

LA4 CUMULATIVE EFFECTS, IRREVERSIBLE, AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Cumulative Effects

CEQ regulations stipulate that the cumulative effects analysis in an EIS should consider the potential environmental impacts resulting from “the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions” (40 CFR 1508.7). Recent CEQ guidance in *Considering Cumulative Effects* affirms this requirement, stating that the first steps in assessing cumulative effects involve defining the scope of the other actions and their interrelationship with the proposed action. The scope must consider other projects that coincide with the location and timetable of the proposed action and other actions. Cumulative effects analysis must also evaluate the nature of interactions among these actions.

In this section, an effort has been made to identify past and present actions in the Langley AFB region and those reasonably foreseeable actions that are in the planning phase at this time. Actions that have details and that have a potential to interact with the proposed action at Langley are included in this cumulative analysis. This approach enables decisionmakers to have the most current information available so that they can evaluate the environmental consequences of a beddown of the F-22 aircraft at Langley AFB and training in associated airspace.

Langley AFB is an active military installation that undergoes changes in mission and in training requirements in response to defense policies, current threats, and tactical and technological advances. The base, like any other major institution (e.g., university, industrial complex), requires new construction, facility improvements, infrastructure upgrades, and maintenance and repairs. In addition, tenant organizations such as the Air National Guard and NASA-Langley Research Center occupy portions of the base, conduct aircraft operations, and maintain facilities. All of these factors (i.e., mission changes, facility improvements, and tenant use) will continue to occur before, during, and after the proposed action if it is selected.

Past and Present Actions Relevant to the Proposed Action

Langley AFB has been a military installation for over 80 years. During this time, it has grown, been developed, and supported numerous kinds of aircraft. Past actions relevant to assessment of the proposed action start in 1994, focusing on changes to the number of aircraft at the base.

In 1994, a force structure change reduced the number of F-15C aircraft at Langley AFB from 72 to 54 aircraft. This action included a decrease in personnel from 10,823 to 10,585 persons, and a decrease in annual flights by the F-15C aircraft from 13,470 to 10,102. This action also included a drawdown of two ANG F-16 aircraft with a decrease in annual flights from 670 to 288. The Environmental Assessment/Finding of No Significant Impact (FONSI) (Air Force 1994b) for the drawdown action did not identify any significant impacts.

During this timeframe, Langley AFB F-15C aircraft were deployed to meet overseas contingencies on a temporary, but consistent basis. Corresponding reductions in airfield operations and sortie-

operations in training airspace ensued. The AEF concept provides a schedule for deployments that applies under baseline conditions and will apply to the proposed F-22 beddown.

In 1998, the Air Force implemented a force structure change that added 12 F-15C aircraft and 134 personnel to Langley AFB, increasing the total number of F-15C aircraft to 66 and the flights by about 2,000. These additional aircraft also increased training activities in the primary and occasional use airspace. Analysis of this force structure change (Air Force 1998b) resulted in a FONSI, and implementation of the action created the baseline situation against which the proposed F-22 beddown was evaluated.

Also in 1998, the United States Navy (Navy) realigned 156 F/A-18 aircraft to Naval Air Station (NAS) Oceana, Virginia Beach, Virginia, and 24 F/A-18 aircraft to the Marine Corps Air Station (MCAS) in Beaufort, South Carolina (Navy, 1998). The reassigned aircraft conduct training flights in some of the same airspace used by aircraft from Langley AFB. The airspace units that would be affected directly include the offshore Warning Areas W-72, W-122, and W-386. These F/A-18s and other Navy aircraft form the prime users of the three Warning Areas. The Navy prepared an EIS/Record of Decision (Navy 1998) that reflected analysis of combined Navy, Langley AFB, and other users of the affected airspace. These Navy and Marine Corps actions are part of the baseline conditions presented in this F-22 beddown EIS.

Incremental Impacts of the Proposed Action with Reasonably Foreseeable Future Actions

During the timeframe (FY 2002 to 2005) for F-22 facility construction, Langley AFB has proposed a number of actions that are independent of the proposed action and would be implemented irrespective of a decision on the proposed F-22 beddown. These actions are a dormitory and family housing (\$24.8 million in 2002), family housing (\$5.6 million in 2003), privatize family housing (\$17 million in 2003), new housing office (\$1.2 million in 2003) and replacement of water and sanitary sewer mains in a portion of the base. Other ongoing maintenance and repair activities are also likely to occur at the base during this period.

The Navy is proposing to introduce the new F/A-18E/F Super Hornet aircraft to the Atlantic Fleet. These aircraft would replace older F/A-18C/D and F-14 aircraft currently operating out of NAS Oceana and use some of the same airspace flown by the current F-15Cs or proposed F-22s from Langley AFB. The Navy has begun to prepare an EIS to evaluate various alternatives for siting the aircraft. Four bases are currently being considered as possible home bases for the new aircraft: NAS Meridian, Mississippi; MCAS Beaufort, South Carolina; MCAS Cherry Point, North Carolina; and NAS Oceana, Virginia. The Navy is planning to transition in 60 F/A-18E, 70 F/A-18F, and 34 F/A-18E/F Fleet Reserve Squadron aircraft for a total of 164 aircraft over a six-year period starting in 2004. Total personnel associated with the aircraft are 523 officers and 2,808 enlisted.

As part of this effort the Navy has begun an additional study to identify sites that would support an Outlying Landing Facility that would be needed to support MCAS Cherry Point and Beaufort and would supplement Fentress Field near NAS Oceana. Since the process to evaluate this set of actions has just begun, details of the alternatives and how they might interact with the proposed F-22 beddown remain imprecise.

The Navy has also initiated an EIS to evaluate the potential environmental consequences of the establishment of new and/or modification of existing MOAs near MCAS Cherry Point, North Carolina. Details concerning the use of this airspace are not yet available.

Other regional projects include continuing upgrades to I-64, expansion of commercial buildings, and construction of warehousing complexes such as West Park located on Big Bethel Boulevard. These projects are part of the ongoing construction within the region and are not expected to cause any change in employment or population that could affect the Langley AFB proposed action.

Analysis of Cumulative Effects

The following analysis considers how the impacts of these other actions might affect or be affected by those resulting from the proposed action at Langley AFB and whether such a relationship would result in potentially significant impacts not identified when the proposed action is considered alone.

Past implementation of force structure changes at Langley AFB, as noted above, form the affected environment/no-action alternative. As such, analysis of the effects of these changes has been first treated in the no-action alternative, then integrated into the proposed action. For example, analysis of airfield operations and associated noise includes baseline activities by all users, including the F-15Cs, for the no-action alternative. Noise modeling then mathematically removed the F-15Cs, and the proposed F-22 operations were introduced to address the proposed action.

Similarly, the realignment of F/A-18 aircraft to Oceana NAS has been assessed cumulatively within both the no-action and the proposed action. Sortie-operations by these Navy aircraft form part of the total activity addressed under no-action and proposed action.

For both the Langley AFB and the Oceana NAS past actions, their effects were integrated with those resulting from the F-22 proposed action. This approach applied to all relevant resource categories, so the analysis of impacts presented in section LA3 also includes the cumulative effects of these past and present actions.

Although not fully analyzed at this time in separate environmental analyses, none of the future on-base actions would be expected to result in more than negligible impacts individually or cumulatively. All actions affect very specific, circumscribed areas, and the magnitude of the actions is minimal. Short-duration, temporary increases in localized noise and air emissions from construction and related vehicles, as well as a minor but temporary increase in on-base traffic would be expected. These effects would generally overlap with those from F-22 proposed construction. However, the two sets of construction activities would be geographically separated on-base and localized. Given that the proposed F-22 construction would likewise have a minimal effect on noise, air quality, and traffic, the combined impacts of these actions would remain well below the threshold of significance for all resources.

With a decision regarding basing the Navy's F/A-18E/F aircraft more than two years away, precise evaluation of this action's impacts or their cumulative effects is not achievable. If the Navy decides to base them at Oceana NAS, interaction with the proposed F-22 beddown would occur in the training airspace shared by Oceana NAS and Langley AFB (W-72, W-122, and W-386). Navy sortie-operations in these Warning Areas would likely increase in direct correlation to the increase in

aircraft (-156 F/A-18s + 164 F/A-18E/Fs = +8 aircraft). An estimated 20 percent more sortie-operations would be distributed into these Warning Areas and other airspace units. Not much overall change to conditions would occur. Assuming similar operational patterns as the F/A-18s, the additional F/A-18E/F sortie-operations would probably yield an increase in noise of 1 dB or less. Even combined with the proposed F-22 activity, noise levels in these Warning Areas would likely remain below 45 DNL.

The beddown of F/A-18E/F aircraft to Oceana NAS would increase personnel, and possibly air emissions, in the same general area of Virginia as Langley AFB. However, the distance separating the two bases and the large population of the region would greatly decrease the potential for the two actions to produce cumulative effects.

If the Navy decides to base the F/A-18E/Fs at one of the other three alternative locations, sortie-operations in the shared Warning Areas would probably decrease. Cumulative noise levels and other related effects would, in response, be reduced also.

Implementation of the Outlying Landing Field relocation and MOA restructuring actions would also tend to draw activity away from the areas proposed for use by the F-22s. As such, the potential for cumulative effects would be negligible.

The cumulative effect of ongoing conversion of open lands to commercial, industrial, and educational facilities within areas designated by the AICUZ and the APZ is encroachment on Langley AFB. This has the cumulative potential for more individuals and activities to be subjected to undesirable noise levels or safety issues. Langley managers continue to work with surrounding communities to identify non-conforming off-base uses and recommend actions to reduce environmental risks.

Irreversible and Irretrievable Commitment of Resources

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the uses of these resources have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irreversible effects at Langley AFB are associated with construction impacts.

For the Langley AFB F-22 beddown, most resource commitments are neither irreversible nor irretrievable. Most impacts are short-term and temporary, such as air emissions from construction, or longer lasting, but negligible (e.g., air emissions from mobile sources).

Under the proposed action, construction and renovation of base facilities would occur on approximately 16 acres of land previously disturbed and would consume limited amounts of material typically associated with interior renovations (wiring, insulation, windows, drywall) and exterior construction (concrete, steel, sand, brick). An undetermined amount of energy to conduct renovation, construction, and operation of these facilities would be expended and irreversibly lost. Demolition of buildings 754, 755, 756, and 365, along with the rehabilitation of the West Apron would generate construction debris that would consume landfill space.

Buildings 754, 755, and 756 are identified as “contributing” buildings to the historic district at Langley AFB, and their demolition would be considered an adverse effect to the Langley Field Historic District. New hangars constructed to replace buildings 754, 755, and 756 would be designed in accordance with the Secretary of the Interior’s Standards, Air Force requirements and in consultation with the Virginia SHPO. These new facilities would meet foreseeable maintenance needs of the F-22 aircraft. No future additional demolition of historic hangars in the District is anticipated.

These construction and ground-disturbing activities would occur on previously disturbed lands and would not adversely impact wetlands or terrestrial communities. Irrecoverable resource commitments are, therefore, confined to buildings associated with construction.

Training operations would involve consumption of nonrenewable resources, such as gasoline used in vehicles and jet fuel used in aircraft. Use of training ordnance would involve commitment of chaff and flares. None of these activities would be expected to significantly affect environmental resources.

