FINAL
ENVIRONMENTAL ASSESSMENT
FOR
THE TRANSITION FROM C-2A TO CMV-22B AIRCRAFT
AT
FLEET LOGISTICS CENTERS
NAVAL AIR STATION NORTH ISLAND AND
NAVAL STATION NORFOLK

July 2018
ABSTRACT

Designation: Environmental Assessment

Title of Proposed Action: Transition from C-2A to CMV-22B Aircraft at Fleet Logistics Centers

Project Locations: Naval Air Station (NAS) North Island, California and Naval Station (NS) Norfolk, Virginia

Lead Agency for the EA: Department of the Navy

Cooperating Agency: Department of the Air Force (for proposed transient flight activities at Joint Base Langley-Eustis’ Felker Army Airfield)

Affected Regions: San Diego County, California and Hampton Roads Metropolitan Area, Virginia

Action Proponent: Commander, United States Fleet Forces, Department of the Navy

Point of Contact: Naval Facilities Engineering Command, Atlantic Division Attn: Code EV21JB 6506 Hampton Boulevard Norfolk, Virginia 23508

Date: July 2018

The Department of the Navy has prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act, as implemented by the Council on Environmental Quality regulations and Navy regulations for implementing the National Environmental Policy Act. The Proposed Action would provide facilities and functions to support the replacement of the C-2A Greyhound with the new CMV-22B Osprey (Navy V-22) at existing logistics support centers, NAS North Island, California and NS Norfolk, Virginia. Under the Proposed Action, the Navy plans to replace 27 legacy C-2A aircraft operated by existing logistics support squadrons with 38 Navy V-22 aircraft operated by fleet logistics support multi-mission squadrons; establish a Navy V-22 training squadron to train pilots and aircrews, and a maintenance school for maintenance personnel; construct, renovate, and maintain facilities to accommodate Navy V-22 squadron aircraft and personnel; and conduct Navy V-22 flight training operations. This EA evaluates the potential environmental impacts associated with the transition and the alternatives for the location of the fleet training squadron and maintenance school (NAS North Island and NS Norfolk), and the No Action Alternative (as a baseline for comparing the two action alternatives) to the following resource areas: airfields and airspace, noise, land use compatibility, public health and safety, air quality, transportation, biological resources, water resources, infrastructure, cultural resources, hazardous materials and wastes, and socioeconomics.
EXECUTIVE SUMMARY

ES.1 Proposed Action

The United States (U.S.) Department of the Navy (Navy) proposes to provide facilities and functions to support the replacement of the C-2A Greyhound aircraft with the new CMV-22B Osprey aircraft, herein referred to as “Navy V-22,” at existing West and East Coast Fleet Logistics Centers Naval Air Station (NAS) North Island, California and Naval Station (NS) Norfolk, Virginia. Under this Proposed Action, the Navy plans to:

- replace 27 legacy C-2A aircraft operated by existing fleet logistics support squadrons with 38 Navy V-22 aircraft operated by fleet logistics support multi-mission squadrons;
- establish a Navy V-22 training squadron for pilots and aircrews;
- establish a maintenance school for maintenance personnel;
- construct, renovate, and maintain facilities to accommodate Navy V-22 squadron aircraft and personnel;
- make adjustments to personnel levels (increases or decreases) associated with the Navy V-22 training squadron and the maintenance school; and
- conduct Navy V-22 flight training operations.

The existing fleet logistics support squadrons are based at NAS North Island (within the consortium of Naval Base Coronado [NBC] installations), and Chambers Field located within NS Norfolk. The fleet logistics centers provide logistics, supply, and support services to fleet units and shore commands. The fleet logistics support squadrons will be replaced by the fleet logistics support multi-mission squadron.

The Proposed Action would be implemented over a 10-year period beginning in 2018 with facility renovations and some personnel actions at NAS North Island and NS Norfolk. The transition of fleet logistics support squadrons from C-2A to Navy V-22 would begin with Navy V-22 aircrews and maintenance personnel initially training at the existing U.S. Marine Corps MV-22B training squadron and maintenance school at Marine Corps Air Station (MCAS) New River, North Carolina for several years before returning to their home base location. Eventually, the Navy V-22 training squadron and a maintenance school would be established, either on the West Coast or the East Coast, to fully support Navy training requirements.

ES.2 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to provide the logistics support community the facilities and functions needed to support the replacement of the fixed-wing C-2A aircraft with the Navy V-22 tilt-rotor aircraft to meet updated operational requirements and enhance the logistics support mission.

The Proposed Action is needed because the older C-2A aircraft has reached the end of its service life. Increasing maintenance requirements limit the use of the aging C-2A for the aircraft carrier on-board delivery mission. The Proposed Action would provide the facilities needed to efficiently transition the C-2A to the Navy V-22 aircraft without interruption of the time-critical logistics support mission for carrier strike groups at sea.

The Navy has prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA), as implemented by the Council on Environmental Quality Regulations (CEQ) and Navy regulations for implementing NEPA.
ES.3 Alternatives Considered

In developing the proposed range of alternatives that meet the purpose of and need for the Proposed Action, the Navy carefully reviewed these important considerations:

- colocation with fleet logistics centers that service aircraft carriers
- maximization of existing facilities and support
- colocation of Navy V-22 training squadron with fleet logistics support squadrons

Based upon these considerations, the Navy evaluated two action alternatives that meet the purpose of and need for the Proposed Action and a No Action Alternative.

ES.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur; the Navy would not provide facilities and functions to support the replacement of C-2A aircraft with the Navy V-22 at existing West and East Coast logistics support centers that service aircraft carriers. The Navy would not renovate, expand, or construct new facilities or infrastructure. Consequently, there would be no facilities or functions to support the Navy V-22 aircraft. The carrier on-board mission would continue to be performed by VRC-30 at NAS North Island and VRC-40 at NS Norfolk using the C-2A aircraft. Personnel levels would remain the same, 390 C-2A personnel at NAS North Island and 581 C-2A personnel at NS Norfolk. Additionally, C-2A naval aviators and aircrews would continue to be trained to join the fleet operational squadrons at NS Norfolk by the existing fleet training squadron.

However, the existing C-2A aircraft have reached the end of their service life. Increasing maintenance requirements limit the use of the aging C-2A for the aircraft carrier on-board delivery mission, which would prevent the Navy from supporting its forward deployed forces effectively. The No Action Alternative would not meet the purpose of and need for the Proposed Action; however, the conditions associated with the No Action Alternative serve as reference points for describing and quantifying the potential impacts associated with the action alternatives.

The analysis in this EA first compares the No Action Alternative to the baseline conditions, and then compares the action alternatives to the No Action Alternative. The expected end-state year is 2028 for both the No Action Alternative and the action alternatives because the proposed aircraft transition would be complete by 2028. The baseline conditions for most resource areas in 2017 would be the same as No Action Alternative. However, because of known programmed aircraft actions that are ongoing, the number of aircraft and corresponding aircraft operations in the existing baseline will change by 2028 regardless of the Proposed Action; therefore, the projected 2028 operations without the Proposed Action are analyzed under the No Action Alternative as a point of reference.

ES.3.2 Alternative 1: C-2A to Navy V-22 Transition with West Coast Fleet Training Squadron and Maintenance School

Under Alternative 1, the Navy would provide facilities and functions to support the replacement of the existing C-2A aircraft with Navy V-22 aircraft at NAS North Island and NS Norfolk. The Navy V-22 training squadron and maintenance school would be established at NAS North Island. The Navy would begin to transition the C-2A to the Navy V-22 in 2020 when the first aircraft are expected to arrive at NAS North Island. For the next several years, there would be a mix of C-2A and Navy V-22 aircraft and personnel, until the transition from the C-2A to the Navy V-22 is complete in the 2028 timeframe. Total fleet logistics support squadron aircraft at NAS North Island would increase from 10 to 23 compared to the
No Action Alternative. At NS Norfolk, total fleet logistics support squadron aircraft would decrease from 17 aircraft to 15 aircraft compared to the No Action Alternative.

Under Alternative 1, there would be an increase of 341 personnel at NAS North Island compared to the No Action Alternative, whereas NS Norfolk would experience a reduction of 126 personnel. Alternative 1 would include construction and/or renovation of facilities at NAS North Island and NS Norfolk that would include aircraft hangars, parking aprons, taxiways, helipads, wash racks, and pilot and maintenance training facilities. Pilot training facilities would include installation of a flight simulator called a flight training device (FTD) at NAS North Island and a containerized flight training device (CFTD) at NS Norfolk. Two Navy V-22 training squadron aircraft would also require hangar space at NAS North Island under Alternative 1. Hangar space construction and pavement renovation would total approximately 156,000 square feet and 35 acres, respectively, at NAS North Island and 62,000 square feet and 24 acres at NS Norfolk. At NAS North Island, 26 existing buildings would be demolished for construction of new facilities, and the interiors of three existing NAS North Island buildings outside the project area would be partially renovated.

The Navy anticipates a total of approximately 16,000 annual airfield operations by Navy V-22 aircraft at NAS North Island under Alternative 1, which represents an increase of 11,500 from No Action Alternative C-2A operations. Total aircraft operations at NAS North Island would increase from 79,800 to 91,300, a 14 percent increase. The resulting total projected operations for Alternative 1 are well within recent historical averages at NAS North Island (e.g. 138,000 in 2002; 95,000 in 2004; 102,000 in 2010) and would not represent a significant operational change. Additionally, the Navy anticipates a total of approximately 7,000 annual Navy V-22 airfield operations at NS Norfolk, which would be about the same as C-2A operations under the No Action Alternative.

Navy V-22 flight training would also require the use of secondary training airfields in the vicinity of NAS North Island and NS Norfolk. Secondary airfield training requirements would be distributed among six West Coast and six East Coast Department of Defense (DoD) airfields. The Navy needs flexibility when scheduling and executing training operations and the usage rates at each airfield may vary from year to year due to factors such as weather, wind, facility maintenance, and scheduling conflicts with other military aircraft.

Under Alternative 1, approximately 12,500 annual operations would be distributed across six West Coast airfields in the vicinity of NAS North Island, and approximately 4,600 annual operations would be distributed across six East Coast airfields in the vicinity of NS Norfolk. On each coast, the majority of operations would be distributed among three main secondary airfields, and a smaller number could occur at three additional airfields. On the West Coast, a maximum of 80 percent (up to approximately 10,000) of the operations could occur at either Naval Auxiliary Field (NAF) El Centro, MCAS Miramar, or MCAS Camp Pendleton; and a maximum of 20 percent (up to approximately 2,500) could occur at either Naval Auxiliary Landing Field (NALF) San Clemente, Marine Corps Outlying Field (MCOLF) Camp Pendleton, or MCAS Yuma. On the East Coast under Alternative 1, a maximum of 80 percent (up to approximately 3,700) of the operations could occur at either NALF Fentress, Felker Army Airfield (AAF), or MCAS New River; and 20 percent (up to approximately 900) could occur at either Blackstone AAF, MCOLF Bogue, or MCOLF Oak Grove.

While the Navy anticipates that total Navy V-22 flight training requirements would be distributed among the six West Coast and six East Coast airfields to achieve the needed throughput, Alternative 1 assumes there is some potential, although unlikely, for the maximum number of Navy V-22 flight training
operations to occur in any year at one location, up to the stated maximum (i.e., up to 80 percent at one of the main secondary airfields and up to 20% at one of the other secondary airfields). For example, up to approximately 10,000 airfield operations may occur in any given year at any of the following: NAF El Centro, MCAS Miramar, or MCAS Camp Pendleton, and up to approximately 2,500 operations could occur at either NOLF San Clemente, MCOLF Camp Pendleton, or MCAS Yuma.

Existing operations at the other DoD airfields where most of the Navy V-22 secondary airfield training operations are proposed, including those of fixed-wing jet and rotary-wing aircraft, have been previously analyzed in other NEPA documents listed in Section 1.6 (Key Documents). Proposed annual operations at secondary airfields would be similar to existing operations and would represent a small percentage of the operations that have already been analyzed under NEPA. There would be no more than a 15 percent increase in total airfield operations per year at any one airfield. Actual operations proposed would be variable, and the maximum operations occurring at any one airfield would be unlikely in any given year, and even more unlikely in consecutive years. The Navy V-22 operations would be expected to have negligible environmental impacts to the airspace and airfield environments. Therefore, environmental and operational impacts associated with Navy V-22 use of secondary training airfields would not be significant.

ES.3.3 Alternative 2: C-2A to Navy V-22 Transition with East Coast Fleet Training Squadron and Maintenance School

Under Alternative 2, the Navy would provide facilities and functions to support the replacement of the existing C-2A aircraft with Navy V-22 aircraft at NAS North Island and NS Norfolk. The Navy V-22 training squadron and maintenance school would be established on the East Coast at NS Norfolk under Alternative 2, as compared with Alternative 1 where it would be established on the West Coast. The Navy would begin to transition the C-2A to the Navy V-22 in 2020, as described in Alternative 1, except that the last C-2A would leave NAS North Island in 2024, while the last C-2A would leave NS Norfolk by 2026. The transition at both NAS North Island and NS Norfolk would be completed by 2028. Total fleet logistics squadron aircraft at NAS North Island would increase from 10 to 18 compared to the No Action Alternative, and at NS Norfolk would increase from 17 aircraft to 20 aircraft.

Under Alternative 2, there would be an increase of 161 personnel at NAS North Island compared to the No Action Alternative, and NS Norfolk would experience an increase of 54 personnel. Alternative 2 would include construction and/or renovation of facilities at NAS North Island and NS Norfolk that would include aircraft hangars, parking aprons, taxiways, helipads, wash racks, and pilot and maintenance training facilities. Pilot training facilities would include installation of an FTD at NAS North Island and a CFTD at NS Norfolk. Two Navy V-22 training squadron aircraft would also require hangar space at NS Norfolk under Alternative 2. Hangar space construction and pavement renovation would total approximately 102,200 square feet and 24 acres, respectively, at NAS North Island and approximately 96,100 square feet and 36 acres at NS Norfolk. At NAS North Island, 17 existing buildings would be demolished for construction of new facilities, and the interiors of three existing NAS North Island buildings outside the project area would be partially renovated.

The Navy anticipates a total of approximately 10,300 annual airfield operations by Navy V-22 aircraft at NAS North Island under Alternative 2, which represents an increase of 5,800 operations from No Action Alternative C-2A operations. Total annual operations of all aircraft at NAS North Island would increase from 79,800 to 85,600, a 7 percent increase. This level of operations at NAS North Island is consistent with recent historical operations. Additionally, the Navy anticipates a total of approximately 12,700
annual airfield operations at NS Norfolk, which represents an increase of 5,700 operations from No Action Alternative C-2A operations. Total annual operations of all aircraft at NS Norfolk would increase from 66,900 to 72,600, an 8.5 percent increase.

Under Alternative 2, Navy V-22 flight training would also occur at secondary training airfields. Approximately 7,500 annual Navy V-22 operations would be distributed across six West Coast airfields in the vicinity of NAS North Island, and approximately 9,600 annual operations would be distributed across six East Coast airfields in the vicinity of NS Norfolk. On the West Coast, a maximum of 80 percent (up to approximately 6,000) of the operations could occur at either NAF El Centro, MCAS Miramar, or MCAS Camp Pendleton; and a maximum of 20 percent (up to approximately 1,500) could occur at either NALF San Clemente, MCOLF Camp Pendleton, or MCAS Yuma. On the East Coast under Alternative 2, a maximum of 80 percent (up to approximately 7,700) of the operations could occur at either NALF Fentress, Felker AAF, or MCAS New River; and 20 percent (up to approximately 1,900) could occur at Blackstone AAF, MCOLF Bogue, or MCOLF Oak Grove.

As described under Alternative 1, while the Navy anticipates that total Navy V-22 flight training requirements would be distributed among the six West Coast and six East Coast airfields, Alternative 2 also assumes there is some potential, although unlikely, for the maximum number of Navy V-22 secondary airfield operations to occur in any year at one location, up to the stated maximum of 80 percent at one of the main secondary airfields and 20 percent at one of the other secondary airfields. For example, up to approximately 6,000 airfield operations may occur in any given year at any of the following: NAF El Centro, MCAS Miramar, or MCAS Camp Pendleton; and up to approximately 1,500 operations could occur at either NOLF San Clemente, MCOLF Camp Pendleton, or MCAS Yuma.

Proposed annual operations at the secondary airfields would be similar to existing operations and would represent a small percentage of the operations that have already been analyzed under NEPA. There would be no more than an 11 percent increase in total airfield operations per year at any one airfield. Alternative 2 impacts would be the same as described for Alternative 1. The Navy V-22 secondary airfield operations would be expected to have negligible environmental impacts to the airspace and airfield environments and would not be significant.

ES.4 Summary of Environmental Resources Evaluated in the Environmental Assessment

CEQ regulations, NEPA, and Navy instructions for implementing NEPA, specify that an EA should address those resource areas potentially subject to impacts. In addition, the level of analysis should be commensurate with the anticipated level of environmental impact. The following resource areas have been analyzed in detail in this EA: airfields and airspace, noise, public health and safety, air quality, transportation, biological resources, water resources, infrastructure, cultural resources, hazardous materials and waste, and socioeconomics.

Because potential impacts were considered to be negligible or nonexistent, the following resource areas were not analyzed in detail in this EA: land use compatibility, community/emergency services, parks, recreation, geological resources, and visual resources.

ES.5 Summary of Potential Environmental Consequences of the Action Alternatives and Major Mitigating Actions

Potential impacts to resources at NAS North Island and NS Norfolk are described below. The analysis contained in this EA has determined that the Proposed Action and alternatives would not result in significant environmental impacts. Table ES-1 provides a tabular summary of the potential impacts to
the resources associated with each of the alternatives analyzed and compares the potential impacts at NAS North Island and NS Norfolk.

**Airfields and Airspace.** Alternative 1 and Alternative 2 would result in an increase of 14 percent and 7 percent in total airfield operations at NAS North Island, respectively. The increase would be well within recent historical operations levels in the last 15 years at NAS North Island and would not be significant. At NS Norfolk under Alternative 1, annual airfield operations of Navy V-22 would be about the same as C-2A operations under the No Action Alternative. Therefore, Alternative 1 would have no impact to airfields and airspace at Chambers Field. Alternative 2 would increase annual airfield operations at NS Norfolk by approximately 8.5 percent. This small increase would not impact civilian aircraft or other users in the vicinity of NAS North Island and NS Norfolk, as existing standard operating procedures and course rules would continue to apply to minimize safety risks. Navy V-22 usage of associated airspace would be consistent with current operations, and there would be no direct or indirect impact to airspace.

Under Alternative 1 and Alternative 2 at NAS North Island and NS Norfolk, transit flights to secondary airfields would be dispersed throughout the available airspace and would have negligible impact to airspace. No changes to airspace would be required for Alternative 1 or Alternative 2. Navy V-22 transits would occur at altitudes exceeding 3,000 feet above ground level. At that altitude, noise impacts or impacts to other environmental resources are negligible or nonexistent. Navy V-22 operations would be managed in accordance with existing procedures and established local approach and departure patterns at each airfield to avoid conflicts and minimize safety risks.

**Noise.** Construction and operations of Alternative 1 or Alternative 2 would not result in a perceptible change to noise at NAS North Island or NS Norfolk. For noise from aircraft operations, none of the alternatives would result in a perceptible change in the DoD’s primary noise metric, Community Noise Equivalent Level (CNEL) at NAS North Island or Day-Night Average Sound Level (DNL) at NS Norfolk. Noise levels for the alternatives would be nearly indistinguishable from the baseline. This indicates that the aircraft and types of events that cause the primary contribution to the CNEL or DNL are not affected by the proposed alternatives at NAS North Island or NS Norfolk. The alternatives would have no impact to the Air Installations Compatible Use Zones (AICUZ) Programs at NAS North Island or NS Norfolk.

Supplemental noise analysis was conducted to determine the noise exposure (DNL or CNEL), loudest noise events (Sound Exposure Level and maximum sound level), and probability of sleep disturbance at specific locations (percent probability of awakening). Results of supplemental noise metric analysis showed that at 13 points of interest (POIs) in the NAS North Island community and 18 POIs in the NS Norfolk community, there would be no perceptible change in noise exposure in either community under Alternative 1 or 2. The loudest events showed no difference at any of the POIs at NAS North Island or NS Norfolk from the baseline or in comparing the alternatives.

For sleep disturbance with windows closed, there would be no change in the probability of awakening at 12 of the 13 POIs at NAS North Island during any given night under any of the alternatives. Under Alternative 2 at one POI, near the approach end of Runway 29 (Coronado Municipal Beach), there would be a 1 percent increase in the probability of awakening under the condition that a person would be trying to sleep there with the windows open during night flying activity at NAS North Island.

Supplemental noise analysis was performed at three representative locations (P1, P2, and P3) on the California least tern nesting area at NAS North Island. The modeling results from the noise study showed that under Alternative 1 or 2, the CNEL change at each point on the California least tern nesting area.
would be less than 1 decibel (dB) to 1 dB at P1, P2, and P3, which is assumed to be imperceptible to the least terns. The noisiest events are all produced by aircraft that would not change under the Proposed Action.

For 16 of the 18 POIs at NS Norfolk, there would be no change in the probability of awakening under Alternative 1 or Alternative 2. At two POIs immediately adjacent to the east end of the main runway, there would be a 2 to 3 percent increase in the probability of awakening under Alternative 1, and a 1 to 3 percent increase under Alternative 2. The 3 percent increase would result at the POI closest to the runway under the condition that a person would be trying to sleep there with the windows open during night flying activity at the NS Norfolk.

While vibration may be a component of the noise from Navy V-22, the level of noise would not be high enough to cause structural damage. The loudest Sound Exposure Level from Navy V-22 operations would not exceed thresholds for rattling of objects in buildings (110 dB) or damage (130 dB) at any of the POIs. Therefore, vibration effects from Navy V-22 operations would be expected to be minor.

The Navy would continue to implement noise abatement procedures published in the 2013 NBC Instruction 3710.7V for NAS North Island and in the 2009 AICUZ Study at NS Norfolk.

**Public Health and Safety.** With implementation of the Alternative 1 or Alternative 2, the Navy would continue to meet the primary goal of the AICUZ Programs at NAS North Island and NS Norfolk, which is to protect the public’s health, safety, and welfare through collaboration with the local communities. Alternative 1 would slightly increase the volume of air operations at NAS North Island, compared to the No Action Alternative, and Alternative 2 would slightly increase the volume of air operations at NAS North Island and NS Norfolk. However, this would not change each installation’s ability to comply with military airfield safety procedures for aircraft arrival and departure flight tracks and for operations surrounding the airfields.

The analysis determined that potential environmental impacts would be negligible, and the alternatives would not change each installation’s ability to comply with military airfield safety procedures. Therefore, in accordance with Executive Order 13045 Protection of Children from Environmental Health Risks and Safety Risks, the EA analysis has determined that Alternatives 1 and 2 would not result in environmental health risks or safety risks that may disproportionately affect children.

The operation of the Navy V-22 would not change airfield habitat or its attractiveness to birds and other wildlife; therefore, the alternatives would not impact the bird/animal aircraft strike hazard (BASH) programs at NAS North Island or NS Norfolk.

**Air Quality.** Total air pollutant emissions associated with construction activities under Alternative 1 and 2 at NAS North Island and NS Norfolk, even if all construction activities were to occur in one year and not two, would be well below the applicable annual significance thresholds. Navy V-22 transits would occur at altitudes exceeding 3,000 feet above ground level. At that altitude, emissions are above the U.S. Environmental Protection Agency’s presumed mixing height for criteria air pollutants.

The Navy has determined that the potential emissions of Alternatives 1 and 2 at NAS North Island would not cause or contribute to a violation of any National Ambient Air Quality Standards (NAAQS) or California Ambient Air Quality Standards. Emissions would be below the applicable General Conformity de minimis thresholds. NS Norfolk is in the City of Norfolk, which is within the Hampton Roads Intrastate Air Quality Control Region (AQCR). The Hampton Roads Intrastate AQCR is in attainment of all NAAQS; therefore, the Proposed Action does not require a General Conformity evaluation. The net increase in
emissions from the replacement of existing C-2A aircraft operations with the proposed Navy V-22 operations at NAS North Island or NS Norfolk under Alternatives 1 and 2 would not exceed any Prevention of Significant Deterioration (PSD) thresholds. Emissions increases to the global inventory of greenhouse gases under Alternatives 1 or 2 would produce a negligible contribution to future climate change.

**Transportation.** Alternatives 1 and 2 would result in a short-term increase in construction delivery trucks and construction worker vehicles at NAS North Island and NS Norfolk, which would have a temporary impact on the cities of Coronado and Norfolk roadways. On average, approximately five truck trips per work day (Monday through Friday) would travel to NAS North Island over a construction period of 24 months. Under Alternative 2, approximately four truck trips per work day would travel to the construction site over a period of 24 months. At NS Norfolk, on average, approximately one truck trip per work day would travel over a construction period of 24 months. To minimize the impacts of construction traffic at NAS North Island or NS Norfolk, the Navy would consider establishment of construction truck routes and/or construction worker carpooling.

Under Alternative 1 at NAS North Island, an additional 341 personnel would generate an estimated 340 commuter trips, referred to as average daily traffic (ADT), which is less than 1 percent of existing NAS North Island daily traffic. This increase in ADT was previously accounted for in projected future cumulative projects analyzed by the Navy in a 2008 traffic impact study. Cumulative traffic impacts are discussed in **Section 5.4.5 (Cumulative Impacts – Transportation).** Under Alternative 2, an additional 161 personnel would generate an estimated 160 ADT, less than 1 percent of existing NAS North Island daily traffic.

Under Alternative 1 at NS Norfolk, a reduction of 126 personnel would result in an estimated decrease of 125 ADT, less than 1 percent of existing NS Norfolk daily traffic. Under Alternative 2, an increase of 54 personnel would generate an estimated increase of 55 ADT, less than 1 percent of existing NS Norfolk daily traffic. These changes would have a negligible effect on traffic.

Alternatives 1 and 2 would have a minimal impact on the capacity of carpool, vanpool, and other alternative transportation at NAS North Island and NS Norfolk. The Navy continues to work together with the communities and the transportation authorities to plan for the enhancement of the local and regional transportation system to provide residents and military personnel with increased options for transportation.

**Biological Resources.** Implementation of Alternative 1 or Alternative 2 would not result in significant impacts to biological resources at NAS North Island or NS Norfolk.

Alternative 1 would result in an increase in aircraft operations at NAS North Island, and Alternative 2 would increase aircraft operations at NAS North Island and NS Norfolk. The operations increases have the potential to result in an increase in BASH, including takes of migratory birds, as defined by the Migratory Bird Treaty Act (MBTA). Aircraft operations would be conducted in accordance with the BASH Plan and the NBC and NS Norfolk Integrated Natural Resources Management Plans (INRMPs), which would minimize the risk of collision impacts to wildlife at NAS North Island and NS Norfolk. Additionally, no attractants would be created under Alternatives 1 or 2 that would increase the concentration of birds at the airfields.

To ensure that construction activities would avoid impacting birds protected under the MBTA (including Birds of Conservation Concern) building demolition work and tree removal (if any) would, to the extent feasible, take place outside of the breeding season (non-breeding season is September 1 to February...
14). If this work must be conducted during the bird breeding season, a qualified biologist must confirm that no active nest would be impacted by these actions. At NAS North Island, if an active nest is found in the project area, any nest removal action must be overseen by the NBC Wildlife Biologist. The NBC Wildlife Biologist, in coordination with the qualified biologist, must confirm that there would be no impacts to active nests before construction work could resume. In addition, new buildings at NAS North Island would incorporate bird-friendly design to prevent migratory birds from colliding with buildings, primarily through consideration of glass and lighting design. Therefore, impacts to MBTA-protected bird species and their active nests would be avoided during construction. Aircraft operations under the Proposed Action are a military readiness activity. The risk of impacts to MBTA species would be expected to remain similar to existing conditions. Therefore, Alternatives 1 and 2 are not anticipated to have a significant adverse effects on a population of migratory bird species (including Birds of Conservation Concern) that would result in the need for mitigation and consultation with the U.S. Fish and Wildlife Service (USFWS).

The Navy has determined that implementing Alternatives 1 or 2 at NAS North Island may affect, but is not likely to adversely affect the California least tern and the western snowy plover; therefore, the Navy has conducted informal consultation with the USFWS. In a letter dated March 26, 2018, the USFWS concurred with the Navy’s determination. Correspondence with the USFWS is included in Appendix D. In its concurrence letter, the USFWS stated, “Based on the site and species information [described in the concurrence letter] and the Navy’s commitment to implement the proposed conservation measures, we conclude that all potential impacts of the project on the California least tern and western snowy plover will be avoided or reduced to a level of insignificance warranting our concurrence with the Navy’s determination that the project is not likely to adversely affect the California least tern and western snowy plover.” No construction within 300 feet of the MAT site and no heavy construction within 500 feet of the MAT site would occur during the California least tern breeding season. Construction greater than 500 feet from the MAT site that could result in noise or visual impacts to nesting terns (e.g., building demolition, jackhammering) would be conducted outside of the California least tern breeding season to the maximum extent practicable. Western snowy plover nests found on the airfield would be collected for captive-rearing in accordance with the Ongoing Airfield Operations and Management Strategies at NAS North Island Biological Opinion (BO) (FWS-SDG-3908.3, 1 April 2005). Therefore, construction would not impact nesting western snowy plovers. Aircraft operations within the taxiway and parking apron at NAS North Island would not result in significant impacts to California least tern and western snowy plover. However, the proposed increase in aircraft operations under Alternatives 1 or 2 could result in a minor increase in BASH potential at NAS North Island, and there is a potential for individual California least tern and western snowy plover to be affected by a strike. Aircraft occasionally strike California least tern and western snowy plovers at the NAS North Island airfield under baseline conditions. Given the overall very low numbers of BASH incidents involving these species over the past 35 years (a total of 7 incidents of aircraft striking California least tern and 2 incidents of aircraft striking western snowy plover) compared to the number of existing aircraft operations, a minor increase in aircraft operations would not be expected to increase take of California least tern or western snowy plover above that already authorized in the Ongoing Airfield Operations and Management Strategies at NAS North Island BO (FWS-SDG-3908.3, 1 April 2005). Continued adherence to the BASH Plan would minimize the risk of collision impacts to wildlife at NAS North Island.

No federally endangered, threatened, or candidate species of flora or fauna have been confirmed at NS Norfolk. Calls made by the state-listed Rafinesque’s eastern big-eared bat and tri-colored bat have been recorded at NS Norfolk.
Ecosystems can serve as natural buffers from extreme events such as flooding. Climate change and human modification may restrict ecosystems’ ability to temper the impacts of extreme conditions, and thus may increase vulnerability to damage. Climate change may influence the geographic distribution of species, bringing in additional species to the area while driving out others. However, it is not likely that any additional species would be significantly impacted by the Proposed Action.

**Water Resources.** Implementation of Alternative 1 or Alternative 2 would not result in significant impacts to water resources at NAS North Island or NS Norfolk. The operation of facilities at NAS North Island and NS Norfolk proposed under Alternatives 1 and 2 would comply with applicable standards and policies for post-construction stormwater management under the Energy Independence and Security Act of 2007; Navy Low Impact Development standards; Chief of Naval Operation Instruction 4100.5E; Executive Order 13834, *Efficient Federal Operations*; the NBC National Pollutant Discharge Elimination System (NPDES) Permit; and the NS Norfolk Virginia Pollutant Discharge Elimination System (VPDES) permit. Post-construction stormwater management features would be incorporated into the project planning and site design. Non-stormwater discharges from the wash racks would be diverted to the sanitary system.

At NAS North Island, both alternatives could require dewatering activities during construction because of the shallow depth to groundwater within the project area. In the event groundwater is encountered during construction, the construction contractor would comply with applicable requirements under either NPDES General Permit, Limited Threat Discharges to Surface Waters (Board Order R6T-2005-0023), or General Waste Discharge Requirements for Discharges to Land with a Low Threat To Water Quality (WQO-2003-0003). The Navy would obtain authorization from the California State Water Resources Control Board under the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities for construction activities associated with Alternatives 1 and 2. Impacts to surface water during construction would be minimized through implementing a site-specific stormwater pollution prevention plan (SWPPP) and applicable construction best management practices (BMPs).

At NS Norfolk, Alternatives 1 and 2 could also require dewatering activities during construction because of the shallow depth to groundwater within the project area. In the event groundwater is encountered during construction, the construction contractor would contact NS Norfolk environmental staff to determine if a permit is needed. If the groundwater is uncontaminated, it may be discharged to an authorized non-stormwater discharge under the Virginia Stormwater Management Program Construction General Permit as long as it has been filtered, settled, or similarly treated. The Navy would obtain authorization under the Virginia Stormwater Management Program Construction General Permit from the Virginia Department of Environmental Quality (VDEQ) before starting construction activities. Impacts to surface water during construction would be minimized through implementing a site-specific SWPPP and applicable construction BMPs.

Based on current plans for Alternatives 1 and 2 at NS Norfolk for widening the runway, impacts to wetlands present adjacent to the Chambers Field runway would be avoided. Should project developments require any impact to wetlands, appropriate permits would be obtained and impacts would be mitigated. Alternatives 1 and 2 include expanding the taxiway including an area that is within the floodplain. Widening the taxiway would increase the amount of impervious surface in the floodplain, reducing floodplain capacity and floodwater infiltration. The taxiway expansion would be designed in compliance with Executive Order 11988 to minimize potential harm within the floodplain. Therefore, it is not anticipated that the Proposed Action would significantly impact flooding at NS Norfolk.
Project facilities proposed at NAS North Island under Alternatives 1 and 2 would be unlikely to be impacted by flooding under current sea levels. However, if according to a 2015 study future sea level rises by as much as 7 feet, a small portion of the project area located at lower elevations (roadways, landing areas, etc.) could be temporarily under water during flood events. At NS Norfolk, proposed facilities under both alternatives could be impacted by flooding in the future if sea level rises by 7 feet. As part of the 2014 Climate Change Adaptation Roadmap, the Navy is actively participating with the DoD in developing installation-level vulnerability assessments. As a result, the Navy plans to incorporate appropriate measures to address potential impacts from sea level rise.

**Infrastructure.** At NAS North Island, Alternative 1 would increase water use by 87,000 gallons per day (98 acre-feet per year) and wastewater collection by 0.053 million gallons per day. Alternative 2 would result in increases of approximately 45,000 gallons per day (50 acre-feet per year) water demand and 0.025 million gallons per day wastewater collection. This would result in a 1 percent increase in water demand for California American Water San Diego County District service area; sufficient capacity would be available to accommodate this increase. The existing wastewater system at NAS North Island would adequately handle the increase in wastewater from additional personnel and operational activities. The Navy V-22 wash rack use would increase wastewater sent to oil recovery plant by 3,250 gallons per day under Alternative 1 and by 2,000 gallons per day under Alternative 2, and may exceed the current permitted industrial discharge (26,100 gallons per day). If necessary, the Navy would obtain an increase in the permitted discharge of industrial wastewater.

Construction and operations would increase solid waste at NAS North Island. However, the waste flow would be minimized through mandatory recycling practices, and the existing landfill capacity would be able to accommodate the waste. Existing electrical infrastructure and utilities have ample capacity to absorb additional demand of the minor population increase.

At NS Norfolk, Alternative 1 would increase water demand and wastewater collection for the wash rack; this impact would generally be offset by the reduction of 126 personnel. Construction and operations would increase solid waste; area landfills have capacity to accept the additional waste. Existing electrical infrastructure and utilities would adequately handle the demand of proposed facilities.

At NS Norfolk under Alternative 2, additional personnel, families, and the wash rack would increase water use in the City of Norfolk, but the increase would not be significant. The existing wastewater system at NS Norfolk would adequately handle the minor increase in wastewater that would result from additional personnel and operational activities. Construction and operations would increase solid waste at NS Norfolk. However, the solid waste flow would be minimized through mandatory recycling practices, and the existing landfill capacity would be able to accommodate the waste. The NS Norfolk electrical infrastructure has ample capacity to absorb the population and facilities operations increase.

**Cultural Resources.** Pursuant to the National Historic Preservation Act (NHPA) Section 106 implementing regulations, the Navy has determined that no historic properties would be affected at NAS North Island with implementation of any of the alternatives. Therefore, in accordance with Stipulation VIII-B of the NBC Programmatic Agreement, NBC has satisfied its Section 106 responsibilities for the Proposed Action, and no further NHPA Section 106 review is required.

No adverse effect to National Register of Historic Places (NRHP)-eligible or NRHP-listed architectural or archaeological resources is anticipated at NS Norfolk. In compliance with Section 106 of the NHPA, the Navy consulted with the Virginia Department of Historic Resources, which acts as the State Historic Preservation Officer (SHPO); federally recognized tribes; and interested parties regarding its
determination of effects for the proposed construction and flight operations activities at NS Norfolk. In a letter dated January 3, 2018, the Virginia Department of Historic Resources concurred with the Navy’s determination that implementing the Proposed Action would have no adverse effect on historic properties. The Navy would coordinate with the Virginia Department of Historic Resources during the hangar design process. It is not expected that undiscovered cultural resources would be found during implementation of the Proposed Action; however, in the unlikely event of an inadvertent discovery of previously unrecorded or unevaluated cultural resources during ground disturbing operations, the Navy would manage these resources in accordance with the NHPA and other federal and state laws, Navy and DoD regulations and instructions. Correspondence from the SHPO, tribes, and interested parties is included in Appendix E.

**Hazardous Materials and Waste.** The quantity of hazardous wastes generated from demolishing existing buildings and construction/renovation activities associated with Alternatives 1 and 2 at NAS North Island and NS Norfolk would be minor and would not be expected to exceed the capacities of existing hazardous waste disposal facilities. The installations have established measures and programs for managing construction activities to ensure they are conducted in compliance with federal and state environmental laws and regulations.

Maintaining and operating Navy V-22s under both alternatives at NAS North Island and NS Norfolk would require using hazardous materials and would also generate hazardous wastes. These materials and wastes would be similar to those currently generated during fixed-wing and rotary-wing aircraft maintenance and operations, including for C-2A aircraft that the Navy V-22 would replace. Existing facilities and established procedures are in place for the safe handling, use, and disposal of hazardous materials. Alternatives 1 and 2 would not result in a significant increase in hazardous materials and wastes and would not impact the generator status of the installations.

Due to the age of the buildings, asbestos-containing materials (ACMs) and materials containing regulated levels of lead-based paint (LBP) and polychlorinated biphenyl (PCBs) are assumed to be present at NAS North Island and NS Norfolk and must be removed before the initiation of demolition and construction/renovation activities. These activities would be conducted by a licensed contractor and disposed of in accordance with all applicable federal, state, and local requirements.

At NS Norfolk, a portion of the project area for Alternatives 1 and 2 is located within the contaminant plume for Installation Restoration Program (IRP) Site 20. Construction would be avoided in the boundaries of IRP Site 20 to the extent feasible; however, the CFTD would be installed within the boundary of the site. A concrete pad would be constructed for placement of the CFTD. If construction cannot be avoided within the boundaries of IRP Site 20, established land use controls would be adhered to during construction activities. These are, (1) the use of shallow groundwater and Yorktown aquifer groundwater would be prohibited, and (2) concrete and asphalt pavement would be maintained to minimize exposure to site soils. Because the CFTD is containerized and would be placed on a pad, vapor intrusion risk is limited. However, per the land use controls, vapor intrusion risks would be investigated, and if necessary, mitigation measures would be employed.

Aqueous film forming foam (AFFF) is used for fire suppression at NAS North Island and NS Norfolk and has the potential to release of perfluorinated compounds (PFC) and polyfluoroalkyl substances (PFAS) to the environment. Perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) are the primary PFOs of concern. No areas of concern (AOCs) for PFAS/PFC contamination have been identified at NAS North Island. At NS Norfolk, one AOC with potential PFAS/PFC contamination is located within the
project area for Alternatives 1 and 2. The site will undergo a systematic investigation to determine the presence of and address any PFAS/PFC contamination. At NAS North Island and NS Norfolk, the new hangars’ AFFF fire-fighting system would conform to specifications found in Unified Facilities Criteria 4-211-01, *Aircraft Maintenance Hangars* including an underground containment system for spent AFFF. The spent AFFF would be disposed of in accordance with applicable Navy, federal, state, and local laws and regulations. In addition, the Navy is switching over to non-PFOS and low PFOA formulations and Navy policy does not allow non-emergency use of AFFF. Therefore, impacts from AFFF releases would not be expected.

**Socioeconomics.** There would be both short- and long-term minor beneficial economic impacts from construction activities under both Alternatives 1 and 2 at NAS North Island and NS Norfolk.

At NAS North Island, there would be increases in personnel of 341 under Alternative 1 and 161 under Alternative 2 that would generate minor beneficial economic impacts. At NS Norfolk, under Alternative 1, there would be a decrease of 126 personnel at NS Norfolk and an increase of 54 personnel under Alternative 2. Given the scale of the regional economies and total employment at NAS North Island and NS Norfolk, these levels of loss or gain of jobs would not have significant direct or indirect impacts on local economic resources.

No significant adverse impacts are anticipated from the proposed minor population increases. While new Navy personnel may have to find housing in the community, assuming that all 341 or 161 new personnel at NAS North Island (Alternatives 1 and 2, respectively) seek community housing at the same time in 2020, this would represent 1 percent or less of the San Diego County Central major statistical area (MSA 0) total housing units, and 1 to 2 percent of vacant housing units projected for 2020. These increases would not result in a significant direct or indirect impact.

While 54 new Navy personnel at NS Norfolk may have to find housing in the community under Alternative 2, this would represent less than 1 percent of City of Norfolk housing units and would not result in a significant direct or indirect impact.

Based on the number and capacity of child care centers in proximity to NAS North Island and NS Norfolk, there is assumed to be ample child care capacity for 88 or 44 preschool-aged children (Alternative 1 or Alternative 2, respectively) at NAS North Island, and for 15 preschool-aged children at NS Norfolk (Alternative 2).

The EA analysis determined that potential environmental impacts would be negligible at NAS North Island and NS Norfolk. Therefore, Alternatives 1 and 2 would not result in disproportionately high and adverse human health or environmental effects on minority populations or low-income populations in the NAS North Island or NS Norfolk communities.

**Cumulative Impacts.** Based on the analysis of each resource potentially impacted by the Proposed Action, implementation of the Proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant cumulative impacts at NAS North Island or NS Norfolk.

**Coastal Consistency.** The Navy has determined that Alternative 1 or Alternative 2 at NAS North Island would have no effect on coastal use or resources of the State of California’s coastal zone. The Navy consulted with the California Coastal Commission on this determination. During consultation with the Commission, the Navy reiterated its commitment to continued cooperation with the City of Coronado on planning efforts to monitor and, where feasible and practicable, examine ways to reduce effects of
aircraft and traffic on residents, recreation, and wildlife. A copy of the Coastal Consistency Negative Determination and concurrence from the California Coastal Commission are provided in Appendix F.

The Navy determined that Alternative 1 or Alternative 2 at NS Norfolk may have an effect on a coastal use or resources of the Commonwealth of Virginia’s coastal zone and would be consistent to the maximum extent practicable with the applicable enforceable policies of the Virginia Coastal Zone Management Program. The Navy has consulted with VDEQ on this determination. A copy of the Coastal Consistency Determination and concurrence from VDEQ are provided in Appendix F.

Table ES-1 provides a tabular summary of the potential impacts to the resources associated with Alternative 1 and Alternative 2 and compares the potential impacts at NAS North Island and NS Norfolk. The No Action Alternative would not meet the purpose of and need for the Proposed Action and is not a viable alternative. However, the No Action Alternative serves as reference point for describing and quantifying the potential impacts associated with Alternatives 1 and 2.

ES.6 Public Involvement

The Navy circulated the Draft EA for public review from January 4 to February 26, 2018. Comments received from the public and federal, state, and local agencies were considered in finalizing this EA. During the Draft EA public review period, public open house information meetings were held at two locations near the project areas as follows:

- Mary D. Pretlow Anchor Branch Library in Norfolk, Virginia (Thursday, January 18, 2018)
- Coronado Community Center in Coronado, California (Wednesday, February 7, 2018)
### Executive Summary

#### Table ES-1: Summary of Potential Impacts to Resource Areas at NAS North Island and NS Norfolk

<table>
<thead>
<tr>
<th></th>
<th>No Action Alternative¹</th>
<th>Alternative 1</th>
<th>Alternative 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NAS North Island</strong></td>
<td><strong>NS Norfolk</strong></td>
<td><strong>NAS North Island</strong></td>
<td><strong>NS Norfolk</strong></td>
</tr>
<tr>
<td><strong>Airfields and Airspace</strong></td>
<td></td>
<td>Baseline airfield and airspace conditions would remain unchanged.</td>
<td>Baseline airfield and airspace conditions would remain unchanged.</td>
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<tr>
<td></td>
<td></td>
<td>Negligible impact from 14% increase in operations. Would not adversely affect airspace management, local air traffic, or noise contours.</td>
<td>No impact. Number and type of operations are about the same as No Action Alternative.</td>
</tr>
<tr>
<td><strong>Noise</strong></td>
<td></td>
<td>No perceptible change compared to baseline CNEL noise contours or sound exposure at POIs from minor ongoing increase in operations.</td>
<td>No perceptible change to DNL noise contours, sound exposure, or vibration effects at POIs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No perceptible impact to CNEL noise contours, sound exposure, or vibration effects at POIs.</td>
<td>Impacts and impact minimization would be the same as, but slightly less than, Alternative 1.</td>
</tr>
<tr>
<td><strong>Public Health and Safety</strong></td>
<td></td>
<td>No change to baseline safety risk. All regulations and plans that pertain to airfield and other flight safety considerations would continue to be followed.</td>
<td>Negligible impact with minor increase in operations and potential BASH events. Existing management strategies, regulations, and plans that pertain to airfield and other flight safety considerations would continue to minimize risk. No change to AICUZ Program. No change to environmental health risks or safety risks that may disproportionately affect children.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negligible impact. No change to AICUZ Program. No change to environmental health risks or safety risks that may disproportionately affect children.</td>
<td>Impacts and impact minimization would be the same as, but slightly less than, Alternative 1.</td>
</tr>
</tbody>
</table>

¹No Action Alternative refers to the current operational status at NAS North Island and NS Norfolk.
### ES-1: Summary of Potential Impacts to Resource Areas at NAS North Island and NS Norfolk (cont.)

<table>
<thead>
<tr>
<th>No Action Alternative</th>
<th>NAS North Island</th>
<th>NS Norfolk</th>
<th>Alternative 1</th>
<th>NAS North Island</th>
<th>NS Norfolk</th>
<th>Alternative 2</th>
<th>NAS North Island</th>
<th>NS Norfolk</th>
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<tbody>
<tr>
<td><strong>Air Quality</strong></td>
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<tr>
<td>Baseline regional air quality conditions would remain unchanged. Minor increase in emissions would be below the applicable General Conformity de minimis or PSD thresholds.</td>
<td>Since Hampton Roads Intrastate AQCR is in attainment of all NAAQS, the Proposed Action at NS Norfolk would not require a General Conformity evaluation. Minor increase in emissions would be below the applicable PSD thresholds.</td>
<td>Emissions would be below the applicable General Conformity de minimis or PSD thresholds.</td>
<td>Since Hampton Roads Intrastate AQCR is in attainment of all NAAQS, the Proposed Action at NS Norfolk would not require a General Conformity evaluation. Emissions would be below the applicable PSD thresholds.</td>
<td>Impacts would be the same as, but slightly less than, Alternative 1.</td>
<td>Impacts would be the same as Alternative 1, except emissions would be slightly higher with increase in operations.</td>
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<tr>
<td><strong>Transportation</strong></td>
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<tr>
<td>Baseline traffic conditions in the vicinity of the installation would remain unchanged.</td>
<td>Baseline traffic conditions in the vicinity of the installation would remain unchanged.</td>
<td>Minor direct impact from additional 340 ADT (less than 1% of total ADT). Previously accounted for in Navy 2008 traffic study. Short-term construction truck traffic (average of five truck trips per work day) and construction worker vehicles.</td>
<td>Minor beneficial impact from reduction of 125 ADT. Temporary minor impact from construction delivery trucks and construction worker vehicles.</td>
<td>Minor direct impact from additional 160 ADT (less than 1% of total ADT). Previously accounted for in Navy 2008 traffic study. Short-term construction truck traffic (average of four truck trips per work day) and construction worker vehicles.</td>
<td>Minor direct impact from additional 55 ADT (less than 1% of total ADT). Temporary minor impact from construction delivery trucks and construction worker vehicles.</td>
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</table>
### ES-1: Summary of Potential Impacts to Resource Areas at NAS North Island and NS Norfolk (cont.)

<table>
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<tr>
<th></th>
<th>No Action Alternative</th>
<th>Alternative 1</th>
<th>Alternative 2</th>
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<tbody>
<tr>
<td><strong>NAS North Island</strong></td>
<td>No impact.</td>
<td>No impacts to biological resources associated with construction or climate change. Number and type of operations are about the same as No Action Alternative; therefore, no increased take of migratory birds and bats. Existing management strategies would continue to minimize risk. Impacts to MBTA-protected bird species and their active nests would be avoided during construction. Potential for takes during operations would not result in significant adverse effect on a population of migratory birds and would continue to be in compliance with MBTA as military readiness activity.</td>
<td>Impacts and impact minimization would be the same as, but slightly less than, Alternative 1.</td>
</tr>
<tr>
<td><strong>NS Norfolk</strong></td>
<td>No impact.</td>
<td>No impacts to biological resources associated with construction or climate change. Negligible potential for increased strikes of bats, including potential state listed species. Existing BASH management strategies would continue to minimize risk. Impacts to MBTA-protected bird species and their active nests would be avoided during construction. Potential for takes of migratory birds during operations would not result in significant adverse effect on a population of migratory birds and would be in compliance with the MBTA as military readiness activity.</td>
<td>No impacts to biological resources associated with construction or climate change.</td>
</tr>
</tbody>
</table>

**Biological Resources**

- Minor increases in potential BASH. Existing management strategies would continue to minimize BASH risk. Impacts to MBTA-protected bird species and their active nests would be avoided during construction. Potential for takes of migratory birds during operations would not result in a significant adverse effect on a population of migratory birds and would continue to be in compliance with the MBTA as military readiness activity. *May affect, not likely to adversely affect* the California least tern and western snowy plover; informal consultation with USFWS was conducted. Agency documentation is provided in Appendix D.
## ES-1: Summary of Potential Impacts to Resource Areas at NAS North Island and NS Norfolk (cont.)

<table>
<thead>
<tr>
<th>Water Resources</th>
<th>No Action Alternative</th>
<th>Alternative 1</th>
<th>Alternative 2</th>
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</thead>
<tbody>
<tr>
<td><strong>NAS North Island</strong></td>
<td>No impact.</td>
<td>Minimal impacts to groundwater and surface water with minimization measures. Potential for future sea level rise to contribute to 100-year event flooding in a portion of the project area (roadways, landing areas, etc.).</td>
<td>Impacts and impact minimization would be the same as, but slightly less than, Alternative 1.</td>
</tr>
<tr>
<td><strong>NS Norfolk</strong></td>
<td>No impact.</td>
<td>Minimal impacts to groundwater and surface water with minimization measures. Increase of 2.4 acres of impervious surface would be expected to increase stormwater runoff. Wetlands adjacent to proposed taxiway expansion would be avoided. Existing taxiway is within the floodplain; floodplain modifications would be minimal. Potential for future sea level rise to contribute to 100-year event flooding of most of the project area.</td>
<td>Impacts and impact minimization would be the same as Alternative 1.</td>
</tr>
</tbody>
</table>
### ES-1: Summary of Potential Impacts to Resource Areas at NAS North Island and NS Norfolk (cont.)

<table>
<thead>
<tr>
<th>No Action Alternative</th>
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</thead>
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<tr>
<td><strong>NAS North Island</strong></td>
<td>Increases in water demand/ wastewater of 87,000 gallons per day (98 acre-feet per year). Increase of industrial discharge of wastewater of 3,250 gallons per day, which would result in an increase in the permitted discharge of industrial wastewater. Additional solid waste and energy demand from construction, demolition and operations. Water, wastewater, solid waste, and energy capacities sufficient to meet additional demand.</td>
<td>Additional solid waste and energy demand from construction and demolition. Solid waste and energy capacities sufficient to meet additional demand. Minor reduced water demand/wastewater, energy, and solid waste with reduced personnel.</td>
</tr>
<tr>
<td><strong>NS Norfolk</strong></td>
<td>No impact.</td>
<td>Additional solid waste and energy demand from construction, demolition, and operations. Minimal increases in water demand/wastewater. Water, wastewater, solid waste, and energy capacities sufficient to meet additional demand.</td>
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</table>
### ES-1: Summary of Potential Impacts to Resource Areas at NAS North Island and NS Norfolk (cont.)

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<td><strong>NS Norfolk</strong></td>
<td><strong>NAS North Island</strong></td>
<td><strong>NS Norfolk</strong></td>
</tr>
<tr>
<td>Cultural Resources</td>
<td>No impact.</td>
<td>No historic properties affected.</td>
<td>No adverse effect to historic properties.</td>
</tr>
<tr>
<td></td>
<td>No impact.</td>
<td>No historic properties affected.</td>
<td>No adverse effect to historic properties.</td>
</tr>
<tr>
<td>Hazardous Materials and Wastes</td>
<td>No impact.</td>
<td>Minor hazardous materials and wastes generated from demolition, construction, operations, and maintenance. Potential ACM, LBP, and PCB generated during demolition. Potential PFAS/PFC generated from AFFF during operations. Impacts would be minimized with implementation of appropriate and established handling procedures.</td>
<td>Minor hazardous materials and wastes generated from demolition (ACM, LBP, PCB), construction, operations, and maintenance. Potential PFAS/PFC generated from AFFF during operations. Impacts minimized with implementation of appropriate and established handling procedures. Construction of CFTD within IRP Site 20 would adhere to land use controls. Vapor intrusion risks would be limited, but would be investigated, and if necessary, measures would be employed to minimize risk.</td>
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### ES-1: Summary of Potential Impacts to Resource Areas at NAS North Island and NS Norfolk (cont.)

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<tbody>
<tr>
<td>NAS North Island</td>
<td>NS Norfolk</td>
<td>NAS North Island</td>
<td>NS Norfolk</td>
</tr>
<tr>
<td>Socioeconomics</td>
<td>No impact.</td>
<td>Minor beneficial economic impacts. Minor impacts to population (750 personnel and family) with minor associated impacts to housing, child care, and schools in San Diego County. No disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.</td>
<td>Minor beneficial economic impacts. Minor reduction in population (277 personnel and family) with minor associated reduction in housing, child care, and schools in City of Norfolk and Hampton Roads. No disproportionately high and adverse human health or environmental effects on minority or low-income populations.</td>
</tr>
<tr>
<td>NS Norfolk</td>
<td>No impact.</td>
<td>Minor beneficial economic impacts. Minor reduction in population (277 personnel and family) with minor associated reduction in housing, child care, and schools in City of Norfolk and Hampton Roads. No disproportionately high and adverse human health or environmental effects on minority or low-income populations.</td>
<td>Minor beneficial economic impacts. Minor increase in population (124 personnel and family) with minor associated increase in demand for housing, child care, and schools in City of Norfolk and Hampton Roads. No disproportionately high and adverse human health or environmental effects on minority or low-income populations.</td>
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**Other considerations - Coastal Consistency**

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<tr>
<th></th>
<th>No impact.</th>
<th>No impact.</th>
<th>Same as Alternative 1.</th>
<th>Same as Alternative 1.</th>
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<tbody>
<tr>
<td>NAS North Island</td>
<td>Coastal Consistency Negative Determination based on no effect on coastal use or resources of the State of California’s coastal zone. California Coastal Commission concurrence with this determination is provided in Appendix F.</td>
<td>Coastal Consistency Determination documents effects on coastal use or resources of the Commonwealth of Virginia’s coastal zone and consistency to the maximum extent practicable with the applicable enforceable policies of the Virginia Coastal Zone Management Program. VDEQ concurrence with this determination is provided in Appendix F.</td>
<td>Same as Alternative 1.</td>
<td>Same as Alternative 1.</td>
</tr>
<tr>
<td>NS Norfolk</td>
<td>Coastal Consistency Determination documents effects on coastal use or resources of the Commonwealth of Virginia’s coastal zone and consistency to the maximum extent practicable with the applicable enforceable policies of the Virginia Coastal Zone Management Program. VDEQ concurrence with this determination is provided in Appendix F.</td>
<td>Same as Alternative 1.</td>
<td>Same as Alternative 1.</td>
<td></td>
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</tbody>
</table>

**Note:** The No Action Alternative does not meet the purpose of and need for the action and is not a viable alternative; however, it serves as reference point for describing and quantifying the potential impacts of Alternatives 1 and 2.
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