# Final

# Supplemental Environmental Impact Statement/ Overseas Environmental Impact Statement Atlantic Fleet Training and Testing

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# 3.1 AIR QUALITY

**AIR QUALITY SYNOPSIS**

The Action Proponents considered the stressors to air quality that could result from the Proposed Action within the Study Area. The following conclusions have been reached for the Preferred Alternative (Alternative 1):

- Criteria air pollutants: The emission of criteria pollutants resulting from activities in the Study Area would not cause a violation or contribute to an ongoing violation of the National Ambient Air Quality Standards.
- Hazardous air pollutants: Mobile sources would operate intermittently over a large area and would produce negligible ambient hazardous air pollutant impacts, predominantly in areas not routinely accessed by the general public.
- Greenhouse gas emissions: Military readiness activities in the Study Area would generate greenhouse gas emissions that would disperse throughout the atmosphere, mixing and distributing globally.

## 3.1.1 INTRODUCTION

This section describes air quality in the Study Area and analyzes potential effects to air quality from the proposed Atlantic Fleet Training and Testing (AFTT) military readiness activities. Air quality generally refers to the concentration of air pollutants in a locality and for purposes of this analysis, it specifically refers to air pollutants that could affect the health or welfare of the public for which the United States (U.S.) Environmental Protection Agency (USEPA) has established regulatory National Ambient Air Quality Standards (criteria air pollutants). Air quality also includes hazardous air pollutants that cause cancer or other serious health effects. Greenhouse gases, conversely, refer to gases that trap heat in the atmosphere. Some substances are both air pollutants and greenhouse gases (such as methane).

The approach to analyzing air quality impacts produced by the Proposed Action was explained in the 2018 *Final Atlantic Fleet Training and Testing Environmental Impact Statement/Overseas Environmental Impact Statement* (EIS/OEIS) (hereinafter referred to as the 2018 Final EIS/OEIS). The Study Area is generally consistent with that analyzed in the 2018 Final EIS/OEIS. Additions to the Study Area include pierside training and testing events and transit along established navigation channels from pierside locations to offshore range complexes in the Gulf of America. U.S. Coast Guard activities are similar in nature to Navy activities and fall under the same stressor categories. The air quality analysis takes into consideration the existing air quality and potential air quality impacts that would occur from the project alternatives within these new areas.

Laws, regulations, and guidance that were described in the 2018 Final EIS/OEIS remain applicable to this Supplemental EIS/OEIS. Additionally, areas designated as Clean Air Act maintenance areas for ozone under the 1997 8-hour ozone standard do not need to prepare a separate maintenance plan to comply with the new 2008 ozone standards. (Section 3.1.2.3, Existing Air Quality; see also *South Coast Air Quality Management District v. EPA*, 882 F.3d 1138 [D.C. Cir. 2018]). Also, new executive orders and guidance have changed the way the Navy analyzes greenhouse gases (GHGs) compared to the 2018 Final

EIS/OEIS (see Section 4.3.1, Cumulative Impacts on Environmental Resources, Air Quality, of this Supplemental EIS/OEIS).

### 3.1.1.1 Criteria Pollutants

The Clean Air Act requires the USEPA to establish National Ambient Air Quality Standards for six major pollutants of concern, also known as "criteria pollutants." The six criteria pollutants are: carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter (dust particles less than or equal to 10 microns in diameter and fine particulate matter less than or equal to 2.5 microns in diameter), and sulfur dioxide. National Ambient Air Quality Standards for criteria pollutants are set forth in Table 3.1-1. Locations are designated as either attainment or nonattainment areas based on whether they are within compliance or violation of pollutant standards, respectively. Locations that have been nonattainment, but have subsequently lowered emissions to attainment levels, are classified as maintenance areas. USEPA must also classify nonattainment areas according to the severity of the pollution. Classifications include marginal, moderate, serious, severe, and extreme. All states located in the Study Area have adopted the National Ambient Air Quality Standards for criteria pollutants. Delaware and North Carolina also have adopted state ambient air quality standards for purposes of regulating air quality within their jurisdictions.

Several regions along the Atlantic and Gulf of America coastlines are known as "orphan" maintenance areas under the 1997 ozone National Ambient Air Quality Standard. Even though the ozone standards under the Clean Air Act for these types of areas have changed, case law has clarified that orphan areas may continue following their existing maintenance plans per the 1997 8-hour ozone standard until expiration of the second maintenance period. (See *South Coast South Coast Air Quality Management District v. EPA*, 882 F.3d 1138 [D.C. Cir. 2018]).

**Table 3.1-1: National Ambient Air Quality Standards**

| *Pollutant* | | *Primary/Secondary* | *Averaging Time* | *Level* | *Form* |
|---|---|---|---|---|---|
| Carbon monoxide | | Primary | 8 hours | 9 ppm | Not to be exceeded more than once per year |
| | | | 1 hour | 35 ppm | |
| Lead | | Primary and secondary | Rolling 3-month period | 0.15 µg/m$^3$ (1) | Not to be exceeded |
| Nitrogen dioxide | | Primary | 1 hour | 100 ppb | 98th percentile of 1-hour daily maximum concentrations, averaged over 3 years |
| | | Primary and secondary | 1 year | 53 ppb (2) | Annual mean |
| Ozone | | Primary and secondary | 8 hours | 0.070 ppm (3) | Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years |
| Particle pollution (particulate matter) | $PM_{2.5}$ | Primary | 1 year | 9 µg/m$^3$ | Annual mean, averaged over 3 years |
| | | Secondary | 1 year | 15.0 µg/m$^3$ | Annual mean, averaged over 3 years |
| | | Primary and secondary | 24 hours | 35 µg/m$^3$ | 98th percentile, averaged over 3 years |
| | $PM_{10}$ | Primary and secondary | 24 hours | 150 µg/m$^3$ | Not to be exceeded more than once per year on average over 3 years |

**Table 3.1 1: National Ambient Air Quality Standards (continued)**

| *Pollutant* | *Primary/Secondary* | *Averaging Time* | *Level* | *Form* |
|---|---|---|---|---|
| Sulfur dioxide | Primary | 1 hour | 75 ppb [(4)] | 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years |
| | Secondary | 3 hours | 0.5 ppm | Not to be exceeded more than once per year |

[1] In areas designated nonattainment for the lead standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m$^3$ as a calendar quarter average) also remain in effect.

[2] The level of the annual nitrogen dioxide standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.

[3] Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) ozone standards are not revoked and remain in effect for designated areas. Additionally, some areas may have certain continuing implementation obligations under the prior revoked 1-hour (1979) and 8-hour (1997) ozone standards.

[4] The previous sulfur dioxide standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous sulfur dioxide standards or is not meeting the requirements of a State Implementation Plan call under the previous sulfur dioxide standards (40 Code of Federal Regulations section 50.4(3)). A State Implementation Plan call is a USEPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required National Ambient Air Quality Standards.

Source: (U.S. Environmental Protection Agency, 2024a)

Notes: µg/m$^3$ = micrograms per cubic meter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; $PM_{10}$ = particulate matter less than or equal to 10 microns in diameter; ppb = parts per billion; ppm = parts per million; USEPA = United States Environmental Protection Agency

### 3.1.1.2 Hazardous Air Pollutants

In addition to the National Ambient Air Quality Standards for criteria pollutants, there are national standards for hazardous air pollutants. USEPA has designated 187 substances as hazardous air pollutants under the Clean Air Act, 42 U.S.C. section 7401 et seq. Hazardous air pollutants are those pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects (U.S. Environmental Protection Agency, 2016). National Ambient Air Quality Standards are not established for these pollutants; however, USEPA has developed rules that limit emissions of hazardous air pollutants from specific stationary industrial sources. These emissions control standards are known as "maximum achievable control technologies" and "generally achievable control technologies." They are intended to achieve the maximum degree of reduction in emissions of hazardous air pollutants from stationary sources, taking into consideration the cost of emissions control, non-air quality health and environmental impacts, and energy requirements. USEPA also promulgated a Mobile Source Air Toxics Rule to regulate hazardous air pollutants from mobile sources. USEPA controls hazardous air pollutants from mobile sources by regulating constituents of concern in fuels, promulgating cleaner engine emission standards, and limiting excessive engine operations.

The potential risk of health effects from exposure to hazardous air pollutants can be estimated by applying inhalation exposure values developed by USEPA to ambient pollutant concentrations (U.S. Environmental Protection Agency, 2021). Risk values include incremental lifetime cancer risk and the level of hazard associated with noncancer health effects, depending on the pollutant of concern.

### 3.1.1.3 General Conformity Evaluation

Federal actions are required to conform with the approved State Implementation Plan for those areas of the United States designated as nonattainment or maintenance areas for any criteria air pollutant under the Clean Air Act (40 Code of Federal Regulations [CFR] parts 51 and 93). The purpose of the General Conformity Rule is to ensure that applicable federal actions, such as the Proposed Action evaluated in this Supplemental EIS/OEIS, would not interfere with an implementation plan to attain and maintain the National Ambient Air Quality Standards. A conformity evaluation must be completed for every applicable federal action that generates nonattainment pollutants (or their precursors) within nonattainment or maintenance areas to determine and document whether a proposed action complies with the General Conformity Rule.

The Navy Guidance for Compliance with the Clean Air Act General Conformity Rule section 4.1 states that a Record of Non-Applicability must be prepared if the proposed action is subject to the Conformity Rule, but is exempt because it fits within one of the exemption categories listed under 40 CFR part 93B, because the action's projected emissions are below the *de minimis* conformity applicability threshold values, or because it is presumed to conform (U.S. Department of the Navy, 2013). *De minimis* thresholds are lowered as the air quality of a nonattainment area worsens. For example, the threshold for an ozone precursor is 10 tons per year in an extreme nonattainment area, but 100 tons per year in a moderate nonattainment area.

Certain military readiness activities take place within nonattainment and maintenance areas. Several nonattainment and maintenance areas were identified as relevant to training or testing activities in the Study Area and are further discussed in Section 3.1.2.3 (Existing Air Quality). Therefore, the air quality analysis for this Supplemental EIS/OEIS includes estimates of proposed emissions within these areas as required for the General Conformity applicability analysis.

### 3.1.1.4 National Environmental Policy Act Evaluation

The evaluation of impacts to air quality requires two separate analyses: (1) impacts of air pollutants emitted by military readiness activities within U.S. territorial seas (i.e., within 12 nautical miles [NM] of the coast) are assessed under the National Environmental Policy Act (NEPA); and (2) impacts of air pollutants emitted by military readiness activities outside U.S. territorial seas are evaluated under Executive Order 12114, *Environmental Effects of Major Federal Actions*.

The analysis in this Supplemental EIS/OEIS estimated the magnitude of criteria air pollutant emissions that could occur from the proposed activities and qualitatively determined their potential to exceed an ambient air quality standard (see Table 3.1-1). Factors considered in the analysis included existing air quality, the magnitudes and locations of proposed emissions, and the intermittent and mobile nature of proposed emission sources.

In addition to criteria pollutants, the NEPA air quality analysis also addresses hazardous air pollutants emitted by the proposed activities and qualitatively assesses their potential impacts on air quality. Hazardous air pollutants are generated by combustion of fuels, explosives, propellants, and the materials of which targets, munitions, and other training and testing materials are constructed (e.g., plastic, paint, wood). Fugitive volatile and semi-volatile petroleum compounds also may be emitted whenever mechanical devices are used. The analysis qualitatively evaluated the potential for hazardous air pollutant emissions from the proposed activities to affect public receptors. If proposed emissions

would not exceed the health standard for cancer or non-cancer effects at these locations, then impacts would be less than significant.

### 3.1.1.5 Approach to Analysis

**Boundaries of Analysis**

As discussed in Section 3.1.1.4 (National Environmental Policy Act Evaluation), impacts of air pollutants emitted by military readiness activities in the Study Area within territorial waters are assessed under NEPA and impacts outside territorial waters are assessed under the guidelines of Executive Order 12114.

Air pollutants emitted more than 3,000 feet above ground level are considered to be above the atmospheric mixing layer and therefore do not affect ground level air quality (40 CFR 93.153(c)(2)(xxii)). Accordingly, analysis of health-based air quality impacts under NEPA and Executive Order 12114 includes estimates of criteria air pollutants for all military readiness activities where aircraft, missiles, or targets operate at or below the inversion layer or that involve vessels in U.S. territorial seas.

**Emission Sources**

Criteria air pollutants are generated by the combustion of fuel by surface vessels and by fixed-wing and rotary-wing aircraft. These mobile sources are the primary emitters of air pollution associated with military readiness activities. Emissions are also generated by the combustion of explosives and propellants in various types of munitions.

#### 3.1.1.5.1 Analysis Framework

Emissions sources and the approach used to estimate emissions under Alternative 1 and Alternative 2 for the air quality analysis are based, wherever possible, on information from Navy subject matter experts and established training and testing requirements. The pollutants for which calculations are made include exhaust criteria pollutants, hazardous air pollutants, and carbon dioxide.

The analysis includes a NEPA analysis, a separate section for a Clean Air Act General Conformity applicability analysis to support a determination pursuant to the General Conformity Rule (40 CFR part 93B), and discussion of impacts outside territorial waters pursuant to Executive Order 12114.

### 3.1.1.6 Emission Estimates

Emission sources analyzed in this Supplemental EIS/OEIS include aircraft, vessels, and munitions. To estimate aircraft emissions in the 2018 Final EIS/OEIS, the operating modes, number of hours of operation, and type of engine for each type of aircraft were evaluated to assess impacts on air quality concentrations. Aircraft criteria pollutant emissions are only analyzed for those operations below 3,000 feet above ground level. This atmospheric boundary layer is not applicable to greenhouse gases. GHGs are analyzed based on all aircraft operations, regardless of altitude.

Vessel emissions include those produced by military ships and smaller boats providing services for military readiness activities. The methods for estimating military ship emissions involve evaluating the type of activity and generating the average annual operational hours for ships in each operational area, both within state waters and beyond state waters. In the 2018 Final EIS/OEIS, this was done to create annual averages for the years 2010 through 2015. The average annual hours were used for Alternative 1 in the 2018 Final EIS/OEIS. Alternative 1 reflected a representative year of training to account for the natural fluctuation of training cycles and deployment schedules that generally

influence the maximum level of training that may occur year after year in any 5-year period. For Alternative 2 in the 2018 Final EIS/OEIS, the year with the highest number of operational hours (2011) was selected as the year to represent maximum operations. Alternative 1 was selected as the Preferred Alternative and the Record of Decision to implement that alternative was published in the *Federal Register* on October 26, 2018 (83 *Federal Register* 54097).

For this Supplemental EIS/OEIS, Alternative 1 reflects a representative year of training and testing to account for the natural fluctuations of training cycles, testing programs, and deployment schedules that generally limit the maximum level of training and testing from occurring for the foreseeable future. Alternative 2 reflects the maximum number of training and testing activities that could occur within a given year and assumes that the maximum level of activity would occur every year over any 7-year period.

This Final Supplemental EIS/OEIS presents revised air emissions for the action alternatives and preferred alternative (Alternative 1) in the 2018 Final EIS/OEIS, based on updated emission source activity data that became available since the release of the Draft Supplemental EIS/OEIS. The preferred alternative (Alternative 1) in the 2018 Final EIS/OEIS is the scenario used to determine the air quality effects and changes associated with the action alternatives. Appendix H (Air Quality Emissions Calculations) provides the revised emission calculations and associated General Conformity applicability analyses.

### 3.1.1.7 Greenhouse Gases

GHGs are naturally occurring and human-made atmospheric constituents that absorb and re-emit infrared radiation. This process plays a crucial role in regulating Earth's temperature. Common GHGs include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride, sulfur hexafluoride, and water vapor. Cumulative GHG emissions from all sources, worldwide, can increase heat in the atmosphere, which has the potential to impact average global temperatures.

The action alternatives evaluated in this Supplemental EIS/OEIS would result in the emission of various GHGs associated with activities such as:

- Aircraft Operations: Fuel combustion during training and testing flights.
- Ship Movements: Fuel combustion by Navy vessels.
- Ground Operations: Emissions from vehicles, equipment, and facilities supporting AFTT activities.
- Munitions Use: Combustion of explosives and propellants.

The action alternatives would emit GHGs into the atmosphere. Because GHGs can persist in the atmosphere and disperse globally, emissions from various sources, including the proposed training and testing activities, can collectively contribute to the overall atmospheric concentration of GHGs. An analysis of the projected GHG emissions for each action alternative is presented in Section 4.3.1 (Air Quality) of Chapter 4 (Cumulative Impacts).

## 3.1.2 AFFECTED ENVIRONMENT

### 3.1.2.1 General Background

#### 3.1.2.1.1 Region of Influence

The region of influence for air quality is a function of the type of pollutant, emission rates of the pollutant source, proximity to other emission sources, and local and regional meteorology. The region of influence for air quality includes the Study Area as well as adjoining land areas several miles inland, which may from time to time be downwind from emission sources associated with the action alternatives.

### 3.1.2.2 Sensitive Receptors

Identification of sensitive receptors is part of describing the existing air quality environment. Sensitive receptors are individuals in residential areas, schools, parks, hospitals, or other sites for which there is a reasonable expectation of continuous human exposure during the timeframe coinciding with peak pollution concentrations.

#### 3.1.2.2.1 Climate of the Study Area

Section 3.1.2.2.1 of the 2018 Final EIS/OEIS describes the climates of the regions included within the Study Area, and this description is still accurate. The Study Area is divided into four areas: the North Atlantic Region (Arctic Region through Nova Scotia), the Mid-Atlantic Region (Maine through Virginia), the Southeast Atlantic Region (North Carolina to southern Florida), and the Gulf of America Region (southern Florida through Texas). Meteorological conditions affect air quality due to (1) winds, which transport and disperse emissions from a source and (2) the vertical temperature structure of the lower atmosphere, which determines the ability of the atmosphere to disperse air pollutants (known as atmospheric stability). These conditions are more variable on land than over oceans due to the effects of topography and the greater daily and seasonal temperature variations on land.

Wind conditions can be defined with the use of a wind rose, which displays the frequency of occurrence of wind direction and wind speed of data collected at a location. Figure 3.1-1 presents a wind rose for Naval Air Station Oceana, which is on the Atlantic shoreline of Hampton Roads, Virginia. These data, recorded over a 79-year period, show that winds prevail from the southwest and north directions, with lesser amounts of contributions from all other directions. These data also signify, on an annual average basis, how winds would transport air pollutants emitted from a source near this location. Appendix H (Air Quality Emissions Calculations) includes wind roses for various locations along the coastline of the Study Area from Maine to Texas.

### 3.1.2.3 Existing Air Quality

Most of the Study Area is classified as attainment for all National Ambient Air Quality Standards. As shown in Figure 3.1-2 through Figure 3.1-5, most nonattainment and maintenance areas in the eastern half of the continental United States are in the northeastern states. Many are located in inland, urban, and industrialized areas where air pollutant sources contribute to elevated pollutant impacts. Some coastal areas, however, have nonattainment or maintenance areas for one or more criteria pollutants. These designations are based on air quality data collected from monitors at locations in urban and rural settings, as well as modeling. Nonattainment and maintenance designations range in size from as small as a few square miles to large multi-state regions.

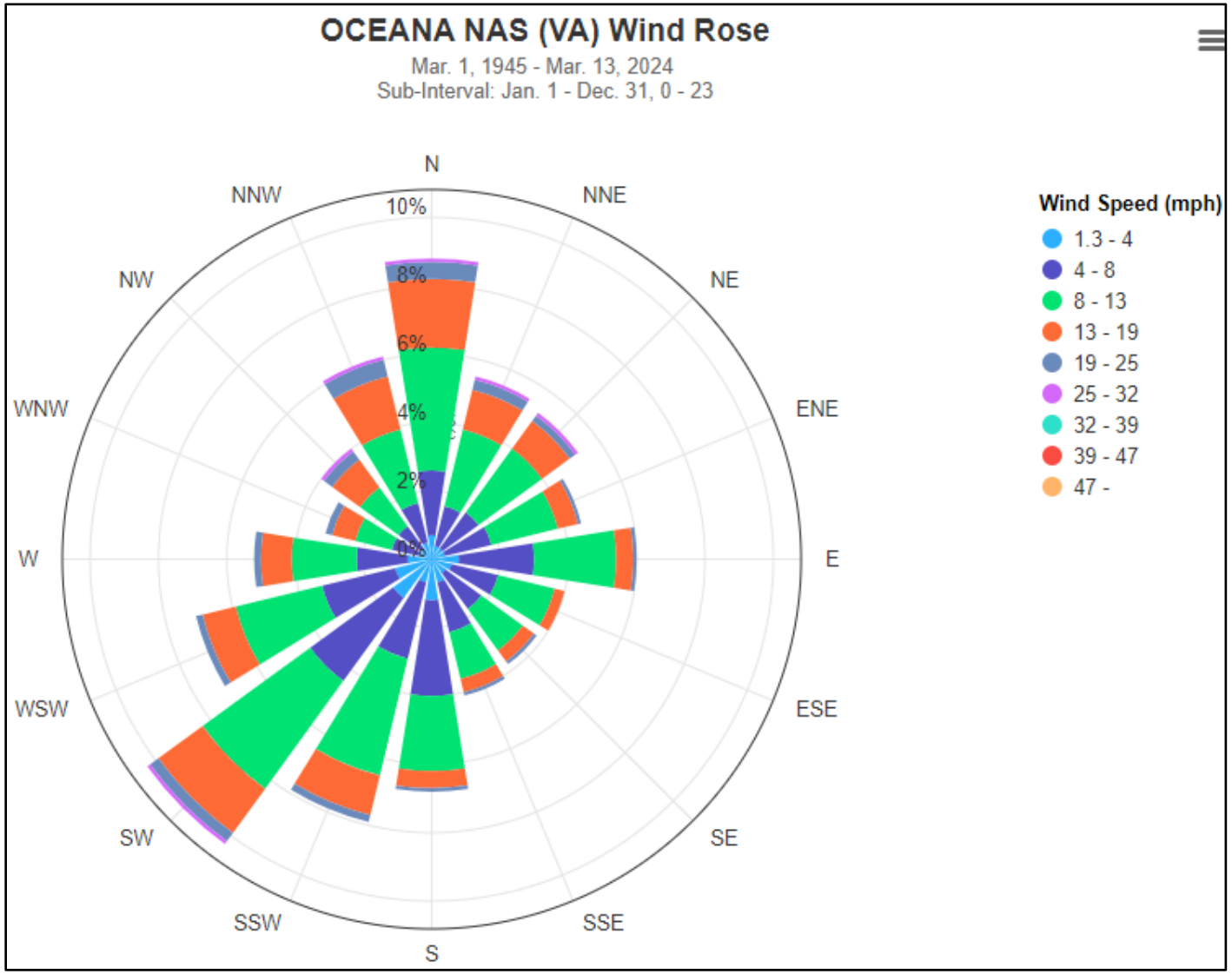
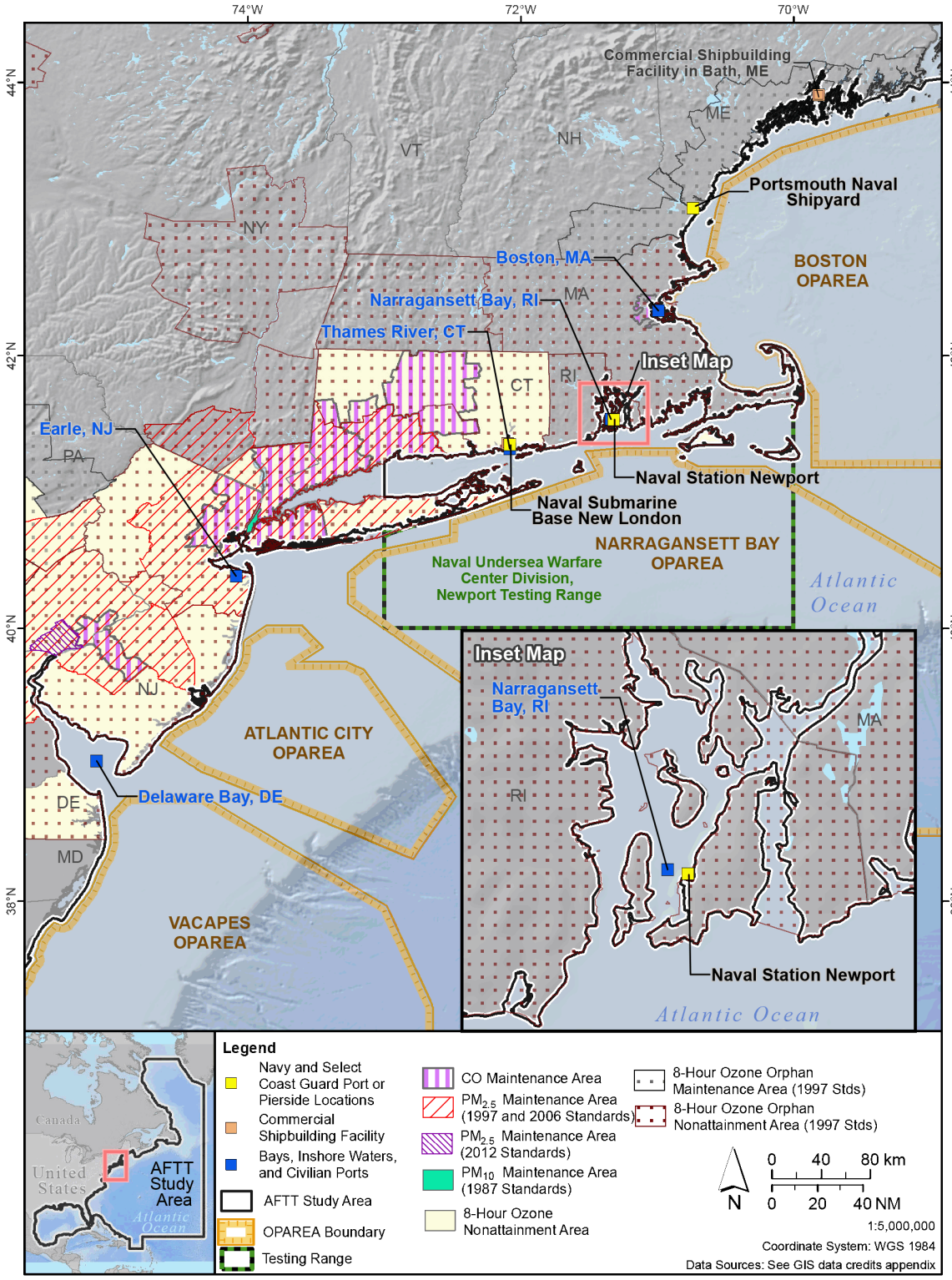
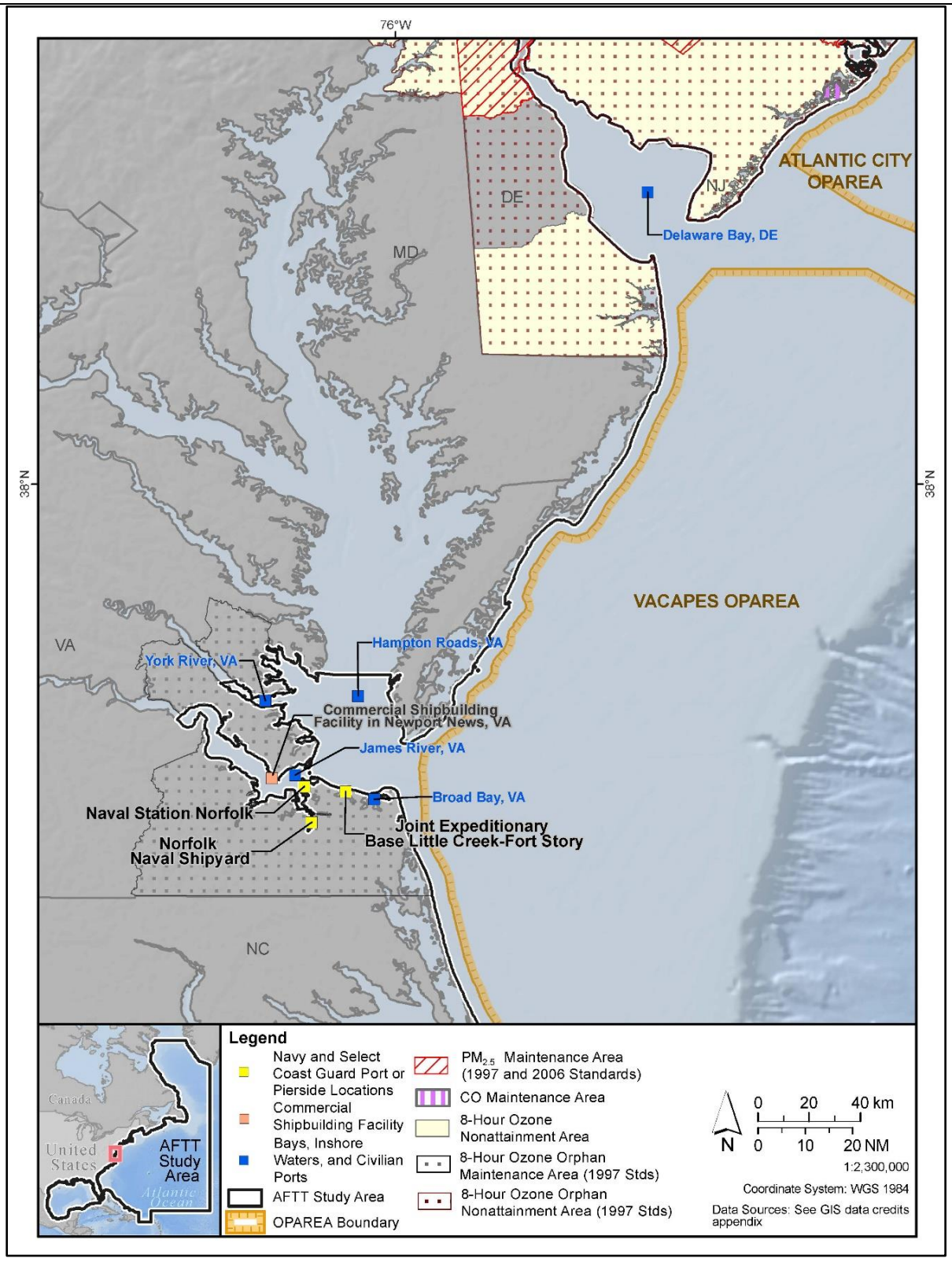



**Figure 3.1-1: Wind Rose for Naval Air Station Oceana, Hampton Roads, Virginia**



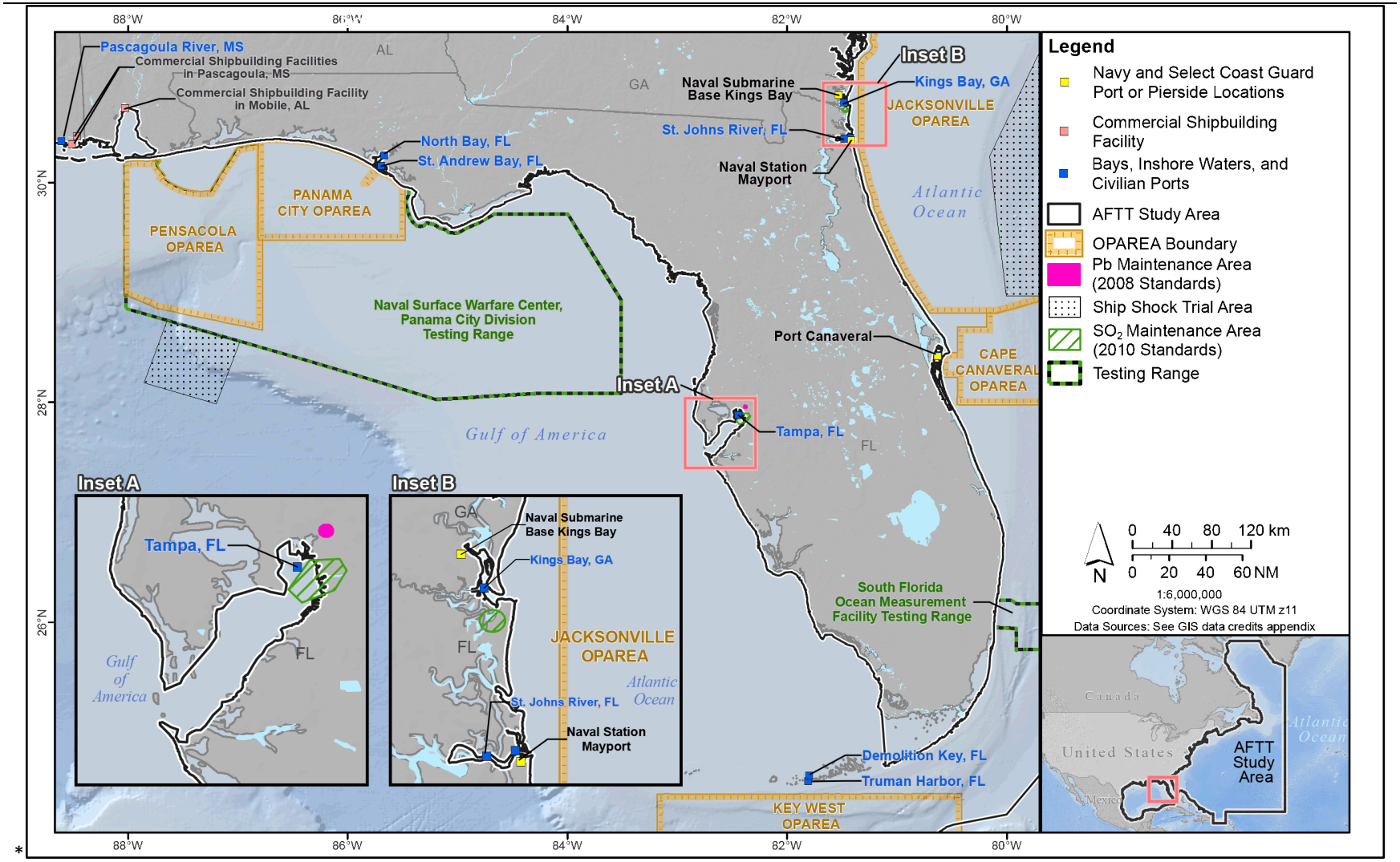

Notes: AFTT = Atlantic Fleet Training and Testing; CO = carbon monoxide; OPAREA = operating area; $PM_{10}$/$PM_{2.5}$ = particulate matter less than or equal to 10/2.5 microns in diameter; Stds = Standards; VACAPES = Virginia Capes

**Figure 3.1-2: Applicable Nonattainment or Maintenance Areas in USEPA Regions 1 and 2 (New York-Northern New Jersey-Long Island, NY-NJ-CT Air Quality Control Region)**



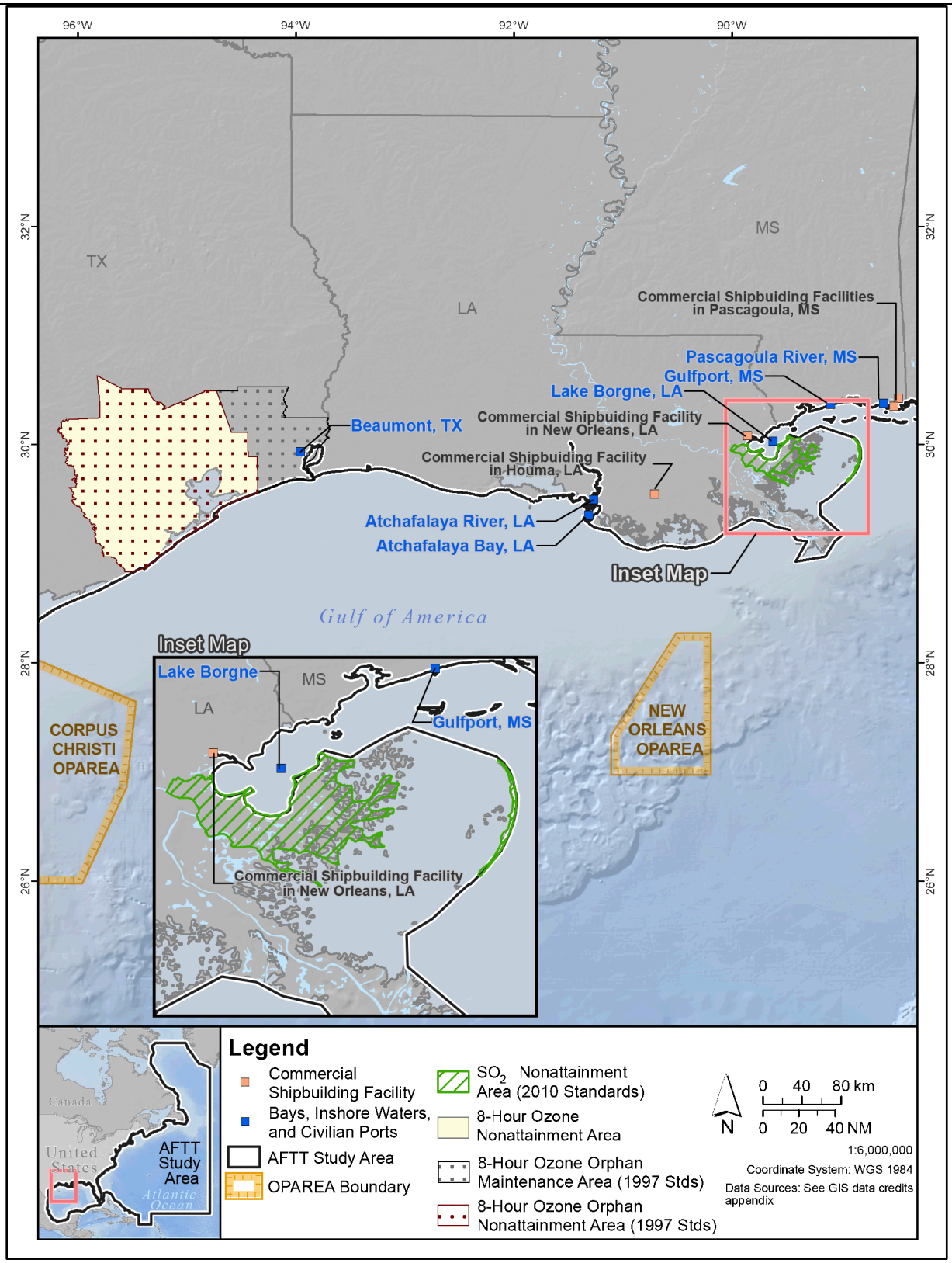

Notes: AFTT = Atlantic Fleet Training and Testing; CO = carbon monoxide; OPAREA = operating area; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; Stds = Standards; VACAPES = Virginia Capes

**Figure 3.1-3: Applicable Nonattainment and Maintenance Areas in USEPA Region 3**




Notes: AFTT = Atlantic Fleet Training and Testing; OPAREA = operating area; Pb = lead; $SO_2$ = sulfur dioxide

**Figure 3.1-4: Applicable Nonattainment and Maintenance Areas in USEPA Region 4**




Notes: AFTT = Atlantic Fleet Training and Testing; OPAREA = operating area; $SO_2$ = sulfur dioxide; Stds = Standards

**Figure 3.1-5: Applicable Nonattainment and Maintenance Areas in USEPA Region 6**

Table 3.1-2 identifies the nonattainment and maintenance areas that are adjacent to the Study Area and Table 3.1-3 lists the Study Area pierside locations and the attainment status for each. The attainment status of the Study Area and the associated regulatory thresholds remain unchanged from the 2018 Final EIS/OEIS (including new areas under analysis), with the following exceptions:

- Western Rockingham and Eastern Hillsborough Counties, New Hampshire, were redesignated from nonattainment to maintenance for sulfur dioxide on September 20, 2019.
- Atlantic, Cape May, and Ocean Counties, New Jersey, were changed from marginal to serious nonattainment status for the 2015 ozone standard.
- Hillsborough County, Florida, was redesignated from nonattainment to maintenance for sulfur dioxide on March 23, 2020, and for lead on October 11, 2018.
- Nassau County, Florida, was redesignated from nonattainment to maintenance for sulfur dioxide on February 15, 2019.
- The coastal region from Massachusetts to Delaware, the southern coastal region of Maine, Hampton Roads Intrastate Air Quality Control region, and the Southern Louisiana-Southeast Texas Interstate region were designated as orphan maintenance areas for the 1997 8-hour ozone standard and continue operating under that standard (U.S. Environmental Protection Agency, 2018; see also 2018 court decision in South Coast Air Quality Management District v. EPA [D.C. Circuit]).

### Table 3.1-2: Nonattainment and Maintenance Areas Adjacent to the Study Area

| *Air Quality Control Region* | *County/Area* | *National Ambient Air Quality Standards Attainment Status* |
|---|---|---|
| **USEPA Regions 1 and 2** | | |
| Merrimack Valley, Southern NH | Partial portions of Rockingham, Hillsborough, and Merrimack Counties | Maintenance area for sulfur dioxide (2010) |
| Metropolitan Boston Intrastate | Boston, MA | Maintenance area for carbon monoxide (1971) |
| | Boston-Lawrence-Worcester (eastern MA) | Orphan nonattainment area for the 1997 ozone standard[1] |
| | Boston-Manchester-Portsmouth (southeast), NH | Orphan maintenance area for the 1997 ozone standard[1] |
| Dukes County, MA | Martha's Vineyard and surrounding islands | Marginal nonattainment for 8-hr ozone (2008) |
| Eastern Connecticut Intrastate | Greater Connecticut, CT | Serious nonattainment for 8-hr ozone (2015) |
| | | Serious nonattainment for 8-hr ozone (2008) |
| | | Orphan nonattainment area for the 1997 ozone standard[1] |
| Androscoggin Valley Interstate | Hancock, Knox, Lincoln and Waldo Counties (central ME coast), ME | Orphan maintenance area for the 1997 ozone standard[1] |
| Hartford-New Haven-Springfield Interstate | Hartford-New Britain-Middletown, CT | Maintenance area for carbon monoxide (1971) |
| | New Haven-Meriden-Waterbury, CT | Maintenance area for carbon monoxide (1971) |

**Table 3.1-2: Nonattainment and Maintenance Areas Adjacent to the Study Area (continued)**

| *Air Quality Control Region* | *County/Area* | *National Ambient Air Quality Standards Attainment Status* |
|---|---|---|
| New Jersey-New York-Connecticut Interstate | NY County, NY | Moderate nonattainment for $PM_{10}$ (1987) |
| | New York-New Jersey-Long Island, NY-NJ-CT | Severe nonattainment for 8-hr ozone (2008) |
| | | Orphan nonattainment area for the 1997 ozone standard[1] |
| | | Maintenance area for $PM_{2.5}$ (1997) |
| | | Maintenance area for $PM_{2.5}$ (2006) |
| | | Maintenance area for carbon monoxide (1971) |
| | NY-Northern NJ-Long Island, NY-NJ-CT | Serious nonattainment for 8-hr ozone (2015) |
| Metropolitan Philadelphia Interstate | Philadelphia-Wilmington, PA-NJ-DE | Maintenance area for $PM_{2.5}$ (1997) |
| | | Maintenance area for $PM_{2.5}$ (2006) |
| | | Maintenance area for $PM_{2.5}$ (1997) |
| | | Maintenance area for $PM_{2.5}$ (2006) |
| | Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE | Serious nonattainment for 8-hr ozone (2015) |
| | | Marginal nonattainment for 8-hr ozone (2008) |
| | | Orphan nonattainment area for the 1997 ozone standard[1] |
| | Atlantic City, NJ | Maintenance area for carbon monoxide (1971) |
| Metropolitan Portland Intrastate | Portland, ME | Orphan maintenance area for the 1997 ozone standard[1] |
| Metropolitan Providence Interstate | Providence (all of RI), RI | Orphan nonattainment area for the 1997 ozone standard[1] |
| **USEPA Region 3** | | |
| Southern Delaware Intrastate | Seaford, DE | Marginal nonattainment for 8-hr ozone (2008) |
| | | Orphan nonattainment area for the 1997 ozone standard[1] |
| Hampton Roads Area, VA | Gloucester, Isle of Wight, James City, and York Counties | Orphan maintenance area for the 1997 ozone standard[1] |
| Metropolitan Philadelphia Interstate | Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE (DE, only portion within Region 3) | Orphan nonattainment area for the 1997 ozone standard[1] |
| **USEPA Region 4** | | |
| West Central Florida Intrastate | Hillsborough County, FL | Maintenance area for $SO_2$ (2010) |
| | Tampa, FL | Maintenance area for lead (2008) |
| Jacksonville (Florida)-Brunswick (Georgia) Interstate | Nassau County, FL | Maintenance area for $SO_2$ (2010) |
| **USEPA Region 6** | | |
| Southern Louisiana-Southeast Texas Interstate | Beaumont-Port Arthur, TX | Orphan maintenance area for the 1997 ozone standard[1] |
| | St. Bernard Parish, LA | Nonattainment for $SO_2$ (2010) |

**Table 3.1-2: Nonattainment and Maintenance Areas Adjacent to the Study Area (continued)**

| *Air Quality Control Region* | *County/Area* | *National Ambient Air Quality Standards Attainment Status* |
|---|---|---|
| Metropolitan Houston-Galveston Intrastate | Houston-Galveston-Brazoria, TX | Severe nonattainment for 8-hr ozone (2008) |
| | | Serious nonattainment for 8-hr ozone (2015) |
| | | Orphan maintenance area for the 1997 ozone standard[1] |

[1] See *South Coast Air Quality Management District v. EPA*, 882 F.3d 1138 (D.C. Cir. 2018).

Source: (U.S. Environmental Protection Agency, 2024b, 2025)

Notes: CT = Connecticut; DE = Delaware; FL = Florida; hr = hour; LA = Louisiana; MA = Massachusetts; MD = Maryland; ME = Maine; NJ = New Jersey; NY = New York; PA = Pennsylvania; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; $PM_{10}$ = particulate matter less than or equal to 10 microns in diameter; RI = Rhode Island; $SO_2$ = sulfur dioxide; TX = Texas; VA = Virginia

**Table 3.1-3: Pierside and Coastal Activity Locations and Their Area's Attainment Status**

| *Air Quality Control Region* | *Pierside Location* | *Designated Area* | *National Ambient Air Quality Standards Attainment Status* |
|---|---|---|---|
| Metropolitan Portland Intrastate | Portsmouth Naval Shipyard, Kittery ME; Shipyard – Bath, ME | Metropolitan Portland/Cumberland County | Orphan maintenance area for the 1997 ozone standard[1] |
| Metropolitan Providence Interstate | NUWC, Division Newport, Newport, RI | Providence (all of RI), RI | Orphan nonattainment area for the 1997 ozone standard[1] |
| Eastern Connecticut Intrastate | Naval Submarine Base New London; Groton, Connecticut Shipyard – Groton, CT and Thames River | Greater Connecticut, CT | Serious nonattainment of the 8-hr ozone standard (2015) |
| | | | Serious nonattainment of the 8-hr ozone standard (2008) |
| | | | Orphan nonattainment area for the 1997 ozone standard[1] |
| Hampton Roads Intrastate | Naval Station Norfolk, Norfolk, VA; JEB Little Creek-Fort Story, Virginia Beach, VA; Norfolk Naval Shipyard, Portsmouth, VA; Shipyard – Newport News, VA; Broad Bay; York River; James River and Tributaries | Hampton Roads Intrastate | Orphan maintenance area for the 1997 ozone standard[1] |
| Charleston Intrastate | Cooper River; Charleston Pier, SC | Charleston County | Attainment of all applicable standards |
| Jacksonville (FL)-Brunswick (GA) Interstate | Naval Submarine Base Kings Bay, GA | Camden County | Attainment of all applicable standards |
| Jacksonville (FL)-Brunswick (GA) Interstate | Naval Station Mayport, Jacksonville, FL; St. Johns River, FL | Duval County | Attainment of all applicable standards |
| Central Florida Intrastate | Port Canaveral, Cape Canaveral, FL | Brevard County | Attainment of all applicable standards |

**Table 3.1-3: Pierside and Coastal Activity Locations and Their Area's Attainment Status (continued)**

| *Air Quality Control Region* | *Pierside Location* | *Designated Area* | *National Ambient Air Quality Standards Attainment Status* |
|---|---|---|---|
| Southeast Florida Intrastate | South Florida Ocean Measurement Facility Testing Range | Broward County | Attainment of all applicable standards |
| Mobile (AL)-Pensacola-Panama City (FL)-Southern Mississippi Interstate | Saint Andrew Bay, FL | Bay County | Attainment of all applicable standards |
| Mobile (AL)-Pensacola-Panama City (FL)-Southern Mississippi Interstate | Shipyard – Pascagoula, MS | Jackson County | Attainment of all applicable standards |

[1] See *South Coast Air Quality Management District v. EPA*, 882 F.3d 1138 (D.C. Cir. 2018).
Source:
Notes: AL = Alabama; CT = Connecticut; FL = Florida; GA = Georgia; hr = hour; JEB = Joint Expeditionary Base; ME = Maine; MS = Mississippi; NUWC = Naval Undersea Warfare Center; RI = Rhode Island; SC = South Carolina; VA = Virginia

#### 3.1.2.3.1 Air Quality Adjacent to the Study Area

More than 70 percent of all AFTT military readiness activities are conducted well offshore and a small percentage are performed in areas offshore of coastal nonattainment or maintenance areas. The transport of emissions from offshore sources to land is well documented.

There are also activities that occur within state waters. Vessels traverse state waters during ingress/egress to operating areas and other Study Area locations further offshore. Certain training activities occur in coastal areas, including riverine and bay locations. The area of greatest activity is in the lower Chesapeake Bay and in tributaries to the bay, primarily the James and York Rivers in Virginia. Additional areas where training or testing occurs within state waters include Narragansett Bay near the Naval Undersea Warfare Center Division, Newport, Rhode Island; the St. Johns River near Naval Station Mayport, Florida; Port Canaveral, Florida; Broward County, Florida, adjacent to the South Florida Ocean Measurement Facility Testing Range; St. Andrew Bay near Naval Support Activity Panama City, Florida; and the Cooper River near Charleston, South Carolina. Of these, only Naval Station Mayport is in an Air Quality Control Region with a nonattainment designation within its borders.

Each state adjacent to the Study Area is responsible for regulating air quality within its jurisdiction, including out to the limits of its state waters. Most state waters extend out to 3 NM from the coastline; however, state waters for Florida (Gulf of America coast only), Texas, and Puerto Rico extend out to 9 NM from the coastline. In addition, the following two local air agencies regulate air quality within the Study Area: (1) Broward County Natural Resources Division – Air Quality Program (adjacent to the South Florida Ocean Measurement Facility Testing Range) and (2) City of Jacksonville Environmental Quality Division – Air Quality Branch (encompassing Naval Station Mayport and adjacent to the Jacksonville operating area).

### 3.1.3 Environmental Consequences

None of the proposed military readiness activities would be conducted under the No Action Alternative. Therefore, the existing air quality and climate affected environments would either remain unchanged or would improve by negligible to minor amounts after cessation of ongoing military readiness activities. As a result, the No Action Alternative is not analyzed further in this section.

This section presents an analysis of how the action alternatives would impact air quality within the Study Area. This section describes the NEPA impacts related to the applicable air quality stressors: criteria pollutants and hazardous pollutants. The air quality analysis estimated the magnitude of emissions that would occur from training and testing activities for each action alternative. The analysis then qualitatively estimated the potential for proposed emissions to contribute to an exceedance of an ambient air quality standard or public health standard within adjacent onshore locations. Factors considered in the analysis included existing air quality, prevailing wind conditions, the magnitudes and locations of proposed emissions, and the intermittent and mobile nature of proposed emission sources.

The analysis also estimated emissions from each action alternative that would occur within nonattainment or maintenance areas for the National Ambient Air Quality Standards and compared these emissions to General Conformity *de minimis* thresholds to assess the applicability of the General Conformity Rule to each action alternative in these areas. Due to activities of the action alternatives that would occur within orphan maintenance areas under the 1997 ozone National Ambient Air Quality Standard, this Supplemental EIS/OEIS evaluated conformity-related emissions from these activities within state waters of the following four areas that were not included in the 2018 Final EIS/OEIS:

- Metropolitan Providence Interstate Area (all of Rhode Island)
- Metropolitan Portland/Cumberland County Area, Maine
- Eastern Connecticut Intrastate Area/New London County
- Hampton Roads Intrastate Area, Virginia

As discussed in Section 3.1.1.6 (Emissions Estimates), this Final Supplemental EIS/OEIS presents revised air emissions for the action alternatives and preferred alternative (Alternative 1) in the 2018 Final EIS/OEIS. These revised emissions did not result in changes to any air quality effect identified in the Draft Supplemental EIS/OEIS. Details of the emission estimates and General Conformity applicability analyses are provided in Appendix H (Air Quality Emissions Calculations).

The criteria for determining the significance of Proposed Action stressors on air quality are described in Table 3.1-4. The abbreviated analysis information provided under each substressor and alternative provides the technical support for these determinations.

The affected environment provides the context for evaluating the effects of the proposed training and testing activities on air quality. With the exceptions noted above regarding orphan maintenance areas under the 1997 ozone National Ambient Air Quality Standard, the affected environment for air quality in the Study Area is not meaningfully different from what is described in the 2018 Final EIS/OEIS.

**Table 3.1-4: Criteria for Determining the Significance of Proposed Action Stressors on Air Quality**

| *Impact Descriptor* | *Context and Intensity* | *Significance Conclusions* |
|---|---|---|
| Negligible | Measurable or anticipated degree of change to ambient criteria pollutant or hazardous air pollutant concentrations would be undetectable or only slightly detectable. | Less than significant |
| Minor | Likely to measurably increase ambient criteria pollutant or hazardous air pollutant concentrations compared to existing conditions. Impacts would not contribute to an exceedance or of a national ambient air quality standard or cause appreciable risks to populations, including sensitive receptors, due to exposure to hazardous air pollutants. | Less than significant |
| Moderate | A measurable or anticipated degree of change is readily apparent, appreciable, and would be noticed by most people. However, the impacts would be low enough such that they would not contribute to an exceedance of a national ambient air quality standard or cause appreciable risks to populations, including sensitive receptors, resulting from the exposure to hazardous air pollutants. | Less than significant |
| Major | Measurable or anticipated degree of change would be substantial and highly noticeable compared to existing conditions. Impacts would contribute to an exceedance of a national ambient air quality standard. Exposure to hazardous air pollutants would cause significant and unacceptable health impacts to populations, including sensitive receptors. | Significant |

Note: Criteria to determine the significance of greenhouse gas emissions from the action alternatives are included in the discussion of increased atmospheric concentrations of greenhouse gases in Section 4.3.1 (Air Quality) of Chapter 4 (Cumulative Impacts).

### 3.1.3.1 Impacts from Air Emissions under Alternative 1

#### 3.1.3.1.1 NEPA Impacts from Air Emissions under Alternative 1

Table 3.1-5 presents estimations of annual emissions that would occur from Alternative 1 for each operational region in the Study Area and includes all locations, regardless of proximity to the coastline. The overwhelming majority of emissions would occur from the operation of vessels beyond state waters, except that most emissions within the Northeast OPAREA would occur from activities while in state waters. Most military readiness activities that would be conducted under Alternative 1 are the same as or similar to those conducted currently or in the past. In addition, the analysis considered U.S. Coast Guard military readiness activities and activities in locations not covered in the 2018 Final EIS/OEIS, including inshore areas of Louisiana and Mississippi and adjustments to the Gulf of America, Jacksonville, and Key West ship shock areas. While natural fluctuations would occur in training cycles, testing programs, and deployment schedules, air pollutant annual emissions are expected to decrease compared to levels associated with the preferred alternative (Alternative 1) in the 2018 Final EIS/OEIS, as shown in Table 3.1-5.

Most military readiness activities would occur more than 12 NM offshore. Depending on the location of these activities and time of year, winds would disperse emissions from training and testing activities away from the coastal land masses at frequencies similar to those shown in the wind roses

presented in Appendix H (Air Quality Emissions Calculations). During periods when winds would transport training and testing emissions into coastal areas, the substantial transport distance and resulting dispersion of these emissions would produce negligible to minor increases of air pollutant concentrations at onshore locations. The mobile and intermittent operation of most emission sources over such large areas also would contribute to dispersed ambient pollutant impacts at a given location. As a result, military readiness activities associated with Alternative 1 within U.S. territorial waters would not contribute to an exceedance of an ambient air quality standard at any location within the Study Area and would produce less than significant impacts to criteria pollutant levels.

Proposed training and testing activities would emit hazardous pollutants, mainly due to the combustion of fuels in vessels and aircraft. Like the dispersion of criteria pollutants mentioned above, training and testing activities also would produce negligible to minor increases of ambient concentrations of hazardous pollutants at any onshore location. As a result, the exposure of sensitive receptors to hazardous pollutants emissions would remain well below health standards set for cancer and non-cancer effects. Therefore, Alternative 1 would produce less than significant hazardous pollutant impacts.

#### 3.1.3.1.2 General Conformity Analysis under Alternative 1 in Areas Designated Nonattainment or Maintenance

##### 3.1.3.1.2.1 Northeast Areas Designated Nonattainment or Maintenance

In the northeast, areas within the New York-Northern New Jersey-Long Island, NY-NJ-CT Air Quality Control Region (U.S. Environmental Protection Agency, 1972) (see Figure 3.1-2) are designated as moderate to severe nonattainment for ozone, maintenance for particulate matter less than or equal to 2.5 microns in diameter, and maintenance for carbon monoxide. In addition, the coastal region from Massachusetts to Delaware is designated as orphan nonattainment for the 1997 8-hour ozone standard (see Table 3.1-2 for specific locations). The Clean Air Act sets out specific requirements for a group of northeast states that make up the Ozone Transport Region. This region includes Connecticut, Delaware, the District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Virginia. States in this region are required to submit a State Implementation Plan and install a certain level of controls for the pollutants that form ozone, even if they meet the ozone standards. A portion of the Eastern Connecticut Intrastate Control Region is also designated as serious nonattainment for ozone. A very small area of coastal New Hampshire that was previously designated nonattainment for sulfur dioxide was redesignated to maintenance on September 20, 2019, and there is a small area of ozone nonattainment in the coastal counties of New Jersey as well as near the coast at Seaford, Delaware. Although classified as attainment for all pollutants, the coastal Maine region is subject to maintenance requirements for the revoked 1997 ozone standards.

**Table 3.1-5: Estimated Annual Air Pollutant Emissions from Activities Occurring within the AFTT Study Area – Alternative 1**

| *Operational Area* | *Emissions by Air Pollutant (TPY)*[1] | | | | | |
|---|---|---|---|---|---|---|
| | *VOC* | *CO* | *$NO_X$* | *$SO_X$* | *$PM_{10}$* | *$PM_{2.5}$* |
| Northeast | 12.43 | 106.76 | 456.03 | 13.58 | 12.82 | 11.59 |
| Virginia Capes | 84.16 | 900.30 | 2,789.64 | 232.06 | 211.94 | 189.91 |

## Table 3.1-5: Estimated Annual Air Pollutant Emissions from Activities Occurring within the AFTT Study Area – Alternative 1 (continued)[1]

| *Operational Area* | *Emissions by Air Pollutant (TPY)[1]* | | | | | |
|---|---|---|---|---|---|---|
| | *VOC* | *CO* | *$NO_X$* | *$SO_X$* | *$PM_{10}$* | *$PM_{2.5}$* |
| Virginia Capes Inshore | 35.98 | 285.26 | 1,452.68 | 266.36 | 37.62 | 34.61 |
| Cherry Point | 44.68 | 383.68 | 1,225.01 | 113.16 | 64.66 | 58.47 |
| Jacksonville | 52.79 | 587.05 | 1,711.30 | 168.60 | 104.02 | 92.55 |
| SFOMF | 0.46 | 5.79 | 19.10 | 0.08 | 0.36 | 0.34 |
| Key West | 9.00 | 47.73 | 228.89 | 9.22 | 22.24 | 20.28 |
| Gulf Range Complex | 38.22 | 302.38 | 1,315.65 | 40.68 | 33.27 | 30.37 |
| Other AFTT Areas | 2.62 | 28.38 | 96.03 | 9.45 | 3.04 | 2.73 |
| **Total – Alternative 1** | **280.36** | **2,647.33** | **9,294.33** | **853.17** | **489.98** | **440.85** |
| **Total – 2018 Final EIS/OEIS Preferred Alternative** | **344.26** | **3,477.74** | **9,823.98** | **3,615.51** | **608.84** | **549.79** |
| **Net Change – Alternative 1 minus 2018 Final EIS/OEIS Preferred Alternative** | **-63.91** | **-830.41** | **-529.65** | **-2,762.34** | **-118.86** | **-108.94** |

[1] Totals might vary slightly from the summation of individual values due to minor rounding errors.

Notes: AFTT= Atlantic Fleet Training and Testing; CO = carbon monoxide; EIS = Environmental Impact Statement; N/A = not applicable; $NO_X$ = nitrogen oxides; OEIS = Overseas Environmental Impact Statement; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; $PM_{10}$ = particulate matter less than or equal to 10 microns in diameter; $SO_X$ = sulfur oxides; TPY = tons per year; VOC = volatile organic compound

Activities in state waters are not scheduled to occur in the majority of these nonattainment or maintenance areas. The primary location where activities in state waters occur is at Naval Undersea Warfare Center Division Newport and Narragansett Bay, both of which are in Rhode Island. Because Rhode Island is considered an orphan nonattainment area for ozone, a General Conformity applicability analysis was performed to determine if the requirements of a formal General Conformity Determination applied to Alternative 1.

Table 3.1-6 presents the emissions estimated for Alternative 1 that would occur within Rhode Island state waters and their relevance to applicable General Conformity thresholds. The analysis conservatively assumed that 85 percent of the emissions produced by Alternative 1 within the state waters of the Northeast OPAREA would occur within the Metropolitan Providence Interstate ozone nonattainment area (all of Rhode Island), although some emissions also would occur in adjacent nonattainment areas, such as the Dukes County, Massachusetts, ozone nonattainment area, which encompasses Martha's Vineyard and surrounding islands. The data in Table 3.1-6 show that the net change in emissions produced from Alternative 1 and the 2018 Final EIS/OEIS preferred alternative within the state waters of Rhode Island would be negative and therefore would not exceed the applicable General Conformity *de minimis* thresholds for ozone precursors (nitrogen oxides and volatile organic compound). As a result, no further analysis of conformity is required and a Record of Non-Applicability was prepared in accordance with Navy guidance (Appendix H, Air Quality Emissions Calculations).

**Table 3.1-6: Estimated Annual Air Pollutant Emissions from Activities Occurring in State Waters in the Metropolitan Providence Interstate (All of Rhode Island) Area, Alternative 1**

| | *Emissions by Air Pollutant (TPY)*[1] | | | | | |
|---|---|---|---|---|---|---|
| | ***VOC*** | ***CO*** | ***$NO_X$*** | ***$SO_X$*** | ***$PM_{10}$*** | ***$PM_{2.5}$*** |
| **Metropolitan Providence Interstate Ozone Nonattainment Area** | | | | | | |
| Total – Alternative 1 | 5.91 | 50.26 | 243.06 | 4.07 | 5.27 | 4.85 |
| **Total – 2018 Final EIS/OEIS Preferred Alternative** | **8.28** | **63.29** | **350.41** | **131.76** | **5.47** | **5.04** |
| **Net Change – Alternative 1 minus 2018 Final EIS/OEIS Preferred Alternative** | **-2.37** | **-13.03** | **-107.35** | **-127.70** | **-0.21** | **-0.19** |
| General conformity thresholds | 100 | N/A | 100 | N/A | N/A | N/A |
| Exceedance? | No | N/A | No | N/A | N/A | N/A |

[1] Totals might vary slightly from the summation of individual values due to minor rounding errors.

Notes: CO = carbon monoxide; EIS = Environmental Impact Statement; N/A = not applicable; $NO_X$ = nitrogen oxides; OEIS = Overseas Environmental Impact Statement; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; $PM_{10}$ = particulate matter less than or equal to 10 microns in diameter; $SO_X$ = sulfur oxides; TPY = tons per year; VOC = volatile organic compound

Activities in state waters would also occur in the Metropolitan Portland/Cumberland County region of Maine. Because Cumberland County is considered an orphan maintenance area for ozone, a General Conformity applicability analysis was performed to determine if the requirements of a formal General Conformity Determination applied to Alternative 1. Table 3.1-7 presents the emissions estimated for Alternative 1 that would occur within the state waters of the Cumberland County Area and their relevance to applicable General Conformity thresholds. The analysis assumed that 10 percent of the emissions produced by Alternative 1 within the state waters of the Northeast OPAREA would occur within this ozone nonattainment area. The data in Table 3.1-7 show that the net change in emissions produced from Alternative 1 and the 2018 Final EIS/OEIS preferred alternative within the state waters of Cumberland County, Maine, would be negative and therefore would not exceed the applicable General Conformity *de minimis* thresholds for ozone precursors (nitrogen oxides and volatile organic compound). As a result, no further analysis of conformity is required and a Record of Non-Applicability was prepared in accordance with Navy guidance (Appendix H, Air Quality Emissions Calculations).

**Table 3.1-7: Estimated Annual Air Pollutant Emissions from Activities Occurring in State Waters in the Metropolitan Portland/Cumberland County Area, Alternative 1**

| | *Emissions by Air Pollutant (TPY)*[1] | | | | | |
|---|---|---|---|---|---|---|
| | ***VOC*** | ***CO*** | ***$NO_X$*** | ***$SO_X$*** | ***$PM_{10}$*** | ***$PM_{2.5}$*** |
| **Metropolitan Portland/Cumberland County Ozone Maintenance Area** | | | | | | |
| Total – Alternative 1 | 0.69 | 5.91 | 28.60 | 0.48 | 0.62 | 0.57 |
| **Total – 2018 Final EIS/OEIS Preferred Alternative** | **0.97** | **7.45** | **41.22** | **15.50** | **0.64** | **0.59** |
| **Net Change – Alternative 1 minus 2018 Final EIS/OEIS Preferred Alternative** | **-0.28** | **-1.53** | **-12.63** | **-15.02** | **-0.02** | **-0.02** |

### Table 3.1-7: Estimated Annual Air Pollutant Emissions from Activities Occurring in State Waters in the Metropolitan Portland/Cumberland County Area, Alternative 1 (continued)[1]

| | *Emissions by Air Pollutant (TPY)[1]* | | | | | |
|---|---|---|---|---|---|---|
| | ***VOC*** | ***CO*** | ***$NO_X$*** | ***$SO_X$*** | ***$PM_{10}$*** | ***$PM_{2.5}$*** |
| **Metropolitan Portland/Cumberland County Ozone Maintenance Area** | | | | | | |
| General conformity thresholds | 100 | N/A | 100 | N/A | N/A | N/A |
| Exceedance? | No | N/A | No | N/A | N/A | N/A |

[1] Totals might vary slightly from the summation of individual values due to minor rounding errors.

Notes: CO = carbon monoxide; EIS = Environmental Impact Statement; N/A = not applicable; $NO_X$ = nitrogen oxides; OEIS = Overseas Environmental Impact Statement; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; $PM_{10}$ = particulate matter less than or equal to 10 microns in diameter; $SO_X$ = sulfur oxides; TPY = tons per year; VOC = volatile organic compound

Minor amounts of proposed activities in state waters also would occur in the Eastern Connecticut Intrastate region of Connecticut. Because New London County is considered a serious nonattainment area for ozone, a General Conformity applicability analysis was performed to determine if the requirements of a formal General Conformity Determination applied to Alternative 1. Table 3.1-8 presents the emissions estimated for Alternative 1 that would occur within the state waters of the New London County Area and their relevance to applicable General Conformity thresholds. The analysis assumed that 5 percent of the emissions produced by Alternative 1 within the state waters of the Northeast OPAREA would occur within this ozone nonattainment area. The data in Table 3.1-8 show that the net change in emissions produced from Alternative 1 and the 2018 Final EIS/OEIS preferred alternative within the state waters of Connecticut would be negative and therefore would not exceed the applicable General Conformity *de minimis* thresholds for ozone precursors (nitrogen oxides and volatile organic compound). As a result, no further analysis of conformity is required and a Record of Non-Applicability was prepared in accordance with Navy guidance (Appendix H, Air Quality Emissions Calculations).

### Table 3.1-8: Estimated Annual Air Pollutant Emissions from Activities Occurring in State Waters in the Eastern Connecticut Intrastate (New London County) Area, Alternative 1

| | *Emissions by Air Pollutant (TPY)[1]* | | | | | |
|---|---|---|---|---|---|---|
| | ***VOC*** | ***CO*** | ***$NO_X$*** | ***$SO_X$*** | ***$PM_{10}$*** | ***$PM_{2.5}$*** |
| **Eastern Connecticut Intrastate Ozone Nonattainment Area** | | | | | | |
| Total – Alternative 1 | 0.35 | 2.96 | 14.30 | 0.24 | 0.31 | 0.29 |
| **Total – 2018 Final EIS/OEIS Preferred Alternative** | **0.49** | **3.72** | **20.61** | **7.75** | **0.32** | **0.30** |
| **Net Change – Alternative 1 minus 2018 Final EIS/OEIS Preferred Alternative** | **-0.14** | **-0.77** | **-6.31-** | **-7.51** | **-0.01** | **-0.01** |
| General conformity thresholds | 50 | N/A | 50 | N/A | N/A | N/A |
| Exceedance? | No | N/A | No | N/A | N/A | N/A |

[1] Totals might vary slightly from the summation of individual values due to minor rounding errors.

Notes: CO = carbon monoxide; EIS = Environmental Impact Statement; N/A = not applicable; $NO_X$ = nitrogen oxides; OEIS = Overseas Environmental Impact Statement; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; $PM_{10}$ = particulate matter less than or equal to 10 microns in diameter; $SO_X$ = sulfur oxides; TPY = tons per year; VOC = volatile organic compound

#### 3.1.3.1.2.2 Hampton Roads, Virginia Areas Designated Nonattainment or Maintenance

Activities from Alternative 1 in state waters would also occur in the Hampton Roads Intrastate Area. Because Hampton Roads is considered an orphan maintenance area for ozone, a General Conformity applicability analysis was performed to determine if the requirements of a formal General Conformity Determination applied to Alternative 1. Table 3.1-9 presents emissions estimated for Alternative 1 that would occur within the state waters of the Hampton Roads Intrastate Area and their relevance to applicable General Conformity thresholds. The analysis conservatively assumed that 100 percent of the emissions produced by Alternative 1 within the Chesapeake Bay area and state waters of the Virginia Capes OPAREA would occur within this ozone maintenance area. The data in Table 3.1-9 show that the net change in emissions produced from Alternative 1 and the 2018 Final EIS/OEIS preferred alternative within the Hampton Roads Intrastate Area would be negative and therefore would not exceed the applicable General Conformity *de minimis* thresholds for ozone precursors (nitrogen oxides and volatile organic compound). As a result, no further analysis of conformity is required and a Record of Non-Applicability was prepared in accordance with Navy guidance (Appendix H, Air Quality Emissions Calculations).

**Table 3.1-9: Estimated Annual Air Pollutant Emissions from Activities Occurring in State Waters in the Hampton Roads Intrastate Area, Alternative 1**

| | *Emissions by Air Pollutant (TPY)*[1] | | | | | |
|---|---|---|---|---|---|---|
| | ***VOC*** | ***CO*** | ***$NO_X$*** | ***$SO_X$*** | ***$PM_{10}$*** | ***$PM_{2.5}$*** |
| **Hampton Roads Ozone Maintenance Area** | | | | | | |
| Total – Alternative 1 | 38.73 | 303.00 | 1,466.29 | 243.81 | 53.37 | 49.10 |
| **Total – 2018 Final EIS/OEIS Preferred Alternative** | **43.29** | **345.11** | **1,580.08** | **714.34** | **79.07** | **72.75** |
| **Net Change – Alternative 1 minus 2018 Final EIS/OEIS Preferred Alternative** | **-4.56** | **-42.11** | **-113.79** | **-470.53** | **-25.71** | **-23.65** |
| General conformity thresholds | 100 | N/A | 100 | N/A | N/A | N/A |
| Exceedance? | No | N/A | No | N/A | N/A | N/A |

[1] Totals might vary slightly from the summation of individual values due to minor rounding errors.

Notes: CO = carbon monoxide; EIS = Environmental Impact Statement; N/A = not applicable; $NO_X$ = nitrogen oxides; OEIS = Overseas Environmental Impact Statement; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; $PM_{10}$ = particulate matter less than or equal to 10 microns in diameter; $SO_X$ = sulfur oxides; TPY = tons per year; VOC = volatile organic compound.

#### 3.1.3.1.2.3 Jacksonville, Florida Areas Designated Nonattainment or Maintenance

In the southeast, the coastal area of Nassau County, Florida (just north of Jacksonville), is designated as a maintenance area for sulfur dioxide. Table 3.1-10 presents the estimated emissions for Alternative 1 activities that would occur within the state waters of Nassau County and their relevance to applicable General Conformity thresholds. The analysis conservatively assumed that all of the emissions produced by Alternative 1 within the state waters of the Jacksonville OPAREA would occur within this sulfur dioxide maintenance area. As shown in Table 3.1-10, the net change in sulfur dioxide emissions produced from AFTT activities in this area and the 2018 Final EIS/OEIS preferred alternative would be negative and therefore would not exceed the applicable General Conformity de minimis threshold. As a result, no further

analysis of conformity is required and a Record of Non-Applicability was prepared in accordance with Navy guidance (Appendix H, Air Quality Emissions Calculations).

**Table 3.1-10: Estimated Annual Air Pollutant Emissions from Activities Occurring in State Waters in Nassau County, Florida, Alternative 1**

| | *Emissions by Air Pollutant (TPY)*[1] | | | | | |
|---|---|---|---|---|---|---|
| | ***VOC*** | ***CO*** | ***$NO_X$*** | ***$SO_X$*** | ***$PM_{10}$*** | ***$PM_{2.5}$*** |
| **Nassau County Sulfur Dioxide Maintenance Area** | | | | | | |
| Total – Alternative 1 | 7.14 | 57.92 | 230.35 | 17.66 | 13.55 | 12.47 |
| **Total – 2018 Final EIS/OEIS Preferred Alternative** | **5.56** | **51.15** | **230.89** | **117.43** | **13.34** | **12.27** |
| **Net Change – Alternative 1 minus 2018 Final EIS/OEIS Preferred Alternative** | **1.57** | **6.78** | **-0.54** | **-99.78** | **0.22** | **0.20** |
| General conformity thresholds | N/A | N/A | N/A | 100 | N/A | N/A |
| Exceedance? | N/A | N/A | N/A | No | N/A | N/A |

[1] Totals might vary slightly from the summation of individual values due to minor rounding errors.

Notes: CO = carbon monoxide; EIS = Environmental Impact Statement; N/A = not applicable; $NO_X$ = nitrogen oxides; OEIS = Overseas Environmental Impact Statement; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; $PM_{10}$ = particulate matter less than or equal to 10 microns in diameter; $SO_X$ = sulfur oxides; TPY = tons per year; VOC = volatile organic compound

#### 3.1.3.1.2.4 Gulf of America Areas Designated Nonattainment or Maintenance

In the Gulf of America, Hillsborough County, Florida, contains maintenance areas for sulfur dioxide and lead. In addition, Saint Bernard Parish in southern Louisiana is a nonattainment area for sulfur dioxide and the Houston-Galveston-Brazoria area is designated as a severe nonattainment area for the 2008 ozone standard.

AFTT activities under Alternative 1 are not scheduled to occur in any of these nonattainment or maintenance areas. The primary location where activities would occur within state waters of the Gulf of America is at the Naval Surface Warfare Center Panama City Division Testing Area, Florida, which is in attainment for all pollutants.

### 3.1.3.1.3 Executive Order 12114 Analysis under Alternative 1 in Areas Beyond 12 Nautical Miles from Shore

The majority of military readiness activities proposed for Alternative 1 and presented in Table 3.1-5 would occur outside of U.S. territorial waters. Executive Order 12114 requires analysis of these impacts. During infrequent periods when winds would transport proposed emissions to coastal areas, the extensive travel distance of these emissions would produce dispersed and negligible ambient pollutant concentrations at these areas. As a result, military readiness activities associated with Alternative 1 beyond U.S. territorial waters would not contribute to an exceedance of an ambient air quality standard at any location within the Study Area and would produce less than significant impacts to criteria pollutant levels.

Like the dispersion of criteria pollutants mentioned above, training and testing activities also would produce negligible increases of ambient concentrations of hazardous pollutants at any onshore location. As a result, the exposure of sensitive receptors to hazardous pollutant emissions would remain well below health standards set for cancer and non-cancer effects. Therefore, military readiness activities associated with Alternative 1 beyond U.S. territorial waters would produce less than significant hazardous pollutant impacts.

#### 3.1.3.1.4 Summary of Air Quality Impacts under Alternative 1

While-pollutants emitted under Alternative 1 would at times be carried ashore by prevailing winds, most military readiness activities would occur beyond state water boundaries and the substantial transport distance and resulting dispersion of these emissions would produce negligible to minor increases of air pollutant concentrations to adjacent air quality control regions. As a result, military readiness activities associated with Alternative 1 would not contribute to an exceedance of an ambient air quality standard or interfere with the attainment of the National Ambient Air Quality Standards at any location within the Study Area. Emissions from inshore operations in Rhode Island; Cumberland County, Maine; New London County, Connecticut; Hampton Roads, Virginia; and Nassau County, Florida, under Alternative 1 would remain below General Conformity *de minimis* thresholds and therefore would not require a General Conformity Determination.

Alternative 1 also would not appreciably increase the exposure of sensitive receptors to hazardous pollutant emissions or associated cancer or non-cancer health effects. Therefore, Alternative 1 would produce less than significant impacts to hazardous pollutant levels.

### 3.1.3.2 Impacts from Air Emissions under Alternative 2

#### 3.1.3.2.1 NEPA Impacts from Air Emissions under Alternative 2

Table 3.1-11 presents estimations of the annual emissions that would occur from Alternative 2 for each operational region in the Study Area and includes all locations, regardless of proximity to the coastline. The overwhelming majority of emissions would occur from the operation of vessels beyond state waters, except that most emissions within the Northeast OPAREA would occur from small boat operations while in state waters. Most military readiness activities that would be conducted under Alternative 2 are the same as or similar to those conducted currently or in the past. In addition, the analysis considered U.S. Coast Guard military readiness activities and activities in locations not covered in the 2018 Final EIS/OEIS, including inshore areas of Louisiana and Mississippi, adjustments to the Gulf of America, Jacksonville, and Key West ship shock areas. While natural fluctuations would occur in training cycles, testing programs, and deployment schedules, annual emissions of all air pollutants except $NO_x$ from Alternative 2 are expected to decrease compared to levels associated with the preferred alternative in the 2018 Final EIS/OEIS, as shown in Table 3.1-11.

**Table 3.1-11: Estimated Annual Air Pollutant Emissions from Activities Occurring within the AFTT Study Area – Alternative 2**

| *Operational Area* | *Emissions by Air Pollutant (TPY)[1]* | | | | | |
|---|---|---|---|---|---|---|
| | *VOC* | *CO* | *$NO_X$* | *$SO_X$* | *$PM_{10}$* | *$PM_{2.5}$* |
| Northeast | 13.44 | 111.27 | 482.49 | 14.93 | 13.39 | 12.12 |
| Virginia Capes | 97.51 | 984.17 | 3,154.74 | 266.82 | 213.84 | 191.60 |
| Virginia Capes Inshore | 36.22 | 286.04 | 1,458.70 | 266.55 | 37.78 | 34.75 |

## Table 3.1-11: Estimated Annual Air Pollutant Emissions from Activities Occurring within the AFTT Study Area - Alternative 2 (continued)

| *Operational Area* | *Emissions by Air Pollutant (TPY)*[1] | | | | | |
|---|---|---|---|---|---|---|
| | ***VOC*** | ***CO*** | ***$NO_X$*** | ***$SO_X$*** | ***$PM_{10}$*** | ***$PM_{2.5}$*** |
| Cherry Point | 49.33 | 423.19 | 1,353.11 | 126.25 | 67.80 | 61.35 |
| Jacksonville | 59.53 | 653.61 | 1,917.92 | 197.15 | 108.29 | 96.44 |
| SFOMF | 0.46 | 5.79 | 19.10 | 0.08 | 0.36 | 0.34 |
| Key West | 11.45 | 58.04 | 290.17 | 13.01 | 23.88 | 21.79 |
| Gulf Range Complex | 46.12 | 336.02 | 1,507.85 | 53.14 | 36.28 | 33.14 |
| Other AFTT Areas | 3.42 | 39.59 | 127.83 | 16.11 | 3.82 | 3.44 |
| **Total – Alternative 2** | **317.49** | **2,897.72** | **10,311.91** | **954.04** | **505.44** | **454.97** |
| **Total – 2018 Final EIS/OEIS Preferred Alternative** | **344.26** | **3,477.74** | **9,823.98** | **3,615.51** | **608.84** | **549.79** |
| **Net Change – Alternative 2 minus 2018 Final EIS/OEIS Preferred Alternative** | **-26.77** | **-580.02** | **487.94** | **-2,661.48** | **-103.40** | **-94.82** |

[1] Totals might vary slightly from the summation of individual values due to minor rounding errors.

Notes: AFTT = Atlantic Fleet Training and Testing; CO = carbon monoxide; EIS = Environmental Impact Statement; N/A = not applicable; $NO_X$ = nitrogen oxides; OEIS = Overseas Environmental Impact Statement; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; $PM_{10}$ = particulate matter less than or equal to 10 microns in diameter; $SO_X$ = sulfur oxides; TPY = tons per year; VOC = volatile organic compound

Most military readiness activities under Alternative 2 would occur more than 12 NM offshore. Depending on the location of these activities and time of year, winds would disperse emissions from training and testing activities away from the coastal land masses at frequencies similar to those shown in the wind roses presented in Appendix H (Air Quality Emissions Calculations). During periods when winds would transport training and testing emissions into coastal areas, the substantial transport distance and resulting dispersion of these emissions would produce minor to immeasurable increases of air pollutant concentrations at onshore locations. The mobile and intermittent operation of most emission sources over such large areas also would contribute to dispersed ambient pollutant impacts at a given location. As a result, military readiness activities associated with Alternative 2 within U.S. territorial waters would not contribute to an exceedance of an ambient air quality standard at any location within the Study Area and would produce less than significant impacts to criteria pollutant levels.

Proposed training and testing activities would emit hazardous pollutants, mainly due to the combustion of fuels in vessels and aircraft. Like the dispersion of criteria pollutants mentioned above, training and testing activities also would produce negligible to minor increases of ambient concentrations of hazardous pollutants at any onshore location. As a result, the exposure of sensitive receptors to hazardous pollutants emissions would remain well below health standards set for cancer and non-cancer effects. Therefore, Alternative 2 would produce less than significant hazardous pollutant impacts.

### 3.1.3.2.2 General Conformity Analysis under Alternative 2 in Areas Designated Nonattainment or Maintenance

#### 3.1.3.2.2.1 Northeast Areas Designated Nonattainment or Maintenance

The nonattainment and maintenance areas for national ambient air quality standards that are applicable to the proposed training and testing activities under Alternative 2 are the same as those identified above in Section 3.1.3.1.2.1 (Northeast Areas Designated Nonattainment or Maintenance).

Activities in state waters are not scheduled to occur in the majority of these nonattainment or maintenance areas. The primary location where activities in state waters occur is at Naval Undersea Warfare Center Division Newport and Narragansett Bay, both of which are in Rhode Island. Because Rhode Island is considered an orphan nonattainment area for ozone, a General Conformity applicability analysis was performed to determine if the requirements of a formal General Conformity Determination applied to Alternative 2.

Table 3.1-12 presents the emissions estimated for Alternative 2 that would occur within Rhode Island state waters and their relevance to applicable General Conformity thresholds. The analysis conservatively assumed that 85 percent of the emissions produced by Alternative 2 within the state waters of the Northeast OPAREA would occur within the Metropolitan Providence Interstate ozone nonattainment area (all of Rhode Island), although some emissions also would occur in adjacent nonattainment areas, such as the Dukes County, Massachusetts ozone nonattainment area, which encompasses Martha's Vineyard and surrounding islands. The data in Table 3.1-12 show that the net change in conformity-related emissions produced from Alternative 2 and the 2018 Final EIS/OEIS Preferred Alternative within the state waters of Rhode Island would be negative and therefore would not exceed the applicable General Conformity *de minimis* thresholds for ozone precursors (nitrogen oxides and volatile organic compound). As a result, no further analysis of conformity is required.

**Table 3.1-12: Estimated Annual Air Pollutant Emissions from Activities Occurring in State Waters in the Metropolitan Providence Interstate (All of Rhode Island) Area, Alternative 2**

| | *Emissions by Air Pollutant (TPY)*[1] | | | | | |
|---|---|---|---|---|---|---|
| | ***VOC*** | ***CO*** | ***$NO_X$*** | ***$SO_X$*** | ***$PM_{10}$*** | ***$PM_{2.5}$*** |
| **Metropolitan Providence Interstate Ozone Nonattainment Area** | | | | | | |
| Total – Alternative 2 | 6.35 | 52.00 | 253.87 | 4.68 | 5.57 | 5.12 |
| **Total – 2018 Final EIS/OEIS Preferred Alternative** | **8.28** | **63.29** | **350.41** | **131.76** | **5.47** | **5.04** |
| **Net Change – Alternative 2 minus 2018 Final EIS/OEIS Preferred Alternative** | **-1.93** | **-11.29** | **-96.54** | **-127.08** | **0.09** | **0.08** |
| General conformity thresholds | 100 | N/A | 100 | N/A | N/A | N/A |
| Exceedance? | No | N/A | No | N/A | N/A | N/A |

[1] Totals might vary slightly from the summation of individual values due to minor rounding errors.

Notes: CO = carbon monoxide; EIS = Environmental Impact Statement; N/A = not applicable; $NO_X$ = nitrogen oxides; OEIS = Overseas Environmental Impact Statement; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; $PM_{10}$ = particulate matter less than or equal to 10 microns in diameter; $SO_X$ = sulfur oxides; TPY = tons per year; VOC = volatile organic compound

Activities in state waters would also occur in the Metropolitan Portland/Cumberland County region of Maine. Because Cumberland County is considered an orphan maintenance area for ozone, a

General Conformity applicability analysis was performed to determine if the requirements of a formal General Conformity Determination applied to Alternative 2. Table 3.1-13 presents the emissions estimated for Alternative 2 that would occur within the state waters of Cumberland County and their relevance to applicable General Conformity thresholds. The analysis assumed that 10 percent of the emissions produced by Alternative 2 within the state waters of the Northeast OPAREA would occur within this ozone nonattainment area. The data in Table 3.1-13 show that the net change in conformity-related emissions produced from Alternative 2 and the 2018 Final EIS/OEIS preferred alternative within the state waters of Cumberland County, Maine, would be negative and therefore would not exceed the applicable General Conformity *de minimis* thresholds for ozone precursors (nitrogen oxides and volatile organic compound). As a result, no further analysis of conformity is required.

**Table 3.1-13: Estimated Annual Air Pollutant Emissions from Activities Occurring in State Waters in the Metropolitan Portland/Cumberland County Area, Alternative 2**

| | ***Emissions by Air Pollutant (TPY)[1]*** | | | | | |
|---|---|---|---|---|---|---|
| | ***VOC*** | ***CO*** | ***$NO_X$*** | ***$SO_X$*** | ***$PM_{10}$*** | ***$PM_{2.5}$*** |
| **Metropolitan Portland/Cumberland County Ozone Maintenance Area** | | | | | | |
| Total – Alternative 2 | 0.75 | 6.12 | 29.87 | 0.55 | 0.65 | 0.60 |
| **Total – 2018 Final EIS/OEIS Preferred Alternative** | **0.97** | **7.45** | **41.22** | **15.50** | **0.64** | **0.59** |
| **Net Change – Alternative 2 minus 2018 Final EIS/OEIS Preferred Alternative** | **-0.23** | **-1.33** | **-11.36** | **-14.95** | **0.01** | **0.01** |
| General conformity thresholds | 100 | N/A | 100 | N/A | N/A | N/A |
| Exceedance? | No | N/A | No | N/A | N/A | N/A |

[1] Totals might vary slightly from summation of individual values due to minor rounding errors.

Notes: CO = carbon monoxide; EIS = Environmental Impact Statement; N/A = not applicable; $NO_X$ = nitrogen oxides; OEIS = Overseas Environmental Impact Statement; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; $PM_{10}$ = particulate matter less than or equal to 10 microns in diameter; $SO_X$ = sulfur oxides; TPY = tons per year; VOC = volatile organic compound

Minor amounts of proposed activities in state waters also would occur in the Eastern Connecticut Intrastate region of Connecticut. Because New London County is considered a serious nonattainment area for ozone, a General Conformity applicability analysis was performed to determine if the requirements of a formal General Conformity Determination applied to Alternative 2. Table 3.1-14 presents the emissions estimated for Alternative 2 that would occur within the state waters of the New London County Area and their relevance to applicable General Conformity thresholds. The analysis assumed that 5 percent of the emissions produced by Alternative 2 within the state waters of the Northeast OPAREA would occur within this ozone nonattainment area. The data in Table 3.1-14 show that the net change in conformity-related emissions produced from Alternative 2 and the 2018 Final EIS/OEIS preferred alternative within the state waters of Connecticut would be negative and therefore would not exceed the applicable General Conformity *de minimis* thresholds for ozone precursors (nitrogen oxides and volatile organic compound). As a result, no further analysis of conformity is required.

**Table 3.1-14: Estimated Annual Air Pollutant Emissions from Activities Occurring in State Waters in the Eastern Connecticut Intrastate (New London County) Area, Alternative 1**

| | *Emissions by Air Pollutant (TPY)*[1] | | | | | |
|---|---|---|---|---|---|---|
| | ***VOC*** | ***CO*** | ***$NO_X$*** | ***$SO_X$*** | ***$PM_{10}$*** | ***$PM_{2.5}$*** |
| **Eastern Connecticut Intrastate Ozone Nonattainment Area** | | | | | | |
| Total – Alternative 1 | 0.37 | 3.06 | 14.93 | 0.28 | 0.33 | 0.30 |
| **Total – 2018 Final EIS/OEIS Preferred Alternative** | **0.49** | **3.72** | **20.61** | **7.75** | **0.32** | **0.30** |
| **Net Change – Alternative 1 minus 2018 Final EIS/OEIS Preferred Alternative** | **-0.11** | **-0.66** | **-5.68** | **-7.48** | **0.01** | **0.00** |
| General conformity thresholds | 50 | N/A | 50 | N/A | N/A | N/A |
| Exceedance? | No | N/A | No | N/A | N/A | N/A |

[1] Totals might vary slightly from the summation of individual values due to minor rounding errors.

Notes: CO = carbon monoxide; EIS = Environmental Impact Statement; N/A = not applicable; $NO_X$ = nitrogen oxides; OEIS = Overseas Environmental Impact Statement; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; $PM_{10}$ = particulate matter less than or equal to 10 microns in diameter; $SO_X$ = sulfur oxides; TPY = tons per year; VOC = volatile organic compound

#### 3.1.3.2.2.2 Hampton Roads, Virginia, Areas Designated Nonattainment or Maintenance

Activities in state waters would also occur in the Hampton Roads Intrastate region. Because Hampton Roads is considered an orphan maintenance area for ozone, a General Conformity applicability analysis was to be performed to determine if the requirements of a formal General Conformity Determination applied to Alternative 2. Table 3.1-15 presents emissions estimated for Alternative 2 that would occur within the state waters of the Hampton Roads Intrastate Area and their relevance to applicable General Conformity thresholds. The analysis conservatively assumed that 100 percent of the emissions produced by Alternative 2 within the Chesapeake Bay area and state waters of the Virginia Capes OPAREA would occur within this ozone maintenance area. The data in Table 3.1-15 show that the net change in emissions produced from Alternative 2 and the 2018 Final EIS/OEIS preferred alternative within the Hampton Roads Intrastate Area would be negative and therefore would not exceed the applicable General Conformity *de minimis* thresholds for ozone precursors (nitrogen oxides and volatile organic compound). As a result, no further analysis of conformity is required.

**Table 3.1-15: Estimated Annual Air Pollutant Emissions from Activities Occurring in State Waters in the Hampton Roads Intrastate Area, Alternative 2**

| | *Emissions by Air Pollutant (TPY)*[1] | | | | | |
|---|---|---|---|---|---|---|
| | ***VOC*** | ***CO*** | ***$NO_X$*** | ***$SO_X$*** | ***$PM_{10}$*** | ***$PM_{2.5}$*** |
| **Hampton Roads Intrastate Ozone Maintenance Area** | | | | | | |
| Total – Alternative 2 | 39.10 | 305.88 | 1,486.66 | 246.89 | 53.86 | 49.55 |
| **Total – 2018 Final EIS/OEIS Preferred Alternative** | **43.29** | **345.11** | **1,580.08** | **714.34** | **79.07** | **72.75** |
| **Net Change – Alternative 2 minus 2018 Final EIS/OEIS Preferred Alternative** | **-4.18** | **-39.22** | **-93.42** | **-467.45** | **-25.21** | **-23.20** |

**Table 3.1 15: Estimated Annual Air Pollutant Emissions from Activities Occurring in State Waters in the Hampton Roads Intrastate Area, Alternative 2 (continued)[1]**

| | *Emissions by Air Pollutant (TPY)[1]* | | | | | |
|---|---|---|---|---|---|---|
| | ***VOC*** | ***CO*** | ***$NO_X$*** | ***$SO_X$*** | ***$PM_{10}$*** | ***$PM_{2.5}$*** |
| General conformity thresholds | 100 | N/A | 100 | N/A | N/A | N/A |
| Exceedance? | No | N/A | No | N/A | N/A | N/A |

[1] Totals might vary slightly from the summation of individual values due to minor rounding errors.

Notes: CO = carbon monoxide; EIS = Environmental Impact Statement; N/A = not applicable; $NO_X$ = nitrogen oxides; OEIS = Overseas Environmental Impact Statement; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; $PM_{10}$ = particulate matter less than or equal to 10 microns in diameter; $SO_x$ = sulfur oxides; TPY = tons per year; VOC= volatile organic compound

### 3.1.3.2.2.3 Jacksonville, Florida Areas Designated Nonattainment or Maintenance

In the southeast, the coastal area of Nassau County, Florida (just north of Jacksonville), is designated as a maintenance area for sulfur dioxide. Table 3.1-16 presents the estimated emissions for Alternative 2 activities that would occur within the state waters of Nassau County and their relevance to applicable General Conformity thresholds. The analysis conservatively assumed that all of the emissions produced by Alternative 2 within the state waters of the Jacksonville OPAREA would occur within this sulfur dioxide maintenance area. As shown in Table 3.1-16, the net change in AFTT activities in this area and the 2018 Final EIS/OEIS preferred alternative would produce a net reduction in sulfur dioxide emissions and therefore would not exceed the applicable General Conformity *de minimis* threshold for this pollutant. As a result, no further analysis of conformity is required.

**Table 3.1-16: Estimated Annual Air Pollutant Emissions from Activities Occurring in State Waters in Nassau County, Florida, Alternative 2**

| | *Emissions by Air Pollutant (TPY)[1]* | | | | | |
|---|---|---|---|---|---|---|
| | ***VOC*** | ***CO*** | ***$NO_X$*** | ***$SO_X$*** | ***$PM_{10}$*** | ***$PM_{2.5}$*** |
| **Nassau County Sulfur Dioxide Maintenance Area** | | | | | | |
| Total – Alternative 2 | 7.50 | 61.83 | 256.01 | 22.15 | 14.28 | 13.14 |
| **Total – 2018 Final EIS/OEIS Preferred Alternative** | **5.56** | **51.15** | **230.89** | **117.43** | **13.34** | **12.27** |
| **Net Change – Alternative 2 minus 2018 Final EIS/OEIS Preferred Alternative** | **1.94** | **10.68** | **25.12** | **-95.28** | **0.95** | **0.87** |
| General conformity thresholds | N/A | N/A | N/A | 100 | N/A | N/A |
| Exceedance? | N/A | N/A | N/A | No | N/A | N/A |

[1] Totals might vary slightly from summation of individual values due to minor rounding errors.

Notes: CO = carbon monoxide; EIS = Environmental Impact Statement; N/A = not applicable; $NO_X$ = nitrogen oxides; OEIS = Overseas Environmental Impact Statement; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; $PM_{10}$ = particulate matter less than or equal to 10 microns in diameter; $SO_X$ = sulfur oxides; TPY = tons per year; VOC = volatile organic compound

### 3.1.3.2.2.4 Gulf of America Areas Designated Nonattainment or Maintenance

In the Gulf of America, Hillsborough County, Florida, contains maintenance areas for sulfur dioxide and lead. In addition, Saint Bernard Parish in southern Louisiana is a nonattainment area for sulfur dioxide and

the Houston-Galveston-Brazoria area is designated as a severe nonattainment area for the 2008 ozone standard.

AFTT activities under Alternative 2 are not scheduled to occur in any of these nonattainment or maintenance areas. The primary location where activities would occur within state waters of the Gulf of America is at the Naval Surface Warfare Center Panama City Division Testing Area, Florida, which is in attainment for all pollutants.

#### 3.1.3.2.3 Executive Order 12114 Analysis under Alternative 2 in Areas Beyond 12 Nautical Miles from Shore

The majority of military readiness activities proposed for Alternative 2 and presented in Table 3.1-11 would occur outside of U.S. territorial waters. Executive Order 12114 requires analysis of these impacts. During infrequent periods when winds would transport proposed emissions to coastal areas, the extensive travel distance of these emissions would produce dispersed and negligible ambient pollutant concentrations at these locations. As a result, military readiness activities associated with Alternative 2 beyond U.S. territorial waters would not contribute to an exceedance of an ambient air quality standard at any location within the Study Area and would produce less than significant impacts to criteria pollutant levels.

Like the dispersion of criteria pollutants mentioned above, training and testing activities also would produce negligible increases of ambient concentrations of hazardous pollutants at any onshore location. As a result, the exposure of sensitive receptors to hazardous pollutant emissions would remain well below health standards set for cancer and non-cancer effects. Therefore, military readiness activities associated with Alternative 2 beyond U.S. territorial waters would produce less than significant hazardous pollutant impacts.

#### 3.1.3.2.4 Summary of Air Quality Impacts under Alternative 2

While-pollutants emitted under Alternative 2 would at times be carried ashore by prevailing winds, most military readiness activities would occur beyond state water boundaries and the substantial transport distance and resulting dispersion of these emissions would produce negligible to minor increases of air pollutant concentrations to adjacent air quality control regions. As a result, military readiness activities associated with Alternative 2 would not contribute to an exceedance of an ambient air quality standard or interfere with the attainment of the National Ambient Air Quality Standards at any location within the Study Area. Inshore operations in Rhode Island; Cumberland County, Maine; Hampton Roads, Virginia; New London County, Connecticut; and Nassau County, Florida, would not exceed General Conformity *de minimis* thresholds and therefore would not require a General Conformity Determination.

Alternative 2 also would not appreciably increase the exposure of sensitive receptors to hazardous pollutant emissions or associated cancer or non-cancer health effects. Therefore, Alternative 2 would produce less than significant impacts to hazardous pollutant levels.

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