

EXECUTIVE SUMMARY

The United States Congress has identified and approved the next-generation F-22 air dominance fighter to replace and supplement the aging F-15C aircraft fleet. The Final Environmental Impact Statement (EIS) analyzes the Air Force proposal to locate or beddown 72 operational F-22 aircraft at an existing Air Force base.

This Final EIS responds to public and agency review and comments on the Draft EIS that were received in writing or at the public hearings. In accordance with 40 Code of Federal Regulations (CFR) 1503.4(c) this document provides an errata chapter that identifies clarifications made to the Draft EIS in response to review and public and agency input. The Final EIS should be used in conjunction with the Draft EIS. A CD-Rom containing both the Draft and Final EIS is provided at the back of this document.

The EIS Timeline identifies major steps in the EIS process. Following issuance of the Final EIS, there will be a 30-day waiting period before the Record of Decision is signed.

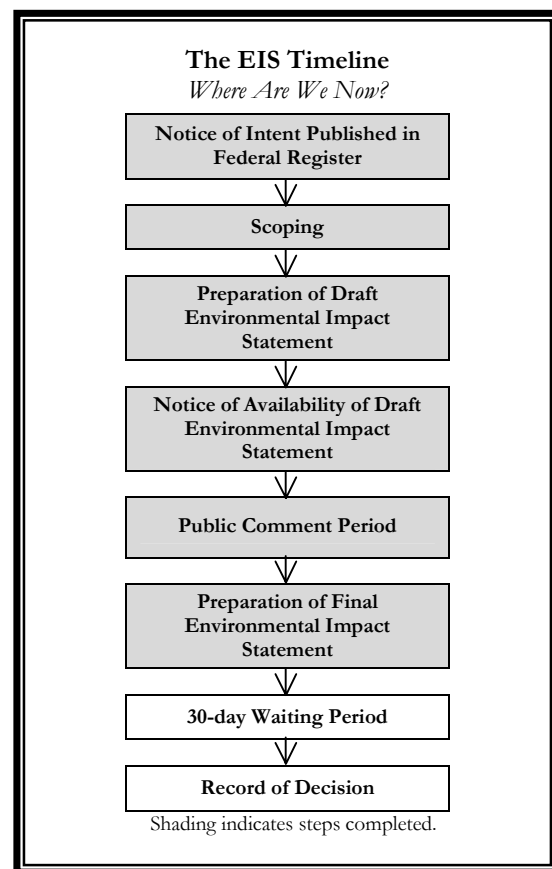
The Air Force defined the operational and physical elements needed to support the Initial F-22 Operational Wing beddown. To be considered viable for the F-22 beddown, a base must fulfill the following six requirements:

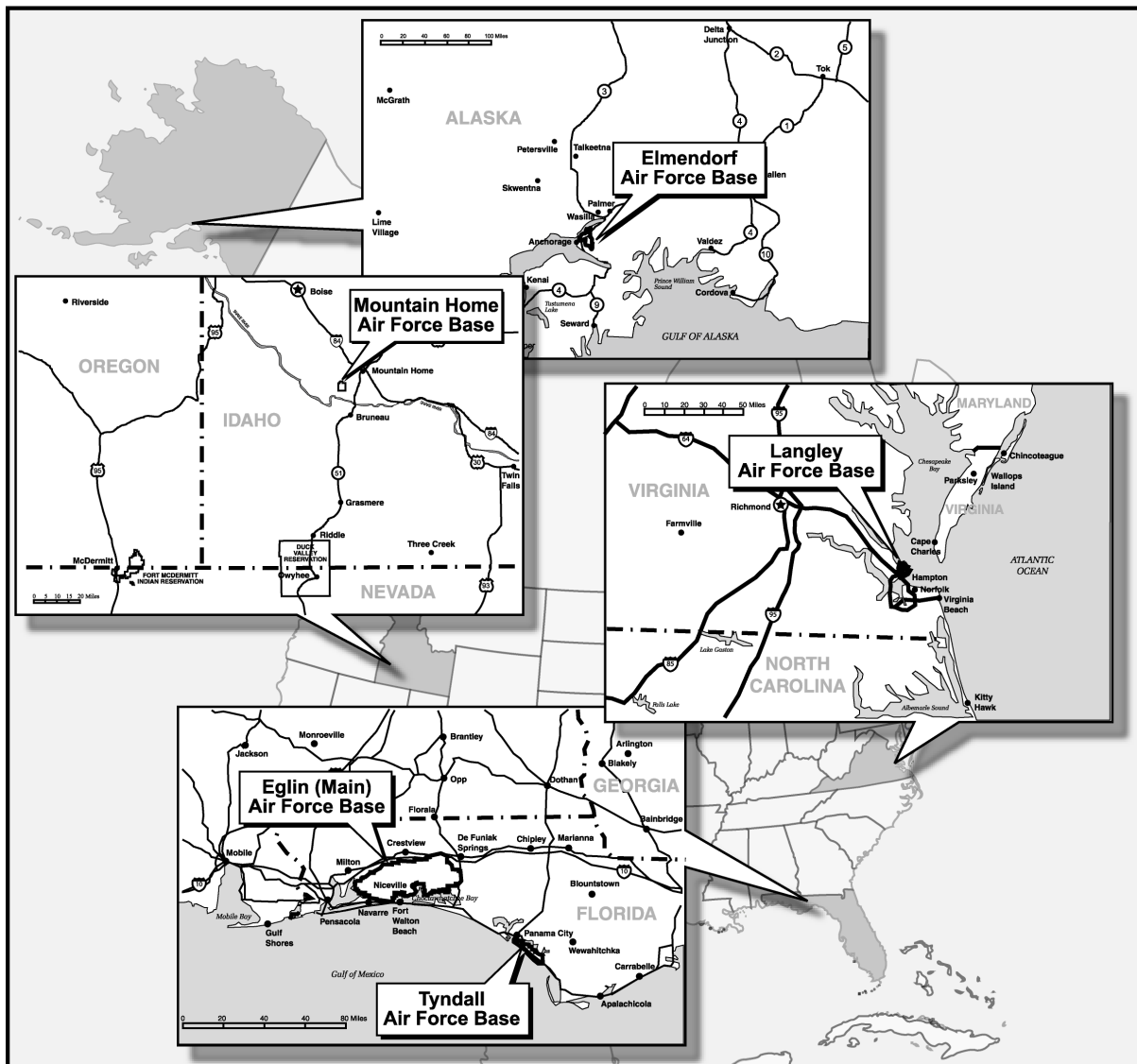
- Air Force base with an existing F-15C mission
- Established support for fighter aircraft
- Access to airspace for training
- Support varied training opportunities
- Available infrastructure
- Existing communications links

Based on the Air Force identification and evaluation process, six bases met the operational requirements: (1) Langley Air Force Base (AFB), Virginia; (2) Eglin AFB,

Florida; (3) Elmendorf AFB, Alaska; (4) Mountain Home AFB, Idaho; (5) Tyndall AFB, Florida; and (6) Nellis AFB, Nevada.

Nellis AFB was excluded from further consideration as a location for the Initial F-22 Operational Wing. Adding or allocating the necessary facilities, infrastructure, organizational structure, and airspace needed to support the Initial F-22 Operational Wing of three squadrons would affect Nellis AFB's ability to fulfill its unique and important functions to support Air Force weapons systems and tactics testing and training. To maintain the existing missions at Nellis and to ensure combat readiness of the Initial Operational Wing, the Air Force eliminated Nellis AFB from further consideration as an alternative location.





The Proposed Action and Alternative Locations

The proposed action is to beddown (establish) the Initial F-22 Operational Wing at Langley AFB, Virginia. The four alternative locations for the beddown are Eglin AFB, Florida; Elmendorf AFB, Alaska; Mountain Home AFB, Idaho; and Tyndall AFB, Florida. The Initial Operational Wing would consist of three squadrons, each with 24 operational F-22 Primary Aircraft Inventory (PAI), plus two Backup Aircraft Inventory (BAI) to ensure full wing capability. Facilities would be constructed, modified, and/or demolished to accommodate the Initial F-22 Operational Wing. F-22 aircraft would conduct training flights (sorties) from the base and sortie-operations in associated training airspace.

The no-action alternative identified in this EIS analysis would result in no decision to beddown the Initial F-22 Operational Wing at this time. Under this alternative, no aircraft would be removed in conjunction with the

F-22s, no F-22 personnel changes or construction would be performed, and no training activities by the Initial F-22 Operational Wing would be conducted in the airspace associated with Langley AFB or one

of the four alternative locations. No action is, in fact, a continuation of ongoing base activities and provides a baseline from which to identify potential environmental consequences when compared with the proposed action or other alternatives. A no-action decision could negatively affect the overall program for integrating the F-22 into the Air Force inventory, delay the fielding of the F-22 for operations and deployment, and increase eventual costs to the overall F-22 program.

Purpose and Need

The overall mission of the Air Force is defense of the United States and fulfillment of the directives of the President and the Secretary of Defense. To meet these requirements, the Air Force must develop and operate combat and support aircraft and train personnel needed for the job.

The F-15C has functioned as the primary air superiority fighter for the Air Force since 1976. The new F-22 Raptor combines stealth technology, sophisticated radar and electronic systems, ability to fly at supersonic speeds without using afterburners, enhanced maneuverability, and efficient maintenance logistics to fulfill near- and long-term combat requirements. The F-22, to supplement and replace the F-15C, must be operationally based. An operational wing must be ready to deploy and be combat mission ready. The Air Force must establish operational F-22 wings that fulfill the F-22's essential air dominance role in the national defense system.

The purpose of the proposed action is to beddown the Initial F-22 Operational Wing at Langley AFB. Establishment of this initial Operational Wing would take place over a period of approximately 5 years with construction beginning in 2002. The beddown would involve basing three squadrons. The proposed action includes

personnel needed to operate and maintain the aircraft and associated facilities for advanced training.

Fulfilling the Need

The F-22 offers a unique combination of capabilities that make it less detectable, faster, more maneuverable, more reliable, and more fuel efficient than the F-15C. These capabilities will enable the F-22 to reach a conflict faster, reduce danger to pilots, and provide more air power to the combat commander. The enhanced capabilities of the F-22 include the following:

- **Stealth:** State-of-the-art design and radar-absorbent composite materials make the F-22 harder to detect.
- **Supersonic speed:** The F-22 can fly at supersonic speeds without the use of afterburners, increasing fuel efficiency.
- **Increased maneuverability:** The design of the airframe coupled with the ability to direct engine thrust, permits an F-22 pilot to turn more rapidly, maintain better control, and evade missile and other threats better than other fighter aircraft.
- **Advanced electronics:** Highly sophisticated avionics systems are integrated throughout the F-22, providing the pilot with a complete picture of the air battle and enhanced situational awareness.
- **Maintainability, sustainability, reliability, and responsiveness:** Computerized self-tests of systems enhance reliability and mission-readiness and reduce maintenance requirements. The F-22 needs fewer personnel and equipment for maintenance and deployment compared to the F-15C.

Beddown of the Initial F-22 Operational Wing would require personnel to operate and maintain the wing and to provide necessary support services. Overall, 1,846 personnel would be required to support the F-22 wing:

169 officers, 1,598 enlisted personnel, 25 civilian government employees, and 54 contractor personnel. Personnel numbers, including contractor personnel, could vary up or down during the wing's lifetime. The numbers of personnel are used throughout this analysis for consistency at all bases. The personnel change for a base often depends on the increase in aircraft at the base. At Langley, three squadrons of F-15Cs would be replaced by three squadrons of F-22s. At Eglin and Elmendorf, two squadrons of F-15Cs would be replaced by three squadrons of F-22s. At Mountain Home, one squadron of F-15Cs would be replaced by three F-22 squadrons, and at Tyndall AFB, all three operational F-22 squadrons would be additive to the base.

For the bases with existing F-15C operational squadrons (all except Tyndall AFB), the F-22 personnel positions would be drawn from the equivalent positions associated with existing F-15C manpower authorizations. As such, the manpower authorizations for the F-22 wing would represent a combination of reassigned F-15C positions and new F-22

positions. At Langley AFB, total personnel would decrease due to the almost one-for-one replacement of the F-15Cs with the F-22s. Fewer personnel, particularly for maintenance, would be needed for the F-22 wing than for an equivalent F-15C wing. At Eglin, Elmendorf, Mountain Home, and Tyndall AFBs, the personnel changes associated with the F-22 beddown would increase total personnel at the base.

The mission of the Initial F-22 Operational Wing would emphasize air-to-air combat. The Air Force anticipates that each operational F-22 would fly about 20 sorties per month (F-15Cs average 18 sorties per month), or 240 times per year either from the selected base or during deployments. The Initial F-22 Operational Wing, with a total of 72 PAI F-22s, would fly approximately 17,280 sorties per year. Two-thirds of the sorties would occur in airspace associated with the selected base. Under current and foreseeable F-22 training requirements, about one-third of the sorties would occur at overseas airfields during deployments or at other locations in preparation for deployments.

Summary of Initial F-22 Operational Wing Beddown Proposal

The proposal for the Initial F-22 Operational Wing beddown would involve implementing several related elements at Langley AFB or one of the four alternative locations. These elements would occur at either a base or in its associated training airspace.

Elements Affecting the Base

- ✓ Beddown 72 PAI F-22 operational aircraft over a period of approximately five years and replace any existing operational F-15C aircraft at the base.
- ✓ Conduct sorties at the base for training and deployment.
- ✓ Construct the facilities and infrastructure necessary to support the Initial F-22 Operational Wing.
- ✓ Implement the personnel changes (increases or decreases) at the base to conform to the F-22 wing's requirements.

Elements Affecting Airspace

- ✓ Conduct F-22 training activities in military airspace, including Military Operations Areas (MOAs), Air Traffic Control Assigned Airspace (ATCAA), and Warning Areas, emphasizing air-to-air combat and supersonic flight (where authorized).
- ✓ Employ defensive countermeasures, such as chaff and flares, in airspace authorized for their use.
- ✓ Accomplish limited employment of Joint Direct Attack Munitions at approved ranges (Nellis Range Complex, Nevada; Utah Test and Training Range, Utah; Eglin AFB's ranges, Florida).

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For the proposed action at Langley AFB, total sorties would increase by 7 percent because the F-15Cs fly fewer monthly sorties per aircraft (18 versus 20) than would the F-22s, and the base would support six more PAI aircraft. Increases in total sorties at Eglin (16 percent), Elmendorf (26 percent), Mountain Home (58 percent), and Tyndall (43 percent) AFBs would result from the increased number of aircraft at the base and from the higher sortie rate of the F-22s.

The airspace associated with the Langley, Eglin, and Tyndall AFB alternatives includes over-water Warning Areas, overland Military Operations Areas (MOAs), and higher altitude Air Traffic Control Assigned Airspaces (ATCAAs). Warning Areas would comprise the type of airspace most used for Langley, Eglin, and Tyndall AFBs. Only overland MOAs and overlying ATCAAs would be used for the Elmendorf AFB and Mountain Home AFB alternatives.

Chaff and flares are the principal defensive countermeasures dispensed by military aircraft to avoid detection or attack by enemy air defense systems. Although the F-22's stealth features reduce its detectability, pilots must train to employ defensive countermeasures. The chaff and flare use by an F-22 training sortie is projected to be similar to chaff and flare use during an F-15C training sortie.

The F-22 would use the full, authorized capabilities of the existing training airspace units, operating from 500 feet above ground level (AGL) up to 60,000 feet mean sea level (MSL). The F-22 would rarely (5 percent or less) fly below 5,000 feet AGL and consistently fly from 10,000 feet AGL to above 30,000 feet MSL. Actual flight altitudes would depend upon the lower and upper limits of specific airspace units.

To train with the full capabilities of the aircraft, the F-22 would employ supersonic

flight. All supersonic flight would occur at altitudes and within airspace already authorized for such activities. Because of the mission of the F-22 and the aircraft's capabilities, the Air Force anticipates that approximately 25 percent of the time spent in air combat training would involve supersonic flight as compared to approximately 7.5 percent of the time for the F-15C.

The F-22 also has air-to-ground capabilities. Most F-22 air-to-ground training would be simulated, where nothing is released from the aircraft, using avionics to simulate ordnance delivery on a target. This type of training could be conducted in any of the airspace units (e.g., MOAs, Warning Areas) and would not require an air-to-ground range.

Air-to-ground training also includes ordnance delivery training. Actual ordnance delivery training would occur during the times when F-22 squadrons would be at exercises or during special training cycles that total less than 3 percent of the Initial Operational Wing's activity. Locations for such training could include the Nellis Range Complex in Nevada; the Utah Test and Training Range, Utah; or the approved ranges associated with Eglin AFB, Florida. Each of these locations currently is authorized for air-to-ground activities.

Environmental Consequences

This Initial F-22 Operational Wing Beddown EIS has been prepared in accordance with the National Environmental Policy Act (NEPA) and its implementing regulations. NEPA requires focused analyses on the areas and resources, such as wildlife or socioeconomics, that are potentially affected by the proposed action or an alternative. Because the F-22 is a new aircraft that is under development, some data normally used to predict noise, air quality, and safety conditions cannot be obtained at this time. The data used in this

EIS analysis represent the best available information on the aircraft components, engines, flight characteristics, training airspace, and other requirements.

The proposed action and alternatives were evaluated using operational requirements, environmental considerations, and community issues identified by the public or agencies as being important. Prior to the publication of the Draft EIS, a total of 33 scoping meetings were held in five states over an 8-month period to help identify local issues and concerns regarding selection of a base for the Initial F-22 Operational Wing beddown. Following publication of the Draft EIS, 23 public hearings were held in five states to receive public and agency comments. Written comments on the Draft EIS were also solicited. Comments on the Draft EIS received during this period are responded to in this Final EIS.

This Final EIS (in conjunction with the Draft EIS) presents to the public and agencies those issues relevant to bases in the five broad environmental resource groups presented below. The results focus on requirements and conditions applicable only to the initial beddown of three operational squadrons of F-22s. Reduced numbers of squadrons or modifications to the basing concept would not meet the purpose and need for the Initial F-22 Operational Wing beddown. Comparisons presented during this EIS process have no bearing on the suitability of any base for future F-22 beddowns with different numbers of aircraft or squadrons.

This EIS analysis has identified past, present, and planned future projects associated with each base and associated airspace so that cumulative consequences can be addressed. Each base is an active military installation with regular changes in mission and training in response to defense policies, current threats, and technological advances.

Sorties and sortie-operations stemming from past and authorized (already environmentally assessed) future aircraft basing actions at the five bases have been identified and incorporated into the baseline. Future proposed actions have been assessed under cumulative effects. In these ways, the potentially additive aspects of these sets of actions were analyzed in the Draft EIS. No on- or off-base cumulative actions were found to significantly impact environmental resources when combined with the potential environmental consequences associated with the Initial F-22 Operational Wing beddown.

A decision to beddown the Initial F-22 Operational Wing would result in irreversible and irretrievable commitments of labor, land area, construction materials, energy, and fuels and lubricants at the selected base. The resource consumption associated with a beddown decision is not expected to significantly alter the availability of the resources.

Resource Category: Aircraft Operations

Aircraft operations resources include airspace management, noise, air quality, and safety. Aircraft operations activities would occur near a base and in training airspace such as over-water Warning Areas, overland MOAs, and ATCAAs. Airspace in the United States is administered by the Federal Aviation Administration (FAA), whose rules govern all civilian and military airspace use. Aircraft operations in the base airfield environment and in training airspace generate noise and exhaust emissions. Flight safety is also a public concern for aircraft operations.

Airspace management near the base or in the training airspaces would not be impacted by the F-22 for the proposed action or any alternative. The screening criterion of an existing F-15C base means that both local civilian and military airspace managers are familiar with fighter aircraft training

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requirements. This is particularly important for Elmendorf AFB with Alaska's extensive general aviation activity.

Impacts to air quality would be minimal. No regulatory air quality thresholds would be exceeded at any of the basing locations. This is primarily due to the maintenance sophistication of the F-22 that permits simplified diagnostics and substantially reduces engine testing within the base environment.

Established safety zones are adequate for the F-22, although continued commercial and other land use encroachments into Langley AFB safety zones have a potential for greater environmental consequences than at other bases.

The greatest potential for consequence in connection with aircraft operations is from noise effects. The larger engines of the F-22 produce more noise than the F-15C. However, these engines permit the F-22 to exit the airfield area and reduce power more quickly than the F-15C. As such, the noise effects of the larger engines would be somewhat offset. At Langley AFB, the replacement of three squadrons of F-15Cs by three squadrons of F-22s results in decreased off-base land area exposed to Day-Night Average Sound Level (DNL) of 65 decibels or greater. However, some off-base areas affected by 65 DNL or greater would have higher average noise levels than at present. All projected levels are consistent with historical noise exposure around the installation. At all the alternative locations, the areas within noise levels of 65 DNL or greater would expand due to the increase in aircraft and associated operations.

At Elmendorf AFB, essentially all the increased noise levels would be over military land or water. At Mountain Home AFB, the increased area affected by noise would primarily include rural grazing land with

scattered residences. At Tyndall AFB, the majority of the expanded area affected by noise would be on base or over water; however, a 23-acre residential area north of the base would be exposed to 65 DNL or above. At Eglin AFB, the area affected by 65-and-greater DNL noise levels would increase by 123 acres of residential area.

The training airspace associated with each base would have no discernible change in subsonic noise because the F-22 would fly more often at higher altitudes (above 30,000 feet 30 percent of the time) compared to the F-15C (above 30,000 feet 8 percent of the time). The increased sonic booms from the higher performing F-22s would have a greater potential for impacting training airspace over land than over water. This was noted as a concern and a potential environmental consequence by commentators on the Draft EIS including Alaska Natives regarding Elmendorf AFB's training airspace and Native Americans regarding Mountain Home's training airspace. These overland environmental consequences would not exist for training airspace associated with Langley AFB, Eglin AFB, or Tyndall AFB, where supersonic activity would be over water.

In summary, for Aircraft Operations, there is no substantive difference among the basing locations for airspace management, safety, or air quality. There is a difference in potential noise consequences. Eglin AFB and Tyndall AFB have potential noise consequences near their bases but not in the airspace. Elmendorf AFB and Mountain Home AFB have potential noise consequences under their airspace but not near the base. Langley AFB has overall a lower potential for environmental consequences from aircraft operations.

Resource Category: Natural Resources

The natural resources addressed include native and non-native plants and animals, the

habitats where they are found, the communities they form, and the soil and water features necessary for these resources to function. The physical and biological features required to sustain these plant and animal species comprise their habitat. When linked together by ecological processes, these species assemblages are referred to as communities.

The extent of ground disturbance would result in soil disturbance due to construction and some erosion even though best management practices would be applied. The base with the greatest erosion potential is Mountain Home AFB, mainly due to construction of an additional runway.

Tyndall AFB has more biologically diverse terrestrial and wetland habitat proximate to the 73 acres disturbed by construction than any other location. Biodiversity is lower at all the other locations with only Mountain Home AFB having somewhat greater potential for consequences to terrestrial communities because of 440 acres of construction disturbance. Disturbed acreage at the other locations are 10 at Eglin AFB, 16 at Langley AFB, and 46 at Elmendorf.

For special status species or communities, Langley AFB has the lowest potential for consequences with no negative construction or operational consequences expected. Eglin AFB, Elmendorf AFB, and Mountain Home AFB have few species of special concern. Tyndall AFB has a number of special status species potentially in or near the construction zone.

Airspace associated with Langley AFB, Tyndall AFB, or Eglin AFB includes over-water Warning Areas and overland MOAs. There would be no discernible change in subsonic noise, no construction under the MOAs, and no supersonic flight in the overland MOAs. The sonic booms would be over water and are not projected to result in consequences to sensitive marine species.

The airspace associated with Mountain Home AFB and Elmendorf AFB is over land. There would be no perceptible change in subsonic noise and no construction under the airspace. The increased supersonic activity in the airspace associated with Elmendorf is not expected to have an adverse long-term effect on wildlife. The airspace associated with Mountain Home AFB has a somewhat higher potential for consequences to wildlife than Elmendorf.

In summary, for natural resources, Langley AFB has the lowest potential for consequences because construction would occur on previously disturbed areas and aircraft would have access to extensive over-water airspace. Eglin AFB has nearly the same, or very slightly more potential for consequences because of the more biologically diverse habitat overflown in some airspace. Elmendorf AFB is similar to Eglin AFB but has slightly greater potential for supersonic impacts under the airspace. Mountain Home AFB and Tyndall AFB have somewhat higher potential for environmental consequences, but for different reasons. Mountain Home AFB has the greater potential to impact species under the associated airspace, whereas Tyndall AFB has a greater potential to impact terrestrial and aquatic species as a result of construction at the base.

Resource Category: Cultural and Traditional Resources

Cultural and traditional resources include prehistoric or historic districts, sites, buildings, structures, or objects considered important to a culture, subculture, or community for scientific, traditional, religious, or other purposes. Cultural and traditional resources include archaeological resources (both prehistoric and historic), historic architectural resources, and traditional resources. Significant cultural resources considered for

potential adverse impacts are those that are eligible for inclusion in the National Register of Historic Places or that are identified as important by Native American, Alaska Native groups, or other traditional groups. According to the Department of Defense's (DoD) American Indian and Alaska Native Policy (October 20, 1998), "the military services must assess, through consultation, the effect of proposed DoD actions that may have the potential to significantly affect protected tribal resources, tribal rights, and Indian lands before decisions are made."

Visual resources are usually defined as areas with unique features that are a result of the combined characteristics of the natural and human aspects of land use.

Construction and operational activities at any of the base locations are not likely to impact any cultural or traditional resources except for historic buildings. All the bases have located potential operational F-22-related facilities in previously disturbed areas with low probability for intact archaeological resources. The visual aspects of the bases are not projected to be substantively changed by any new construction, again with the exception of historic buildings. Architectural resources include designated or potentially eligible historic buildings at Langley AFB, Elmendorf AFB, and Eglin AFB. Within the Langley AFB historic district, three hangars designated as historic properties would be replaced by new hangars. At Elmendorf AFB or Eglin AFB, the consequences would be less with renovations to eligible buildings not expected to substantially affect the exteriors of the buildings. Neither Tyndall AFB nor Mountain Home AFB would have impacts to cultural, historic, visual, or traditional resources.

Under the airspace that would be used for operational F-22 training, neither Langley AFB, Eglin AFB, nor Tyndall AFB has a

potential for impacts to cultural, visual, or traditional resources. Mountain Home AFB and Elmendorf AFB, with overland airspace, have no likely consequences to archaeological, architectural, or visual resources, but Native Americans and Alaska Natives have expressed concerns about existing military or potential F-22 overflights. In Mountain Home AFB airspace, the Native Americans have expressed concern that overflights impact traditional resources including the Duck Valley Reservation traditional sites, sacred locations, and important species. Native Americans have expressed concerns with chaff, flares, sonic booms, and visual intrusion. Alaska Natives have expressed concern with current overflights near villages and in areas traditionally used by villagers for subsistence harvesting. In many of these villages, the Alaska Natives depend upon hunting, trapping, and fishing for their livelihood. They have expressed concern that existing and any increased noise, particularly sonic booms, could impact their traditional resources.

Regarding overall potential consequences for cultural, traditional, and visual resources, Langley AFB has the greatest potential to impact base historic architectural and visual resources as a result of building demolition and renovation. Mountain Home AFB and Elmendorf AFB have the greatest potential for impacting traditional resources under their respective airspace units as a result of increased sonic booms over areas traditionally used by Native Americans or Alaska Natives. Eglin AFB and, especially, Tyndall AFB have lower potential for consequences to cultural, traditional, or visual resources.

Resource Category: Human Resources

Human resources include land use, socioeconomics, and environmental justice. The affected area for human resources includes areas on base and the surrounding

vicinity, specifically those jurisdictions whose economies are closely associated with base activities. For the land use and environmental justice resources, the effects on areas underlying the airspace are also considered. Socioeconomics would not be affected under the airspace.

Proposed activities that could potentially affect existing land use include construction of new on-base facilities and changes in noise levels around the base and in airspace due to aircraft operations. There are no substantive consequences to land use from construction at any of the installations.

Off-base land uses could be affected by changes in noise levels. At Langley AFB, the total area off base affected by a DNL of 65 dB or greater noise levels would decrease with beddown of the F-22. Residential lands would continue to be affected, and some residential areas currently exposed to noise near Langley AFB would be exposed to either higher or lower DNL as compared to the current levels. However, the overall cumulative noise environment is similar to the historical noise environment around the base. At Elmendorf AFB, essentially all noise level increases are over water or existing military lands. At Mountain Home AFB, lands potentially affected by increased noise are primarily rural grazing/agricultural lands. Land use at Elmendorf AFB and Mountain Home AFB would be less affected by noise than at Langley AFB. Potential land use consequences would be greater at Eglin AFB and Tyndall AFB, where localized noise would affect 123 and 23 additional acres of residential land use, respectively.

There would be no land use consequences under the airspace associated with Langley AFB. The noise levels within the Farmville MOA are not projected to change if the F-22 were based at Langley AFB. For Langley AFB, Eglin AFB, and Tyndall AFB,

supersonic activity would occur in over-water Warning Areas. Impacts at Elmendorf AFB and Mountain Home AFB would be similar to each other and greater than for the other three locations because over-land supersonic activity would noticeably increase. At both Elmendorf AFB and Mountain Home AFB, all supersonic activity would occur over land. Increases in sonic booms over special use areas would make the potential for consequences under Mountain Home airspace greater than any other location.

Socioeconomics addresses employment and earnings, population totals and trends, and housing stock and residential building trends for each installation and for those jurisdictions whose economies are closely associated with each base. The socioeconomic influence of the F-22 beddown would vary among the five bases. Langley AFB is the only base where a decrease in operations employment and earnings would occur. Operations employment is projected to decrease by 358 direct and secondary jobs and earnings would decrease by \$12 million. It is also the only base that would not create growth in project-related population and housing demand. Eglin AFB would create the smallest increase in operations employment and earnings and no substantive impacts. Operations employment would increase by 325 direct and secondary jobs and earnings by \$10 million. Elmendorf AFB would experience a greater increase in operations employment and earnings than Eglin AFB; operations employment would increase by 390 direct and secondary jobs and earnings by \$13 million. This level of activity in the greater Anchorage urban area is not a substantial change. Employment at Mountain Home AFB would increase by 1,560 direct and secondary jobs and earnings by \$57 million. Tyndall AFB would have the greatest increase in operations employment and earnings, creating 2,392 direct and secondary jobs and earnings of \$80 million. Both Mountain Home AFB, with a

smaller supporting community, and Tyndall AFB, with a greater socioeconomic impact, could experience growth pressures in population, housing, and services.

Environmental justice addresses whether the proposed action or alternatives results in disproportionately high and adverse environmental and health impacts, specifically noise impacts, on low-income populations, minority populations, and children. There is low potential for disproportionately high or adverse impacts to minority or low-income populations at all bases. No substantive difference exists among the bases relative to environmental justice. Eglin AFB has potential for noise impacts and therefore could have a slight, but not substantial, disproportionate impact on children. Under the airspace for Langley AFB, Eglin AFB, and Tyndall AFB there is little to no potential for disproportionate environmental justice consequences. At Elmendorf AFB and Mountain Home AFB, continued subsonic noise and increased supersonic noise in the over land training airspace is a concern for both the Alaska Native and Native American populations in traditional use areas.

In summary for Human Resources, the potential land use consequences at base level are greatest at Eglin AFB, followed by Tyndall AFB, and then Langley AFB due to potential impacts on residential areas. The potential socioeconomic consequences at base level are greatest at Mountain Home AFB and Tyndall AFB. Langley AFB is the only installation with a reduction in operations employment and earnings. There are no substantial base level environmental justice consequences at any location. Within the airspace for each base, Langley AFB, Eglin AFB, and Tyndall AFB have no discernible consequences, whereas Elmendorf AFB and Mountain Home AFB have Alaska Native and Native American concerns.

Resource Category: Community and Infrastructure

Community and infrastructure resources include public services such as potable water, wastewater treatment, electric and natural gas utilities, hazardous materials and waste, and solid waste management. They also include public schools and transportation. The potential Initial F-22 Operational Wing beddown would affect both on- and off-base employment that, in turn, may affect community and infrastructure resources. At Langley AFB, the projected decrease in population would result in a decrease in the use of on- and off-base services and utilities. At the other locations, there would be an increase in population with increased utility use and traffic. An increase in traffic volume (where employment increases) could result in congestion along access routes, at gates, or at key intersections. There would be no community or infrastructure consequences under the airspace units for the proposed action or any of the alternatives.

Community and infrastructure resources, like human resources, would be directly related to the number of squadrons exchanged at each base. At Langley AFB, where three squadrons of F-15Cs would be traded out for three squadrons of F-22s, there would be no environmental consequences to any of the community and infrastructure resources.

At Eglin AFB or Elmendorf AFB, where two squadrons of F-15Cs would be exchanged for three squadrons of F-22s, there would be a somewhat greater potential for community and infrastructure consequences than at Langley AFB. Increased demand for public services including schoolrooms, and increases in traffic could result in minor, localized issues but not in any substantial environmental consequences.

At Tyndall AFB, with the addition of three new operational squadrons, or Mountain Home AFB with the addition of two operational squadrons, there would be a higher relative demand for services, schools, and transportation resources than at the other bases. Off-base water demand near Mountain Home AFB would require expanded community resources, and localized school overcrowding could occur. Existing traffic constraints in areas leading to Mountain Home AFB and, especially, Tyndall AFB would have the potential to become more severe. The new housing and new dorms on Mountain Home AFB or new dorms on Tyndall AFB would help to keep traffic from becoming a more severe environmental consequence.

Hazardous materials and waste are more directly affected by the increase or decrease in the number of aircraft associated with the Initial F-22 Operational Wing beddown and are, therefore, less dependent upon population changes than other community and infrastructure resources.

The proposed action and alternative bases are all large-quantity hazardous waste generators. Introduction of F-22s would add composite materials to the waste stream but would not change hazardous waste management activities. Of the basing locations, Langley AFB would generate the smallest total increase of hazardous wastes because it adds only six primary aircraft above existing numbers.

In summary, the potential for community and infrastructure environmental consequences are somewhat greater at Mountain Home AFB or Tyndall AFB than at Eglin AFB or Elmendorf AFB. Langley AFB has the lowest potential for environmental consequences to community and infrastructure resources when compared to any alternative basing location.

The Next Steps

This Final EIS has been prepared incorporating public and agency comments provided in writing or at 23 public hearings in five states. After public release and notice of availability, a 30-day waiting period will occur. The Air Force will then issue a Record of Decision.

Preferred and Environmentally Preferred Alternatives

This EIS analysis evaluates a proposed action, four action alternatives, and a no-action alternative for the Initial F-22 Operational Wing Beddown. Langley AFB, Virginia, the proposed action, is the *preferred* alternative. The almost one-for-one replacement of F-22s for F-15Cs at Langley AFB would result in the least disruption to overall Air Combat Command (ACC) and Air Force readiness.

As part of the ultimate decision to select any of the alternatives for implementation, the Air Force is also required by regulation to designate the alternative or alternatives that are considered to be *environmentally preferred*. Differences among the alternatives were evaluated and compared during the NEPA process in the environmental resource areas of Aircraft Operations, Natural Resources, Cultural and Traditional Resources, Human Resources, and Community and Infrastructure. Recommendation of an environmentally preferred alternative followed review of the environmental technical results, comments from the public, input from agencies, and information provided by Alaska Natives and Native American tribes.

All five action alternatives meet Air Force operational goals. A detailed comparison of alternatives by resource area is described in the Draft EIS section 2.4.3.

Initial F-22 Operational Wing Beddown Final EIS

This Final EIS evaluates the environmental consequences of the Air Force proposal to beddown the Initial F-22 Operational Wing, comprised of three squadrons of 24 operating aircraft each, at Langley AFB in comparison with the alternative locations and the no-action alternative. Any comparisons made among the proposed action and the alternatives are to assist the decisionmaker with respect to this action. Any future weapons system beddown decision will consider the future action in comparison to whatever other reasonable action alternatives may be appropriate at that time.

Of the five beddown locations, Langley AFB is considered to be the alternative that is environmentally preferable. If the no-action alternative is also included in the selection of an environmentally preferred alternative, it would have less overall potential for environmental consequences than any action alternative, although the Langley AFB

alternative has the potential for fewer impacts than the no-action alternative in the areas of population and community infrastructure demands.

Summary of Environmental Comparison

The comparison of the environmental considerations in Table ES-1 uses a graded color scale, with green as the least potential for environmental consequences and yellow as the greatest potential for environmental consequences resulting from the initial beddown of three operational squadrons of F-22s. Table ES-1 is the same as Table 2.4-2 in the Draft EIS.

Table ES-1 demonstrates that the Langley AFB alternative can address operational goals with somewhat less potential for environmental consequences, overall, than the other alternatives.

Table ES-1. The Initial F-22 Operational Wing Beddown Summary of Environmental Comparison¹						
		<i>Langley AFB</i>	<i>Eglin AFB</i>	<i>Elmendorf AFB</i>	<i>Mountain Home AFB</i>	<i>Tyndall AFB</i>
Aircraft Operations	Base	●	●	●	●	●
	Airspace	●	●	●	●	●
Natural Resources	Base	●	●	●	●	●
	Airspace	●	●	●	●	●
Cultural and Traditional Resources	Base	●	●	●	●	●
	Airspace	●	●	●	●	●
Human Resources	Base	●	●	●	●	●
	Airspace	●	●	●	●	●
Community and Infrastructure	Base	●	●	●	●	●
	Airspace	NA	NA	NA	NA	NA

Least impact ● → ● → ● Greater impact

Note: 1. Refer to Draft EIS Table 2.4-1 for an explanation of the no-action alternative/environmental consequences. The Initial Operational Wing is comprised of three squadrons of aircraft (72 PAI).

