27	-62	-2	-0.2	-0.1	-0.1	Vessel	-22	-49	-1	0	2	2
Munitions	7	0	0	0	2	1	Munitions	7	0	0	0	2	1
Total	-6	1	-1	2	11	11	Total	5	27	1	3	17	17
Range Modernization and Sustainment							Range Modernization and Sustainment						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Range Modernization and Sustainment	1.11	13.93	0.37	1.03	0.37	0.37	Range Modernization and Sustainment	1	14	0	1	0	0

Table G-24: Summary of Emissions – Hawaii

Mission Readiness- ALT 1							Mission Readiness- ALT 2						
Emission Increase Within 12 NM							Emission Increase Within 12 NM						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	12	32	1	1	9	9	Aircraft	13	34	1	1	10	10
Vessel	35	258	11	0	8	8	Vessel	37	265	11	0	8	8
Munitions	0.5	0.0	0.0	0.0	0.1	0.1	Munitions	0.500	0.021	0.000	0.000	0.075	0.053
Range Modernization and Sustainment	0.3	3.9	0.1	0.3	0.1	0.1	Range Modernization and Sustainment	0.31	3.88	0.10	0.29	0.10	0.10
Total	48	295	12	2	17	17	Total	51	302	12	2	18	18
Honolulu County Air Emissions for 2020, tons/year	77,700	20,652	37,295	11,446	14,553	4,369	Honolulu County Air Emissions for 2020, tons/year	77,700	20,652	37,295	11,446	14,553	4,369
Percent of Existing Emissions	0.06%	1.43%	0.03%	0.02%	0.12%	0.40%	Percent of Existing Emissions	0.07%	1.46%	0.03%	0.02%	0.12%	0.41%
> 12 NM							> 12 NM						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	8	14	1	1	6	6	Aircraft	10	18	1	1	8	8
Vessel	56	189	8	0	6	6	Vessel	73	223	9	0	8	8
Munitions	7	0	0	0	6	6	Munitions	7	0	0	0	7	6
Range Modernization and Sustainment	0	4	0	0	0	0	Range Modernization and Sustainment	0	0	0	0	0	0
Total	71	207	9	1	19	19	Total	90	241	11	1	22	22
Total							Total						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	20	46	2	2	15	15	Aircraft	23	51	2	2	18	18
Vessel	91	447	19	0	14	14	Vessel	110	488	20	1	16	16
Munitions	8	0	0	0	7	6	Munitions	8	0	0	0	7	6
Range Modernization and Sustainment	0	4	0	0	0	0	Range Modernization and Sustainment	0	4	0	0	0	0
Total	119	498	21	3	36	36	Total	141	543	23	3	41	40

Table G-25: Summary of Emissions – SDAB

Mission Readiness- ALT 1							Mission Readiness- ALT 2						
Within 3 NM							Within 3 NM						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	7	5	1	0	4	4	Aircraft	9	6	1	0	5	5
Vessel	13	8	0	0	0	0	Vessel	15	15	1	0	0	0
Munitions	1	0	0	0	0	0	Munitions	1	0.0	0.0	0.0	0.1	0.1
Range Modernization and Sustainment	0.004	0.05	0.0004	0.004	0.002	0.0016	Range Modernization and Sustainment	0.004	0.05	0.0004	0.004	0.002	0.0016
Total	20.8	13.4	1.2	0.3	4.7	4.6	Total	24	22	1	0	6	6
Portside Community Emission, 2018, TPY		1,462	1,248		728	194	Portside Community Emission, 2018, TPY	0	1,462	1,248	0	728	194
Percent of Portside Community Emissions		0.9%	0.1%		0.6%	2.40%	Percent of Portside Community Emissions		1.5%	0.1%		0.8%	2.9%
Within 12 NM							Within 12 NM						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	11	8	1	1	6	6	Aircraft	13	10	1	1	8	8
Vessel	27	50	2	0.02	1	1	Vessel	31	61	2	0	1	1
Munitions	1	0.1			0.2	0.1	Munitions	1	0.1	0.0	0.0	0.2	0.1
Range Modernization and Sustainment	0.004	0.052	0.000	0.004	0.002	0.002	Range Modernization and Sustainment	0.004	0.05	0.0004	0.004	0.002	0.0016
Total	38.2	58.8	2.9	0.5	7.6	7.5	Total	44	71	3	1	9	9
Portside Community Emission, 2018, TPY		1,462	1,248		728	194	Portside Community Emission, 2018, TPY		1,462	1,248		728	194
Percent of Portside Community Emissions		4.0%	0.2%		1.0%	3.9%	Percent of Portside Community Emissions		4.9%	0.3%		1.2%	4.6%
Total, tons/day	0.105	0.161	0.008	0.001	0.021	0.021	Total, tons/day	0.121	0.196	0.009	0.002	0.025	0.025
SDAB Air Emissions for 2020, tons/day	501	88	191	3	95	31	SDAB Air Emissions for 2020, tons/day	501	88	191	3	95	31
Percent of Existing Emissions	0.02%	0.18%	0.004%	0.05%	0.02%	0.07%	Percent of Existing Emissions	0.02%	0.22%	0.005%	0.07%	0.03%	0.08%
> 12 NM							> 12 NM						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	4	18	0	1	2	2	Aircraft	6	23	1	1	3	3
Vessel	58	121	4	0	1	1	Vessel	76	157	5	0	1	1
Munitions	4	0	0	0	6	6	Munitions	4.0	0.0	0.0	0.0	6.1	6.0
Range Modernization and Sustainment	0	0	0	0	0	0	Range Modernization and Sustainment	0	0	0	0	0	0
Total	66	140	5	1	8	8	Total	87	180	6	1	10	10
Total							Total						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	15	26	1	1	8	8	Aircraft	19	33	2	2	11	11
Vessel	84	172	6	0	2	2	Vessel	107	218	8	0	2	2
Munitions	5	0	0	0	6	6	Munitions	5	0	0	0	6	6
Range Modernization and Sustainment	0.008	0.104	0.001	0.008	0.003	0.003	Range Modernization and Sustainment	0.01	0.10	0.00	0.01	0.00	0.00
Total	104	198	8	1	16	16	Total	131	251	9	2	19	19

Table G-26: Summary of Emissions – SCAB

Mission Readiness- ALT 1							Mission Readiness- ALT 2						
Within 3 NM							Within 3 NM						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	1	1	0.1	0.0	1	1	Aircraft	2	2	0	0	1	1
Vessel	5	2	0.4	0.4	-1	-1	Vessel	6	5	0	0	-1	-1
Munitions	1	0	0.0	0.0	0	0	Munitions	1	0.1	0.0	0.0	0.3	0.2
Range Modernization and Sustainment	0	2	0.1	0.2	0	0	Range Modernization and Sustainment	0	2	0	0	0	0
Total	7.6	5.4	0.5	0.6	0.3	0.2	Total	9	9.2	0.7	0.7	0.9	0.8
Within 12 NM							Within 12 NM						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	-0.3	0.3	-0.1	-0.1	-1	-1	Aircraft	1	2	0	0	0	0
Vessel	13	33	1.5	0.8	0.4	0.4	Vessel	17	42	2	1	1	1
Munitions	2	0.2	0.00	0.00	0.4	0.3	Munitions	2	0.2	0.0	0.0	0.4	0.3
Range Modernization and Sustainment	0	3	0.1	0.2	0.1	0.1	Range Modernization and Sustainment	0	3	0	0	0	0
Total	15	37	2	1	0.3	0.2	Total	20	47	2	1	1	1
Total, tons/day	0.041	0.101	0.004	0.003	0.001	0.000	Total, tons/day	0.054	0.128	0.005	0.003	0.003	0.003
SCAB Air Emissions for 2020, tons/day	1,973	361	562	17	219	87	SCAB Air Emissions for 2020, tons/day	1,973	361	562	17	219	87
Percent of Existing Emissions	0.002%	0.028%	0.001%	0.016%	0.000%	0.001%	Percent of Existing Emissions	0.003%	0.035%	0.001%	0.019%	0.002%	0.004%
> 12 NM							> 12 NM						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	0	7	0	0	-1	-1	Aircraft	2	12	0	0	1	1
Vessel	45	100	4	0	1	1	Vessel	67	141	5	1	1	1
Munitions	7	0	0	0	6	6	Munitions	7.4	0.2	0.0	0.0	6.1	6.1
Range Modernization and Sustainment	0	5	0	0	0	0	Range Modernization and Sustainment	0	5	0	0	0	0
Total	53	112	4	1	6	6	Total	77	157	5	2	8	8
Total							Total						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	0	7	0	0	-1	-1	Aircraft	3	13	0	0	1	1
Vessel	58	133	5	1	1	1	Vessel	83	182	7	2	2	2
Munitions	10	0	0	0	7	6	Munitions	10	0	0	0	7	6
Range Modernization and Sustainment	1	10	0	1	0.3	0.3	Range Modernization and Sustainment	1	10	0	1	0	0
Total	68	151	5	2	7	7	Total	97	206	7	3	10	10

Table G-27: Summary of Emissions – SOCAL

Mission Readiness- ALT 1							Mission Readiness- ALT 2						
Within 12 NM							Within 12 NM						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	0	0	0	0	0	0	Aircraft	0	0	0	0	0	0
Vessel	0	0	0	0	0	0	Vessel	0	0	0	0	0	0
Munitions	2	0	0	0	1	0	Munitions	2.4	0.1	0.0	0.0	0.5	0.4
Total	2	0	0	0	1	0	Total	2	0	0	0	1	0
> 12 NM							> 12 NM						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	-1	9	0	0	0	0	Aircraft	0	11	0	0	1	1
Vessel	-64	-111	-4	0	0	0	Vessel	-49	-83	-3	0	0	0
Munitions	4	0	0	0	1	1	Munitions	4	0	0	0	1	1
Total	-62	-102	-4	0	1	0	Total	-45	-72	-3	0	2	2
Total							Total						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	-1	9	0	0	0	0	Aircraft	0	11	0	0	1	1
Vessel	-64	-111	-4	0	0	0	Vessel	-49	-83	-3	0	0	0
Munitions	6	0	0	0	1	1	Munitions	6	0	0	0	1	1
Total	-59	-102	-4	0	1	1	Total	-43	-72	-3	0	3	2

Table G-28: Summary of Emissions – PMRS

Mission Readiness- ALT 1							Mission Readiness- ALT 2						
Within 3 NM							Within 3 NM						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	0	0	0	0	0	0	Aircraft	0	0	0	0	0	0
Vessel	1	9	0	0	0	0	Vessel	1	10	0	0	0	0
Munitions	0	0	0	0	0	0	Munitions	0	0.0	0.0	0.0	0.0	0.0
Total	2	10	0	0	0	0	Total	2	10	0	0	0	0
Within 12 NM							Within 12 NM						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	1	1	0	0	1	1	Aircraft	1	2	0	0	1	1
Vessel	7	33	1	0	1	1	Vessel	8	35	1	0	1	1
Munitions	2	0	0	0	1	1	Munitions	2	0.0	0.0	0.0	0.8	0.6
Total	11	34	1	0	2	2	Total	12	37	1	0	3	2
Total, tons/day	0.03	0.09	0.004	0.0002	0.01	0.01	Total, tons/day	0.03	0.10	0.004	0.0004	0.01	0.01
Air Emissions for 2020, tons/day	450	43	266	4	66	32	Air Emissions for 2020, tons/day	450	43	266	4	66	32
Percent of Existing Emissions	0.01%	0.22%	0.001%	0.005%	0.01%	0.02%	Percent of Existing Emissions	0.01%	0.24%	0.002%	0.01%	0.01%	0.02%
> 12 NM							> 12 NM						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	6	16	0	1	4	4	Aircraft	7	19	1	1	6	6
Vessel	12	37	1	0	1	1	Vessel	19	48	2	0	1	1
Munitions	8	0	0	0	6	6	Munitions	8.1	0.0	0.0	0.0	6.3	6.2
Total	26	53	2	0	11	11	Total	34	68	3	1	13	13
Total							Total						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	7	18	1	1	5	5	Aircraft	9	21	1	1	7	7
Vessel	20	69	3	0	2	2	Vessel	27	83	3	0	2	2
Munitions	11	0	0	0	7	7	Munitions	11	0	0	0	7	7
Total	37	87	3	1	14	13	Total	46	105	4	1	16	15

Table G-29: Summary of Emissions – NOCAL

Mission Readiness- ALT 1							Mission Readiness- ALT 2						
Within 12 NM							Within 12 NM						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	0.08	0.20	0.01	0.01	0.06	0.06	Aircraft	0	0	0	0	0	0
Vessel	1	3	0.17	-0.05	0.06	0.06	Vessel	1	4	0	0	0	0
Munitions	0.2	0.0	0.0	0.000	0.006	0.005	Munitions	0.2	0.0	0.0	0.0	0.0	0.0
Total	1	3	0.2	0.0	0.1	0.1	Total	2	4	0	0	0	0
Total, tons/day	0.0025	0.0084	0.0005	-0.0001	0.0003	0.0003	Total, tons/day	0.0042	0.0121	0.0006	0.0000	0.0004	0.0004
Air Emissions for 2020, tons/day	728	36	191	4	100	57	Air Emissions for 2020, tons/day	728	36	191	4	100	57
Percent of Existing Emissions	0.0003%	0.02%	0.0003%	-0.003%	0.0003%	0.001%	Percent of Existing Emissions	0.0006%	0.03%	0.0003%	0.001%	0.0004%	0.001%
> 12 NM							> 12 NM						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	1	1	0	0	0	0	Aircraft	1	1	0	0	0	0
Vessel	6	24	1	0	0	0	Vessel	8	16	1	0	0	0
Munitions	1	0	0	0	0	0	Munitions	1	0	0	0	0	0
Total	7	25	1	0	0	0	Total	9	17	1	0	0	0
Total							Total						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	1	1	0	0	0	0	Aircraft	1	1	0	0	0	0
Vessel	7	27	1	0	0	0	Vessel	9	20	1	0	0	0
Munitions	1	0	0	0	0	0	Munitions	1	0	0	0	0	0
Total	8	28	1	0	1	1	Total	11	21	1	0	1	1

Table G-30: Summary of Emissions – Transit Corridor

Mission Readiness- ALT 1							Mission Readiness- ALT 2						
Within 12 NM							Within 12 NM						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	0	0	0	0	0	0	Aircraft	0	0	0	0	0	0
Vessel	0	0	0	0	0	0	Vessel	0	0	0	0	0	0
Munitions	0	0	0	0	0	0	Munitions	0.1	0.0	0.0	0.0	0.0	0.0
Total	0	0	0	0	0	0	Total	0	0	0	0	0	0
> 12 NM							> 12 NM						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	0	0	0	0	0	0	Aircraft	0	0	0	0	0	0
Vessel	-1	-2	0	0	0	0	Vessel	0	0	0	0	0	0
Munitions	0	0	0	0	0	0	Munitions	0	0	0	0	0	0
Total	-1	-2	0	0	0	0	Total	0	0	0	0	0	0
Total							Total						
Activity	Emissions by Air Pollutant (TPY)						Activity	Emissions by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>		CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Aircraft	0	0	0	0	0	0	Aircraft	0	0	0	0	0	0
Vessel	-1	-2	0	0	0	0	Vessel	0	0	0	0	0	0
Munitions	0	0	0	0	0	0	Munitions	0	0	0	0	0	0
Total	-1	-2	0	0	0	0	Total	0	0	0	0	0	0

### G.3 Navy Record of Non-Applicability (RONA) for Clean Air Act Conformity of Non-Applicability

#### G.3.1 South Coast Air Basin Nonattainment Area

The Proposed Action falls under the Record of Non-Applicability (RONA) category and is documented with this RONA.

**Proposed Action:** Hawaii-California Training and Testing

**Action Proponents:** Commander U.S. Pacific Fleet, Naval Air Systems Command, Naval Facilities Engineering and Expeditionary Warfare Center, Naval Sea Systems Command, Naval Information Warfare Systems Command, Office of Naval Research, U.S. Marine Corps, U.S. Army, and U.S. Air Force

**Proposed Action Name:** Hawaii-California (HCTT) Training and Testing Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS)

#### Proposed Action and Emissions Summary:

The Proposed Action (Preferred Alternative, Alternative 1) consists of military readiness activities in the waters of the States of Hawaii and California, as well as in federal and international waters. The action involves the operation of military aircraft, vessels, and small boats to achieve requisite training and testing requirements. Small boats and vessels would be operational in locations within the South Coast Air Basin. These nearshore activities generate emissions primarily through fossil fuel combustion from engine operation. The region, managed by South Coast Air Quality Management District, is classified as an extreme non-attainment area for ozone (eight-hour average concentration), a carbon monoxide maintenance area, a maintenance area for nitrogen dioxide, a maintenance area for particulate matter with an aerodynamic size less than or equal to 10 microns (PM<sub>10</sub>) and a serious non-attainment area for particulate matter with an aerodynamic size less than or equal to 2.5 microns (PM<sub>2.5</sub>). As a result, Proposed Action emissions were evaluated to assess compliance with the General Conformity Rule *de minimis* thresholds for the above pollutants and their precursors. As shown in the table below, Proposed Action would result in no exceedance of the applicable *de minimis* thresholds. Therefore, emissions from the Proposed Action would show conformity under the Clean Air Act.

**Table G-31: Estimated Net Change in Annual Criteria Air Pollutant Emissions from Military Readiness Activities in the South Coast Air Basin (Within 3 NM), Alternative 1<sup>1</sup>**

Source	Emissions Increase by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Net Change in Emissions from all Sources	7.6	5.4	0.5	0.6	0.3	0.2
<i>De Minimis</i> Threshold	100	10	10	70	100	70

<sup>1</sup> Table includes criteria pollutant precursors (e.g., VOC). Individual values may not add exactly to total values due to rounding.

Notes: CO = carbon monoxide, NO<sub>x</sub> = nitrogen oxides, PM<sub>2.5</sub> = particulate matter ≤ 2.5 microns in diameter, PM<sub>10</sub> = particulate matter ≤ 10 microns in diameter, SO<sub>x</sub> = sulfur oxides (precursor to PM<sub>2.5</sub>), TPY = tons per year, VOC = volatile organic compounds

**Affected Air Basins:** South Coast Air Basin

**Date RONA prepared:** November 13, 2024

**RONA prepared by:**

**Proposed Action Exemptions**

The Proposed Action is exempt from General Conformity Rule requirements, based on the determination that emissions associated with the Proposed Action are below all *de minimis* thresholds.

**Emissions Evaluation Conclusion**

The U.S. Navy concludes that de minimis thresholds for nonattainment pollutants and their precursors would not be exceeded as a result of implementation of the Proposed Action. The emissions data supporting this conclusion is shown in Table G-31 above. The calculations, methodology, data, and references contained in Section 3.1 (Air Quality and Climate Change) and Appendix G of the HCTT EIS/OEIS.

Therefore, the Navy concludes that further formal Conformity Determination procedures are not required, resulting in this RONA.

**RONA Approval:**

Signature: \_\_\_\_\_

Name/Rank: \_\_\_\_\_ Date: \_\_\_\_\_

Position: \_\_\_\_\_ Activity: \_\_\_\_\_

### G.3.2 San Diego Air Basin Nonattainment Area

The Proposed Action falls under the Record of Non-Applicability (RONA) category and is documented with this RONA.

**Proposed Action:** Hawaii-California Training and Testing

**Action Proponents:** Commander U.S. Pacific Fleet, Naval Air Systems Command, Naval Facilities Engineering and Expeditionary Warfare Center, Naval Sea Systems Command, Naval Information Warfare Systems Command, Office of Naval Research, U.S. Marine Corps, U.S. Army, and U.S. Air Force

**Proposed Action Name:** Hawaii-California (HCTT) Training and Testing Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS)

#### Proposed Action and Emissions Summary:

The Proposed Action (Preferred Alternative, Alternative 1) consists of military readiness activities in the waters of the States of Hawaii and California, as well as in federal and international waters. The action involves the operation of military aircraft, vessels, and small boats to achieve requisite training and testing requirements. Small boats and vessels would be operational in locations within the San Diego Air Basin. These nearshore activities generate emissions primarily through fossil fuel combustion from engine operation. The region, managed by San Diego Air Pollution Control District, is classified as a severe non-attainment area for ozone (eight-hour average concentration). As a result, Proposed Action emissions were evaluated to assess compliance with the General Conformity Rule *de minimis* thresholds for ozone precursors, oxides of nitrogen (NO<sub>x</sub>) and volatile organic compounds (VOC). As shown in the table below, Proposed Action would result in no exceedance of the applicable *de minimis* thresholds. Therefore, emissions from the Proposed Action would show conformity under the Clean Air Act.

**Table G-32: Estimated Net Change in Annual Criteria Air Pollutant Emissions from Military Readiness Activities in the San Diego Air Basin (Within 3 NM), Alternative 1<sup>1</sup>**

Source	Emissions Increase by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Net Change in Emissions from all Sources	21	13	1	0.3	5	5
De Minimis Threshold	N/A	25	25	N/A	N/A	N/A

<sup>1</sup> Table includes criteria pollutant precursors (e.g., volatile organic compounds). Individual values may not add exactly to total values due to rounding.

Notes: CO = carbon monoxide, NO<sub>x</sub> = nitrogen oxides, PM<sub>2.5</sub> = particulate matter ≤ 2.5 microns in diameter, PM<sub>10</sub> = particulate matter ≤ 10 microns in diameter, SO<sub>x</sub> = sulfur oxides, TPY = tons per year, VOC = volatile organic compounds

**Affected Air Basins:** San Diego Air Basin

**Date RONA prepared:** November 13, 2024

**RONA prepared by:**

#### Proposed Action Exemptions

The Proposed Action is exempt from General Conformity Rule requirements, based on the determination that emissions associated with the Proposed Action are below all *de minimis* thresholds.

### Emissions Evaluation Conclusion

The U.S. Navy concludes that de minimis thresholds for ozone precursors would not be exceeded as a result of implementation of the Proposed Action. The emissions data supporting this conclusion is shown in Table G-32 above. The calculations, methodology, data, and references contained in Section 3.1 (Air Quality and Climate Change) and Appendix G of the HCTT EIS/OEIS.

Therefore, the Navy concludes that further formal Conformity Determination procedures are not required, resulting in this RONA.

### RONA Approval:

Signature: \_\_\_\_\_

Name/Rank: \_\_\_\_\_ Date: \_\_\_\_\_

Position: \_\_\_\_\_ Activity: \_\_\_\_\_

### G.3.3 South Central Coast Air Basin Air Basin Nonattainment Area

The Proposed Action falls under the Record of Non-Applicability (RONA) category and is documented with this RONA.

**Proposed Action:** Hawaii-California Training and Testing

**Action Proponents:** Commander U.S. Pacific Fleet, Naval Air Systems Command, Naval Facilities Engineering and Expeditionary Warfare Center, Naval Sea Systems Command, Naval Information Warfare Systems Command, Office of Naval Research, U.S. Marine Corps, U.S. Army, and U.S. Air Force

**Proposed Action Name:** Hawaii-California (HCTT) Training and Testing Environmental Impact Statement/Overseas Environmental Impact Statement (EIS/OEIS)

#### Proposed Action and Emissions Summary:

The Proposed Action (Preferred Alternative, Alternative 1) consists of military readiness activities in the waters of the States of Hawaii and California, as well as in federal and international waters. The action involves the operation of military aircraft, vessels, and small boats to achieve requisite training and testing requirements. Small boats and vessels would be operational in locations within the G.3.3 South Central Coast Air Basin. These nearshore activities generate emissions primarily through fossil fuel combustion from engine operation. The region, managed by Ventura County Air Pollution Control District, is classified as a serious non-attainment area for ozone (eight-hour average concentration). As a result, Proposed Action emissions were evaluated to assess compliance with the General Conformity Rule *de minimis* thresholds for ozone precursors, oxides of nitrogen (NO<sub>x</sub>) and volatile organic compounds (VOC). As shown in the table below, Proposed Action would result in no exceedance of the applicable *de minimis* thresholds. Therefore, emissions from the Proposed Action would show conformity under the Clean Air Act.

**Table G-33: Estimated Net Change in Annual Criteria Air Pollutant Emissions from Military Readiness Activities in the South Central Coast Air Basin (Within 3 NM), Alternative 1<sup>1</sup>**

Source	Emissions Increase by Air Pollutant (TPY)					
	CO	NO <sub>x</sub>	VOC	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Net Change in Emissions from all Sources	2	10	0.3	0.03	0.4	0.4
<i>De Minimis</i> Threshold	N/A	50	50	N/A	N/A	N/A

<sup>1</sup>Table includes criteria pollutant precursors (e.g., volatile organic compounds). Individual values may not add exactly to total values due to rounding.

Notes: CO = carbon monoxide, NO<sub>x</sub> = nitrogen oxides, PM<sub>2.5</sub> = particulate matter ≤ 2.5 microns in diameter, PM<sub>10</sub> = particulate matter ≤ 10 microns in diameter, SO<sub>x</sub> = sulfur oxides, TPY = tons per year, VOC = volatile organic compounds

**Affected Air Basins:** South Central Coast Air Basin

**Date RONA prepared:** November 13, 2024

**RONA prepared by:**

#### Proposed Action Exemptions

The Proposed Action is exempt from General Conformity Rule requirements, based on the determination that emissions associated with the Proposed Action are below all *de minimis* thresholds.

### Emissions Evaluation Conclusion

The U.S. Navy concludes that de minimis thresholds for ozone precursors would not be exceeded as a result of implementation of the Proposed Action. The emissions data supporting this conclusion is shown in Table G-33 above. The calculations, methodology, data, and references contained in Section 3.1 (Air Quality and Climate Change) and Appendix G of the HCTT EIS/OEIS.

Therefore, the Navy concludes that further formal Conformity Determination procedures are not required, resulting in this RONA.

#### **RONA Approval:**

Signature: \_\_\_\_\_

Name/Rank: \_\_\_\_\_ Date: \_\_\_\_\_

Position: \_\_\_\_\_ Activity: \_\_\_\_\_

## References

- Air Force Civil Engineer Center. (2023). *Air Emissions Guide for Air Force Mobile Sources: Methods for Estimating Emissions of Air Pollutants for Mobile Sources at United States Air Force Installations*. JBSA Lackland, TX: Compliance Technical Support Branch.
- Hawaii Department of Health. (2016). *State of Hawaii Annual Summary, 2015 Air Quality Data*. Retrieved from [https://health.hawaii.gov/cab/files/2016/12/aqbook\\_2015.pdf](https://health.hawaii.gov/cab/files/2016/12/aqbook_2015.pdf).
- San Diego County Air Pollution Control District. (2022). *Annual Air Quality Report 2022*. San Diego, CA: San Diego County Air Pollution Control District.
- South Coast Air Quality Management District. (2022). *2022 Air Quality Management Plan*. Diamond Bar, CA: South Coast Air Quality Management District.
- State of Hawaii Department of Health. (2023). *State of Hawaii 2023 Air Monitoring Network Plan*. Honolulu, HI: Environmental Management Division, Clean Air Branch.
- U.S. Department of the Air Force. (2024). *Air Emissions Guide for Air Force Stationary Sources*. Air Force Civil Engineer Center.
- U.S. Department of the Navy. (2014). *US Navy F-35C West Coast Homebasing Environmental Impact Statement*. San Diego, CA: U.S. Department of the Navy, Naval Facilities Engineering Command Southwest.
- U.S. Environmental Protection Agency. (1972). *Mixing Heights, Wind Speeds, and Potential for Urban Air Pollution Throughout the Contiguous United States*. Research Triangle Park, NC: Environmental Protection Agency Office of Air Programs.
- U.S. Environmental Protection Agency. (2022). *Ports Emissions Inventory Guidance: Methodologies for Estimating Port-Related and Goods Movement Mobile Source Emissions*. Washington, DC: U.S. Environmental Protection Agency, Office of Transportation and Air Quality, Transportation and Climate Division.
- U.S. Environmental Protection Agency. (2024). *Climate Change Indicators: Weather and Climate*. Retrieved April 25, 2024, from <https://www.epa.gov/climate-indicators/weather-climate>.
- Ventura County Air Pollution Control District. (2022). *2022 Ventura County Air Quality Management Plan*. Ventura, CA: Ventura County Air Pollution Control Board.