

1.0 PURPOSE AND NEED FOR THE ACTION

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1.1 INTRODUCTION

Federal law and Air Force policy requires Force Development Evaluation (FDE) testing and Weapons School (WS) training of new aircraft. To meet this requirement for the F-22, the Air Force proposes to base, or beddown, F-22 aircraft at Nellis Air Force Base (AFB) in Nevada (Figure 1.1-1). This section presents the purpose and need of the Proposed Action.

1.2 BACKGROUND FOR THE PURPOSE AND NEED

1.2.1 F-22 Aircraft

Air superiority may well determine the outcome of any modern conflict. Air Force fighter aircrews and aircraft first deployed to a conflict will face the full weight of the enemy's air forces and surface-to-air defenses. These aircrews must be equipped, trained, and ready to overcome the enemy air forces and defenses quickly and decisively. Modern air battles tend to be brief and extremely dynamic. By winning air superiority rapidly and thoroughly, the United States (U.S.) can safely establish and maintain ground forces and other assets needed to conduct and win a war with minimum casualties. To ensure success of these and other operations, U.S. air superiority must extend deep into enemy territory.

Existing and developing foreign aircraft and air defense systems have reached levels of sophistication and effectiveness sufficient to pose a significant threat to current U.S. fighters. Emerging non-U.S. fighter aircraft with advanced technologies are expected to offer better capabilities than the Air Force's existing air superiority fighter, the F-15C. The worldwide prevalence of sophisticated air-to-air and surface-to-air missiles continues to grow, increasing the number of threats to which the F-15C is vulnerable. In 1985, Congress determined that a need existed to provide the Air Force with a next-generation fighter, to supplement the aging F-15C fleet, and to ensure air superiority well into the 21st century. Congress also determined that the F-22 would meet this need.

The Air Force has now developed the F-22. This aircraft embodies critical combat capabilities to fulfill its primary air superiority role. The F-22 epitomizes the characteristics needed for this role, offering a unique combination of capabilities:

- *Stealth:* Using design and radar-absorbent composite materials, the F-22 is harder to detect by radar than conventional aircraft of similar size.
- *Supercruise:* Because the combat capability allows the F-22 to sustain supersonic speeds without the use of afterburners (an afterburner greatly increases fuel consumption), it can operate longer at higher speeds and be less vulnerable to other aircraft and missiles.

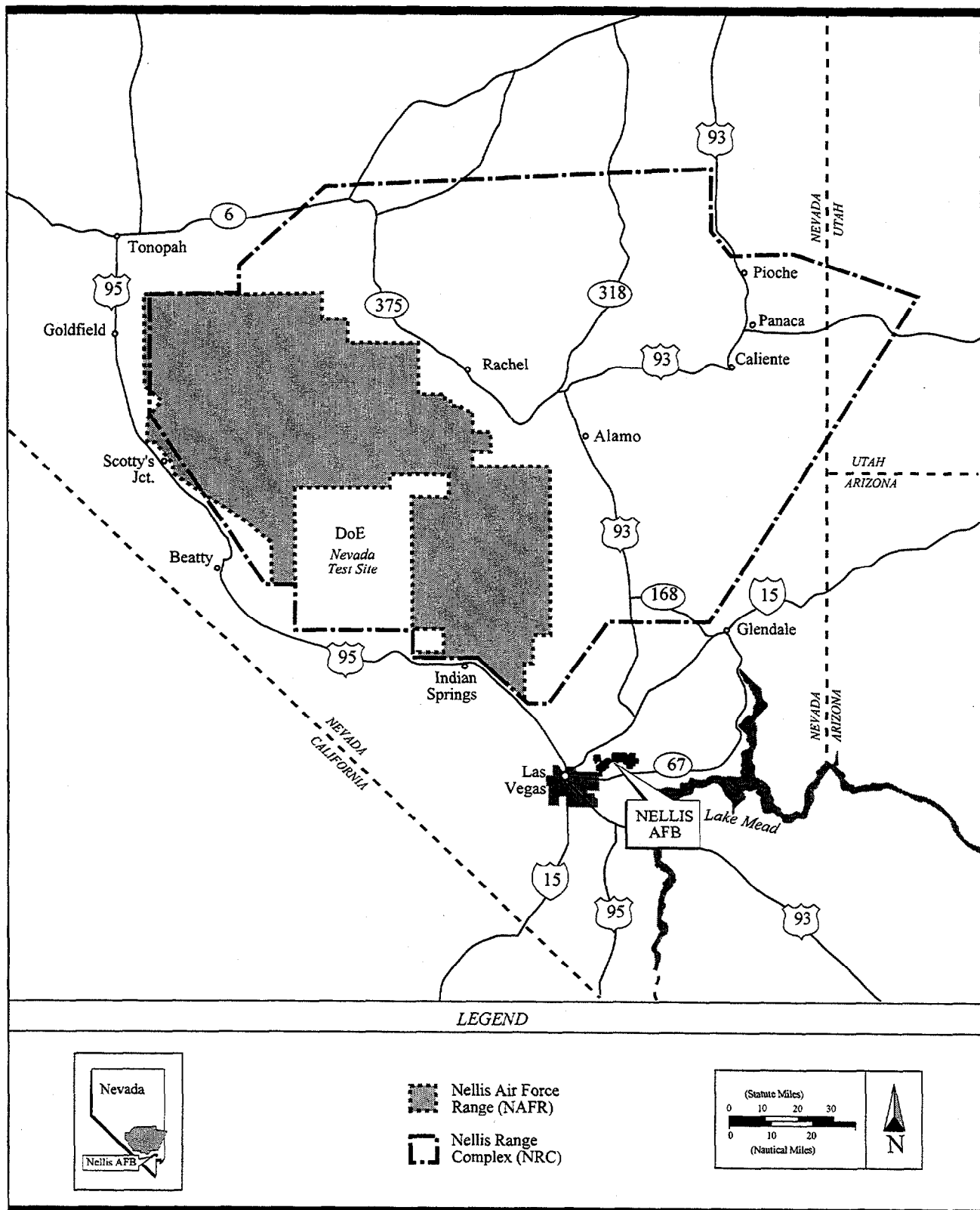


Figure 1.1-1. Nellis AFB and Nellis Range Complex Location Map

- *High maneuverability:* By directing engine thrust, an F-22 pilot can turn more rapidly and maintain better control than other fighter aircraft can and is better able to evade missile threats.
- *Comprehensive combat information systems:* Highly sophisticated avionics systems are integrated throughout the F-22 to provide the pilot information from many sources and produce a clear, simple picture of the combat situation.
- *Maintainability, sustainability, reliability, and responsiveness:* Computerized self-tests of all systems represent just one of the features designed to enhance the reliability and mission-readiness of the F-22.

The F-22, powered by two F119 Pratt and Whitney 100 jet engines each capable of supplying approximately 35,000 pounds of thrust, can fly Mach 1.4. Measuring approximately 62 feet long at the fuselage with a 44-foot wingspan, the F-22 uses air-to-air and air-to-ground guided weapons and a 20-mm cannon. It also employs defensive countermeasures such as chaff and flares. These characteristics will enable the F-22 to fly undetected into enemy territory, launch its weapons, outmaneuver enemy fighters, and evade enemy air defenses.

1.2.2 F-22 Development and Deployment Process

The Air Force uses a standard process for weapons system acquisition, production, testing, and deployment; this is the process being used for F-22 development. Figure 1.2-1 outlines the past, ongoing, and proposed phases, milestones, and associated environmental documentation for the F-22 development process. This systematic process guarantees the following:

1. The F-22 will receive thorough, intensive testing and evaluation to ensure its effective, safe operation;
2. FDE program and WS will continue to refine the capabilities of the F-22 and improve tactics employed in the F-22 for as long as the aircraft remains part of the Air Force inventory; and
3. Environmental documentation, developed in accordance with National Environmental Policy Act (NEPA), the Clean Air Act, and all other applicable regulations, has been or will be prepared for each major action within the process, including future beddowns of operational F-22 units.

The requirement that led to the F-22 was identified through the process described in Air Force Instruction (AFI) 10-601, *Mission Needs and Operational Requirements Guidance and Procedures*. During the early 1980s, the Air Force assessed its tactical capabilities against projected threats and determined that a mission deficiency would emerge in the near future. Such a deficiency could jeopardize the U.S.'s ability to ensure that its forces have the freedom of action to conduct operations against opposing forces. By 1984, the Air Force had defined the

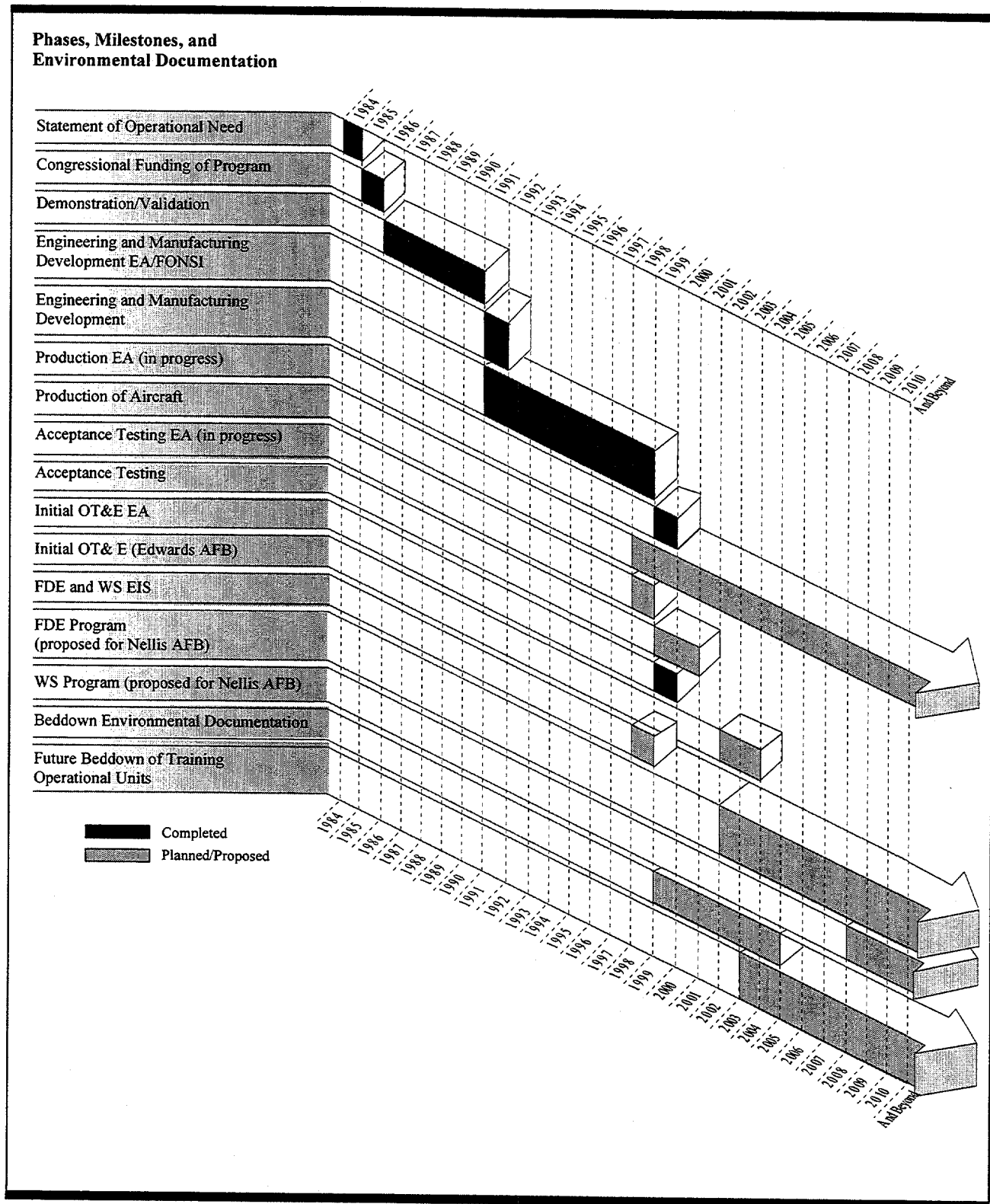


Figure 1.2-1. Past, Ongoing, and Proposed Elements of F-22 Development Process

requirements for an advanced tactical fighter, presenting them in a *Statement of Operational Need*.

Since 1986, the F-22 program has progressed from demonstration/validation and engineering and manufacturing development into Initial Operational Test and Evaluation (IOT&E). The first F-22s flew in 1997, and more than 204 flight hours have been completed as of March 1999.

F-22 FDE pilot training would occur in 2002, with actual FDE activities proposed to begin in 2003 after completion of IOT&E. FDE, like IOT&E, is a part of the overall OT&E program for the F-22. While IOT&E ensures that the F-22 meets mandatory operational capabilities, FDE, lasting as long as the aircraft is used, tests and evaluates the aircraft and its systems to ensure that it continues to meet operational requirements. FDE also explores the use of new flight techniques and tactics to satisfy deficiencies in aircraft performance and to develop training programs. By testing capabilities of an aircraft in tactical situations, including air-to-air, air-to-ground, and electronic combat operations, FDE provides essential input on tactics to the WS and operational units.

The WS represents an essential activity performed throughout the life of the aircraft in the Air Force inventory. As established in Multi-Command Regulation 55-120, the WS conducts graduate level instructor courses in weapons and tactics employment. The WS offers academic courses and flight training on specific aircraft to qualified instructor pilots. Upon completion of WS courses, which includes two weeks of combat training exercises, graduate officers return to their home units to provide advanced instruction to unit pilots on employing the aircraft for its mission. As currently planned, WS for the F-22 would start at Nellis AFB in 2008.

In 2003, Air Education and Training Command would receive F-22 aircraft to establish initial pilot training and begin qualifying pilots to fly the F-22. To accomplish this training, Air Education and Training Command would first establish a training squadron. Members of this squadron would complete pilot training to fly the F-22 and successfully perform the academic work and flying skills necessary to achieve instructor status. Some of these new instructor pilots would be assigned to operational units that will receive F-22s. Some would also become WS instructors. By 2008, a sufficient number of qualified instructor pilots would be ready to receive the advanced training of the WS.

The ultimate goal of the F-22 development and deployment process is to provide Air Force operational units with a proven, tested aircraft, as well as with tactics and operational guidance to meet mission requirements. The Air Force will prepare appropriate environmental analyses for any future F-22 beddowns for operational units.

1.3 PURPOSE AND NEED FOR THE ACTION

The purpose of the Proposed Action is to implement the FDE program and WS for the F-22. F-22 development and the manufacturing process have been initiated, and the aircraft is currently being evaluated. F-22 aircraft will be placed in operational units and available for combat missions by 2005.

In accordance with 10 U.S.C. 2399, the Department of Defense (DoD) and the Air Force must test major weapon systems. In addition, Air Force Instruction 99-102, *Operational Test and Evaluation*, directs that "OT&E (of which FDE is a part) will be conducted in as realistic an operational environment as possible and practicable, and identify and help resolve deficiencies as early as possible. These conditions must be representative of both combat stress and peacetime operational conditions." The AFI defines the needed elements of FDE and explains how the Air Force major command operating the aircraft plans and conducts FDE until the aircraft is retired. For the F-22, Air Combat Command (ACC) is the major command responsible for implementing the FDE program. FDE serves several important functions:

- refines employment doctrine and tactics in response to changing threats;
- develops or refines operational procedures and training programs;
- evaluates changes to the aircraft (F-22) to fix newly identified deficiencies and verifies they have been fixed throughout the entire time the aircraft is in the Air Force inventory;
- explores nonmateriel (e.g., tactics) means of meeting changing operational requirements as long as the aircraft remains in the inventory;
- evaluates routine software changes (operational flight programs), preplanned product improvements, modifications, upgrades, mission data updates, and other improvements or changes as long as the aircraft is in the inventory;
- researches, demonstrates, exercises, analyzes, and evaluates tactics against anticipated threats; and
- ensures proper aircraft performance in combat by providing training, information on operational capabilities, and new requirements.

Under Multi-Command Regulation 55-120, ACC must establish and maintain a WS for each aircraft type in its inventory. This program operates throughout the life of the aircraft, adapting to changes in technology, tactics, and threats. Feedback to and from the FDE program is essential to the WS since it applies, evaluates, and refines tactics developed under FDE. The WS provides up-to-date training for pilots already qualified to fly the aircraft. With tactics and combat training as its focus, the WS offers rigorous, intensive, and realistic instruction that enables WS graduates to effectively teach combat skills to members of their home operational units. The WS

- provides graduate-level training for weapons and tactics for a specific aircraft type;
- prepares graduates to instruct other pilots in the most up-to-date tactics and capabilities, thereby readying operational units with combat missions for potential enemy threats; and

- includes intensive combat training exercises offering the realism needed to test and hone the skills and knowledge of the graduates.

The FDE program and WS represent essential but distinct parts of the Air Force's overall mission. These two essential parts of the F-22 program have different purposes but very similar needs. The types of flying activities required in each program are similar and the fundamental supporting assets (i.e., base, airspace) needed by both programs also closely match. FDE could be established at a different base than WS, and the Air Force considered that possibility. But splitting the FDE program and the WS between two locations would not be an efficient or effective use of existing available infrastructure, training assets, and personnel. Economies of maintenance, training, and personnel would be achieved by establishing both the FDE program and WS at the same base and using the same airspace to conduct needed flight operations. Further economies would accrue if a base selected for the F-22 FDE program and WS already supported such programs for other fighter aircraft. Establishing the FDE and WS at two separate locations would also reduce the opportunity for the two programs to provide feedback to one another about the capabilities of the F-22 and the expansion of those capabilities for combat. Transitioning specific F-22 aircraft (airframes) from FDE to WS would be simpler and more effective if both programs resided at the same base. After considering the concept to duplicate the F-22 FDE program and WS at different bases and the factors described above, the Air Force concludes it would not be reasonable to separate the programs.

Individually and combined, the FDE program and WS involve unique requirements that differ from those associated with the training activities of operational units. Both programs need specific, similar assets to meet their unique requirements. For the F-22, these fall into three major categories:

- *Airspace and ranges.* The F-22 FDE and WS each need military airspace, secure training ranges, and associated ground facilities capable of accommodating specific operational and training activities. Such activities are very similar for both FDE and WS; only the purpose differs between the two programs.
- *Professional expertise and opportunities for realistic operations.* Basing of the F-22 must provide personnel with the opportunity to perform realistic operations and the training needed to realize the full value of the FDE program and WS.
- *Base.* A base for FDE and WS must offer the physical and organizational infrastructure to support these programs.

1.4 ENVIRONMENTAL IMPACT ANALYSIS PROCESS

1.4.1 Regulatory Requirements

This Environmental Impact Statement (EIS) was prepared in conformance with the National Environmental Policy Act (NEPA) and associated regulations. NEPA (Public Law 91-190, 42

U.S.C. 4321-4347, as amended) was enacted to establish a national policy for the protection of the environment. It also established the Council on Environmental Quality (CEQ) to implement the provisions of NEPA and review and appraise federal programs and activities in light of NEPA policy. CEQ developed regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508). These regulations outline the responsibilities of federal agencies under NEPA and provide specific procedures for preparing EISs to comply with NEPA. AFI 32-7061, which implements the CEQ regulations with regard to Air Force actions, defines the steps and milestones in the Environmental Impact Analysis Process (EIAP). The major milestones in the EIAP for the proposed F-22 beddown at Nellis AFB include the following:

- publishing a Notice of Intent (NOI) to prepare an EIS;
- inviting public and agency input to determine and define the significant issues to be addressed in the EIS;
- collecting data on the affected environment to provide a baseline for analyzing the effects of the alternatives;
- assessing the potential impacts of the Proposed Action and alternatives on the environment;
- preparing and distributing a Draft EIS for public review and comment;
- establishing a public review period, including public hearings to solicit comments on the analysis presented in the Draft EIS;
- preparing and distributing a Final EIS incorporating all comments received on the Draft EIS and responding to the substantive issues raised during the public review period; and
- publishing a Record of Decision (ROD), outlining the Air Force's decision, no sooner than 30 days after the availability of the Final EIS.

Appendix A lists other federal and state laws and regulations pertinent to the Proposed Action. This list is not encyclopedic. Rather it focuses on those laws and regulations that either 1) set regulatory thresholds for impacts that could occur as a result of implementing the Proposed Action, 2) enforce a process for the evaluation of potential impacts for a particular resource, or 3) set standards for the treatment of a resource. Only those laws and regulations that apply to resources affected by the Proposed Action are presented.

PERMITS: Should the Proposed Action be implemented, the Air Force would need to obtain new or update existing permits. These permits would apply to the removal and disposal of asbestos as a result of demolition of, and modifications to, on-base buildings; construction of new buildings; and updating of Nellis AFB's Title V permit under the Clean Air Act. Nellis AFB may also need

to update its Resource Conservation and Recovery Act (RCRA) Part B permit for hazardous waste.

Asbestos Removal and Disposal: Prior to demolition or additions to buildings, asbestos surveys are required by Air Force regulation. For the removal of asbestos, a notification process with Clark County, the state health board, the Environmental Protection Agency (EPA), and the base hazardous waste coordinator is required. Removal would be contracted out to state-certified and licensed contractors. Contractors would obtain the necessary permits for the removal, handling, and transportation of asbestos. Contractors must have access to a landfill permitted for disposal of asbestos.

Construction of New Buildings: The base would submit building plans and a request for location to the base zoning and development board. An air quality dust permit must be obtained from Clark County if the building site causes 0.25 acre or more of topsoil disturbance. The Clark County Surface Disturbance Permit would be applied for by Nellis AFB after finalization of the building footprints but prior to construction.

Title V Permit: Modifications to the current basewide Title V Permit would be required if equipment other than mobile aircraft maintenance equipment was added or replaced. Due to a base exemption, no modifications are required for changes or additions to mobile equipment used to maintain or service planes on the ground. However, Clark County air quality operating permits for individual pieces of equipment would have to be modified for all changes. All modifications to the Title V Permit and the Clark County air quality operating permits would be applied for by Nellis AFB after equipment needs are finalized.

RCRA Part B Permit: Nellis AFB currently holds a RCRA Part B permit for management of hazardous waste generated by maintenance and other activities. If any new waste streams are identified after the production model of the F-22 is finalized, the appropriate transportation, storage, and disposal procedures would be implemented and Nellis AFB's RCRA Part B permit would be modified as necessary.

AGENCY CONSULTATION: Both NEPA and CEQ regulations require intergovernmental notifications prior to any detailed statement of environmental impacts. Through the process of Interagency and Intergovernmental Coordination for Environmental Planning (IICEP), concerned federal, state, and local agencies (such as the U.S. Fish and Wildlife Service [USFWS], Bureau of Land Management [BLM], Nevada Division of Environmental Protection, and the Nevada State Historic Preservation Officer [SHPO]) must be notified and allowed sufficient time to evaluate potential environmental impacts of a proposed action. This was accomplished in two ways: (1) agencies were contacted early in the EIS process via letters to solicit their comments on the Proposed Action and No-Action Alternative, and (2) the Air Force also conducted scoping meetings. Appendix B, *Public Participation Summary*, provides a list of the agencies and governmental entities to which the letters were sent and any responses. Comments from these agencies were reviewed for incorporation into the environmental analysis.

GOVERNMENT-TO-GOVERNMENT CONSULTATION: Several laws and regulations address the requirement of federal agencies to notify or consult with American Indian groups or otherwise consider their interests when planning and implementing federal undertakings.

On April 29, 1994, the President issued the *Memorandum on Government-to-Government Relations with Native American Tribal Governments*, which specifies a commitment to developing more effective day-to-day working relationships with sovereign tribal governments. The intent of this memorandum has been incorporated in the *DoD American Indian and Alaska Native Policy* and Executive Order 13084, *Consultation and Coordination with Indian Tribal Governments*, which the Air Force is following. The DoD American Indian and Alaska Native policy supports tribal self-government and government-to-government relations with the Federal government. It specifies that DoD will meet its trust responsibilities to tribes and will address tribal concerns related to protected tribal resources, tribal rights, and Indian lands. The policy also addresses procedures for building stable and enduring relationships with tribes.

As part of the NEPA process, 17 tribes and one organization with historical ties to the land in the NRC vicinity were notified at the initiation of the project. Discussion of the F-22 is part of an ongoing government-to-government consultation between Nellis AFB and these tribes. This ongoing consultation is directed through the Nellis AFB Native American Interaction Program. A list of the consulted tribes is presented in Appendix B.

1.4.2 Public Involvement Process

AFI 32-7061 and CEQ regulations require an early and open process for identifying significant issues related to a proposed action and obtaining input from the public prior to making a decision that could significantly affect the environment. These regulations specify public involvement at various junctures in the development of an EIS, including public scoping prior to the preparation of a Draft EIS, and public review of the Draft EIS prior to finalizing the document and making a decision. Appendix B of this EIS includes a summary of public participation in the EIAP.

Prior to the publication of the Draft EIS, the public process included publishing the NOI in the *Federal Register* on August 11, 1997. After public notification in newspapers and radio stations, three scoping meetings, averaging 3 hours in duration, were held August 26 through August 28 at the following southern Nevada locations: Tonopah, Las Vegas, and Caliente. A total of 22 people attended the meetings and provided comments. Of these 22, seven people provided oral input. By the end of the scoping period, September 30, 1997, 13 written comments had been received.

Following these scoping meetings, the Air Force prepared this Draft EIS and made it available to the public and agencies for review and comment. The document was sent to those in the public who requested a copy and was made available at selected public facilities such as libraries and local government agencies within southern Nevada. The public review and comment period for the Draft EIS will last 45 days. During this time hearings will be held to provide an opportunity for the public to evaluate the proposal and the analysis contained within the Draft EIS.

Comments received during the public review and comment period will be addressed in the Final EIS and provided to the decisionmaker for consideration. A copy of the Final EIS will be published and made available to the public. The Final EIS will include responses to comments and questions received during the public comment period. After a minimum of 30 days of review, the Air Force may publish a ROD. The ROD would specify the selected alternative, its implementation, and mitigation measures, if any, that could be employed to reduce environmental impacts.

SUMMARY OF ISSUES IDENTIFIED DURING SCOPING: Of the 20 written and oral comments received from individuals, agencies, or interest groups, noise was the issue receiving the most interest. Many citizens expressed concern about current sonic booms and any additional booms that could negatively impact their quality of life as well as recreational and tourist opportunities. In both Tonopah and Caliente, concern centered around the abundance of supersonic flights in the region. In Las Vegas, some residents of the El Dorado subdivision (near the base) hoped that the F-22 would not add more noise over their neighborhood.

Two other areas of concern were how the F-22 would operate and the way in which it would fly within current airspace. Several people were concerned that F-22 flights would occur at such an altitude or in such a manner as would conflict with commercial or private aviation activities, and others wondered if current airspace boundaries would need to be reconfigured.

Department of Interior agencies (USFWS and BLM) comments centered on wildlife populations and habitats, noise impacts on wildlife, and possible impairment of water quality because of hazardous materials generated on-base and construction activities. No comments were received from the Nevada SHPO.

ISSUES RAISED THAT ARE BEYOND THE SCOPE OF THIS EIS: The public scoping process resulted in comments questioning the decision to build the F-22 aircraft. However, the decision to manufacture the F-22 and incorporate it into the Air Force inventory was decided by Congress and environmental effects of its early development have been addressed in other NEPA documents.

1.4.3 Decisions To Be Made

After considering the environmental information presented in this EIS, as well as other factors relative to national defense, the Air Force will decide whether to implement the Proposed Action or to select the No-Action Alternative. A decision to proceed with the Proposed Action would result in basing the F-22 aircraft for FDE and WS at Nellis AFB, and implementing associated supporting actions. If the No-Action Alternative is selected, the F-22 aircraft beddown for the purposes of FDE and WS training would not occur at Nellis AFB. Selection of the No-Action Alternative may affect the timing of F-22 integration into the Air Force.