5 Cumulative Impacts

This section 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 Environmental Impact Statements (EISs), agencies shall 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 U.S. Environmental Protection Agency (USEPA) have published guidance addressing implementation of cumulative impact analyses—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 guidance entitled *Considering Cumulative Impacts Under NEPA* (1997) 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 coincidently in a similar location or during a similar time period with respect to the same environmental. 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 coincidently 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 coincidently 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.

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

Action	*Summary of Action*	*NEPA Analysis Completed/Timeframe*
Past Actions		
Transition of Expeditionary EA-6B Prowler Aircraft to EA-18G Growler Aircraft	The action included retaining the expeditionary Electronic Attack mission capabilities at 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. *It should be noted that this project was not retained for further analysis.*	EA A Finding of No Significant Impact (FONSI) for the EA was signed on October 30, 2012. Action to be completed in 2015
P-8A Multi-Mission Aircraft (MMA) Supplemental EIS (SEIS)	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. *It should be noted that this project was not retained for further analysis.*	EIS/SEIS A ROD for the SEIS was signed in 2014.

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

Action	*Summary of Action*	*NEPA Analysis Completed/Timeframe*
Northwest Training Range Complex 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 Northwest Training Range Complex at sea and on shore.	EIS/OEIS A ROD for the EIS/OEIS was signed on October 25, 2010. Action implementation ongoing
Replacement of the C-9 Aircraft with the C-40 Aircraft	The four C-9 Skytrain II aircraft stationed at NAS Whidbey Island were replaced by three C-40 Clipper aircraft. *It should be noted that this project was not retained for further analysis.*	CATEX 2010 Completed
Present and Reasonably Foreseeable Future Actions		
Environmental Assessment for the Pacific Northwest Electronic Warfare Range	Naval Special Warfare is proposing intermediate to advanced cold-water training in Western Washington State at multiple sites.	EA A FONSI was signed on August 28, 2014.
Environmental Assessment (EA) for the OLF Security Barrier	The Navy is proposing the installation of security blocks on the perimeter of OLF Coupeville.	EA To be determined (TBD)
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 To be determined
Northwest Training and Testing Final EIS/OEIS	The Navy proposes to conduct military readiness training and testing activities in the Northwest Training and Testing 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 United States.	EIS/OEIS The Final EIS/OEIS was published in October 2015 To be determined
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.	EA A FONSI was signed on July 14, 2016.

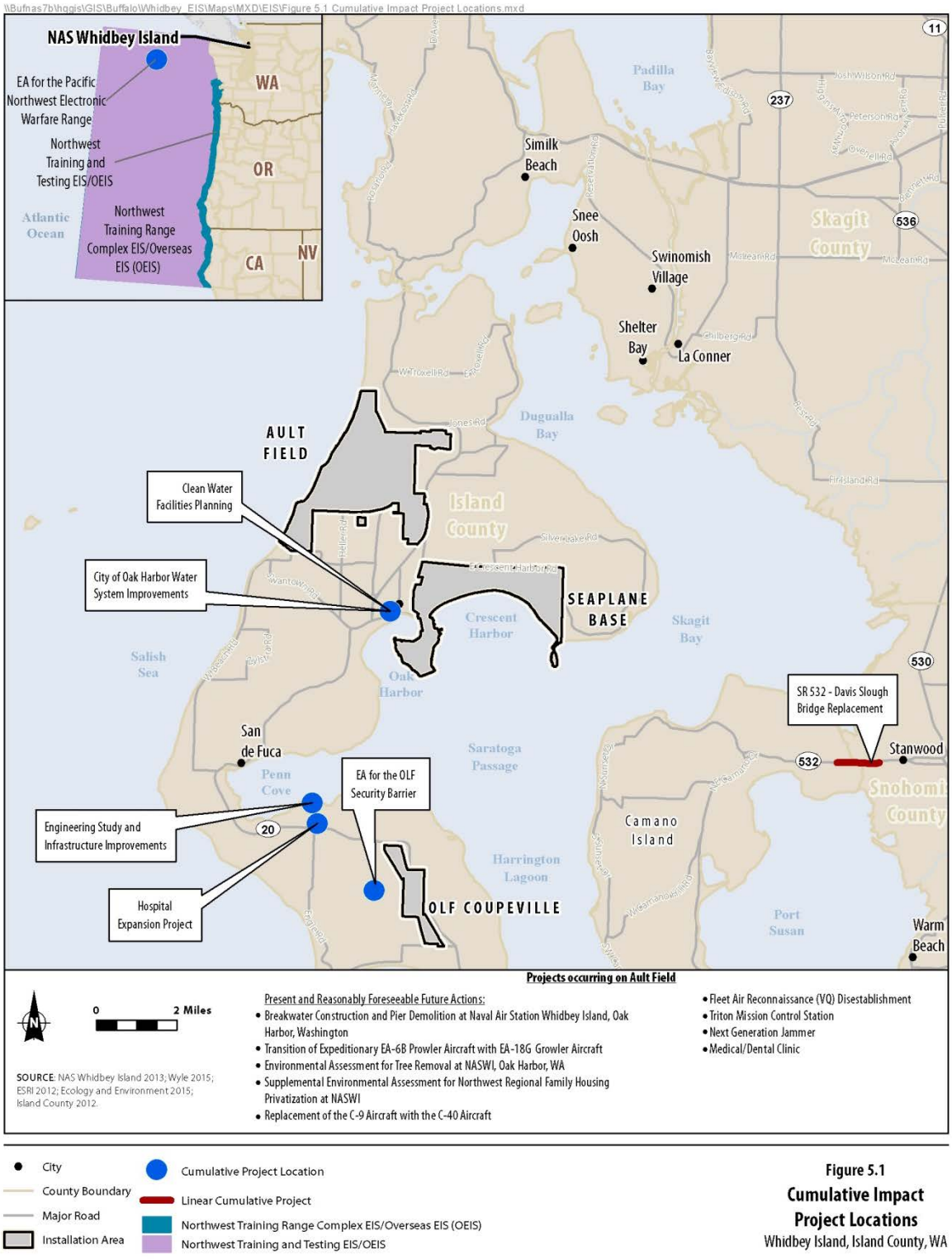
Table 5-1 Other Actions Considered for Potential Cumulative Impacts Associated with the Proposed Action for the NAS Whidbey Island Complex

Action	*Summary of Action*	*NEPA Analysis Completed/Timeframe*
Supplemental Environmental Assessment (SEA) for Northwest Regional Family Housing Privatization at NAS Whidbey Island	The Proposed Action includes the demolition of the nine farmhouses at NAS Whidbey Island.	SEA To be determined
Fleet Air Reconnaissance (VQ) Disestablishment	The DoD has directed the Navy to disestablish the Fleet Air Reconnaissance (VQ) mission capabilities at NAS Whidbey Island by 2020.	2020
Triton Mission Control Station	This project would construct an approximately 30,000-square-foot Broad Area Maritime Surveillance (BAMS) facility to provide space and communications for two mission control stations that would control BAMS aircraft that fly from a remote location.	Analyzed in P-8A Multi-Mission Aircraft (MMA) EIS 2008 Construction anticipated in Fiscal Year 2017 (FY 17)
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.	Level of NEPA, TBD Construction anticipated in FY 19
Medical/Dental Clinic	The Defense Health Administration (DHA) 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.	EA Construction anticipated in FY 21
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.
SR 532 - Davis Slough Bridge Replacement		None; non-federal action Construction from August 2014-Spring 2016

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

Action	*Summary of Action*	*NEPA Analysis Completed/Timeframe*
Whidbey General Hospital 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 Whidbey General Hospital.	None; non-federal action Ongoing; anticipated completion date unknown
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
Clean Water Facilities Planning	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

Figure 5-1 Cumulative Impact Project Locations



5.3.1 Past Actions

5.3.1.1 Federal Actions

Three 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 Northwest Training Range Complex Final EIS/Overseas EIS (OEIS), and the Replacement of the C-9 Aircraft with the C-40 Aircraft. However, these projects are complete and included as part of the existing environment analysis in this EIS. Therefore, they are not retained for further cumulative impacts analysis.

The Navy decided in 2008 to provide facilities and functions to support home basing twelve P-8A Multi-Mission Maritime Aircraft (MMA) squadrons and one Fleet Replacement Squadron into the U.S. Navy Fleet. The P-8A MMA will replace the current maritime patrol aircraft, the P-3C Orion, at existing maritime patrol home bases. The action will result in the home basing of six Fleet squadrons (42 aircraft) at NAS Whidbey Island. The Record of Decision (ROD) was signed in June 2014, and the transition to the P-8A aircraft is currently underway. Based on the ROD, P-8A aircraft arrive at NAS Whidbey Island in 2016. There will be an overall increase of 18 aircraft by 2020.

5.3.1.2 Non-federal Actions

There are no past non-federal actions that have been included as part of this analysis.

5.3.2 Present and Reasonably Foreseeable Actions

5.3.2.1 Federal Actions

Environmental Assessment for the OLF Security Barrier

The Navy is proposing the installation of 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 maritime training activities for Navy Special Operations personnel. The action would take place in the coastal and inland waters and selected nearshore lands of western Washington State with permission of willing property owners. The training would involve movements of personnel, in which a key goal is to remain undetected and leave no trace of the trainee's presence, during or after the training activity. Support staff would always be present and would interact with the public, if necessary. All training would be non-invasive, to include no live fire, no digging, no cutting of vegetation, no fires, and no human waste. All training would be compliant with federal and state laws and consistent with existing non-military use of the land.

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 Military Operations Area (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 and Washington State Department of Natural Resources (WSDNR) lands, and (5) the operation of Mobile Electronic Warfare Training System vehicle-mounted emitters on U.S. Forest Service lands within the Okanogan and Roosevelt MOAs. The FONSI was signed on August 28, 2014; however, permits from the U.S. Forest Service are still pending.

Northwest Training and Testing Final EIS/OEIS

An EIS/OEIS was prepared to identify and evaluate the potential environmental consequences associated with training and testing activities primarily within existing range complexes, OPAREAs, testing ranges, and select Navy pier-side locations in the Pacific Northwest. The Proposed Action included pier-side sonar testing conducted as part of overhaul, modernization, maintenance, and repair activities at Puget Sound Naval Shipyard in Bremerton, Naval Base Kitsap at Bangor, and Naval Station Everett. The Proposed Action would ensure the Navy accomplishes its mission to maintain, train, and equip combat-ready military forces. This mission is achieved by conducting realistic training and testing activities 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, which is 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. The Final EIS/OEIS was published in October 2015.

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 FONSI 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.

Fleet Air Reconnaissance Disestablishment

The DoD has directed the Navy to disestablish the Fleet Air Reconnaissance (VQ) mission capabilities at NAS Whidbey Island by 2020. 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.

Triton Mission Control Station

This project would construct an approximately 30,000-square-foot Broad Area Maritime Surveillance facility to provide space and communications for two mission control stations that would control Broad Area Maritime Surveillance aircraft that fly from a remote location. The facility would be constructed on previously disturbed and impervious surface within the existing flight line. Construction is anticipated to occur in FY 17.

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.

Medical/Dental Clinic

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.

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 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).

Whidbey General Hospital 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 Whidbey General Hospital. 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 Facilities Planning

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, 2015a).

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 Northwest Training Range Complex (NWTRC) EIS/OEIS and the disestablishment of the VQ mission capabilities at NAS Whidbey Island by 2020. 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. However, it was determined that the remoteness of the inshore use areas and public notification procedures would substantially reduce possible congestion during 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 2020. 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 38 percent at the NAS Whidbey Island complex. Operations at Ault Field would increase from approximately 7,700 operations (above No Action Alternative) (Alternative 1, Scenario A) up to approximately 34,100 operations (above No Action Alternative) (Alternative 3, Scenario C). Likewise, operations at OLF Coupeville would increase from approximately 1,800 operations (above No Action Alternative) (Alternative 3, Scenario C) up to approximately 28,100 operations (above No Action Alternative) (Alternative 1, Scenario A). However, none of the action 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 proposed projects would 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 38 percent), the cumulative impacts to number of aircraft operations and airspace congestion could be significant. However, with the increases in operations from all combined actions, the airspace would be used more often and remain open for civilian air traffic. Similarly, no changes in the types of classification or civilian and commercial use of the airspace would be anticipated.

5.4.2 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 day-night average sound level (65 DNL) contour 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 Northwest Training and Testing (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 proposed 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, the number of training activities would increase from 5,414 events (No Action Alternative) to 8,140 events in the offshore area. Inland, these activities would decrease from 166 events to 117 events and thus would result in less noise in and around these inland areas.

Disestablishment of the Fleet Air Reconnaissance Capabilities

The DoD has directed the Navy to disestablish the VQ mission capabilities at NAS Whidbey Island by 2020. 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 decibel (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 22.8 percent, Alternative 2 would result in an increase of up to 20.8 percent, and Alternative 3 would result in an increase of up to 20.8 percent of the total population surrounding the two airfields.

The DNL noise contour that covered the highest estimated population was Alternative 1, Scenario C, with a total population of 13,547. 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 2, Scenario A, with a total population of 12,684 (an approximately 7-percent difference from the high range). Comparing the three 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 operations assigned to those airfields under the three 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 (NIPTS) for individuals would be far less than the values reported in Chapter 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. In addition, some of the other projects evaluated for cumulative impacts will result in slightly more operations, which may have a slight 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 that have the potential to affect flight safety, Bird/Aircraft Strike Hazard (BASH), 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 an increase in air operations proposed under each of the alternatives, there is no proposed change planned to existing flight procedures for Ault Field or OLF Coupeville; therefore, the BASH risk would be expected to remain similar to existing levels. 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 required.

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 BASH 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 Washington Intrastate Air Quality Control Region, which includes Island, Skagit, and Whatcom Counties and is managed by the Northwest Clean Air Agency. The Air Quality Control 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 Northwest Training and Testing EIS/OEIS identified emissions that would occur related to the expansion of 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 each Air Quality 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).

Table 5-2 Cumulative Changes in Criteria Pollutant and GHG Emissions, Northwest Air Basin

	Emissions (tpy)[2]						MT CO_2e
Proposed Actions	*NO_x*	*VOC*	*CO*	*SO_2*	*PM_{10}*	*$PM_{2.5}$*	*CO_2*
Growler Airfield Operations at the NAS Whidbey Island Complex							
Alternative 1 A	333.0	284.6	931.8	44.2	131.4	124.3	56,828.7
Alternative 1 B	277.9	243.5	780.4	36.9	111.5	104.4	47,671.6
Alternative 1 C	224.8	209.4	647.6	30.1	92.9	85.8	38,999.7
Alternative 2 A	329.1	300.8	977.3	44.1	138.3	125.6	57,446.7
Alternative 2 B	275.9	261.0	831.2	37.2	119.1	106.3	48,609.4
Alternative 2 C	223.9	228.1	703.0	30.5	100.9	88.2	40,133.5
Alternative 3 A	326.9	298.7	966.4	43.9	131.5	124.2	56,380.9
Alternative 3 B	275.7	266.7	841.1	37.3	113.7	106.4	48,050.8
Alternative 3 C	221.9	226.9	694.9	30.3	94.3	87.1	39,136.7
Northwest Training and Testing EIS/OEIS							
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

Table 5-2 Cumulative Changes in Criteria Pollutant and GHG Emissions, Northwest Air Basin

	Emissions (tpy)[2]						MT CO_2e
Proposed Actions	NO_x	VOC	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_2

Source: Navy, 2015d.

Key:
AQCR = Air Quality Control Region
CO = carbon monoxide
CO_2e = carbon monoxide equivalent
EIS = Environmental Impact Statement
GHG = greenhouse gas
MT = metric tons
NO_x = nitrogen oxide
OEIS = Overseas Environmental Impact Statement
$PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter
PM_{10} = particulate matter less than or equal to 10 microns in diameter
SO_2 = 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. These emissions are subject to NAS Whidbey Island's Air Operating Permit (AOP) (NWCAA, 2013), although estimated emissions are 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 provides a summary of the total change in emissions from ongoing changes to operations for all alternatives.

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

Changes to Operations

The Northwest Training and Testing operation 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 includes 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 2020. The 2008 Final EIS 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. 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

The Proposed Action would have no impact on on-station land use, regional land use, or on-station land use controls. All action alternatives and scenarios would impact off-station land use controls. All action alternatives and scenarios would result in an increase of 14 percent to 19 percent of land within the projected greater than 65 dB DNL contours. Following this EIS process, the Navy would undertake a formal Air Installation Compatible Use Zone update process to formalize the recommendation for new APZs and confirm existing APZs. 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 the proposed APZs under any alternative selected for implementation.

Recreation and Wilderness

Alternative 1, Scenarios A and B; Alternative 2, Scenarios A and B; and Alternative 3, Scenario B, would have localized significant impacts on county and municipal parks as a result of increased annual average noise levels. There would be no significant impacts to recreation as a result of increased demand under these alternatives and no significant impacts to wilderness areas. Alternative 1, Scenario C; Alternative 2, Scenario C; and Alternative 3, Scenarios A and C, would have no significant impacts to the management, use of, or demand for recreational areas and no significant impacts to wilderness areas.

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

The VQ squadron disestablishment that could affect land use over population areas would likely decrease air operations and noise contours, or have only a minor change. As such, cumulative impacts to land use could occur, but no significant cumulative impacts on land use 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 65 dB DNL noise contour (see Figure 3.6-1). As noted on Figure 5-1, these projects include all construction projects located at Ault Field as well as the following projects: Northwest Training and Testing EIS/OEIS; Hospital Expansion Project; and the engineering study and infrastructure 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 actions occurring at Ault Field would require appropriate consultation and permitting in order to avoid and minimize potential impacts to archeological resources, architectural resources, and American Indian traditional resources. 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

There would be minimal to no impact to archaeological sites previously recorded within Ault Field and OLF Coupeville during the construction. The Navy is consulting with the Washington State Historic Preservation Office (SHPO), the Advisory Council on Historic Preservation, American Indian tribes and nations, and interested parties regarding archaeological resources.

Architectural Resources

Minimal to no direct and indirect impacts are anticipated to occur to on-station historic resources during construction. Minimal indirect impacts are anticipated to occur during operations. Minimal to no impacts are anticipated to occur during construction to off-station resources because activities are limited to Ault Field. Minimal to moderate indirect impacts are anticipated to occur to off-station historic resources during operation. The Navy is consulting with the Washington SHPO, American Indian tribes and nations, and consulting parties regarding architectural resources.

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 or historic buildings and structures. Federal and state projects with potential for impacts on cultural resources would undergo Section 106 review under the National Historic Preservation Act, which includes consultation with the Washington SHPO and affected American Indian tribes and nations, other interested parties, and the Advisory Council on Historic Preservation. 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 dBA DNL noise contour areas 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 Northwest Training and Security EIS/OEIS; the Triton Mission Control; and the medical/dental clinic.

Federal agencies are tasked with the requirement to consider traditional resources and the interests of federally recognized American Indian tribes and nations 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 National Historic Preservation Act 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 American Indian tribes and nations regarding its activities that may have the potential to 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 NAS Whidbey Island 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 greenhouse gas emissions. The Navy has invited government-to-government consultation with potentially affected American Indian tribes and nations 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. To date, no tribes have requested government-to-government consultation on the Proposed Action.

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 American Indian tribes and nations; 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 American Indian tribes and nations. 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 the NWTT EIS/OEIS and improvements to the City of Oak Harbor's clean water facilities and water system. A summary of relevant impacts of each action is described below.

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 EOD use; 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 Biological Opinion (BO). As part of this BO, the NMFS concluded that Navy training and testing activities in the NWTT action area and the NMFS' issuance of the Marine Mammal Protection Act regulations and level of activity are likely to adversely affect but will not appreciably reduce the ability of the threatened and endangered species under the 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 July 21, 2016, 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 Northwest Training and Testing Activities, as proposed, is not likely to jeopardize the continued existence of 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 Northwest Training and Testing 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 Northwest Training and Testing Activities, as proposed, is not likely to jeopardize the continued existence of the short-tailed albatross.

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

Aircraft Operations

Under the Proposed Action, the greatest potential for impacts on biological resources would occur during aircraft operations, when noise and collision impacts could occur.

Aircraft operations at the NAS Whidbey Island complex would increase under each of the action alternatives, as compared to the No Action Alternative; however, mammals inhabiting the study area are already exposed to a high level of long-term aircraft operations and other human-made disturbances. Terrestrial mammals in the study area have presumably habituated to the very high level of noise and visual disturbances at Ault Field and OLF Coupeville, as has been reported for some mammals (i.e., ungulates) in other areas of repeated exposure (Efroymson et al., 2000). Thus, the implementation of the Proposed Action would not significantly affect terrestrial mammals by disturbances from aircraft operations.

Although information regarding reptile and amphibian responses to noise, aircraft noise in particular, is limited, existing data suggest that sound pressure levels of 95 dBA and higher may disturb them or affect their hearing (Bondello, 1976; Brattstrom and Bondello, 1983; Efroymson et al., 2000). Given that reptiles and amphibians occurring in the study area are already exposed to high levels of noise, any reptiles and amphibians that occupy the study area would presumably be habituated to these noise levels, as were desert tortoises in the Bowles et al. (1999) study. Therefore, the aircraft noise impacts on reptiles and amphibians under each of the three alternatives would not differ significantly from the No Action Alternative.

As noted previously, aircraft operations at the NAS Whidbey Island complex would increase under each of the action alternatives, as compared to the No Action Alternative. Birds in the study area are already exposed to high levels of long-term aircraft operations and other human-made disturbances and are presumably habituated. Therefore, implementation of any of the action alternatives would not result in significant impacts on birds during either the breeding or non-breeding seasons. Marbled murrelets have been documented at a number of locations in the study area, and they would be susceptible to disturbances from aircraft operations. However, marbled murrelets in the study area are already exposed to existing aircraft operations on the NAS Whidbey Island, which suggests they are habituated

to the existing high levels of aircraft activity as well as other human-made disturbances (e.g., boat traffic). Existing research indicates that most individuals would not respond to aircraft overflights, and those that do may return to normal foraging and loafing activities relatively soon after the disturbances end (Speckman, Piatt, and Springer, 2004; Hentze, 2006; Bellefleur, Lee, and Ronconi, 2009). For these reasons, the Proposed Action under each of the three action alternatives would not result in significant aircraft-related, sensory disturbance impacts on marbled murrelets.

Aircraft-wildlife Strike Effects

The increase in operations would result in an increase in the potential for aircraft-wildlife strikes, and the potential increase would be similar under all three alternatives as the increase in air operations is similar. However, NAS Whidbey Island would continue to implement the measures outlined in the installation's BASH plan to minimize the risk of a strike occurring. Therefore, it is expected that the number of wildlife-aircraft strikes at the NAS Whidbey Island complex would remain relatively low compared to the high number of operations. Wildlife-aircraft strikes would not have significant impacts on local wildlife populations, including special status species (such as the marbled murrelet).

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. As noted previously, the full scope of some of the identified present and reasonably foreseeable actions is unknown at this time. Therefore, certain assumptions pertaining to decreases and increases in aircraft operations must be drawn as a result of the individual proposed actions.

As noted in Section 4.8 and also summarized in this section, the Proposed Action is not expected to result in significant sensory disturbance effects or aircraft-wildlife strike effects to any species of mammal, bird, or reptile/amphibian. 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 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.

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 action 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 approximately 2 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 action 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 action 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 action 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. A summary of relevant impacts of each action is 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 2020. The 2008 Final EIS accounted for the VQ mission to be at NAS Whidbey Island beyond 2020. VQ Squadron Two (VQ-2) was disestablished in FY 12, and personnel were consolidated with VQ Squadron One (VQ-1). Personnel loading for VQ-1 following consolidation is approximately 640. Therefore, it would be expected that impacts to socioeconomics would result in a reduction of approximately 640 personnel.

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 786 military personnel and dependents under Alternative 1; 1,407 military personnel and dependents under Alternative 2; and 799 military personnel and dependents under Alternative 3 are expected to reside in the two 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 action 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 371 to 664 personnel under the three proposed 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.

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 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.

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 Northwest Training and Testing 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 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 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 2020. 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/scenarios, there are minority populations and low-income populations living within the affected environment. The Navy has concluded that although 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), these impacts do not disproportionately impact environmental justice communities.

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 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 impacts on any environmental justice communities 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.

Although the Navy has determined there to be no disproportionately high or adverse impacts on environmental justice communities under this Proposed Action, the Navy has embarked on a robust community outreach program as part of this EIS process. As detailed in Section 1.9, Public and Agency Participation and Intergovernmental Coordination, the Navy has held eight public scoping meetings 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 public comment period 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, and Island County, Washington.

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 Triton mission control station and the medical/dental clinic would likely require additional construction-related traffic during construction activities. Similarly, additional personnel may commute to and from the installation once construction is completed.

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 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 171 and 2,321 new trips per weekday under Alternative 1; 306 to 4,154 new trips per weekday under Alternative 2; and 174 to 2,359 new trips per weekday

under Alternative 3 within the study area on major roadways (i.e., I-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 action 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. 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: Fleet Air Reconnaissance 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, 2015c). 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, approximately 2.1 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 projected 2.1 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 action 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 action 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 (Triton Mission Control Station; Next Generation Jammer; and the Medical/Dental Clinic) 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 approximately 2 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 the use of 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 (Triton Mission Control Station; Next Generation Jammer; and the Medical/Dental Clinic) 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.

Final CEQ guidance (CEQ, 2016) states that 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.