

## 5 Cumulative Impacts

This chapter 1) defines cumulative impacts, 2) describes past, present, and reasonably foreseeable future actions relevant to cumulative impacts, 3) analyzes the incremental interaction the Proposed Action may have with other actions with coincidental effects, and 4) evaluates cumulative impacts potentially resulting from these interactions of the coincidental effects on the same environmental resource.

### 5.1 Definition of Cumulative Impacts

The approach taken in the analysis of cumulative impacts follows the objectives of the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations, and CEQ guidance. Cumulative impacts are defined in 40 Code of Federal Regulations, Section 1508.7.

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

To determine the scope of an Environmental Impact Statements (EIS), agencies consider cumulative actions, which when viewed with other Proposed Actions, have cumulatively significant impacts and should therefore be discussed in the same impact statement. In addition, CEQ and the United States (U.S.) Environmental Protection Agency (USEPA) have published guidance addressing implementation of cumulative impact analyses, including *Guidance on the Consideration of Past Actions in Cumulative Effects Analysis* (CEQ, 2005) and *Consideration of Cumulative Impacts in USEPA Review of NEPA Documents* (USEPA, 1999). CEQ (1997) guidance entitled *Considering Cumulative Impacts Under NEPA* states that cumulative impact analyses should:

“...determine the magnitude and significance of the environmental consequences of the proposed action in the context of the cumulative impacts of other past, present, and future actions...identify significant cumulative impacts...[and]...focus on truly meaningful impacts.”

Cumulative impacts are most likely to arise when a relationship or synergism exists between a Proposed Action and other actions expected to occur coincidentally in a similar location or during a similar time period. Actions overlapping with or in close proximity to the Proposed Action would be expected to have more potential for a relationship than those more geographically separated. Similarly, relatively concurrent actions would tend to offer a higher potential for cumulative impacts. To identify cumulative impacts, the analysis needs to address the following three fundamental questions:

- Does a relationship exist such that affected resource areas of the Proposed Action might interact coincidentally with the same affected resource areas of past, present, or reasonably foreseeable actions?
- If one or more of the affected resource areas of the Proposed Action and another action could be expected to interact, would the Proposed Action affect or be affected coincidentally by impacts of the other action?

- If such a relationship exists, then does an assessment reveal any potentially significant impacts not identified when the Proposed Action is considered alone?

## 5.2 Scope of Cumulative Impacts Analysis

The scope of the cumulative impacts analysis involves both the geographic extent of the effects and the time frame in which the coincidental effects could be expected to occur. For this EIS, the study area defines the geographic extent of the cumulative impacts analysis. In general, the study area includes those areas previously identified in Chapter 4 for the respective resource areas. The time frame for cumulative impacts centers on the timing of the Proposed Action.

Another factor influencing the scope of cumulative impacts analysis involves identifying other actions to consider. In addition to identifying the geographic scope and time frame for the previously completed and currently ongoing actions, the analysis also includes the identification of “reasonably foreseeable” actions (i.e., anticipated future actions). For the purposes of this analysis, public documents prepared by federal, state, and local government agencies form the primary sources of information regarding reasonably foreseeable actions. Documents used to identify other actions include notices of intent for EISs and Environmental Assessments (EAs), management plans, land use plans, and other planning-related studies. Additionally, Naval Air Station (NAS) Whidbey Island staff provided information on local and regional actions, as well as previously completed, currently ongoing, and reasonably foreseeable future actions at Ault Field and Outlying Landing Field (OLF) Coupeville. Finally, local websites for local news outlets were searched for articles pertaining to actions that would need to be included in this analysis.

Multiple U.S. Department of the Navy (Navy) actions are ongoing within the Pacific Northwest Region; however, each NEPA document addresses a specific Proposed Action, separated from other actions by its purpose and need, independent utility, timing, and geographic location. Some NEPA documents are stand-alone documents; others tier off of and/or expand the analyses of other existing NEPA documents. NEPA documents for at-sea training (for example [e.g.], the Northwest Training and Testing [NWTT] EIS/Overseas EIS [OEIS]) focus on training activities occurring within a range complex and/or Military Operations Area (MOA) and involve different types of aircraft, ships, and range complex enhancements. However, NEPA documents that analyze a specific type of aircraft operation at a military airfield (in this case, the Growler) are focused in and around that airfield and its facility needs. While the Navy has analyzed, and is currently analyzing, various Proposed Actions in the area, those Proposed Actions are not preconditions for Growler operations at the NAS Whidbey Island complex. Growler operations at the NAS Whidbey Island complex are not a precondition for larger military readiness activities on range complexes in the Pacific Northwest. Even in the absence of this Proposed Action, military training in the Pacific Northwest would continue independently from this Proposed Action, as analyzed in the documents referenced in Section 1.6. Each of the documents includes the results of a cumulative impact analysis that was conducted at the time the document was prepared; thus, the combined impacts of all of these activities are being captured in multiple documents.

### **5.3 Past, Present, and Reasonably Foreseeable Actions**

This section focuses on past, present, and reasonably foreseeable future projects at and near the NAS Whidbey Island complex. In determining which projects to include in the cumulative impacts analysis, a preliminary determination was made regarding the past, present, or reasonably foreseeable action. Specifically, using the first fundamental question included in Section 5.1, it was determined whether a relationship exists such that the affected resource areas of the Proposed Action (included in this EIS) might interact with the affected resource area of a past, present, or reasonably foreseeable action. If no such potential relationship exists, the project was not carried forward into the cumulative impacts analysis. In accordance with CEQ guidance (CEQ, 2005), these actions considered but excluded from further cumulative effects analysis are not catalogued here because the intent is to focus the analysis on the meaningful actions relevant to inform decision making. Projects included in this cumulative impacts analysis are listed in Table 5-1 and shown on Figure 5.1, and they are briefly described in the following subsections.

**Table 5-1 Other Actions Considered for Potential Cumulative Impacts Associated with the Proposed Action for the NAS Whidbey Island Complex**

<b>Action</b>	<b>Summary of Action</b>	<b>NEPA Analysis Completed/Timeframe</b>
<b>Past Actions</b>		
Transition of Expeditionary EA-6B Prowler Aircraft to EA-18G Growler Aircraft	<p>The action included retaining the expeditionary Electronic Attack mission capabilities at Naval Air Station (NAS) Whidbey Island; performing the in-place transition of three existing expeditionary Electronic Attack squadrons home based at NAS Whidbey Island from the Prowler aircraft to the Growler aircraft; relocating one reserve expeditionary Electronic Attack squadron from Joint Base Andrews to NAS Whidbey Island, and transitioning from the Prowler aircraft to the Growler aircraft.</p> <p><i>Aircraft, personnel, and construction associated with this project were accounted for in the No Action Alternative and are assessed in Chapter 4; therefore, this project was not retained for further analysis.</i></p>	Environmental Assessment (EA) A Finding of No Significant Impact (FONSI) for the EA was signed on October 30, 2012.  Action completed in 2016

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<b>Action</b>	<b>Summary of Action</b>	<b>NEPA Analysis Completed/Timeframe</b>
<p>P-8A Multi-Mission Maritime Aircraft (MMA) Supplemental Environmental Impact Statement (SEIS)</p>	<p>The purpose of the P-8A SEIS was to supplement the home basing alternatives and analysis contained in the 2008 Final EIS in light of new conditions and information. Circumstances and conditions that underwent significant change since the 2008 Record of Decision (ROD) were reexamined to better inform Navy decision makers and the public about the environmental effects of dual-siting P-8A squadrons (versus the original plan for triple siting) as a cost-saving measure while still meeting current strategic operational objectives and timelines.</p> <p><i>Aircraft, personnel, and construction associated with this project were accounted for in the No Action Alternative and are assessed in Chapter 4; therefore, this project was not retained for further analysis.</i></p>	<p>EIS/SEIS</p> <p>A ROD for the SEIS was signed on April 25, 2014. Operations of these aircraft are ongoing and are included in the “all other aircraft” operations analyzed in this EIS.</p>
<p>Replacement of the C-9 Aircraft with the C-40 Aircraft</p>	<p>The four C-9 Skytrain II aircraft stationed at NAS Whidbey Island were replaced by three C-40 Clipper aircraft.</p> <p><i>Aircraft, personnel, and construction associated with this project were accounted for in the No Action Alternative and are assessed in Chapter 4; therefore, this project was not retained for further analysis.</i></p>	<p>Record of Categorical Exclusion (CATEX) 2010</p> <p>Completed</p>
<p>Tree Cutting at Ault Field at NAS Whidbey Island, Washington.</p>	<p>The Proposed Action is to clear 10 acres of trees present within a wetland located northeast of the approach end of Runway 25.</p>	<p>EA</p> <p>A Finding of No Significant Impact (FONSI) was signed on July 14, 2016.</p> <p>Project completed</p>

**Table 5-1 Other Actions Considered for Potential Cumulative Impacts Associated with the Proposed Action for the NAS Whidbey Island Complex**

<b>Action</b>	<b>Summary of Action</b>	<b>NEPA Analysis Completed/Timeframe</b>
State Route (SR) 532 – Davis Slough Bridge Replacement	The Washington State Department of Transportation (WSDOT) constructed a new, wider bridge to carry SR 532 over Davis Slough and to replace the previous bridge, which was over 60 years old. This project also included widening SR 532 between the Camano Gateway Bridge and the west side of Davis Slough.	None; non-federal action  Completed; construction occurred from August 2014 to spring 2016
WhidbeyHealth Medical Center Expansion Project	The hospital expansion project included installing a two-story, 60,000-square-foot expansion wing and a 5,000-square-foot renovation of the existing WhidbeyHealth Medical Center.	None; non-federal action  Completed; construction occurred from September 2015 to fall 2017
<b>Present and Reasonably Foreseeable Future Actions</b>		
Northwest Training Range Complex (NWTRC) Final EIS/Overseas EIS (OEIS)	The Navy evaluated the impacts of increases in training activities, including those that would be needed as a result of changes in basing locations for ships, aircraft, and personnel (force structure changes) and impacts of providing for range enhancements in the NWTRC at sea and on shore.	EIS/OEIS A ROD for the EIS/OEIS was signed on October 25, 2010.  Action implementation ongoing for on-shore activities. At-sea activities were reanalyzed in the Northwest Training and Testing (NWTT) EIS/OEIS addressed below.
Environmental Assessment for the Pacific Northwest Electronic Warfare Range	The Navy evaluated use of a fixed transmitter site and up to three mobile transmitter vans that emit signals that pilots need to detect and identify. This action was planned to improve training that was already occurring in existing military operations areas.	EA  A FONSI was signed on August 28, 2014, and the final signed and executed permit is dated October 5, 2017. Action implementation is ongoing.
Outlying landing field (OLF) security barrier	The Navy installed security blocks on the perimeter of OLF Coupeville.	Record of CATEX signed September 23, 2013  Project completed and security blocks have been installed
Naval Special Operations Training in Western Washington State	The Navy proposes to conduct small unit, intermediate, and advanced land and maritime training activities for Navy Special Operations personnel.	EA  EA completion anticipated summer 2018

**Table 5-1 Other Actions Considered for Potential Cumulative Impacts Associated with the Proposed Action for the NAS Whidbey Island Complex**

<b>Action</b>	<b>Summary of Action</b>	<b>NEPA Analysis Completed/Timeframe</b>
NWTT Final EIS/OEIS	The Navy is conducting military readiness training and testing activities in the NWTT Study Area, which is made up of air and sea space in the eastern north Pacific Ocean region, located adjacent to the Pacific Northwest coast of the U.S. and including the Strait of Juan de Fuca, Puget Sound (including Hood Canal), and Western Behm Canal in southeastern Alaska.	EIS/OEIS  A ROD for the EIS/OEIS was signed on October 31, 2016  Action implementation ongoing (Notice of Intent for Supplemental EIS published August 22, 2017)
Northwest Regional Family Housing Privatization at NAS Whidbey Island	The Proposed Action includes the demolition of nine farmhouses at NAS Whidbey Island.	Analyzed in EA for PPV Housing Privatization  A FONSI was signed on August 11, 2004  Demolition expected by 2019
Fleet Air Reconnaissance (VQ) Disestablishment	The U.S. Department of Defense (DoD) has directed the Navy to disestablish the VQ mission capabilities at NAS Whidbey Island by 2021.	NEPA TBD. This disestablishment action is assumed in the operations numbers presented in this EIS.  Completion by 2021
Triton Mission Control Station	This project would construct an approximately 30,000-square-foot Triton Mission Control Station facility to provide space and communications for two mission control stations that would control Triton unmanned aerial vehicles (UAVs) that fly from a remote location.  <i>This project was accounted for in the No Action Alternative and is assessed in Chapter 4; therefore, this project was not retained for further analysis.</i>	Analyzed in P-8A MMA EIS 2008  Construction anticipated to start in 2018 and be completed in 2020.
Next Generation Jammer	This project would renovate and modernize the existing ALQ-99 electronic jamming pod maintenance, storage, and training facilities to support the requirements of the next generation jammer pod.	Record of CATEX to be completed  Work anticipated in FY 19

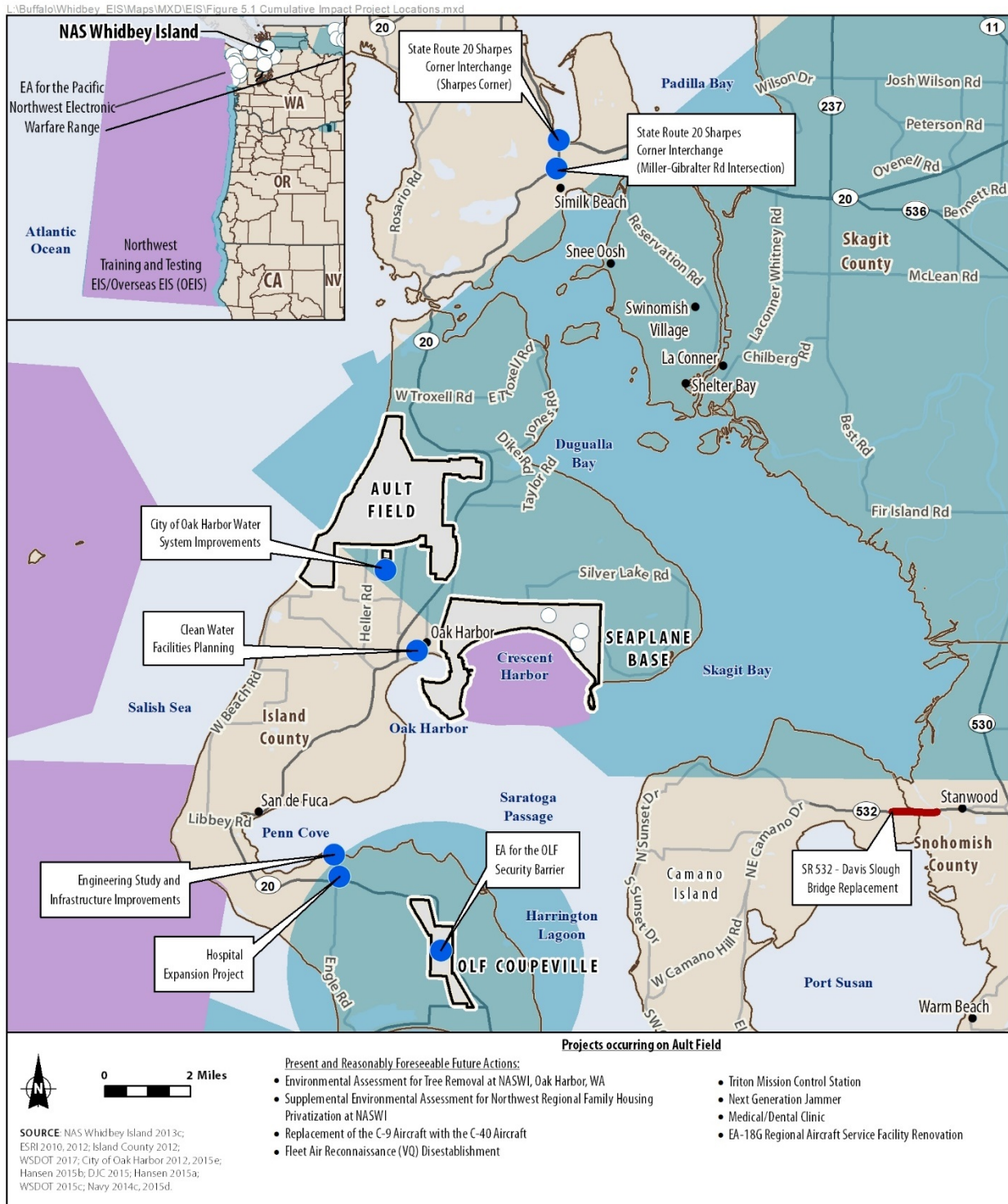
**Table 5-1 Other Actions Considered for Potential Cumulative Impacts Associated with the Proposed Action for the NAS Whidbey Island Complex**

<i>Action</i>	<i>Summary of Action</i>	<i>NEPA Analysis Completed/Timeframe</i>
Naval Health Clinic Oak Harbor	The Defense Health Administration (DHA) has directed NAS Whidbey Island to develop a project to replace the existing naval clinic on the installation. Project details include the construction of a medical facility at NAS Whidbey Island in support of military personnel, their dependents, and retirees.	EA completion by summer 2019  Construction anticipated in FY 21
Regional Aircraft Service Facility Renovation	This project would construct an addition to Hangar 7 (Building 2544) to provide an aircraft maintenance hangar with space for high-bay aircraft maintenance and maintenance shops. This project includes site improvements, including replacement of fencing and construction of a concrete access apron, and demolition of five temporary relocatable buildings on the site.	Record of CATEX to be completed  Construction anticipated between 2023 and 2025
City of Oak Harbor Water System Improvements	The City of Oak Harbor is planning to construct improvements to its water system in order to replace aging infrastructure and meet minimum storage requirements over the next 20-year planning horizon. Improvements will include construction of a new water reservoir tank and a new booster station.	None; non-federal action  Construction anticipated to be completed in 2019.
Engineering Study and Infrastructure Improvements	An engineering study has been proposed for the Port of Coupeville’s wharf to determine the state of the infrastructure and to recommend repairs and upgrades that should be undertaken.	None to date  To be determined
City of Oak Harbor Clean Water Facility Project	The City of Oak Harbor is currently replacing its two existing wastewater treatment facilities (WWTFs) with a new wastewater treatment system.	None; non-federal action  Construction: 2015-2018



**Table 5-1 Other Actions Considered for Potential Cumulative Impacts Associated with the Proposed Action for the NAS Whidbey Island Complex**

<b>Action</b>	<b>Summary of Action</b>	<b>NEPA Analysis Completed/Timeframe</b>
SR 20 – Sharpes Corner Interchange (Roundabout)	WSDOT is improving the Sharpes Corner intersection on SR 20 to address traffic congestion and safety risks. This project includes construction of a roundabout at Sharpes Corner and a second roundabout at Miller-Gibraltar Road.	None; non-federal action Construction: 2018
SR 20 – Banta Road Intersection (Roundabout or Signal Light)	WSDOT is improving the Banta Road intersection on SR 20 to address safety risks. The project is under design and will consist of construction of a roundabout or installation of a signal light.	None; non-federal action Construction: 2019
Oak Harbor Urban Growth Area (UGA) expansion (Wright’s Crossing)	<p>The City of Oak Harbor proposed to expand the UGA to include Wright’s Crossing, a proposed affordable single-family housing development of 1,000 to 1,500 single-family homes that would be constructed on property south of SR 20 and Miller Road. The Island County Planning Commission, which must approve the UGA expansion, voted to exclude the project from its 2018 planning docket.</p> <p><i>This project is not currently moving forward and therefore was considered but not included in the cumulative impacts analysis.</i></p>	None; non-federal action To be determined



**Figure 5.1**  
**Cumulative Impact**  
**Project Locations**  
 Whidbey Island, Island County, WA

### 5.3.1 Past Actions

#### 5.3.1.1 Federal Actions

Five previous federal actions were identified in Table 5-1: the Environmental Assessment for the Transition of Expeditionary EA-6B Prowler Aircraft with EA-18G Growler Aircraft; the P-8A Multi-Mission Aircraft EIS/SEIS; the Replacement of the C-9 Aircraft with the C-40 Aircraft; and the tree cutting project at Ault Field. However, these projects are complete and included as part of the existing environment analysis in this EIS. Additionally, the Triton Mission Control Station project has been included in the No Action Alternative analysis in Chapter 4. The Triton Mission Control Station project would be complete before the baseline year of 2021 considered in this EIS and is therefore considered part of the baseline. These projects are not retained for further cumulative impacts analysis.

#### 5.3.1.2 Non-federal Actions

There are no past non-federal actions that have been included as part of this analysis because they have been captured in the baseline.

### 5.3.2 Present and Reasonably Foreseeable Actions

#### 5.3.2.1 Federal Actions

##### **Northwest Training Range Complex Final Environmental Impact Statement/Overseas Environmental Impact Statement**

The 2010 NWTRC Final EIS/OEIS assessed surface, submarine, aviation, and explosive ordnance disposal training operations by units located at Navy installations in northwest Washington over a five-year period. The proposed action included air and surface target training, development and use of a new electronic combat threat signal capability, development of a Portable Undersea Tracking Range (PUTR), and development of a new underwater minefield for training. Air and surface target training require use of surface combat vessels, submarines, and aircraft that will engage in a number of training exercises involving air-to-air missiles, air-to-air combat, surface-to-air weaponry, and air-to-surface bombs and missiles. In addition to the development of new training capabilities, the Navy increased the type and number of several types of training exercises compared to previous levels. Navy training exercises in the NWTRC occur in the air, on the ocean surface, and in subsurface ocean environments in the Pacific Ocean off the coasts of Washington, Oregon, and northern California; within the airspace, land, and waters of Coastal Washington and the Puget Sound region; and within the airspace over lands across the northern tier of Washington and into Idaho. Training areas within the NWTRC Study Area are shown on Figure 5-1. The at-sea portions of the study area were further analyzed in a subsequent EIS/OEIS (see the Northwest Training and Testing Final EIS/OEIS section below).

##### **Environmental Assessment for the Pacific Northwest Electronic Warfare Range**

The action consists of (1) the installation and operation of a Mission Control and Debrief Center in an existing facility at NAS Whidbey Island (already completed); (2) the installation and operation of a fixed Electronic Warfare emitter at Naval Station Everett Annex Pacific Beach, to include renovation of Building 104; (3) the installation and operation of communication equipment on an existing tower in the Olympic MOA at Octopus Mountain; (4) the operation of Mobile Electronic Warfare Training System vehicle-mounted emitters within the Olympic MOAs on U.S. Forest Service (USFS) and Washington State Department of Natural Resources lands; and (5) the operation of Mobile Electronic Warfare Training

System vehicle-mounted emitters on USFS lands within the Okanogan and Roosevelt MOAs (Navy, 2014c). The Finding of No Significant Impact was signed on August 28, 2014. USFS permits for this action have been received, and the Navy is conducting training with mobile emitters operated on USFS roads.

#### **Categorical Exclusion for the OLF Security Barrier**

The Navy installed security blocks on the perimeter of OLF Coupeville in order to ensure public safety by keeping vehicles off the runway.

#### **Environmental Assessment for Naval Special Operations Training in Western Washington State**

The Navy proposes to conduct small unit, intermediate, and advanced land and cold-water maritime training activities for Navy Special Operations personnel. The proposed action would take place on selected nearshore land and the inland waters of Puget Sound, including the Hood Canal, as well as the southwestern Washington coast with permission of willing property owners. As part of the rigorous training, the trainees learn skills needed to avoid detection along with the goal of leaving no trace of their presence during or after training activities. Support staff would always be present and would interact with the public, if necessary. All training would be non-invasive, to include no use of live-fire ammunition, no explosive demolitions, no off-road driving, no manned air operations, no digging, no vegetation cutting or removal, no tree climbing, no construction, no building campfires or infrastructure, and no leaving human waste. (Navy, 2018a).

#### **Northwest Training and Testing Final EIS/OEIS**

An EIS/OEIS was prepared to identify and evaluate the potential environmental consequences associated with at-sea training and testing activities within existing range complexes, air space, and Navy installation pier-side locations in the Pacific Northwest. The purpose of the Proposed Action is to conduct training and testing activities to ensure that the Navy meets its mission to maintain, train, and equip combat-ready naval forces capable of winning wars, deterring aggression, and maintaining freedom of the seas. This mission is achieved in part by conducting training and testing within the study area (Navy, 2015d). The Final EIS/OEIS was published in October 2015, and the Record of Decision (ROD) was signed on October 31, 2016.

In August 2017, the Navy announced its intent to prepare a supplement to the 2015 NWTT Final EIS/OEIS. The Supplemental EIS/OEIS will assess training and testing activities projected to occur after 2020 and will support renewal of current regulatory permits and authorizations. These training and testing activities are generally consistent with those analyzed in the previous EIS/OEIS and are representative of activities the Navy has been conducting in the study area for decades (Navy, 2017b).

Included in the NWTT EIS/OEIS study area is the training use of the existing Special Use Airspace areas of Restricted Area R-6701 and Chinook A and B MOAs. These areas are in proximity to the airspace used for FCLP activities at OLF Coupeville but are seldom activated for current Navy aircraft training. R-6701 airspace parameters are from surface level up to an elevation of 5,000 feet above mean sea level (MSL). The Chinook MOAs' parameters are from 300 feet MSL to 5,000 feet MSL. Both R-6701 and the Chinook MOAs have been rarely used for military flights in recent decades, with an average of only two aircraft sorties occurring per year. Aircraft using these airspace areas in recent years have generally been limited to search and rescue SH-60 helicopters from NAS Whidbey Island conducting flight familiarization training and search and rescue training. Additionally, R-6701 has been used during infrequent events for small unmanned aircraft system (UAS) development and testing flights.

**Tree Cutting at Ault Field at NAS Whidbey Island, Washington**

The Proposed Action is to clear 10 acres of trees present within a wetland located northeast of the approach end of Runway 25. The trees are currently blocking approach lighting and as a result have raised the approach elevation, limiting the runway use during certain adverse weather conditions. A Finding of No Significant Impact was signed on July 14, 2016.

**Supplemental Environmental Assessment for Northwest Regional Family Housing Privatization at NAS Whidbey Island**

The Proposed Action includes the demolition of the nine farmhouses at NAS Whidbey Island.

**Categorical Exclusion for the Fleet Air Reconnaissance Disestablishment**

The U.S. Department of Defense (DoD) has directed the Navy to disestablish the Fleet Air Reconnaissance (VQ) mission capabilities at NAS Whidbey Island by 2021. VQ Squadron Two (VQ-2) was disestablished in Fiscal Year (FY) 2012, and personnel were consolidated with VQ Squadron One (VQ-1). Personnel loading for VQ-1 following consolidation will be approximately 640.

**Categorical Exclusion for the Next Generation Jammer**

This project would renovate and modernize the existing ALQ-99 electronic jamming pod maintenance, storage, and training facilities to support the requirements of the next generation jammer pod. Construction is anticipated to occur in FY 19.

**Environmental Assessment for the Naval Health Clinic Oak Harbor**

The Defense Health Administration has directed NAS Whidbey Island to develop a project to replace the existing Naval Hospital on the installation. Project details include the construction of a medical facility at NAS Whidbey Island in support of military personnel, their dependents, and retirees. Construction is anticipated to occur in FY 21.

**Categorical Exclusion for the Regional Aircraft Service Facility Renovation**

This project would construct an addition to Hangar 7 (Building 2544) to provide an aircraft maintenance hangar with space for high-bay aircraft maintenance. Five small buildings on the site totaling approximately 5,070 square feet would be demolished. The first and second floors of Building 2544 would be renovated to provide additional maintenance shops. Site improvements would include construction of a concrete access apron, utility connections, and replacement of a section of fence line.

**5.3.2.2 Non-federal Actions****City of Oak Harbor Water System Improvements**

The City of Oak Harbor is planning to construct improvements to its water system in order to replace aging infrastructure and meet minimum storage requirements over the next 20-year planning horizon. Improvements will include construction of a new water reservoir tank, which will be 150 feet in diameter and 39 feet tall, with a capacity of 4.0 million gallons, and a new booster station. The reservoir tank and booster station will be located off of Gun Club Road, south of Ault Field. Additionally, 5,700 feet of 18-inch and 24-inch water transmission mains will be installed along Gun Club Road from Oak Harbor Road to the reservoir site. Other, follow-on improvement projects may include extension of large-diameter mains and construction of pressure-regulating valve stations in the city's distribution

system. The project will allow the city to supply water to the Seaplane Base through its distribution system (City of Oak Harbor, 2012).

#### **Washington State Department of Transportation: State Route 532 - Davis Slough Bridge Replacement**

The Washington State Department of Transportation (WSDOT) will raise and widen a 0.75-mile section of State Route (SR) 532 between Smith and Eide Roads and replace the Davis Slough Bridge to help improve and protect the highway from storms, high tides, floods, earthquakes, and blocking collisions (WSDOT, 2015c).

#### **WhidbeyHealth Medical Center Expansion Project**

The hospital expansion project includes installing a two-story, 60,000-square-foot expansion wing and a 5,000-square-foot renovation of the existing WhidbeyHealth Medical Center. The expansion will include 39 patient beds and possibly a laboratory, pharmacy, and space for materials management. The new inpatient wing at Whidbey General will include 39 single-patient rooms to provide medical/surgical care, labor and delivery, observation, and intensive care.

The estimated construction cost is \$33.3 million, and site work began in July 2015. The new inpatient wing is slated for completion in April 2017 (DJC, 2015; Hansen, 2015a).

#### **Engineering Study and Infrastructure Improvements**

An engineering study has been proposed for the Port of Coupeville's wharf to determine the state of the infrastructure and to recommend repairs and upgrades that should be undertaken (Hansen, 2015b).

#### **City of Oak Harbor Clean Water Facility Project**

The City of Oak Harbor is currently replacing its two existing wastewater treatment facilities with a new wastewater treatment system. The current facilities have neither the technology to meet modern water quality standards nor the capacity for the city's projected population growth.

Construction for the Clean Water Facility Project is underway. The first phase of construction started in June 2015 with the replacement of the existing outfall pipe in Oak Harbor Bay (City of Oak Harbor, 2015b).

#### **State Route 20 – Sharpes Corner Interchange (Roundabout)**

To relieve congestion at the Sharpes Corner intersection on SR 20 and reduce the risk of traffic accidents, the WSDOT is constructing a roundabout at the intersection. This project also includes construction of a roundabout at the Miller-Gibraltar Road intersection, improvements to bicycle and pedestrian facilities along the highway, and improvements to stormwater culverts and detention ponds. Construction is expected to be completed in 2018 (WSDOT, 2017).

#### **State Route 20 – Banta Road Intersection**

The WSDOT is proposing to improve safety and traffic flow at the Banta Road intersection with SR 20 by constructing a roundabout or traffic signal light. Construction on this project is expected to begin and be completed in 2019 (WSDOT, 2018b).

### **5.4 Cumulative Impact Analysis**

Where feasible, the cumulative impacts were assessed using quantifiable data; however, for many of the resources included for analysis, quantifiable data are not available, and a qualitative analysis was

undertaken. In addition, where an analysis of potential environmental effects for future actions has not been completed, assumptions were made regarding cumulative impacts related to this EIS where possible. The analytical methodology presented in Chapter 4, which was used to determine potential impacts to the various resources analyzed in this document, was also used to determine cumulative impacts.

It is important to note that this analysis presents and discusses the impacts individually for each cumulative impact project for those resources where the potential impacts are more appreciable or where quantitative data are known (as it pertains to the projects identified in Table 5-1). Conversely, the cumulative impacts to those resources with less appreciable potential impacts are presented in a more qualitative analysis.

#### **5.4.1 Airfield and Airspace**

##### **5.4.1.1 Description of Geographic Study Area**

The study area for airfield and airspace cumulative impacts includes Ault Field at NAS Whidbey Island and OLF Coupeville. It should be noted that other areas mentioned in this EIS are analyzed in appropriate NEPA documents.

##### **5.4.1.2 Relevant Past, Present, and Future Actions**

The past, present, or reasonably foreseeable actions that have a potential to interact with the Proposed Action and cumulatively impact airspace and airfield operations include the NWTRC EIS/OEIS and the disestablishment of the VQ mission capabilities at NAS Whidbey Island by 2021. A summary of relevant impacts of each action is provided below.

##### **Northwest Training Range Complex Final EIS/OEIS (2010)**

The airspace-related activities associated with the NWTRC EIS/OEIS project included additional operations in the inshore area around NAS Whidbey Island. Inshore activities proposed under the Proposed Action would cause a training tempo increase of approximately 54 percent, resulting in more air traffic. Training included search and rescue training at the Seaplane Base and the OLF. Aircraft were already operating in this airspace, and no significant changes in the types of airspace classification and uses would occur. Aircraft transiting to the NWTRC use designated military transit routes near the NAS Whidbey Island complex that also would be used by Growler aircraft transiting between Ault Field and OLF Coupeville or to training ranges.

##### **Disestablishment of the Fleet Air Reconnaissance Capabilities**

The DoD has directed the Navy to disestablish the VQ mission capabilities at NAS Whidbey Island by 2021. While the full scope of this action has not been fully developed, the potential changes to airfield operations associated with this action would decrease annual EP-3 operations by approximately 4,700. Consequently, it would be expected that impacts on airspace and airfield operations would be positive. It is important to note that this project has been incorporated as an element of the No Action Alternative identified in this EIS.

### 5.4.1.3 Cumulative Impact Analysis

#### Proposed Action

Implementation of the Proposed Action would increase total airfield operations by up to 33 percent at the NAS Whidbey Island complex. The increase in operations above the No Action Alternative would range between 9,100 operations (Alternative 1, Scenario A) and 25,000 operations (Alternatives 1 and 2, Scenario C) at Ault Field. At OLF Coupeville, Alternatives 2 or 3 with Scenario C would result in a decrease of 200 operations compared to the No Action Alternative. The increase in operations at OLF Coupeville under the remaining alternatives would range from a decrease of 200 operations (Alternatives 2 and 3, Scenario C) to an increase of 18,800 operations (Alternative 1, Scenario A). None of the alternatives would require any modification to the current airspace of operational procedures or any changes to the departure and arrival route structures in order to accommodate the increased air traffic.

#### Combined Impacts from Past, Present, and Reasonably Foreseeable Future Actions

Each of the past projects and several of the present and reasonably foreseeable future actions listed in Table 5-1 has or will result in changes to the number of flight operations. As noted previously, there would be an inshore activity increase of 54 percent as identified in the 2010 NWTRC EIS/OEIS. When coupled with the proposed increase in aircraft operations as a result of the Proposed Action (up to 33 percent), the airspace would be used more often and could become congested at times but would remain open for civilian air traffic. No changes in the types of classification or significant impacts on civilian and commercial use of the airspace would be anticipated.

### 5.4.2 Noise Associated with Aircraft Operations

Construction noise generated by multiple construction, modification, expansion, and demolition projects under each alternative would result in short-term noise impacts at and near Ault Field. Since the proposed construction is located on the flight line, aircraft-related noise would likely dominate construction noise. No residential areas or other points of interest are located in the vicinity of the proposed construction activity; therefore, there would not be a significant construction-noise-related impact. There is no proposed construction at OLF Coupeville associated with the Proposed Action. Therefore, the discussion of noise impacts focuses on noise associated with aircraft operations.

#### 5.4.2.1 Description of Geographic Study Area

The study area for noise cumulative impacts includes the land and population under the greater than 65 decibel (dB) day-night average sound level (DNL) contours of the NAS Whidbey Island complex.

#### 5.4.2.2 Relevant Past, Present, and Future Actions

The past, present, or reasonably foreseeable actions that have a potential to interact with the Proposed Action and cumulatively impact noise include the NWTT EIS/OEIS and the disestablishment of the VQ mission capabilities at NAS Whidbey Island. A summary of relevant impacts of each action is described below.

#### Northwest Training and Testing Final EIS/OEIS

The training activities in the NWTT Final EIS/OEIS include: Anti-Air Warfare; Anti-Surface Warfare; Anti-Submarine Warfare; Electronic Warfare; Mine Warfare; Naval Special Warfare; and "Other" training



activities (Maritime Security Operations; Precision Anchoring; Small Boat Attack; Intelligence, Surveillance, and Reconnaissance; Search and Rescue; Surface Ship Sonar Maintenance; and Submarine Sonar Maintenance). As detailed in the Final EIS/OEIS (Navy, 2015d), the number of training activities would increase from 5,414 events (No Action Alternative) to 8,140 events in the offshore area, including the Olympic MOAs. Inland, these activities would decrease from 166 events to 117 events and thus would result in less noise in and around these inland areas. The proposed training and testing activities that will be analyzed in the supplement to the 2015 Final EIS/OEIS (Phase III of the NWT) are generally consistent with those analyzed in the previous EIS/OEIS and approved in the 2016 ROD.

### **Disestablishment of the Fleet Air Reconnaissance Capabilities**

The DoD has directed the Navy to disestablish the VQ mission capabilities at NAS Whidbey Island by 2021. The 2008 Final EIS and 2014 SEIS accounted for the VQ mission to be at NAS Whidbey Island beyond 2020. The full scope of this action has not been fully developed, so potential changes to the noise environment associated with this action cannot be assessed at this time. However, potential changes to airfield operations associated with this action would likely decrease by approximately 4,700 EP-3 operations annually.

#### **5.4.2.3 Cumulative Impact Analysis**

##### **Proposed Action**

The Proposed Action and alternatives would have a significant impact on the noise environment as it relates to aircraft operations at Ault Field and OLF Coupeville. There would be an increase in population within the 65 dB DNL noise contour under all alternatives and scenarios. More specifically and depending on the scenario, Alternative 1 would result in an increase of up to 17.3 percent, Alternative 2 would result in an increase of up to 15.8 percent, and Alternative 3 would result in an increase of up to 15.8 percent of the total population surrounding the two airfields.

The DNL noise contour that covered the highest estimated population was Alternative 1, Scenario E, with a total population of 13,050. However, the range of population potentially within the 65 dB DNL noise contour did not vary drastically between alternatives. The lowest estimated population was under Alternative 3, Scenario A, with a total population of 12,483 (an approximately 4.5-percent difference from the high range). Comparing the five scenarios under each alternative, Scenario A always resulted in the highest estimated population within the 65 dB DNL noise contour associated with OLF Coupeville, while the highest estimated population associated with Ault Field was always under Scenario C. This would be expected and is consistent with the proportion of field carrier landing practice (FCLP) operations assigned to those airfields under the five scenarios.

There would also be an increase in several of the supplemental metrics, including indoor and outdoor speech interference, probability of awakening, and classroom/learning interference. These varied by location and alternative/scenario. In addition, the population that may be vulnerable to permanent hearing loss increased under the Proposed Action, with more of an impact on the populations surrounding Ault Field. However, the analysis used to assess the population that may be vulnerable to potential hearing loss is based upon an extremely conservative set of parameters, including being outdoors at one's residence and exposed to all aircraft events over a 40-year period. Therefore, since it is highly unlikely for an individual to meet those criteria, the actual potential Noise Induced Permanent Threshold Shift for individuals would be far less than the values reported in Section 4.2, and hearing loss is not expected.

## **Combined Impacts from Past, Present, and Reasonably Foreseeable Future Actions**

While the Proposed Action is expected to have a significant impact to the noise environment around Ault Field and OLF Coupeville, the other actions (Table 5-1) would only have a minor contribution to the overall cumulative effect. Some of the other projects evaluated for cumulative impacts will result in slightly more operations, which may have a cumulative effect on the area immediately surrounding Ault Field. However, the majority of aircraft operations that would result in noise increases are expected to occur in more remote areas. Other current aircraft operations at NAS Whidbey Island and ongoing non-federal activities in the vicinity of the installation (i.e., vehicle and air traffic) would continue in the future at reasonably foreseeable current levels. These other activities are not expected to cause additional significant impacts.

### **5.4.3 Public Health and Safety**

#### **5.4.3.1 Description of Geographic Study Area**

The study area for safety cumulative impacts is the NAS Whidbey Island complex and the immediate vicinity around it.

#### **5.4.3.2 Relevant Past, Present, and Future Actions**

The past, present, or reasonably foreseeable actions that have a potential to interact with the Proposed Action and cumulatively impact public health and safety are those that have the potential to affect flight safety, Bird/Animal Aircraft Strike Hazard, and Accident Potential Zones (APZs) and Clear Zones within the NAS Whidbey Island complex. Therefore, the VQ disestablishment project is included in this analysis.

#### **5.4.3.3 Cumulative Impact Analysis**

##### **Proposed Action**

The Proposed Action would add 35 or 36 Growler aircraft and increase overall airfield flight operations at the NAS Whidbey Island complex, thereby increasing the risk of an incident. However, current airspace safety procedures, maintenance, training, and inspections would continue to be implemented, and airfield flight operations would adhere to established safety procedures. Potential aircraft mishaps are the primary safety concern with regard to military training flights. NAS Whidbey Island maintains detailed emergency and mishap response plans to react to an aircraft accident, should one occur. These plans assign agency responsibilities and prescribe functional activities necessary to react to mishaps, whether on or off the installation. While there is no proposed change planned to existing flight procedures for Ault Field or OLF Coupeville, there is an increase in air operations proposed under each of the alternatives. Therefore, the Bird/Animal Aircraft Strike Hazard risk would increase as a result of increased exposure. Impacts as a result of the increased Bird/Animal Aircraft Strike Hazard risk would be minimized through continued implementation of the standard procedures and protocols of the Bird/Animal Aircraft Strike Hazard plan. The flight operations for each alternative were combined where they generally utilized the same arrival, departure, or pattern flight tracks to determine whether new APZs would be recommended.

#### **5.4.3.4 Combined Impacts from Past, Present, and Reasonably Foreseeable Future Actions**

When past, present, and reasonably foreseeable future projects are analyzed together with the Proposed Action and all action alternatives, there is the potential for additive impacts to public health and safety as a result of additional aircraft and increased operations, as applicable. Cumulatively, there would be a net increase in aircraft operations at the NAS Whidbey Island complex and within the region. This net increase in operations corresponds to a net increase in a risk to public health and safety, and Bird/Animal Aircraft Strike Hazard incidents. Aircrews would continue to follow procedures outlined in the installation's Bird/Airstrike Hazard Management Plan. Current airspace safety procedures, maintenance, training, and inspections would continue to be implemented, and airfield flight operations would adhere to established safety procedures. As such, implementation of the Proposed Action would not result in significant cumulative impacts to public health and safety.

#### **5.4.4 Air Quality**

##### **5.4.4.1 Description of Geographic Study Area**

The study area for air quality cumulative impacts is the Northwest Clean Air Agency (NWCAA) Air Quality Management Jurisdiction, which includes Island, Skagit, and Whatcom Counties. The Region in the vicinity of the NAS Whidbey Island complex would experience an increase in air emissions from construction and operations associated with the Proposed Action.

##### **5.4.4.2 Relevant Past, Present, and Future Actions**

The past, present, or reasonably foreseeable actions that have a potential to interact with the Proposed Action and cumulatively impact air quality primarily include projects that would increase or decrease operations at the NAS Whidbey Island complex and increase vehicle traffic in the area. These include:

##### **Northwest Training and Testing Final EIS/OEIS**

The NWTT EIS/OEIS identified emissions that would occur related to the changes in Navy training and testing activities in national and international regions in the vicinity of NAS Whidbey Island. To evaluate regional criteria pollutant impacts, total emissions within the region were estimated, while total project greenhouse gas (GHG) emissions were also calculated (See Table 5-2). The EIS analysis determined that the incremental contribution of the action would be low and would still be below applicable state, federal, and USEPA standards and guidelines (Navy, 2015d).

##### **VQ Disestablishment**

The DoD has directed the Navy to disestablish the VQ mission capabilities at NAS Whidbey Island by 2021. While the full scope of this action has not been fully developed, the potential changes to airfield operations associated with this action would decrease annual EP-3 operations by approximately 4,700. Consequently, it would be expected that air emissions from airspace and airfield operations would be reduced.

**Table 5-2 Total Changes in Criteria Pollutant and GHG Emissions due to Proposed Actions, NWCAA Jurisdiction**

Proposed Actions	Emissions (tpy) <sup>2</sup>						MTCO <sub>2e</sub>
	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
<b>Growler Airfield Operations at the NAS Whidbey Island Complex</b>							
Alternative 1 A	229.0	186.7	638.0	18.0	90.8	84.3	39,375
Alternative 1 B	183.3	156.2	527.0	14.5	74.7	68.2	31,899
Alternative 1 C	139.6	132.3	433.5	11.3	59.9	53.5	24,922
Alternative 1 D	214.3	178.5	606.3	16.9	85.8	79.4	37,016
Alternative 1 E	150.8	140.6	465.6	12.1	64.0	57.5	26,786
Alternative 2 A	227.4	205.4	691.2	18.1	98.6	86.6	40,250
Alternative 2 B	183.3	175.9	584.2	14.8	83.1	71.1	33,050
Alternative 2 C	141.5	152.6	493.7	11.7	68.9	56.9	26,356
Alternative 2 D	213.5	197.6	660.9	17.1	93.9	81.9	38,018
Alternative 2 E	155.7	160.6	524.8	12.7	73.8	61.7	28,627
Alternative 3 A	225.0	202.8	679.3	17.9	91.7	85.1	39,295
Alternative 3 B	183.5	180.1	590.3	14.9	77.6	71.1	32,646
Alternative 3 C	139.6	151.0	484.3	11.5	62.2	55.7	25,490
Alternative 3 D	211.1	195.1	649.2	16.9	87.0	80.4	37,070
Alternative 3 E	153.6	158.9	514.9	12.6	67.0	60.4	27,741
<b>Northwest Training and Testing EIS/OEIS</b>							
Changes to Training and Testing Emissions in the Olympic-Northwest Washington Intrastate (WA) AQCR (or total for GHG emissions)							
Alternative 1	53.6	8.4	102.0	10.5	1.7	1.7	47,000.0

Source: Navy, 2015d.

Key:

- AQCR = Air Quality Control Region
- CO = carbon monoxide
- CO<sub>2e</sub> = carbon monoxide equivalent
- EIS = Environmental Impact Statement
- GHG = greenhouse gas
- MT = metric tons
- NO<sub>x</sub> = nitrogen oxide
- OEIS = Overseas Environmental Impact Statement
- PM<sub>2.5</sub> = particulate matter less than or equal to 2.5 microns in diameter
- PM<sub>10</sub> = particulate matter less than or equal to 10 microns in diameter
- SO<sub>2</sub> = sulfur dioxide
- tpy = tons per year
- VOC = volatile organic compound

### 5.4.4.3 Cumulative Impact Analysis

#### Proposed Action

The Proposed Action would result in direct and indirect emissions of criteria air pollutants during construction and after implementation of the action. Changes to facilities and the maintenance of more aircraft would result in increases in stationary source emissions at NAS Whidbey Island. Although these emissions would be subject to NAS Whidbey Island's Air Operating Permit (AOP) (NWCAA, 2013), estimated emissions would be below permit thresholds for required permit modification and therefore would not require changes to the AOP. New buildings would require additional direct (natural gas) and indirect (electricity) energy use, which would result in an increase in direct and indirect emissions. Changes to aircraft operations and personnel commuting would result in an increase in annual emissions. Mobile emissions are not covered by the NAS Whidbey Island AOP; however, these emissions contribute to regional emission totals and can effect compliance with National Ambient Air Quality Standards. Implementation of the Proposed Action would also contribute directly to emissions of GHGs from the combustion of fossil fuels. Table 5-2, above, provides a summary of the increases in emissions from ongoing changes to operations for all alternatives.

#### Combined Impacts from Past, Present, and Reasonably Foreseeable Future Actions

##### Changes to Operations

The NWTT activity changes and VQ disestablishment are all recent or ongoing actions that involved the re-alignment of aircraft and changes to operations at or in the vicinity of the NAS Whidbey Island complex. The environmental review of these projects determined that each individual action would have no significant impact on local air quality. In some cases, these actions result in a reduction in emissions from the replacement of old aircraft and/or the reduction of operations (Navy, 2015d). The changes in operating emissions can be the result of aircraft operations changes and a change in the number of personnel, which would impact emissions from commuting. Table 5-2 provides a summary of estimated emissions from this action. The cumulative impacts from changes in operations at the NAS Whidbey Island complex would not be significantly different than the impacts from the Proposed Action, and some projects (such as the Replacement of Four C-9 Skytrain II Aircraft by Three C-40 Aircraft) may reduce the cumulative impacts.

##### Construction Projects

Construction of the Proposed Action and other construction projects would result in temporary and minor increases in air emissions from the combustion of fossil fuels in equipment and vehicles, volatile organic compound emissions from paving and painting, and emissions of fugitive dust and dirt during site ground disturbance. Due to the temporary and dispersed nature of construction emissions, it is not likely that cumulative construction emissions would result in significant impacts to air quality. Construction emissions could be reduced by using best management practices (BMPs). Exhaust emissions from construction vehicles can be reduced by using fuel-efficient vehicles with emission controls and ensuring that all equipment is properly maintained. Dust emissions from ground disturbance and road traffic should be controlled by spraying water on soil piles and graded areas and keeping roadways clean.

## 5.4.5 Land Use

### 5.4.5.1 Description of Geographic Study Area

The study area for land use cumulative impacts includes NAS Whidbey Island, OLF Coupeville, the City of Oak Harbor, the Town of Coupeville, and portions of Island County, Washington.

### 5.4.5.2 Relevant Past, Present, and Future Actions

The past, present, or reasonably foreseeable actions that have a potential to interact with the Proposed Action and cumulatively impact land use compatibility in the area surrounding NAS Whidbey Island include the VQ squadron disestablishment. A summary of relevant impacts of the action is described below.

#### **Disestablishment of the Fleet Air Reconnaissance Capabilities**

The DoD has directed the Navy to disestablish the VQ mission capabilities at NAS Whidbey Island by 2021. The full scope of this action has not been fully developed, so potential changes to the noise environment associated with this action cannot be assessed at this time. However, potential changes to airfield operations associated with this action would likely decrease by approximately 4,700 EP-3 operations annually. Therefore, it would be expected that there would not be significant impacts to land use compatibility.

### 5.4.5.3 Cumulative Impact Analysis

#### **Proposed Action**

##### **Land Use Compatibility**

Implementation of the Proposed Action at the NAS Whidbey Island complex would not result in any impact to on-station land use. Construction proposed under the alternatives would not result in direct or indirect impacts to regional land uses because all construction would be located entirely within the NAS Whidbey Island complex. Land use compatibility surrounding the NAS Whidbey Island complex would be impacted under each alternative. The acreage of land within the projected greater than 65 dB DNL noise contours would increase by between 9 percent and 18 percent during an average operating year. Incompatible land use (i.e., residential land) within the DNL noise contours would increase under all alternatives and scenarios, during average operating years.

The conceptual APZs at OLF Coupeville would increase under each alternative. If warranted, the APZs could be updated by completing an Air Installations Compatible Use Zones update and coordinating with local communities to provide appropriate new land use recommendations as necessary. The Navy would continue to work with Island County, Skagit County, the City of Oak Harbor, and the Town of Coupeville as necessary to plan for compatible land use development within current and proposed APZs under any alternative selected for implementation.

##### **Recreation and Wilderness**

Overall, implementation of the Proposed Action at NAS Whidbey Island would result in localized significant impacts to recreation at Ebey's Landing National Historical Reserve, various county and municipal parks and recreational areas, and private recreational facilities under some alternatives and scenarios, as a result of increased noise exposure. Implementation of the Proposed Action would result in moderate impacts on wilderness recreation and management at Williamson Rocks, which are included in the San Juan Island Wilderness, part of the San Juan Islands National Wildlife Refuge. The

Proposed Action would directly affect recreation management in the study area as a result of long-term changes in noise exposure that would affect the recreational experiences of visitors when aircraft are operating in the area.

### **Combined Impacts from Past, Present, and Reasonably Foreseeable Future Actions**

The VQ squadron disestablishment that could affect land use in the geographic study area would likely decrease air operations and noise contours, or have only a minor change. As such, cumulative impacts to land use, recreation, and wilderness could occur, but no significant cumulative impacts would be expected.

## **5.4.6 Cultural Resources**

### **5.4.6.1 Description of Geographic Study Area**

The study area for cultural resources cumulative impacts is Ault Field, areas adjacent to the installation within the Area of Potential Effect, and OLF Coupeville.

### **5.4.6.2 Relevant Past, Present, and Future Actions**

The past, present, or reasonably foreseeable future actions that have a potential to interact with the Proposed Action and cumulatively impact cultural resources include the projects identified in Table 5-1 that occur within the Area of Potential Effects, which is defined as the area encompassed by the 65 dB DNL noise contour and is inclusive of the entire Ebey's Landing National Historical Reserve (see Figure 3.6-1). As noted on Figure 5-1, these projects include all construction projects located at Ault Field and OLF Coupeville as well as the following two projects: the NWTT EIS/OEIS and City of Oak Harbor Water System Improvements.

Construction associated with the aforementioned actions that occur on Ault Field or federally owned property or using federal funding would require some form of federal authorization or permitting if potential impacts to cultural resources may occur. Federal agency procedures would be implemented to identify cultural resources, avoid impacts, and mitigate if impacts cannot be avoided. Therefore, past, present, and reasonably foreseeable future federal actions would require appropriate consultation and permitting in order to avoid and minimize potential impacts to archaeological resources, architectural resources, cemeteries, and traditional cultural properties. Nonetheless, inadvertent impacts could occur if unidentified cultural resources are present within the footprint of those actions.

### **5.4.6.3 Cumulative Impact Analysis**

#### **Proposed Action**

#### **Archaeological Resources**

As evaluated under NEPA, minimal to no impact would occur to known or intact archaeological resources. Per its Section 106 responsibilities, the Navy determined that no adverse effect would occur.

#### **Architectural Resources**

As evaluated under NEPA, moderate to no direct and indirect impacts are anticipated to occur to on-station historic resources during construction. Minimal indirect impacts to on-station resources are anticipated to occur during operations. No direct impacts are anticipated to occur during construction to off-station resources because activities are limited to Ault Field. Minor to moderate, temporary indirect impacts are anticipated to occur to off-station historic resources during operation. Per its Section 106

responsibilities, the Navy determined that an adverse effect would occur to historic properties due to changes to the perceptual qualities of five landscape features that contribute to the significance of the Central Whidbey Island Historic District/Ebey's Landing National Historical Reserve. The Navy is consulting with the Washington State Historic Preservation Office (SHPO), American Indian tribes and nations (hereinafter referred to as "tribes"), and other consulting parties regarding a Memorandum of Agreement (MoA) as part of its National Historic Preservation Act (NHPA) Section 106 consultation.

### **Cemeteries**

As evaluated under NEPA, no known cemeteries or human burial grounds would be subject to potential ground disturbance. Minimal to no indirect impacts would occur to these resources. Per its Section 106 responsibilities, the Navy determined an overall finding of no adverse effects to cemeteries and human burial grounds that are historic properties.

### **Traditional Cultural Properties**

As evaluated under NEPA, no impact would occur to traditional cultural properties (TCPs) because no known TCPs have been identified. Per its Section 106 responsibilities, the Navy determined that no effect would occur to TCPs.

## **Combined Impacts from Past, Present, and Reasonably Foreseeable Future Actions**

When past, present, and reasonably foreseeable future projects are analyzed together with the Proposed Action, there would be potential for cumulative impacts to cultural resources. On- and off-station projects that include ground disturbance, demolition/modifications of buildings, construction of new facilities in undeveloped areas (potential visual impacts), or aircraft operations (i.e., noise) associated with other cumulative projects could impact prehistoric and historic archaeological resources, historic buildings and structures, cemeteries, and TCPs. Federal projects with potential for impacts on cultural resources would undergo Section 106 review under the NHPA, which includes consultation with the Washington SHPO and affected tribes, other interested parties, and the Advisory Council on Historic Preservation. State projects may be subject to other cultural resources reviews. Any potentially significant impacts to cultural resources would be mitigated. For these reasons, it is expected that any cumulative impacts on cultural resources would be less than significant.

## **5.4.7 American Indian Traditional Resources**

### **5.4.7.1 Description of Geographic Study Area**

The study area for traditional resource cumulative impacts includes Ault Field and areas within the 65 dB DNL noise contour for 2021 conditions (as defined in Section 3.7).

### **5.4.7.2 Relevant Past, Present, and Future Actions**

The past, present, or reasonably foreseeable future actions that have a potential to interact with the Proposed Action and cumulatively impact traditional resources and/or access to usual and accustomed (U&A) grounds and stations include the projects identified in Table 5-1 that consist of federal actions and that occur within Ault Field and within the 65 dB DNL noise contour areas (including the co-use waters to the west and north of Ault Field; co-use waters in Dugualla Bay; and the co-use waters of Crescent Harbor) (see Section 3.7 for a description of the U&A grounds). These projects include the Pacific Northwest Electronic Warfare Range EA; the OLF Security Barrier EA; the NWTT EIS/OEIS; the Triton Mission Control; and the Naval Health Clinic Oak Harbor.



Federal agencies are tasked with the requirement to consider traditional resources and the interests of federally recognized tribes in their actions and policies. Therefore, projects that require federal permitting, funding, or approvals would necessitate consultation with federally recognized tribes.

Federal agencies often maintain established procedures to identify traditional resources, to avoid impacts to them, and, if needed, to mitigate impacts that cannot be avoided. Traditional resources, along with archaeological and architectural resources, are protected by various laws and their implementing regulations, such as the NHPA of 1966, as amended; the American Indian Religious Freedom Act of 1978; and the Native American Graves Protection and Repatriation Act of 1990.

The Navy, in particular, has an active consultation process in place and will continue to consult on a government-to-government basis with potentially affected tribes regarding its activities that may have the potential to significantly impact traditional resources and/or access to U&A grounds and stations.

### **5.4.7.3 Cumulative Impact Analysis**

#### **Proposed Action**

The implementation of the Proposed Action at the NAS Whidbey Island complex would not result in significant impacts to traditional resources or access to U&A grounds and stations, as discussed in Section 4.7. Marine and terrestrial animals were considered, along with water resources and potential changes in GHG emissions. The Navy has invited government-to-government consultation with potentially affected tribes to solicit any concerns they may have so that the Navy can more fully consider the extent of any potentially significant impacts to traditional resources. Government-to-government consultation on this Proposed Action was requested by the Swinomish Indian Tribal Community on December 13, 2016; however, the tribe subsequently withdrew its request on September 27, 2017. No other tribes have requested or initiated government-to-government consultation at this point in the environmental planning process.

#### **Combined Impacts from Past, Present, and Reasonably Foreseeable Future Actions**

When past, present, and reasonably foreseeable future projects are analyzed in concert with the Proposed Action, the potential for cumulative impacts to traditional resources would be present. On- and off-station projects that include ground or water disturbance; the demolition or alteration of buildings or objects important to tribes; construction of new facilities in undeveloped areas (due to limited access, changes to the landscape, or potential visual, auditory, or vibratory impacts); or aircraft operations (potential visual, auditory, or vibratory impacts) associated with other cumulative projects could impact traditional resources. Federal projects with the potential for impacts on traditional resources would require consultation with federally recognized tribes. If necessary, any potentially significant impacts to traditional resources would be mitigated. Therefore, the Navy anticipates that any cumulative impacts on traditional resources would be less than significant. Sections 5.4.8 (Biological Resources), 5.4.9 (Water Resources), and 5.4.16 (Climate Change and Greenhouse Gases) provide additional information on the potential for cumulative impacts associated with each respective resource.

## 5.4.8 Biological Resources

### 5.4.8.1 Description of Geographic Study Area

The study area for biological resources cumulative impacts is Ault Field, OLF Coupeville, and the surrounding vicinity.

### 5.4.8.2 Relevant Past, Present, and Future Actions

The past, present, or reasonably foreseeable actions that have the greatest potential to interact with the Proposed Action and cumulatively impact biological resources include all construction projects and operational changes in progress or proposed at Ault Field and OLF Coupeville as well as the following projects: the NWTRC Final EIS/OEIS, NWTT EIS/OEIS, Naval Special Operations Training in Western Washington State, and improvements to the City of Oak Harbor's clean water facilities and water system.

Other construction projects at Ault Field and OLF Coupeville would occur in previously disturbed areas of high-volume human activity and would not result in significant impacts on terrestrial wildlife related to habitat loss. Wildlife in these areas would be expected to avoid construction sites but continue using these sites once construction is complete. Clearing 10 acres of trees northeast of the approach end of Runway 25 would result in permanent loss of a small area of woodland habitat. Similar habitat is located in the surrounding area, and given that this area is exposed to high levels of aircraft operations, no significant impacts to biological resources would result. The Navy will consult with the appropriate regulatory agencies regarding potential impacts to biological resources.

### Northwest Training Range Complex Final EIS/OEIS

The airspace-related activities associated with the NWTRC EIS/OEIS project included additional operations in the on-shore area around NAS Whidbey Island; at-sea activities were reanalyzed in the NWTT EIS/OEIS addressed below.

Increased human activity during training operations would have the potential to displace terrestrial (non-marine) wildlife from localized areas. However, disruptions of wildlife behaviors and use of habitat would be temporary and intermittent, occurring only when personnel are present in an area. Training activities would not be expected to result in permanent impacts to vegetation or habitat.

The NWTRC Biological Evaluation (to include amendment) analyzed potential effects to Endangered Species Act- (ESA-) listed species as result of the Navy training and RDT&E activities occurring both in the water and on land in the northwest region as well as of overflights within Okanogan and Roosevelt MOAs in north-central Washington near the Canadian border. While some airspace-related activities associated with the NWTRC EIS/OEIS project occur within the described study area for biological resource cumulative impacts for the Growler Proposed Action, the aircraft overflights within the Okanogan and Roosevelt MOAs are outside of that study area and not considered further. Consultation with the U.S. Fish and Wildlife Service (USFWS) concluded in 2010 with the issuance of the biological opinion (BO). As part of this BO, the USFWS came to the following conclusions for on-shore species:

- **Bull Trout (*Salvelinus confluentus*).** The effects of the action and the cumulative effects, it is the BO of the USFWS that the 2010-2015 NWTRC, as proposed, is not likely to jeopardize the continued existence of the species.

- **Marbled Murrelet (*Brachyramphus marmoratus*)**. The effects of the action and the cumulative effects, it is the BO of the USFWS that the 2010-2015 NWTRC, as proposed, is not likely to jeopardize the continued existence of the species.
- **Northern Spotted Owl (*Strix occidentalis caurina*)**. Aircraft strikes are not anticipated in any portion of the action area. Therefore, we conclude the action is not likely to adversely affect spotted owls.
- **Short-tailed Albatross (*Phoebastria albatrus*)**. It is extremely unlikely that individual albatrosses will co-occur with stressors generated by these exercises such that adverse effects would occur. Therefore, short-tailed albatrosses are not likely to be adversely affected by the Proposed Action.
- **Western Snowy Plover (*Charadrius alexandrinus nivosus*)**. Given the extremely low likelihood of species exposure to stressors associated with the Proposed Action, snowy plovers are not likely to be adversely affected.
- **Canada Lynx (*Lynx canadensis*)**. It is extremely unlikely that lynx would be exposed to sound levels that would result in a measurable effect. The short duration and infrequent timing of these overflights also minimizes the likelihood of a measurable response. For these reasons, the Proposed Action is not likely to be adversely affect the Canada lynx.
- **Grizzly Bear (*Ursus arctos*)**. In the extremely unlikely event that a grizzly bear were exposed to low-level flights during the critical spring period, alternate spring habitat with less human disturbance would be available. Therefore, the Proposed Action is not likely to adversely affect grizzly bears.
- **Gray Wolf (*Canis lupus*)**. Exposure is also considered extremely unlikely due to the small number of wolves. Therefore, the Proposed Action is not likely to adversely affect gray wolves.
- **Woodland Caribou (*Rangifer tarandus caribou*)**. It is extremely unlikely that woodland caribou will be exposed to low-level flights. Given this, woodland caribou are not likely to be adversely affected.
- **Sea Otter (*Enhydra lutris*)**. The southwest Alaska population of the northern sea otter (*Enhydra lutris kenyoni*) and the California population of the southern sea otter (*Enhydra lutris nereis*) are both listed as threatened under the Endangered Species Act (ESA), but neither population occurs within the action area and, thus, neither will be affected by the Proposed Action. There is no requirement for ESA consultation with the USFWS on the Navy's determination of may affect.

#### Northwest Training and Testing Final EIS/OEIS

Underwater detonations at Crescent Harbor Explosive Ordnance Disposal Training Range, located approximately 2 miles southeast of NAS Whidbey Island, would increase from two, 2.5-lb. net explosive weight charges (E3 source class) per year to three, 2.5-lb. net explosive weight charges per year under both action alternatives. The potential for birds, including the marbled murrelet, to be impacted by explosive detonations may increase slightly compared to the No Action Alternative. The total number of explosive training events in Crescent Harbor would also increase from the additional use of 18 SWAGs. The SWAG is composed of a cylindrical steel tube, 3 inches long by 1-inch-wide, containing

approximately 0.033 lb. of explosives. The single explosive is highly focused. Divers place a single SWAG on the mine that is located mid-water-column, within water depths of 10 to 12 feet. Serious injury or mortality to individual fish would be expected if present in the immediate vicinity of explosive ordnance disposal; however, despite the increase in training, impacts would be temporary and localized because the explosive training events would be infrequent and widely dispersed throughout Crescent Harbor, and the distribution of potentially affected fish would also vary.

Consultation with the National Marine Fisheries Service (NMFS) concluded on November 9, 2015, with the issuance of the BO. As part of this BO, the NMFS concluded that Navy training and testing activities in the NWTT action area and level of activity are likely to adversely affect but will not appreciably reduce the ability of the threatened and endangered species under NMFS jurisdiction to survive and recover in the wild. Therefore, the NMFS concluded that these activities were not likely to jeopardize the continued existence of any endangered or threatened species.

Consultation with the USFWS concluded on June 14, 2018, with the issuance of the BO. As part of this BO, the USFWS came to the following conclusions:

- **Bull Trout.** Implementation of the Navy's NWTT activities, as proposed, may affect, but is not likely to adversely affect, the bull trout. Critical habitat for the bull trout is designated in the action area, and the USFWS concurs with the Navy's determination that the Proposed Action is not likely to adversely affect designated critical habitat for the bull trout. Therefore, the Proposed Action is not likely to destroy or adversely modify critical habitat for the bull trout.
- **Marbled Murrelet.** Implementation of the Navy's NWTT activities, as proposed, is not likely to jeopardize the continued existence of the marbled murrelet. While critical habitat for the marbled murrelet has been designated in the action area, no effects to the critical habitat are anticipated. Therefore, the Proposed Action is not likely to destroy or adversely modify designated critical habitat for the marbled murrelet.
- **Short-tailed Albatross.** Implementation of the Navy's NWTT activities, as proposed, is not likely to jeopardize the continued existence of the short-tailed albatross.
- **Western Snowy Plover:** Implementation of the Navy's NWTT activities, as proposed, is not likely to jeopardize the continued existence of the western snowy plover.
- **Streaked Horn Lark:** Implementation of the Navy's NWTT activities, as proposed, is not likely to jeopardize the continued existence of the streaked horn lark.
- **Northern Spotted Owl:** Implementation of the Navy's NWTT activities, as proposed, is not likely to jeopardize the continued existence of the northern spotted owl.

Training and testing activities projected to occur after 2020 would generally be consistent with those analyzed in the previous EIS/OEIS and would be expected to result in similar impacts to biological resources. The Navy will analyze impacts to biological resources in the supplement to the 2015 NWTT EIS/OEIS.

#### **Naval Special Operations Training in Western Washington State**

Increased human activity during training operations would have the potential to displace marine and terrestrial wildlife from localized areas. However, disruptions of wildlife behaviors and use of habitat would be temporary and intermittent, occurring only when personnel are present in an area. No construction would be required for this project, and training activities would not be expected to result in permanent impacts to vegetation or habitat. It is unlikely that training activities would impact aquatic or

terrestrial species listed under the ESA. The Navy is preparing a separate environmental assessment to analyze the potential effects of this project, including cumulative impacts.

### **Improvements to the City of Oak Harbor's Water System**

Construction-related noise could result from the replacement of the City of Oak Harbor's aging water system. This project could cause increased noise during the construction period, which would temporarily displace wildlife. However, this potential disruption would be expected to be short term. It is unlikely that noise from this terrestrial-based project would impact aquatic-based Endangered Species Act-listed species, in particular the marbled murrelet. Impacts to vegetation would be negligible because this is a replacement project, not construction on a green field. If any vegetation impacts were to occur, they would be temporary.

### **Replacement of the City of Oak Harbor's Clean Water Facilities**

Construction-related noise could result from the replacement of the City of Oak Harbor's two existing water treatment facilities under the City of Oak Harbor Water Systems Improvement project. This project could cause increased noise during the construction period, which would temporarily displace wildlife. However, this potential disruption would be expected to be short term, and wildlife, including the Endangered Species Act-listed marbled murrelet, should return upon the completion of construction. The discharge of effluent into Oak Harbor as a result of improvement of the City of Oak Harbor's water supply infrastructure and the replacement of the City of Oak Harbor's two existing water treatment facilities would not be expected to impact the nearshore foraging areas used by marbled murrelets because all discharge would be treated before its release.

## **5.4.8.3 Cumulative Impact Analysis**

### **Proposed Action**

Potential effects on terrestrial and marine wildlife from implementation of the Proposed Action would be similar between all three alternatives but greater under Alternative 1 because it is the alternative that would result in the largest increase in aircraft operations. There would be negligible differences to impacts on biological resources between scenarios and between average year and high-tempo FCLP year conditions across all three alternatives. Differences would be attributable to the location and frequency of operations (e.g., more FCLPs proposed under Scenario C). However, the overall significance of the Proposed Action on terrestrial and marine wildlife would be expected to be similar for each alternative because the increase in operations under each of the three alternatives is very similar. The Navy will consult with the appropriate regulatory agencies. The overall significance of the Proposed Action's potential impacts on various wildlife species groups is highlighted below.

- Construction of the new facilities would occur in previously disturbed areas of high-volume human activity and is not expected to result in significant impacts on terrestrial wildlife related to habitat loss. Construction noise would not have any impacts on marine species. Additionally, the NMFS determined that the construction activities may affect, but not adversely affect, Southern Resident killer whale critical habitat. The NMFS's determination under the ESA was issued on July 20, 2017.
- In general, wildlife in the study area are already exposed to high levels of aircraft operations and other human disturbances, and the Proposed Action would result in some additional sensory disturbance impacts, particularly from noise. As previously stated, the impacts would be similar

under each alternative; however, the levels of impacts would vary between the five operational scenarios. Scenario C for both Ault Field and OLF Coupeville would be the most comparable to the No Action Alternative and constitute the smallest change in noise impacts, whereas Scenario A at OLF Coupeville would result in the greatest change in noise impacts overall.

- The NAS Whidbey Island complex reports a proportionally small number of bird/animal aircraft strikes annually (approximately 28 reported strikes per year between 2005 and 2015) relative to the high number of aircraft operations flown (84,700 annually (Section 4.1.2.1) at the complex and the large numbers of wildlife inhabiting the study area throughout the year. With the continued implementation of the NAS Whidbey Island complex's Bird/Animal Aircraft Strike Hazard plan, the Proposed Action would not significantly impact local wildlife populations (NAS Whidbey Island, 2013a).
- For Migratory Bird Treaty Act (MBTA)-protected species, U.S. Department of Defense (DoD) installations are not exempt from "take"; however, under the MBTA regulations applicable to military readiness activities (50 Code of Federal Regulations Part 21), the impacts from stressors from the Proposed Action would not result in a significant adverse effect on migratory bird populations. During construction, impacts to MBTA-protected species will be minimized by implementing appropriate conservation measures to offset adverse effects of the Proposed Action.
- The Proposed Action may adversely affect the marbled murrelet.
- The Proposed Action's increase in aircraft operations would not have significant noise impacts on federally listed fish species (i.e., bull trout, green sturgeon, eulachon, Chinook salmon, Hood Canal summer-run chum, steelhead, bocaccio rockfish, and yelloweye rockfish). Therefore, the Proposed Action would not significantly impact the bull trout, green sturgeon, eulachon, Chinook salmon, Hood Canal summer-run chum, steelhead, bocaccio rockfish, and yelloweye rockfish. In Endangered Species Act (ESA) terms, the Proposed Action may affect, but is not likely to adversely affect, the bull trout, green sturgeon, eulachon, Chinook salmon, Hood Canal summer-run chum, steelhead, bocaccio rockfish, and yelloweye rockfish. The NMFS's determination under the ESA was issued on July 20, 2017.
- The Proposed Action's increase in aircraft operations would not have significant noise and/or visual impacts on the Southern Resident killer whale and humpback whale. Marine mammals, including non-ESA species, exposed to fixed-wing aircraft overflights could exhibit a short-term behavioral response, but fixed-wing aircraft overflights over territorial waters would have no significant impact on marine mammals. Therefore, the Proposed Action would not significantly impact the Southern Resident killer whale and humpback whale. In ESA terms, the Proposed Action may affect, but is not likely to adversely affect, the Southern Resident killer whale and humpback whale. The Navy consulted with the NMFS regarding the effects determination for Southern Resident killer whales and humpback whales. Pursuant to the Marine Mammal Protection Act, including the 2004 military readiness amendment, no take of marine mammals is anticipated.

### **Combined Impacts from Past, Present, and Reasonably Foreseeable Future Actions**

The Proposed Action, when taken into consideration with currently ongoing and reasonably foreseeable future actions that would result in an increase of aircraft operations at Ault Field, OLF Coupeville, or in

the surrounding regional airspace, could result in cumulative effects to wildlife. Specifically, these effects include sensory disturbances and wildlife-aircraft strike effects.

The potential exists for additive effects when the Proposed Action is taken into consideration with the aforementioned actions that would result in increased operations. However, other actions would result in fewer operations at Ault Field and OLF Coupeville, which has the potential to offset some of these potential effects. Consequently, the Proposed Action, when considered with other past, present, and future actions, could cumulatively impact biological resources, but it would not be expected to have a significant cumulative impact.

#### **5.4.9 Water Resources**

##### **5.4.9.1 Description of Geographic Study Area**

The study area for water resources cumulative impacts includes NAS Whidbey Island, OLF Coupeville, and the surrounding area.

##### **5.4.9.2 Relevant Past, Present, and Future Actions**

The past, present, or reasonably foreseeable actions that have the greatest potential to interact with the Proposed Action and cumulatively impact water resources and wetlands include other construction projects at Ault Field and the improvements to the City of Oak Harbor's water system and clean water facilities. A summary of relevant impacts of each action is described below.

Construction projects at Ault Field, including the Naval Health Clinic Oak Harbor and Regional Aircraft Service Facility Renovation, would occur on previously developed sites, which would minimize the amount of new impervious surface created and potential impacts resulting from increased stormwater runoff or erosion. One project, demolition of nine farmhouses at NAS Whidbey Island, would reduce the amount of impervious surface at the air station.

Clearing trees northeast of the approach end of Runway 25 would result in direct impacts to 10 acres of wetlands. This project was developed in consultation with the appropriate state and federal agencies, and no significant impacts to wetlands would result.

##### **Improvements to the City of Oak Harbor's Water System**

Construction-related water resource impacts could result from the replacement of the City of Oak Harbor's aging water system. This project would increase impervious surfaces due to the installation of a new storage tank and new road; however, this impact would be partially mitigated by the removal of an old storage tank (the Eastside tank). Water quality of nearby water bodies could potentially be impacted during initial runoff events following construction due to erosion associated with grading and clearing activities. This runoff would be temporary until cleared areas have been re-vegetated. It is unknown at this time whether wetlands would be impacted.

##### **Replacement of the City of Oak Harbor's Clean Water Facilities**

Construction-related impacts to water resources could result from the replacement of the City of Oak Harbor's existing wastewater treatment facility under the City of Oak Harbor Water Systems Improvement project. The improvement of the City of Oak Harbor's water supply infrastructure and the replacement the wastewater treatment facility owned by the City of Oak Harbor are expected to improve water quality of the effluent discharged into Oak Harbor, although the new impervious surface

will increase stormwater runoff in the area. The new wastewater treatment facility is planned to be built within a 100-year floodplain; as such, it may be elevated to avoid flooding during a 100-year flood event. Wetlands would likely be filled in the 100-year floodplain as a result of this project, but to what extent is unknown at this time. It is important to note that the Navy will take back the operation and maintenance of the lagoon wastewater treatment plant, with all Navy-related discharge going to this location and not the City of Oak Harbor's wastewater treatment facility.

#### **5.4.9.3 Cumulative Impact Analysis**

##### **Proposed Action**

###### **Groundwater**

New construction under each of the alternatives would not impact the three groundwater aquifers in the vicinity of NAS Whidbey Island because none of the proposed construction would extend below the ground surface to a depth that would impact the underlying water tables. Although the number of personnel employed or stationed at NAS Whidbey Island would increase, resulting in a corresponding increase in the demand for groundwater, this is anticipated to be minimal because NAS Whidbey Island does not use groundwater as a source of drinking water.

###### **Surface Water**

The Proposed Action would result in up to 2.3 acres of new impervious surface created by the new armament storage, mobile maintenance facility, vehicle parking, and hangar space. The increase in impervious surface would be less than 1 percent compared to the existing approximately 600 acres of impervious surface at NAS Whidbey Island.

###### **Wetlands**

Each of the three alternatives would have no direct impacts on wetlands at NAS Whidbey Island because no wetlands occur in or adjacent to the proposed construction areas.

###### **Floodplains**

No construction would occur within Federal Emergency Management Agency-mapped floodplains under any of the three alternatives. Therefore, there would be no impacts on floodplains, and all three alternatives would be fully consistent with Executive Order 11988.

###### **Marine Waters and Sediments**

The projected increase in new impervious surfaces under each alternative would increase the quantity and velocity of stormwater runoff, which would increase the susceptibility of surrounding soils to erosion and could potentially lead to impacts to marine sediments. These impacts would be minimized or avoided by implementing the BMPs described above for surface waters.

In summary, implementation of any of the Proposed Action would have no direct impacts on water resources. Indirect impacts on water resources would not be significant due to the relatively small size of ground disturbance that would occur and the relatively small amount of new impervious surfaces being created.

##### **Combined Impacts from Past, Present, and Reasonably Foreseeable Future Actions**

While other projects impacting water resources or wetlands would implement regulatory-required mitigation, any anticipated impacts from the above-listed projects would not be considered significant because of geographic separation of wetlands, the types of waters impacted (freshwater or marine), and



temporal displacement and replacement of the resource function. Consequently, the Proposed Action when considered with other past, present, and future actions could cumulatively impact water resources and wetlands but would not be anticipated to have a significant cumulative impact.

#### **5.4.10 Socioeconomics**

##### **5.4.10.1 Description of Geographic Study Area**

The study area for socioeconomic cumulative impacts includes NAS Whidbey Island, OLF Coupeville, and Island County.

##### **5.4.10.2 Relevant Past, Present, and Future Actions**

The past, present, or reasonably foreseeable actions that have the greatest potential to interact with the Proposed Action and cumulatively impact socioeconomics include the disestablishment of the VQ mission capabilities at NAS Whidbey Island. The relevant impacts of this action are described below.

The other actions described in Table 5-1 would cumulatively impact the socioeconomic environment of Island County, primarily as a result of the increased personnel associated with the military actions being added to the regional economy. However, these projects represent the types of actions that occur each year at a military installation or in a well-developed economy. This level of activity is not atypical for the region and could in fact be considered part of the No Action Alternative or existing level. Therefore, from an economic standpoint, these projects do not represent a cumulative change in economic activity over existing conditions.

##### **Disestablishment of the Fleet Air Reconnaissance Capabilities**

The DoD has directed the Navy to disestablish the VQ mission capabilities at NAS Whidbey Island by 2021. VQ-2 was disestablished in FY 12, and personnel were consolidated with VQ-1. Personnel loading for VQ-1 following consolidation was approximately 640. The loss or transfer of approximately 640 personnel and their families from NAS Whidbey Island would cause a long-term socioeconomic impact as a result of the decrease in payroll and spending in the community.

##### **5.4.10.3 Cumulative Impact Analysis**

###### **Proposed Action**

###### **Population**

Implementation of the Proposed Action would result in minor impacts on the personnel loading at the NAS Whidbey Island complex and on total population in the region. Total Growler personnel loading at the NAS Whidbey Island complex is expected to increase under Alternatives 1 through 3 when compared to the personnel loading under the No Action Alternative. In total, an estimated 794 military personnel and dependents under Alternative 1; 1,488 military personnel and dependents under Alternative 2; and 808 military personnel and dependents under Alternative 3 are expected to reside primarily in Island or Skagit Counties. Alternative 1 would result in an increase of 0.4 percent; Alternative 2 would result in an increase of 0.7 percent; and Alternative 3 would result in an increase of 0.4 percent in the total population in the two counties.

###### **Short-term Construction-related Impacts**

Implementation of the proposed alternatives would necessitate the expenditure of different levels of construction funds to support the revised mission. At present time, detailed cost estimates for each

alternative are not available. However, the Navy expects that the total construction costs would range between approximately \$47.8 million and \$122.5 million for each alternative, depending on the facilities constructed.

#### **Long-term Employee Earnings and Spending Impacts**

As described above, direct Navy employment at NAS Whidbey Island would expand by an additional 335 to 628 personnel under the three alternatives compared to the No Action Alternative level. As additional income is injected into the regional economy through changes in the NAS Whidbey Island complex's payroll, employment and earnings in the regional economy would be expanded or be multiplied.

#### **Housing**

All types of housing around the NAS Whidbey Island complex, including military-controlled housing, would experience an increase in demand as a result of the personnel changes associated with the proposed alternatives. However, nearly all these additional households are expected to reside off station.

#### **Community Services**

The provision of medical services and fire and rescue services and police protection are not expected to be significantly impacted. School districts, particularly the Oak Harbor School District, would be significantly affected by the proposed alternatives, with the majority of the school-aged military dependents expected to attend schools in that district. Elementary schools in the Oak Harbor School District would experience the greatest impact under all three alternatives, and there would be minor impacts to the Coupeville School District and the Anacortes School District.

#### **Agriculture**

No agricultural lands will be removed from production as a direct result of implementation of the Proposed Action, all existing farms will be allowed to continue operation, and agricultural production in the region is expected to remain unchanged. However, some minor increases in the cost of production may occur as a result of the Proposed Action. No significant impact is expected to occur to the agricultural industry as a result of the Proposed Action.

#### **Tourism**

Increased flight operations and the resulting noise exposure under Alternatives 1 through 3 may have a negative impact on some visitors' experiences at certain tourist destinations within the greater than 65 dB DNL contours. Implementation of the Proposed Action could potentially reduce attendance levels at certain tourist destinations from reaching the levels that would have occurred without the Proposed Action; however, the effect on the tourism industry as a whole is not expected to be substantial.

#### **Combined Impacts from Past, Present, and Reasonably Foreseeable Future Actions**

Personnel loading under the VQ squadron disestablishment would be expected to decrease. When this project is analyzed in combination with the Proposed Action and is examined for its context and intensity, no significant change in personnel loading at NAS Whidbey Island from affected environment conditions would occur. Each of the actions would partially offset each other with some increases and some decreases in personnel. Cumulative demographic impacts in the community similarly would be offset. In particular, the VQ squadron disestablishment would result in the loss or transfer of approximately 640 NAS Whidbey Island personnel and their families, including approximately 330 school-aged children, which would offset the increase in school-aged children that would attend the Oak Harbor, Coupeville, or Anacortes school districts under the Proposed Action. The decrease in school-

aged children that would result from the VQ squadron disestablishment would more than offset the largest estimated increase under the Proposed Action (324 school-aged children). Because these are estimates, actual changes in enrollment may vary. However, given this offset, significant cumulative impacts to local school districts as a result either of a rapid increase in enrollment or loss of a large amount of federal impact aid would not be expected. Because so few of the other actions identified in Section 5.3 would cumulatively impact socioeconomic resources, the potential cumulative effects would not be significant.

#### **5.4.11 Environmental Justice**

##### **5.4.11.1 Description of Geographic Study Area**

The study area for environmental justice cumulative impacts includes those census block groups that either fully or partially fall beneath the modeled noise contours and that were identified as having a potential environmental justice community.

##### **5.4.11.2 Relevant Past, Present, and Future Actions**

The past, present, or reasonably foreseeable actions that have the greatest potential to interact with the Proposed Action and cumulatively impact populations of people include the training activities associated with the NWTT EIS/OEIS and the disestablishment of the VQ mission capabilities at NAS Whidbey Island. A summary of relevant impacts of each action is described below.

##### **Northwest Training and Testing Final EIS/OEIS**

Under the Proposed Action, the number of training activities occurring in the offshore area (including the Olympic MOAs) is expected to increase from 5,414 events to 8,140 events, while the number of inland training activities is expected to decrease from 166 events to 117 events. No significant impacts associated with noise, air quality, water quality, or hazardous materials or hazardous waste were expected to occur as a result of the Proposed Action. Therefore, no disproportionately high or adverse environmental or human health effects on any low-income populations or minority populations are predicted to occur as a result of implementation of these activities.

##### **Disestablishment of the Fleet Air Reconnaissance Capabilities**

The DoD has directed the Navy to disestablish the VQ mission capabilities at NAS Whidbey Island by 2021. Potential changes to airfield operations associated with this action would likely decrease by approximately 4,700 EP-3 operations annually. Therefore, air quality and noise impacts would likely be minor and environmentally beneficial.

##### **5.4.11.3 Cumulative Impact Analysis**

###### **Proposed Action**

Under all alternatives and scenarios, minority and low-income populations are living within the affected environment. The Navy has concluded that there are environmental justice communities within the affected area and there are significant impacts outlined within the EIS to populations living within the affected area (noise impacts to those living within the 65 dB DNL noise contours and overcrowding at Oak Harbor School District schools). However, the Navy has determined that there will be no disproportionate high and adverse human health or environmental effects from noise, Clear Zones/APZs, or school overcrowding on minority populations or low-income populations. The Navy has,

however, concluded that impacts on housing availability and housing affordability could have the potential to have a disproportionately high and adverse impact on low-income communities. The Navy further acknowledges that the increase in the cost of housing and the decrease in available properties may have a negative impact on low-income residents, who typically spend a larger proportion of their income on housing than the general population.

### **Combined Impacts from Past, Present, and Reasonably Foreseeable Future Actions**

When past, present, and reasonably foreseeable future projects are analyzed together with the Proposed Action and all three alternatives, there is the potential for cumulative impacts. Available information on the states of identified past, present, and reasonably foreseeable future projects shows that only minor impacts to noise and population increases are anticipated from the other projects and that none of them had disproportionately high or adverse environmental impacts or human health effects on minority populations or low-income populations when considered separately. Most of the actions identified above are expected to be completed by 2021 and would therefore be occurring at the same time as the Proposed Action. Some additional environment justice communities may be affected by the cumulative impact of these actions.

The Navy has embarked on a robust community outreach program as part of this EIS process. As detailed in Sections 1.9 and 1.10, the Navy has held eight public scoping meetings and five open house public meetings during the public comment period on the Draft EIS and has kept residents informed throughout the process with mailings (both letters and postcards), newspaper advertisements, press releases, a project website, and digital advertisements. Project documents have been made available at local public libraries as well as online at the project's website. Public outreach efforts will continue throughout the EIS process to ensure that impacted environmental justice populations are kept informed and involved in the decision-making process.

## **5.4.12 Transportation**

### **5.4.12.1 Description of Geographic Study Area**

The study area for transportation cumulative impacts is NAS Whidbey Island, the City of Oak Harbor, Island County, and SR 20, including segments in Skagit County.

### **5.4.12.2 Relevant Past, Present, and Future Actions**

The past, present, or reasonably foreseeable future actions that have a potential to interact with the Proposed Action and cumulatively impact transportation include projects that involve a change (increase or decrease) in personnel stationed at or frequently accessing Ault Field; projects within the geographic study area that may add construction- or operations-related traffic to area roadways; and transportation improvement projects that may temporarily impair level of service but would improve it in the long term.

Activities such as the VQ disestablishment have already changed, or may likely involve a change, in personnel at the NAS Whidbey Island complex. Construction activities at Ault Field, including but not limited to the Naval Health Clinic Oak Harbor, would likely require additional construction-related traffic during construction activities. Similarly, additional personnel may commute to and from the installation once construction is completed.

The planned construction of roundabouts at the Sharpes Corner and Miller-Gibraltar Road intersections on SR 20 in Skagit County and construction of a roundabout or traffic signal light at the Banta Road intersection on SR 20 in Island County would temporarily impair levels of service on this roadway during construction of these projects in 2018 and 2019, respectively. These projects are expected to improve level of service over the long term and reduce safety risks.

### **5.4.12.3 Cumulative Impact Analysis**

#### **Proposed Action**

Construction activities associated with the Proposed Action under each alternative would result in short-term impacts, but project components would result in a negligible increase in traffic and would not result in a worsening of level of service (LOS) on major roadways beyond LOS standards under the No Action Alternative. Operations associated with the Proposed Action under each alternative would result in long-term and moderate increases in traffic, but they would not result in worsening of LOS on major roadways beyond LOS standards. Some local roadways and intersections near Ault Field may see significant increases in traffic, but mitigation would reduce impacts to less than significant. Therefore, implementation of the Proposed Action under any alternative would not result in significant impacts to transportation.

The Proposed Action would generate between 122 and 2,051 new trips per weekday under Alternative 1 and 229 to 3,845 new trips per weekday under Alternative 2 within the study area on major roadways (i.e., Interstate-5, SR 20, and SR 525). Additional trips from Navy personnel and dependents would be expected on other local roads and would vary depending on housing decisions. The largest increase in traffic volumes on local roads would be expected to occur on roads near Ault Field and the Seaplane Base from Navy personnel commuting to and from the installation. Implementation of the Proposed Action under any of the alternatives would not result in significant impacts to transportation.

#### **Combined Impacts from Past, Present, and Reasonably Foreseeable Future Actions**

When past, present, and reasonably foreseeable future projects are analyzed together with the Proposed Action and all three alternatives, there would be a slight overall increase in traffic accessing NAS Whidbey Island and the surrounding communities. However, given this slight increase in personnel and associated traffic, when combined with the planned projects and their contributions to additional traffic, the cumulative impacts to transportation would not be significant. Additionally, the aforementioned improvements to roadways and the LOS improvement priority projects identified in the City of Oak Harbor's Comprehensive Plan (City of Oak Harbor, 2014a) would help offset these impacts and improve the flow of traffic and alleviate congestion on the nearby roadways and SR 20. With these roadway improvements, the cumulative traffic impacts of the Proposed Action in conjunction with the other actions identified in Table 5-1 would not be significant.

### **5.4.13 Infrastructure**

#### **5.4.13.1 Description of Geographic Study Area**

The study area for infrastructure cumulative impacts includes NAS Whidbey Island, OLF Coupeville, and Island County, Washington, along with its outlying areas.

### 5.4.13.2 Relevant Past, Present, and Future Actions

The past, present, or reasonably foreseeable future actions that have a potential to interact with the Proposed Action and cumulatively impact infrastructure include those that would add personnel to NAS Whidbey Island, thereby adding demand, as well as other development projects that increase impervious surface at NAS Whidbey Island and the surrounding vicinity. These include the following projects: VQ disestablishment; City of Oak Harbor Water System Improvements and Clean Water Facilities Planning; and all planned construction projects at Ault Field.

### 5.4.13.3 Cumulative Impact Analysis

#### Proposed Action

##### Potable Water

The City of Oak Harbor is expected to have sufficient capacity under the current agreement with the City of Anacortes to meet projected demand for the City of Oak Harbor and NAS Whidbey Island until 2024. Improvements to existing wells that would permit maximum allowable water withdrawals based on water rights would allow Oak Harbor to meet projected demand until 2060 (City of Oak Harbor, 2014b). However, the current water service contract between the Navy and Oak Harbor requires the city to have capacity to transmit no less than 4.5 million gallons per day (mgd) to NAS Whidbey Island (Navy, 1971). The increase in military personnel and dependents in the study area would result in an increased demand for potable water. However, NAS Whidbey Island, Oak Harbor, and Anacortes currently have additional water capacity. Therefore, each alternative is expected to have a negligible impact on potable water sources.

##### Wastewater

The total combined maximum monthly flow for the City of Oak Harbor wastewater system (including Seaplane Base) was 2.9 mgd in 2011 (Carollo Engineers, 2013). The city projects total maximum monthly flow in 2030 to be 3.9 mgd, assuming no additional growth at the Seaplane Base. The existing contract between the city and the Navy allows the Navy to discharge up to 0.85 mgd into the lagoon. The city is currently in the process of constructing a new wastewater plant to replace the aging facilities that will be unable to handle expected population growth and increasing water quality standards (Carollo Engineers, 2013). The new facility is expected to increase the city's wastewater capacity by 2.7 mgd (City of Oak Harbor, 2015b) and to be online in 2018 (City of Oak Harbor, 2017). The increase in military personnel and dependents in the study area would result in an increased production of wastewater. However, NAS Whidbey Island, Oak Harbor, and Anacortes all currently have additional wastewater treatment capacity. Therefore, the Proposed Action, regardless of alternative selected, is expected to have an impact, but not a significant one, on wastewater treatment.

##### Stormwater

The Proposed Action would result in an increase in total impervious surface area at NAS Whidbey Island. Specifically, 2.3 acres of new impervious surface area would be created on NAS Whidbey Island as a result of new armament storage, the mobile maintenance facility, vehicle parking, and hangar space. The 2.3 acres of impervious surface area would be an increase of less than 1 percent over the existing approximately 600 acres of existing impervious surface at NAS Whidbey Island.

##### Solid Waste Management

An increase in total solid waste generation is expected at NAS Whidbey Island and within the City of Oak Harbor and other areas of Island and Skagit Counties under the Proposed Action. However, regional

landfill facilities have sufficient capacity. Therefore, no significant impact on solid waste management is expected.

### **Energy**

An increase in total energy consumption at NAS Whidbey Island and within the City of Oak Harbor and other areas of Island and Skagit Counties would be expected under each alternative. However, projections anticipate sufficient energy supply for the foreseeable future. Therefore, no significant impact to energy supply is expected under any of the alternatives.

### **Communication**

The Proposed Action is expected to result in an increased use of the bandwidth of existing communication systems at NAS Whidbey Island from the increased number of personnel and operations. Existing capacity does not currently keep up with peak demand. Renovation or construction of new facilities under the alternatives would include new or upgraded communication networks for facilities, such as fiberoptic and copper cables to support alarms, telephones, video teleconferencing, processing, perimeter security, enterprise land mobile radio, legacy applications, environmental controls, and information assurance and cyber security.

### **Facilities**

Existing facilities at NAS Whidbey Island would need to be modified, and new facilities would be constructed in order to support the necessary training, maintenance, and operational requirements under each alternative. Approximately 55,500 square feet (Alternatives 1 and 3) to 93,000 square feet (Alternative 2) of new facilities would be constructed.

## **Combined Impacts from Past, Present, and Reasonably Foreseeable Future Actions**

When past, present, and reasonably foreseeable future projects are analyzed together, there would be an overall increase to the demand on utilities that service NAS Whidbey Island and the surrounding communities. The Proposed Action, combined with several of the planned projects, would result in cumulative impacts to utilities and infrastructure. However, based on improvements planned for these utilities, it is anticipated that these utilities would continue to expand and be upgraded as needed to accommodate the future growth and development of the region. None of the proposed projects involve excessive construction/paving activities that would drastically increase impervious surface at NAS Whidbey Island or within Island County. Therefore, based on the planned utility improvements likely to be implemented along with the future projects, there would be no significant cumulative impact to utilities.

## **5.4.14 Geological Resources**

### **5.4.14.1 Description of Geographic Study Area**

The study area for cumulative impacts to geological resources includes NAS Whidbey Island, OLF Coupeville, and the immediate surrounding vicinity.

### **5.4.14.2 Relevant Past, Present, and Future Actions**

The past, present, and reasonably foreseeable future actions that have a potential to impact geological resources at the NAS Whidbey Island complex include those projects that would involve earth-moving activities and/or could result in soil erosion. Therefore, the planned construction projects at Ault Field

(the Next Generation Jammer, Naval Health Clinic Oak Harbor, and Regional Aircraft Service Facility) are considered in this analysis.

#### **5.4.14.3 Cumulative Impact Analysis**

##### **Proposed Action**

###### ***Topography***

The Proposed Action would have no impact on topography because new construction would be conducted in generally level areas.

###### ***Geology***

Under the Proposed Action, construction would not include grading, clearing, or blasting of earth or rock. Therefore, no significant impacts on geology would occur.

###### ***Seismic Activity***

In the event of an earthquake, seismic hazards including liquefaction may result in damage to buildings or other structures. Potential for damage from ground shaking is highest in local areas that contain artificial fill, areas underlain by peat, existing landslides, and valley floors underlain by unconsolidated alluvial sediments. Much of the runway and airfield areas at Ault Field were constructed on artificial fill. However, all buildings constructed under the Proposed Action would be designed to conform to the seismic provisions of the Washington State Building Code. In the event of an earthquake, there is also the potential for spills to occur. However, a spill prevention, control and countermeasures plan would be developed and implemented in order to help prevent spills and to control and clean up spills in the event that they did occur. Therefore, if a seismic event were to occur, human health and safety would be protected to the maximum extent practicable.

###### ***Soils***

Under the Proposed Action, impacts to soils during construction could include compaction and rutting from vehicle traffic and an increase in erosion. Up to 2.3 acres of new impervious surfaces would increase the quantity and velocity of stormwater runoff, which would increase the susceptibility of surrounding soils to erosion. These impacts would be minimized or avoided by using standard soil erosion- and sedimentation-control techniques at the construction site such as a silt barrier (filter fabric) and appropriate revegetation techniques upon completion.

##### **Combined Impacts from Past, Present, and Reasonably Foreseeable Future Actions**

The aforementioned construction projects at Ault Field would likely impact soil resources within the activity footprint. Erosion and sedimentation plans would be developed for each project, and the impacts would be managed through the use of appropriate BMPs for each site. The Proposed Action would also impact soils, and, as such, erosion and sedimentation plans would be developed, and BMPs would be used to manage impacts to soils. Due to the minimal impacts anticipated under any of the alternatives coupled with the use of BMPs and impact minimization measures, there would be no significant cumulative impacts to geological resources.



### **5.4.15 Hazardous Materials and Wastes**

#### **5.4.15.1 Description of Geographic Study Area**

The study area for cumulative impacts to hazardous materials and wastes includes NAS Whidbey Island, OLF Coupeville, and the immediate surrounding vicinity.

#### **5.4.15.2 Relevant Past, Present, and Future Actions**

The past, present, and reasonably foreseeable future actions that have a potential to use hazardous materials or generate hazardous waste at the NAS Whidbey Island complex include those projects that require building demolition/modification that may require disposal of small quantities of asbestos-containing material or lead-based paint. Projects with the potential for cumulative impacts to hazardous materials and waste include those with ground disturbance and demolition/modification. Therefore, the planned construction projects at Ault Field (the Next Generation Jammer, Naval Health Clinic Oak Harbor, and Regional Aircraft Service Facility Renovation) are considered in this analysis.

#### **5.4.15.3 Cumulative Impact Analysis**

##### **Proposed Action**

Operation and maintenance of additional Growler aircraft would not introduce any new hazardous materials and/or waste streams at Ault Field. While the addition of 35 or 36 Growler aircraft would increase the amount of hazardous materials handled and generate increased amounts of hazardous wastes, this increase would be managed by existing hazardous material and waste management functions and facilities at Ault Field and would not result in significant impacts with regard to the handling, use, storage, or disposal of fuel, oils, and lubricants at Ault Field. All hazardous wastes would continue to be collected and managed on site in accordance with the installation's Hazardous Waste Management Plan. Appropriate procedures for handling of hazardous materials and BMPs for the management of hazardous substances and spill response at Ault Field would be applied. Hazardous waste management activities would follow existing procedures for the safe handling, use, and disposal of hazardous substances and waste. Therefore, the Proposed Action under any alternative would have no impact to hazardous materials and the waste management program at Ault Field.

##### **Combined Impacts from Past, Present, and Reasonably Foreseeable Future Actions**

When past, present, and reasonably foreseeable future projects are analyzed together, there may be an overall increase of the amount of hazardous materials handled and amounts of hazardous wastes generated. However, as stated above, the Proposed Action under any alternative would have no impact to hazardous materials and the waste management program at Ault Field. Similarly, any hazardous materials and wastes associated with the other construction and demolition projects planned at Ault Field would continue to be collected and managed on site in accordance with the installation's Hazardous Waste Management Plan. Similarly, they would follow existing procedures for the safe handling, use, and disposal of hazardous substances and waste. Therefore, there would be no significant cumulative impact to hazardous materials and wastes.

### **5.4.16 Climate Change and Greenhouse Gases**

The potential effects of climate change and GHG emissions are, by nature, global and cumulative impacts. While individual sources of GHG emissions are not large enough to have an appreciable effect on climate change, the global accumulation of GHG emissions is resulting in global and local impacts on

the climate. The cumulative totals of GHG emissions as described in Section 5.4.4 would not likely contribute to global warming to any discernible extent or have a significant impact on the State of Washington's GHG emission goals as described in Section 4.16.

The direct and indirect effects analysis of GHG emissions as discussed in Sections 3.16 and 4.16 adequately addresses cumulative impacts for climate change, and a separate cumulative analysis is not needed. Global climate change threatens ecosystems, water resources, coastal regions, crop and livestock production, and human health. The continuing increase in GHG concentrations in the Earth's atmosphere will likely result in a continuing increase in global annual average temperature and climate change effects. Global, federal, and state initiatives to reduce GHG emissions have been implemented to reduce the severity of climate change impacts in the future. The Proposed Action would result in an increase in GHG emissions, primarily from the increase in the use of jet fuel for military aircraft operations. The Navy and the DoD have implemented other programs and policies to reduce GHG emissions from other sources. The Navy, the DoD, and the State of Washington have implemented laws, policies, and programs to address the impacts of climate change in the future.