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M-X/MPS

ENVIRONMENTAL
TECHNICAL REPORT

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Prepared for
**United States Air Force
Ballistic Missile Office
Norton Air Force Base, California**

By
**Henningson, Durham & Richardson, Inc.
Santa Barbara, California**

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DEPARTMENT OF THE AIR FORCE
WASHINGTON 20330



OFFICE OF THE ASSISTANT SECRETARY

Federal, State and Local Agencies

On October 2, 1981, the President announced his decision to complete production of the M-X missile, but cancelled the M-X Multiple Protective Shelter (MPS) basing system. The Air Force was, at the time of these decisions, working to prepare a Final Environmental Impact Statement (FEIS) for the MPS site selection process. These efforts have been terminated and the Air Force no longer intends to file a FEIS for the MPS system. However, the attached preliminary FEIS captures the environmental data and analysis in the document that was nearing completion when the President decided to deploy the system in a different manner.

The preliminary FEIS and associated technical reports represent an intensive effort at resource planning and development that may be of significant value to state and local agencies involved in future planning efforts in the study area. Therefore, in response to requests for environmental technical data from the Congress, federal agencies and the states involved, we have published limited copies of the document for their use. Other interested parties may obtain copies by contacting:

National Technical Information Service
United States Department of Commerce
5285 Port Royal Road
Springfield, Virginia 22161
Telephone: (703) 487-4650

Sincerely,


JAMES F. BOATRIGHT
Deputy Assistant Secretary
of the Air Force (Installations)

1 Attachment
Preliminary FEIS

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1.0 GENERAL INTRODUCTION

1.1 INTRODUCTION

(Final Environmental Impact Statement)
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As indicated in Chapter 6 (Public Comment Volume) Section 6.4, there was a desire on the part of many commentors to see a much greater level of detail than that which appeared in the DEIS or is in the FEIS. Other than those instances where the detail requested is beyond any intended level of analysis, there are a series of present and future planning efforts that will address the degree of analysis suggested. These planning efforts can generally be categorized as Air Force initiated planning and planning generated by federal agencies other than the Air Force as well as planning initiated by local and state governments and Indian tribes. The following sections of this volume will address the nature of these programs and highlight the levels of effort encompassed within specific plans.

(Draft Environmental Impact Statement)

2.0 AIR FORCE ENVIRONMENTAL PLANNING

The Air Force environmental planning function is designed to implement Department of Defense and Air Force policies and programs to (1) protect and improve the broad area natural resources of air, water, and land; (2) prevent, abate and control deterioration or pollution of the environment; and (3) conserve and effectively utilize soil, water, vegetation, fish and wildlife, and man-made resources.

Similar to traditional planning efforts, the Air Force began its involvement in environmental planning with a set of goals which outline its planning process. These include:

- o providing for systematic and effective participation and coordination with all levels of government in matters of environmental planning so the Air Force needs and concerns are made known and protected while preserving the environment in so far as this is possible.
- o providing for current and long range operational/support capability to perform assigned, proposed, or potential missions.
- o ensuring wise protection, provision, use, and management of human, financial, natural, and man-made resources.
- o determining the desires, concerns, priorities, and projected needs of the Air Force community, while recognizing the base as interacting with surrounding communities.
- o promoting land use/airspace compatibility with off base areas which affect or may be affected by base development and operations, and
- o promoting the public health, safety and welfare, and overall quality of life.

Air Force Environmental Planning is organized to ensure that the Air Force, operating within current constraints, can meet the requirements and responsibilities of each of its roles, and achieve the stated Air Force goals.

As previously discussed, the FEIS provides environment information to aid in making two major decisions: selection of the DDA and of the OB suitability zones. It does not, however, contain all of the information which will become available over the next few years for selection of each specific facility site. This process of step-by-step analysis and decisionmaking is called "tiering" and is authorized by the Council on Environmental Quality regulations implementing NEPA. Tiering is appropriate when the sequence of analysis is from an EIS at an early decision stage, such as this DDA selection and OB vicinity selection, to a later stage of selecting specific facility construction sites.

The FEIS presents the environmental consequences of conceptual missile deployment layouts and conceptual operating base layouts. These conceptual layouts have been tentatively sited within the suitability zones of a bistate

suitability area. Zones were determined to provide suitable alternative layout potential, taking into account system operation, geologic features, support requirements and desirable features and avoiding known, sensitive environmental areas.

This area-wide EIS (Tier I) will not be used to decide irrevocably the sites of each individual facility or the OB boundary within the suitability zones. Decisions regarding the siting of each individual facility, utility corridor, and the OB boundary, as well as site-specific location of construction camps and their attendant life support facilities, will follow further, more site-specific analysis in subsequent tiers.

The Tier IIA analysis will include the fiscal year 1982 military construction program. The major elements of these facilities include an OB, OBTS, and connecting DTN. The data is already being collected relative to the siting of the Tier IIA facilities at all locations. The scopes of work relative to data accumulation are very comprehensive. A sampling of these statements of work follows and records the level of data that will be retrieved.

SOCIOECONOMICS

Technical Memorandum #1

ROI

Coyote OB - Clark and Lincoln counties

Beryl OB - Iron, Beaver, Washington, and Lincoln counties

Milford OB - Beaver and Iron counties

Clovis OB - Curry and Roosevelt counties

These ROIs are consistent with the other social impact studies planned for Tier IIA. The communities analyzed within each of these counties will be those included in the other social impact studies performed by HDR.

The Tier IIA analysis will include:

Sensitivity analysis of alternative model specifications and policy options

Key areas of uncertainty, alternative baseline projections, and specific planning options will be analyzed. The policy options include delays in operational staffing and overtime use.

Land value impact analysis

Impacts on residential real estate values in the OB areas will be estimated. This analysis will build on publicly available data collected from local realty boards. This will be integrated with the housing analysis to be performed by other HDR social scientists.

Microsector studies

Impacts on agriculture, ranching, mining, and other resource-competing sectors will be analyzed.

Subyear timing of impacts

This analysis will disaggregate annual average impacts into quarterly or monthly impacts. Required data include quarterly or monthly direct employment data.

Public finance analysis for local government

This impact analysis is more detailed and refined in its data sources than the Tier I studies. It will integrate HRS and HSG data.

Impacts, Methods, and Data Needs

Each issue area will be addressed using the following methods and data:

Sensitivity analysis

Existing county-level economic models will be used. Input is USAF refinement of policy options. Some additional literature survey will be required. No primary data collection is needed.

Land values analysis

The average annual price of homes in communities is being collected by another Principal Investigator. Data will be used in a regression analysis to project home prices in the areas as functions of population, income, and general price level. Projections will be made with and without M-X.

Microsector studies

The potential dislocation of mining and agricultural activities, and shifts in occupational structure of the regional due to altered wage schedules within affected industries, can result in reduced output. A quantitative analysis of impacts of construction and operation activities on the local mining, agricultural, and construction industries is proposed. The extent of physical dislocation of existing mining and agricultural activities will be analyzed. Lost earnings, output, and employment estimates for the direct and indirect-induced reduction in specific mining and agricultural operations will be presented. A sensitivity analysis altering various parameters regarding labor availability also will be presented.

Potential occupational shifts and the level of labor in-migration anticipated from outside the regions of influence may necessitate selective inclusion of geographic regions in addition to those listed previously in this memorandum.

No primary data collection will be required for this analysis. This work will build on existing studies of impacts on ranching. It also will incorporate mining-sector studies.

Subyear timing of impacts

Impacts will be estimated by indexing total employment and population impacts on an average annual basis by the quarterly or monthly level of direct employment. Quarterly or monthly data has been requested from the USAF and other contractors. No primary data collection will be required.

Local public finance analysis

Fiscal impacts on governmental units will be measured as estimated surpluses or deficits resulting from the project. The projection methodology is a community-specific, per capita rate technique for

expenditures and receipts. Adjustments will be made to reflect the potential for economies-of-scale and service-level capacity conditions. This analyses Tier I incremental public supply estimates and incorporates baseline supply estimates (based on existing local capacity).

Data needs consist of historical budgetary and manpower statistics, information on existing infrastructure conditions, and the expected response to growth. Some community budget and detailed manpower and infrastructure data are available. Data available from HDR include county and municipal general fund expenditures, and receipts in nominal dollars, in the aggregate, on a per capita basis from 1974 through 1979 for all Nevada/Utah counties and selected municipalities. The HDR data also include limited information on selected Nevada/Utah special districts, but this information is not comprehensive. Data from the 1976-1977 Census of Governments will be augmented by HDR data for Nevada/Utah and available data from the state of New Mexico. Limited data collection activities will update the baseline data from HRS through FY 1979-80. Data collection on a limited basis for property tax sources is required. Data collected by other HDR social scientists will be used to estimate local public service capacities. No field data collection efforts for the local public finance analysis are planned in addition to those of other HDR social scientists. Data needs have been incorporated into the community infrastructure field data collection plan.

SCENIC RESOURCES/AESTHETIC CONSIDERATIONS

Technical Memorandum #1

ROI

Identification with visual corridors and historical/architectural elements within the following regions of influence:

Coyote Spring

North through Pahrangat Wash, Kane Spring Wash, Delamar Mountains and Sheep Range

East to Warm Springs Wash and surrounding breaks, Meadow Valley Mountains

South to Hidden Valley including Las Vegas Range and Arrow Canyon Range

Western edge of the Sheep Range

Beryl

North to Escalante Desert, Wah Wah Mountains, Needle Range

South to Escalante Desert, Silver Creek, intersection of Route 56 and Route 18, Modena

East to Escalante Desert, Antelope Range, Newcastle including Beryl Junction

West into Hamblin Valley

Milford

North to Escalante Desert, Beaver Lake Mountains, southern portion of Beaver Bottoms, Wah Wah Mountains, San Francisco Mountains, Fishers Wash, etc.

South to neck of the desert, Antelope Peak, Pale Butte, Lund, Escalante Desert

East to Escalante Desert, Black Mountains, Salishau Mountain, Mud Spring Hills

West to Wah Wah Mountains, San Francisco Mountains, Grovel Wash, Shaumtae Hills, Fishers Wash, Antelope Peak

Clovis

General 10-15 mile radius of operating base

Data Sufficiency

There is little or no data or information on this topic. Some literature research would be required for historical/architectural buildings, characteristics, and building styles. Work will be coordinated with other Principal Investigators.

Data Needed

Visual and selected aesthetic resources at each OB

Location or spatial information for OB; spatial information to be developed in a two-dimensional format for:

Housing

Community Center

Work areas

Justification

Provide a scenic resources/aesthetic baseline for the development of the operating base. Identify the scenic resources near the OB and define methods to preserve those significant resources.

SCENIC RESOURCES/AESTHETIC CONSIDERATIONS

Technical Memorandum #2

Data Collection Plan and Tasks

At each OB vicinity, view corridor/sheds will be identified. A view corridor/shed will be established for each alternative within each suitability zone. Major emphasis will be on preferred OB sites.

Within each suitability zone the view corridors will be photographed morning and evening, using:

35mm color slides and personal observation. Detailed field notes will be maintained.

A field team of two architect/planners will be in Coyote Spring two days, Milford/Beryl two days, and Clovis two days.

Data Deliverables

The photographic inventory will be transferred to maps and graphically represented to identify view corridors. This information may be computer plotted and reproduced three-dimensionally.

ECONOMIC GEOLOGY, MINING, AND MINERALS

Technical Memorandum #1

ROI

The ROI for the Coyote Spring OB includes Townships 10-14 South, Ranges 63 and 64 East. For the Beryl OB, it includes Townships 32-35 South, Ranges 13 to 19 West, containing the Stateline Mining District, and areas with potential oil, gas, and geothermal development.

The Milford OB ROI includes Townships 29-33 South, Ranges 11-14 West, and Townships 29 and 30 South, Range 10 West, and Township 28 South, Ranges 10 to 12 West. The area contains the Star Range, a major mining district, areas of high geothermal potential, and some potential for oil and gas development.

In addition, the potential impacts will include the railroad and DTN routes and the OBTS sites.

Impacts

The potential impacts are two. The first could be the direct effect of the presence of an OB site, through preemption, of land overlying a potentially developable mineral deposit, or access conflicts. The second could be the indirect effect of competition for labor and construction resources. The region of influence for the study of direct offsets is described here. The region of indirect influence will be determined as the study progresses in coordination with the socioeconomics Principal Investigator.

Data Sufficiency

The data available in-house have been assessed at a regional scale, but more detail will be necessary. Sources of data in-house include county geological reports, state mineral industry surveys, reports for the Army Corps of Engineers, and ERTEC reports. Complete sets of the latter two categories have been requested.

Determination of indirect impacts associated with competition for resources requires projections of mineral values, labor costs, employment, availability of construction materials, water supply and demand, and the effects of interaction.

The geotechnical staff will provide the location, production, employment, and the projections for future growth of mines in the ROIs, and the location and development potential of major mining claims. Geologic setting, stratigraphy structure, and mineralized belts and trends will be analyzed. Potential development plans will be identified.

Data Needed

Identification of mines with current or past production, categorized by potential for direct or indirect impact.

ERTEC reports.

Identification of mining claims which will be directly impacted and estimates of claims indirectly impacted.

Separation of available in-house information from data needs.

WILDLIFE

Technical Memorandum #1

ROI

Coyote Spring OB

- Coyote Spring Wash
- Kane
- Kane Springs Wash
- Hidden Valley
- Meadow Valley Mountains
- Arrow Canyon Range
- Las Vegas Range
- Sheep Range
- Delamar Mountains

Beryl OB

- Escalante Desert
- Southern Pine Valley
- Wah Wah Mountains
- Needle Range

Milford OB

- Escalante Desert
- Southern Wah Wah Valley
- Sauntie Hills
- Black Mountains

Clovis OB

The ROI for wildlife is the actual land taken by the base expansion and the OBTS, plus a small area around the perimeters of these facilities. However, as all the land is private, mostly agricultural, and therefore closed to field surveys, the available secondary data base determines the area of study, which for wildlife is Curry County, as tabulated by the New Mexico Department of Game and Fish.

Impacts

Short-term impacts in Nevada/Utah are expected to be disturbance due to noise, human activity, machinery, possible loss of watering sites, and increased poaching. Long-term impacts are expected to be loss of habitats or migration routes due to fencing for facilities security or other exclusion from access.

At Clovis, direct effects on wildlife should be minimal for base expansion, but the OBTS, being partly located in rangeland, is liable to eliminate a portion of the native small animal population. Indirect impacts will be minimal, if not nonexistent, as the surrounding land is private.

Data Needs, Nevada/Utah

- Small mammal abundance and distribution by habitat type.
- Reptile abundance and distribution by habitat type.
- Bird abundance and distribution by habitat type.
- Lagomorph abundance and distribution by habitat type.
- Water hole use by wildlife.
- Bat abundance in study area.
- Desert tortoise abundance and distribution in Coyote Spring.
- Utah prairie dog colony vitality.
- Bighorn sheep numbers, important watering sites, and migration routes.
- Pronghorn key-use areas and numbers.
- Water improvements and catchment locations.
- Updated wild horse data.

Existing Data, Nevada/Utah

- Generalized bighorn sheep, pronghorn, sage grouse, and quail range and key habitat.
- Bald eagle use areas.
- Utah prairie dog colony sites.
- Wild horse range and herd numbers.
- Generalized desert tortoise population densities.
- Generalized furbearer and upland game ranges.
- Raptor nest sites and suspected important foraging areas.

Data Needs, Clovis

From New Mexico Department of Game and Fish, the most recent game and nongame, abundance, and harvest information is needed for Curry County. The presence of blacktailed prairie dogs needs to be ascertained, and status of lesser prairie chicken determined. These are the only species of real concern.

Existing Data, Clovis

Due to lack of access, the secondary data sources, both in-house and yet to be obtained, will have to suffice.

Data Needs, Justification - Special Habitats, Nevada/Utah

Roads have the potential to create new habitats, and may cause concentration of wildlife species in small, specialized surroundings. Road effects vary with highway type, traffic flow, distance from road, and season. Traffic in and around the roads associated with the OB sites may change mortality patterns. Carrion provide a food source for scavengers and carnivores, who may alter home range patterns to take advantage of it. In addition, carrion may increase carrying capacities for some raptor and avian scavengers. Analysis will determine whether carrion will increase with traffic increases, and whether wildlife communities will be altered.

WILDLIFE

Technical Memorandum #2

Data Collection Methods, Nevada/Utah

The Office of the Nevada Department of Wildlife, the Utah Division of Wildlife Resources, and the Bureau of Land Management will be asked for information on water improvements, distribution and abundance of game and non-game wildlife, habits of significance, opinion of M-X impacts, mitigations suggestions, planned wildlife improvements, management charges, wild horses range and herd counts, and hunting statistics.

Habitat mapping will establish sampling areas. Within each habitat type, bird, reptile and lagomorph visual censuses and small-mammal trapping will be done. Depending on the variety of habitats, two to five visual censuses will be run in each habitat. Bird transects will be 1,000 m long and run one-half hour after sunrise. Bird species, flushing distance, and flushing angle will be recorded. Reptile transects will be the same as bird transects. They will run after completion of the bird transect. Starting time for reptile censusing will be determined at each site. Lagomorphs will be censused at the same time as birds and in the same manner.

Small mammals will be censused by establishing one trap line in each habitat type.

The method will use two parallel assessment lines, 35 m apart, with Sherman live-traps every 15 m. After trapping on the parallel census lines, traps will be moved to assessment lines placed at 45 degree angles to the census lines. Four assessment lines will be established for each pair of census lines. Ten traps spaced at 15 m intervals will be placed at each assessment line. Two traps will be placed inside the census line and eight outside. Census lines will be run for three nights. Assessment lines will be run for the following three nights. Mammals caught will be identified to sex, age, and weight, and toe-clipped to identify individuals if they are recaptured.

At Coyote Spring, desert tortoises will be censused by counting burrows found along the reptile transect line. Perpendicular distance of the burrows to the census line will be recorded.

At Beryl, Utah prairie dog colonies in southern Pine Valley, near Cedar City, and in the Parowan Valley will be visited. The vigor of each colony will be determined.

Pellets and scats will be counted along the bird and reptile transects. Ten 0.01-hectare circular plots will be placed at 100 m intervals along the transect line.

Water holes will be observed at night using a night scope from a blind. After several hours of observations, mist nets will be set up to trap bats. Bats will be identified, weighed, and species determined.

Raptor nesting activity will be determined near the OB and in the surrounding mountains. Nests will be located, species determined, and sites mapped. Particular

attention will be given to burrowing owl areas and peregrine falcon nest areas or potential nest areas.

Data Collection Methods

Vegetation transects 20 m long and 1 m wide will be used to determine the cover, density, height, and size of the dominant shrub, grass, and forb species. Belt transects will be randomly located along, and perpendicular to the animal transect line. Each belt transect will be divided into 10 quadrants, 1 m x 2 m in size. All quadrants will be used for cover estimates, and a random subset of two per transect will be used for the density determinations. The individual crown cover (two diameters) and height will be measured on each large species rooted within the five 10 m x 20 m areas outlined by the transect layout, to determine the percent of cover.

Age-class, dominance, and vegetation cover estimates will be recorded and species lists compiled. If suspected threatened or endangered plants are located, data will be recorded on HDR threatened and endangered plant-data forms.

Special habitats. Surveys will be conducted of special habitats including tracts with Populus, springs, stockponds, dumpsites, farmsteads, homesteads, and irrigated agricultural land.

Carrion/Corridor Studies. Three grades of roads will be surveyed day and night for live and dead animals: Level I, paved road, frequently/moderately used, fast traffic (greater than 35 mph); Level II, dirt road, moderately used, usually graded, fast traffic 35 to 55 mph); and Level III, dirt road, rarely used, usually ungraded, slow traffic (less than 35 mph). Survey data will include time and mileage at the beginning and the end of the route, traffic count, density of live and dead animals, weight of carrion, and meteorological observations. Daytime observations recorded will be habitat types. Observation will be visual from a vehicle. At night a spotlight will be used.

3.0 U.S. ARMY CORPS OF ENGINEERS (CoE) ROLE IN THE PLANNING PROCESS

The U.S. Army Corps of Engineers is the Air Force's designated construction agent, and is responsible for management and execution of the design and construction of M-X facilities under the fiscal and requirements definition control of the Air Force. Additionally, the CoE will act as the real estate agent for the Air Force, and will acquire all real property interests for the M-X program. The CoE has established the Corps of Engineers M-X Program Agency (CEMSPA), a dedicated program management element collocated with the M-X Facility Program Manager (AFRCE-M-X) at Norton AFB.

As design, construction, and real estate agent for M-X Facility Program Manager, the CoE actively participates in intergovernmental activities. It is a member of the Nevada and Utah intergovernmental working groups. The CoE is also an active member of state committees, such as the Nevada Employment and Training Committee whose members are appointed by the Governor. The CoE actively participates with the Nevada Local Oversight Committee and the Utah M-X Missile Policy Board.

The CoE participates in the M-X impact assistance planning process to minimize the adverse effects of life support camps and other construction activities on the localities affected. The July 1981 **Community Impact Assistance Study** (Chapter 2, page 120), prepared by the Intergovernmental/Interagency Task Force on Community Impact Assistance, President's Economic Adjustment Committee, states, "In order to avoid direct construction competition, consideration should be given by the communities to retaining the Corps of Engineers as the communities' construction agent. This approach would permit the community projects to be integrated into the overall construction program. The Corps of Engineers has a long history of serving as construction agent for its clients; the Corps would also have a resident construction quality control staff on scene which would be difficult for any community to replicate. It would be necessary for the Corps to participate in the planning and design phase as a responsible construction agent."

The overall management of environmental planning is an Air Force responsibility. The CoE is assisting the Air Force on the FEIS and Tier II. The Air Force's Base Comprehensive Plan (BCP) will provide the CoE with guidance for the design and construction of an M-X airbase. The CEMSPA will ensure that environmental processes are incorporated during both design and construction for the MCP Facility Projects, for FY 82 and beyond. The CEMSPA will identify, analyze, and assess potential M-X project construction impacts, and will prepare mitigation proposals for the Air Force as required. For site specific mitigation measures, CEMSPA will draw on the environmental impact information in the FEIS and subsequent documents. Environmental protection activities and studies for the design and construction stages will be carried out by CEMSPA. In the CoE design process, the Program Oriented Guide Specifications (POGS) provided to all CoE-M-X districts, outlines the environmental considerations and objectives for the design phase. These considerations include directions for environmental clearances of site-specific design work. The CoE Environmental Procedures for Design Manual will outline procedures for avoidance of environmental effects, cultural resources, data recovery, artifact handling, and so forth. This will help standardize procedures

throughout the various districts, and will assist in assuring a standard level of information. Field survey teams, probably composed of a combination of CoE and CoE-contractor personnel, will provide the environmental clearances necessary for design. They will continue to work with the architect-engineer during the design phase, and will assist in coordinating changes in design instructions to accommodate environmental concerns. The necessary qualifications for field team leaders in various disciplines will be specified. The Environmental Procedures for Design Manual contain specific instructions to the architect/engineer/designer on regulations to be followed during the design process.

For the construction phase, the M-X Construction Management Plan being prepared by the Corps of Engineers provides a comprehensive management plan for facility construction for the M-X Weapon System. The document will set forth criteria for schedules, contract packages, and environmental protection provisions. The Construction Management and the Field Management Plans will contain implementation procedures for complying with laws and agreements between AF/CoE and other agencies pertaining to environmental matters. The plans will also contain provisions for coordinating construction activities with local communities to minimize inconvenience to residents. The CoE field mitigation plan and monitoring procedures will be consistent with the design processes. It will describe, in detail, the procedures to be followed during construction to offset impacts. It will also include specific procedures for monitoring the construction contractor's work and, will describe the actions to be taken should the environmental management plans not be followed. The M-X Life Support Plan is an integral part of the M-X Construction Management Plan, and will identify activities required for providing life support to M-X personnel and their dependents. The Air Force and CoE will coordinate this plan with appropriate agencies and communities during its development and implementation.

4.0 COMMUNITY IMPACT ASSISTANCE

A community impact assistance program for M-X was initiated in early 1980. This program, which focuses on state and local planning, is ongoing and evolving in both substance and scope pursuant to congressional direction. As of 1 September 1981 there are a number of unresolved issues regarding future procedures, requirements identification, budgeting mechanisms, and delivery of funds. Resolution of these questions is beyond the control of the Air Force. However, special impact assistance legislation is pending in the Congress. This proposed legislation is based on the findings of the congressionally directed study of this subject submitted by the President to the Congress on 28 August, 1981. There is, however, existing authorizing legislation for an assistance program which is acceptable to state and local authorities. Funds were also appropriated for impact planning in FYs 80 and 81, and the Air Force has requested \$10 million in FY 82. The following is a discussion of past, present, and potential M-X community impact assistance.

There is a long history of federal impact assistance since World War II which indicates that communities and states seriously affected by extraordinary defense growth have not been required to bear the full burden of public facility and service costs associated with the establishment of major new defense bases. Supplemental federal assistance has been available, as the prevailing norm, to assist defense growth (i.e., impacted areas). This federal commitment was reaffirmed by President Carter on 27 March 1978 and the Congress in Section 802 of the "Military Construction Authorization Act of 1981" (P.O. 96-418).

During World War II, the Congress passed two Lanham Acts which authorized the Federal Works Agency (an independent office reporting directly to the President) to provide a broad range of community facilities. Schools, hospitals, recreational facilities, waterworks, and sewage projects were constructed, and other activities were conducted at a cost of \$456 million during the period 1941-1945.

Congress enacted two bills during the Korean War relating to the construction of schools and the operation of school districts related to federally connected children. Both of these programs continue today. A total of \$1,546.8 million has been expended for construction, and \$4,748.6 million has been spent for operation of school districts.

As part of the U.S. Army Corps of Engineers Manhattan District Project, the federal government established and financed three self-contained communities. These communities, at Los Alamos, New Mexico; Oak Ridge, Tennessee; and Richland, Washington; have since been transferred to local authorities. However, since their transfer, federal assistance payments have been given to the communities. Each community has advanced to very near self-sufficiency.

The Congress established a special program for supplemental Department of the Army community impact assistance for the Safeguard Anti-Ballistic Missile Program. The Secretary of Defense was authorized to assist affected communities in meeting costs of increased municipal services and facilities resulting from the ABM Program. The Safeguard Community Impact Assistance Program (including the community share of costs) was implemented through existing domestic federal

agency programs. Prior to cessation of the ABM program, \$12.9 million was expended under this program.

Shortly after announcement of the Trident project in Kitsap County, Washington, local officials requested assistance of the Economic Adjustment Committee. The Congress reenacted the Safeguard legislation, and permitted the Secretary of Defense to supplement the resources available to the domestic agencies on the same basis of avoiding an "unfair and excessive financial burden" to the Trident impacted communities. A subsequent amendment to the HEW authorization bill permitted the construction of school facilities in anticipation of increased student enrollments. Through December 1980, a total of \$28.1 million in assistance has been provided by federal domestic agencies. DOD contributions have amounted to \$86.1 million. Local and state contributions have been \$92.7 million and \$52.2 million, respectively.

Federal community impact assistance has been provided to the Ft. Steward, Georgia area due to significant mission expansion. Additionally, the Department of Defense Access Roads Program has been used for new road construction or improvements to existing roads associated with defense installation construction or expansion. Special housing assistance is also possible under Section 238(c) of the National Housing Act for areas impacted by new military base expansions.

The existing Federal impact assistance policy applying to M-X calls for impact assistance activities to be conducted through the Economic Adjustment Program (EAP). This program was established by Executive Order 12049 and transmitted to members of the Economic Adjustment Committee by Presidential Memorandum. A specific M-X EAP was initiated jointly by the Air Force and the DoD Office of Economic Adjustment (OEA).

In response to requests of Governor List of Nevada and Governor Matheson of Utah, the Secretary of Defense mobilized the President's EAC to provide Nevada and Utah with assistance in defining the potential growth impacts that the M-X deployment might cause. A preliminary framework for an M-X economic adjustment strategy was developed by the Air Force and the OEA, and was transmitted to those states in early 1980. The framework was proposed as a starting point for the development of a more detailed local-state-federal economic adjustment activity.

The objectives of the M-X economic adjustment program are (1) to minimize the adverse socioeconomic effects of large scale rapid growth and (2) to maximize the economic benefits for the affected areas. A major goal of the economic adjustment process is to coordinate and expedite the delivery of federal assistance to meet communities' needs. Four basic components of the M-X economic adjustment program, as outlined in the preliminary framework, are (a) organization, (b) planning, (c) mobilization of private sector resources, and (d) financing.

At the federal level, the Air Force and the OEA are jointly managing the assistance program. The primary forum for federal coordination is the President's Economic Adjustment Committee. The EAC, chaired by the Secretary of Defense and composed of 18 executive agencies, is charged with helping communities and individuals that may be affected by changes in DOD programs, using a combination of federal, state and local resources. The OEA is the permanent staff of the EAC.

The most critical organizational components in the impact assistance program are the M-X Intergovernmental Working Groups established by the governors of Nevada and Utah to bring the main participants of the planning process together monthly. Representatives on these working groups are local (municipalities and counties), state (M-X coordinator's offices and other state agencies), and federal (OEA, Air Force, and the Corps of Engineers). These groups also review and forward funding requests to the Air Force and approve comprehensive work programs for the use of impact assistance funds.

At the local level, there are two multiagency planning groups (Nevada M-X Local Oversight Committee and Utah M-X Impact Policy Board). These groups have full time professional staffs, and are composed of elected officials from potentially affected local jurisdictions. They coordinate local impact planning activities and general funding requests, disburse impact planning funds, and conduct impact planning studies.

M-X impact assistance planning must be a cooperative intergovernmental activity, with program participants sharing responsibilities in a well-defined planning work program. In FY 80 the Congress appropriated \$1 million for impact planning in the states of Utah and Nevada. These funds were used by the four groups discussed above for assessing and strengthening state and local institutional capacity; developing baseline data sources; creating and updating comprehensive community development plans; devising growth management policies; identifying and initiating needed state and federal legislative changes; and developing an appropriate economic model for assessing anticipated fiscal impacts.

In the FY 81 Military Construction Authorization Act (P.L. 96-418), the Congress authorized a \$5 million appropriation (Section 801) to be used for: the development of comprehensive plans for the benefit of the states and local communities directly affected by the deployment of the M-X system; to prepare them for the potential impacts; and to plan for mitigating those impacts to the maximum extent possible. The plans are to be developed in coordination with the Secretary of Defense and the Department of the Air Force, and shall, pursuant to Congressional direction, serve as the basis for the extended community impact program identified in Section 802 of P.L. 96-418.

Section 802 of P.L. 96-418 authorizes the Secretary of Defense to assist communities located near M-X system sites and the states in which such communities are located in meeting the costs of providing increased municipal services and facilities, if the secretary determines that there is an immediate and substantial increase in the need for such services and facilities as a direct result of the work being carried out in connection with the construction, installation, testing and operation of the M-X system, and that an unfair and excessive financial burden will be incurred as a result of the increased need for such services and facilities.

The Secretary of Defense is directed by Congress to carry out this assistance program through existing federal programs. The Secretary of Defense is authorized to supplement funds of existing programs, to provide financial assistance to help communities pay their share of the costs under such existing federal programs, and to guarantee state or municipal indebtedness for improved public facilities.

The planning program authorized to be funded in Section 801 of P.L. 96-418 is underway in accordance with the approved comprehensive work programs. The

outputs of this program will serve as the basis for future impact assistance funding requests. The Air Force has requested \$10 million to continue this effort in FY 82.

In Section 803 of P.L. 96-418, Congress directed the President to conduct a thorough study to (1) identify defense actions that warrant impact assistance, (2) examine the options and recommend organizational mechanisms to administer impact assistance, (3) examine options and recommend procedures for budgeting, (4) recommend changes in existing programs, and (5) consult with state and local authorities. The final report was submitted by the President to Congress on 28 August 1981.

During the conduct of the 803 study, a special impact assistance legislative proposal was prepared by a joint federal, state, and local task force. The approach would authorize a special impact assistance program for M-X. This program would give states and localities the primary responsibility for impact planning and the identification of impact assistance requirements. These requests would be submitted to the Department of Defense and, following validation, would be submitted to the Congress for appropriation considerations. Following appropriation, funds would be transferred from the Department of Defense to a state fiscal agent, to be administered in accordance with the approved Community Impact Services and Facilities Plan.

Because of the importance of this legislative proposal, it follows:

SPECIAL IMPACT ASSISTANCE

Sec. _____ (a) The Secretary of Defense, or his designee, (hereafter referred to as the Secretary) is authorized to provide special impact assistance, as outlined in subsection (b) below, to states, territories, Indian tribes, local governments, or duly recognized associations or authorities of local or state governments from monies appropriated to the Department of Defense for that purpose. Funds appropriated and commitments authorized specifically for Special Impact Assistance shall be used in conjunction with on-going domestic agency programs, wherever possible, to avoid an unfair and excessive financial burden of providing increased public facilities or services in the immediate vicinity of, and directly attributable to, the major construction or expansion of military facilities. Pursuant to subsection (d), such funds and commitments shall be made available only in those exceptional circumstances where federal agency programs are inadequate either in amount or purpose, as determined by the Director of the Office of Management and Budget, and normal state and local resources are inadequate to support national security requirements.

(b) Special impact assistance authorized by this section may include (1) providing direct grant assistance, (2) helping communities or states meet their share of costs under existing federal agency programs, (3) guaranteeing state or municipal indebtedness only where the interest income from such indebtedness is included in gross income for the purposes of Chapter 1 of the Internal Revenue Code of 1954, as amended, and (4) subsidizing interest payments on obligations held by the United States, commercial, or state bonding institutions.

(c) Special impact assistance authorized by this section shall be made available and administered in accordance with (1) regulations promulgated by the Secretary, (2) the annual community impact facilities and services program (hereinafter

referred to as the Program) which shall be specific by project or activity and approved by the Secretary, and (3) the multiyear plan shall be locally prepared and submitted by a duly constituted intergovernmental Defense impact planning and mitigation board (hereinafter referred to as the Board), composed as appropriate of state, local and advisory federal members. The chairman, as authorized by the Board, shall submit implementing procedures and regulations for planning and programming, including regional or state performance and cost standards that are compatible with Department of Defense regulations. The Program and the implementing procedures and regulations shall be submitted to the Secretary who may approve the submissions in whole or in part or may disapprove the submissions and require their resubmission. Such approval shall be based upon a determination that the Program: (1) is consistent with the multiyear plan, (2) meets the public facility and services needs of the military departments responsible for the Defense construction or expansion, (3) demonstrates that the public facilities and services are needed as a result of anticipated Defense-related growth, (4) avoids an unfair and excessive financial burden to state and local governments, and (5) is in compliance with the applicable regulations set forth by the Secretary. The Secretary shall submit his approved Program in support of the President's annual budget request to the Congress.

(d) The Secretary, in consultation with the heads of the other appropriate federal agencies and elected officials of impacted jurisdictions, shall within 120 days of the enactment of this Act publish (1) standards for initiating special impact assistance, and (2) regulations governing the administration of special impact assistance, such regulations among other things to include the planning process standards and requirements for multiyear comprehensive plans and programs.

(e) The Secretary shall (1) keep the appropriate Committees of Congress informed of major changes to the Program made pursuant to regulations promulgated by the Secretary, (2) submit an annual schedule of program and financial audits and reports, and (3) submit annual reports to the appropriate Committees of Congress indicating the total amounts transferred to and the amounts obligated and expended by each recipient of special impact assistance provided under the authority of this section.

(f) Grant assistance to eligible recipients shall be made available through a duly designated fiscal agent upon certification that such funds (1) will be used in accordance with the approved Program, (2) are required for obligation within the following twelve months, and (3) will be used in accordance with applicable state, local, and federal regulations.

(g) Subject to regulations promulgated by the Secretary, the Board may approve reprogramming and cost variations for projects in the approved Program and establish and administer a minor project and activities account.

(h) The Secretary shall determine when there is no longer an unfair and excessive financial burden to the impact jurisdiction by Department of Defense activities. The Secretary of Defense shall also determine when the major construction or expansion of military facilities has been physically completed. No new Special Impact Assistance may be provided after two years thereafter unless the Secretary of Defense, in consultation with the Director of the Office of Management and Budget, determines on a biennial basis that an unfair and excessive financial burden still exists.

(i) For the purpose of this section, (1) "unfair and excessive financial burden" means the net fiscal deficit imposed on an affected jurisdiction by the difference between the incremental capital or operating costs required to support national security requirements and the increases in public tax revenue and bonding capacities derived from the regional spending resulting from the Defense expansion or new construction--based on equitable local and state taxing efforts and the good faith allocation of normal domestic federal agency and state assistance to the impacted jurisdiction, (2) "fiscal agent" means an officially designated financial administration, accounting, and auditing activity for the impacted area on behalf of the Board, (3) "Defense-related growth" means the direct or secondary population, employment, or economic activities attracted to or induced into the immediate vicinity of and directly attributable to the major construction or expansion of military facilities; specifically, those activities which would not otherwise exist in the area without with Defense construction or base expansion, and (4) "comprehensive plans" mean the appropriate elements of the documentation described in 42 U.S.C. 4201 (9) and elements required to be addressed under the applicable provisions of state statutes and regulations pertaining to planning and the preparation of comprehensive plans.

(j) Section 802 of the Military Construction Authorization Act, 1981 (Public Law No. 96-418; 94 Stat. 1777) is hereby repealed.

The following is the process explanation accompanying the legislation proposal in the Section 803 Report:

SPECIAL IMPACT ASSISTANCE PLANNING, PROGRAMMING, AND FUNDING PROCESS

As provided for in the proposed legislation, in those exceptional cases where normal resources (local, state, federal) are inadequate to meet national security requirements the Secretary of Defense (i.e. SecDef) would be authorized to make Special Impact Assistance funds available to impacted jurisdictions. The SecDef will make his determination of what constitutes an "exceptional" case based on the threshold criteria identified in Chapter 1 of the President's Community Impact Assistance Study (done in accordance with the Congressional guidance set forth in Section 803 of the FY 81 Military Construction Authorization Act). Once the SecDef, with the concurrence of the Director of OMB, makes the determination that such an exceptional case or circumstance exists, he would make loan or grant assistance available in the following manner.

PLANNING

The focal point of planning activities (i.e., identification of need and a strategy for meeting those needs) must be with those agencies (state and local) responsible for implementing the mitigation actions. Therefore, those local and state agencies responsible for mitigating Defense impacts would, with the cooperation with Department of Defense (DOD) representatives, be charged with the responsibility for developing a comprehensive planning process.

Guidelines as to the appropriate content and format of such a planning process will be supplied by the SecDef as part of the regulations referenced in the proposed legislation. In general, however, the process would include:

- o Comprehensive Work Programs
- o Comprehensive Plans
- o Multiyear Impact Facilities and Services Plans
- o Annual Community Impact Facilities and Services Programs (Budget Requests)

Once developed, these local and state agencies would submit the comprehensive, multi- year plans and annual program requests to a Defense Impact Planning and Mitigation Board (i.e., The Board).

PROGRAMMING

The Board would be composed of local, state, and federal representatives. The local and state membership and voting relationships would be determined locally. Federal membership would be determined by the SecDef. Federal members would be non-voting and advisory in capacity. The Board would be responsible for:

- o coordinating the planning activities of local, state, and federal agencies
- o consolidating the comprehensive, multiyear plans and annual program requests from state and local agencies
- o acting as a focal point for prior program (budget) requests and programming the annual Community Impact Facilities and Services Program (i.e., The Program).

The Program (which would be project or activity specific and would include information on type and use of the public facility or service provided, location, amount of funds required, and supporting justification) would be approved by the Board and submitted by either the Board Chairman or the affected state's Governor to the SecDef for approval. The SecDef would base the approval on the recommendations made to him by his representative(s) on the Board. The criteria the SecDef representative(s) will base his recommendations on are that the Program:

- o is consistent with a multiyear, comprehensive Community Impact Facilities and Services Plan;
- o meets the public facility and services needs of the Military Department responsible for the Defense construction or expansion activity;
- o demonstrates that the public facilities and services are needed as a result of Defense-related growth and to avoid an unfair and excessive financial burden;
- o is in compliance with the applicable regulations set forth by the SecDef.

After approval, the SecDef will submit the Program through its normal budget process to the appropriate Committees of Congress in support of an annual authorization and appropriation request for the DOD contribution required over and above the good faith and fair share tax and bond contributions of state and local

governments and the normal contributions by other federal agencies. The SecDef will also provide Congress with copies of the Board's approved plans in support of the annual program request.

FUNDING

After Congressional appropriation, the SecDef will transfer funds to finance the approved program to a fiscal agent to be designated by either the Board or the Governor of the affected state. The fiscal agent would grant and administer those funds in accordance with the approved program. Routing applications for the funds would be submitted to the fiscal agent by the state or local agencies either responsible for originating the request and/or charged with carrying out the individual projects.

The fiscal agent would have no reprogramming authority. In order, however, to facilitate local and state flexibility in managing individual projects and meeting unforeseen problems, the Board would have reprogramming authorities. An amount equal to 10 percent of each individual year's total funding request would be left unprogrammed for:

- o cost overruns
- o minor changes to existing projects
- o new small projects costing less than \$250,000

In the event of a major program change involving a cost variation that exceeds 25 percent of the original total project cost estimate or \$1 million (whichever is less), then the approval of the SecDef must be obtained and the appropriate Committees of Congress notified. The fiscal agent shall be responsible for performing audits, establishing project performance monitoring, and reporting systems in support of DOD audit requirements and regulations.

In summary, a community impact assistance program which focuses on state and local planning is underway. Six million dollars have been appropriated to date and \$10 million has been requested in the FY82 budget request. The direction that impact assistance will take is dependent on Congressional action (continue with Section 802 or adopt a Section 803 alternative). In either case, community impact assistance (amount, scope, and substance) depends on state and local planning and the requests generated from that process.

5.0 THE M-X PROGRAMMATIC MEMORANDUM OF AGREEMENT

HISTORY OF THE PMOA

When the Advisory Council on Historic Preservation issued its revised regulations in January 1979, the regulations included a new provision that specified the conditions under which an agency could enter into a Programmatic Memorandum of Agreement (PMOA) with the Advisory Council. In general, a PMOA is intended for a program that would otherwise require numerous individual requests for Advisory Council comments under Section 106 of the Historic Preservation Act.

The Air Force requested development of a PMOA for the M-X project and the Advisory Council agreed that a PMOA was appropriate for this project. Initial meetings to draft a PMOA were held in November 1979 and the document was completed and signed by the Advisory Council on Historic Preservation in August 1980. The Air Force signed the document in October 1980. Other signatories include the Bureau of Land Management (BLM), the Utah State Historical Preservation Officer (SHPO), and the Texas SHPO.

A number of studies related to historic preservation and community studies issues were implemented by Air Force contractors prior to, or soon after, the signing of the PMOA. While these studies all contribute to meeting Air Force PMOA compliance requirements, their design and implementation was not directly guided by the PMOA.

DESCRIPTION OF THE PMOA

The preface of the PMOA identifies the Air Force as the lead agency for the deployment of the M-X system, and as the agency with primary responsibility for compliance with the historic preservation statutes and regulations referenced in the PMOA. This preface also states that initial consultations between the Air Force and the involved State Historic Preservation Officers have determined that deployment of the M-X System could have effects on historic or cultural properties included in, or eligible for, the National Register of Historic Places. The signing parties agree that implementation of M-X deployment in accordance with a set of stipulations will avoid or satisfactorily mitigate adverse effects on historic or cultural properties. The stipulations are organized in four sections:

1. **General.** This section requires establishment of an M-X PMOA Review Committee; further defines Air Force responsibilities to the BLM and SHPOs; calls for responsibilities to the BLM and SHPOs; calls for notification of the public regarding significant actions under the agreement; specifies qualifications of supervisors of historic preservation activities; specifies measures to reduce vandalism of historic and cultural properties; and identifies the requirement to prepare an annual report summarizing all actions taken, pursuant to the PMOA.
2. **Identification and Mitigation of Adverse Effects.** This section identifies general procedures for resource identification; specifies that adverse effects on historic properties will be avoided where feasible; requires development of data recovery guidelines; and defines consultation

procedures for evaluation of the significance of properties and project effects on properties. The requirement to consult with Native Americans to identify locations and issues of concern to them, and in regard to the proposed data recovery guidelines, is also specified in this section. The procedures to be followed when resources are encountered during construction, and the need to develop preservation mechanisms for the operations phase of the M-X Project are included here.

3. Issues Related to Population and Infrastructure Growth. The Air Force and Advisory Council agree to work together as members of the Economic Adjustment Committee to ensure that Federal Government activities to accommodate population and infrastructure growth resulting from M-X deployment are sensitive to the historic and cultural values of the deployment areas.
4. Preconstruction Studies. Preconstruction studies, such as geological, environmental, or engineering studies involving land modification, must be preceded by intensive surveys. Geological test sites and other locations of land modification are to be designed to avoid damages to historic properties. Only limited archaeological test excavations, prior to making National Register determinations of eligibility, are to be conducted.

PMOA KEY ISSUES

The PMOA addresses two key issues. The first issue is the identification and mitigation of impacts to historic and cultural properties. The second issue is the identification and mitigation of issues of concern to Native American and non-Native American communities within the study region. These issues are addressed in more detail.

Historic and Cultural Properties

The PMOA defines historic and cultural properties as "properties included in or likely to meet the criteria for inclusion in the National Register of Historic Places." Thus, the first key issue of the PMOA involves compliance with historic preservation legislation. The PMOA also requires that the American Indian Religious Freedom Act be taken into account (1) through the identification of properties of concern to Native Americans and (2) during the development of data recovery plans and guidelines.

Cultural Character

The PMOA addresses issues related to cultural character in two areas. They are first raised in Stipulation II-F which calls for consultations with Native Americans in order to identify issues of concern related to the American Indian Religious Freedom Act. In Stipulation III the Air Force and the Advisory Council agree to work together to assist states and communities in the development and implementation of programs that will contribute "to protection of the historic and cultural character of communities" that are subject to growth as a result of the M-X project. "Sensitivity to the historic and cultural values of the deployment areas" is also stipulated, and "establishment of measures to foster successful integration... into the existing cultural fabric of the community" is specified.

OVERVIEW OF PMOA COMPLIANCE PROGRAMS

Introduction

The four major classes of cultural resources distinguished for the M-X PMOA Compliance Programs are: archaeological sites, historic properties, historically and culturally significant communities, and Native American sites and resources. Separate compliance programs have been developed for these four major classes of cultural resources because (1) laws and procedures are not uniformly applicable for all classes of cultural resources covered by the PMOA and (2) the content of study programs and procedures for mitigation in each program differ substantially.

The general types of activities defined in the PMOA Compliance Programs are similar in all four program areas. These activities include:

1. Definition of the recommended content of study programs
2. Establishment of a sequence for these programs
3. Creation of standard operating procedures
4. Coordination of contract efforts through preparation of annual PMOA implementation plans

These activities are characterized briefly below and discussed thoroughly in each program volume.

Content of Study Programs

Although there is some variability in each program area, there are basically five types of studies covered by the four PMOA Compliance Programs. These include:

1. Preparation of research designs or program plans
2. Regional studies based on existing literature and sampling programs
3. Systematic preconstruction inventory programs
4. Impact assessment and mitigation planning
5. Mitigation programs

PMOA Activity Sequencing

Standard sequences for PMOA studies are presented in each compliance program volume. The creation of an annual implementation plan is designed to integrate the planning and construction schedule with the standard sequence of PMOA studies.

Both legal and methodological considerations contribute to the standard sequencing of PMOA studies. From a management and research perspective, studies

associated with construction planning are conventionally designed to proceed from general to specific considerations. This broad logic underlies the M-X tiered decisionmaking process.

In order to meet the compliance requirements of the M-X system, the sequencing of PMOA studies includes three major phases of activity: resource identification and significance assessment, impact analysis and mitigation planning, and mitigation implementation.

In the annual PMOA implementation plans scheduled to be prepared each fiscal year, the sequence of studies will be fully developed in response to the Military Construction Program, Base Comprehensive Plan, and Environmental Impact Statement Environmental Assessment Schedules. Refer to Chapter 5, Section 5.2, page 3.

Standard Operating Procedures and Guidelines

Each program contains a standard operating procedures and guidelines section. The purpose of standardizing procedures is to ensure that data are collected, documented, analyzed, and curated in a thorough and professional manner. The standard procedures apply to the following concerns:

- o Qualifications of study teams performing work
- o Field forms for data recording
- o Field procedures for implementing studies
- o Data management
- o Data dissemination
- o Report preparation
- o Curation
- o Interpretive programs
- o Mitigation guidelines

These sections of each volume are to be used in two ways. First, the procedures should be incorporated into the Statements of Work of all contractors performing PMOA related studies. Second, the guideline will outline the professional standards against which Statements of Work, reports, and other PMOA activities conducted by contractors will be evaluated. These standard procedures will be modified as required to incorporate changes and improvements in project management.

PMOA Program Coordination

Coordination of the PMOA program originates with the Air Force Regional Civil Engineer-M-X (AFRCE-M-X), Norton Air Force Base. Given the magnitude and complexity of M-X planning, it is essential to integrate and properly sequence the efforts of contractors, cooperating agencies, and relevant entities within the Air Force.

Program coordination is based largely on the implementation plans that will be developed at the beginning of each fiscal year. These implementation plans will be designed to fit cultural resource management concerns into the schedule of M-X project planning, design, and construction.

In addition, program coordination necessitates creation of an M-X project, cultural-resource clearinghouse and data management system during FY 82. This central data repository is required for cost-effective and timely management of impact planning and mitigation efforts.

Because the Corps of Engineers will be conducting considerable data recovery during the construction phases of this project, an AFRCE-CoE coordination plan is being developed. Consultations on the content and structure of this coordination effort will be held during September 1981. In addition, the Air Force is in the process of developing a management implementation plan related to the PMOA.

6.0 BUREAU OF LAND MANAGEMENT LETTERS OF AUTHORIZATION AND STIPULATIONS

The Bureau of Land Management (BLM) and the Air Force entered into a cooperative agreement related to Air Force and Air Force contractor data gathering on BLM administered land that is necessary for development of a land withdrawal application. The cooperative agreement covers the proposed M-X deployment areas on public domain lands in the states of Nevada, Utah, and New Mexico. The agreement establishes procedures between the BLM and the Air Force or its authorized agents (i.e., Corps of Engineers, Department of Energy, etc.) for submitting letters of application and for the BLM issues of letters of authorization. The letters of authorization will be issued for preapplication activities to determine the suitability of lands for withdrawals, rights-of-way, material sites investigations, and other land use authorizations.

The cooperative agreement also provides that the BLM will include such stipulations in the letters of authorization as are necessary to avoid or mitigate potential environmental impacts on public lands and related issues. Air Force contractors have engaged in site specific field activity on BLM administered lands in the potential deployment area under the provision of this cooperative agreement. Attached to the letters of authorization were special environmental stipulations. Two examples of such letters of authorization follow, each reflecting the environmental protections associated with site specific field gathering activity.



United States Department of the Interior

IN REPLY REFER TO
NV-4-LA-1-9
(N-047)

BUREAU OF LAND MANAGEMENT

Ely District Office
Star Route 5, Box 1
Ely, Nevada 89301

June 2, 1981

Col. G.M. Riddle
AFRCE/DEE
Norton A.F.B., CA 92049

Dear Col. Riddle:

Pursuant to the Cooperative Agreement between the Bureau of Land Management and the U.S. Air Force dated May 15, 1981, the U.S.A.F. is hereby authorized to use or occupy the public lands in accordance with the following provisions:

- A. Description of Use: Short-term geotechnical field investigations involving seismic tests and the construction of a water and observation well. Activities are being conducted by ERTEC Western, Inc.
- B. Duration: Authorization will be for 4 months commencing on the date of this letter and expiring September 30, 1981.
- C. Legal Description: T. 15 N., R. 53 E., Sec.16;
T. 5 N., R. 61 E., Sec. 4;
T. 10 N., R. 56 E., Sec.35;
T. 8 N., R. 69 E., Sec.27.
- D. Special Stipulation: See attached list of Special Stipulations. These stipulations are in addition to the Standard Stipulations made a part of the Cooperative Agreement.

Sincerely,

George Cropper
Acting District Manager

Enclosure

SPECIAL STIPULATIONS

1. No activity will be conducted when the moisture content of the soil is such that the vehicle traffic will cause in excess of a 3-inch rut in a road.
2. All damage to the road or surrounding area in excess of 3 inches will be restored by the permittee at a time approved by BLM U.S.D.I., using BLM approved methods.
3. No new roads are to be constructed.
4. If road improvement is necessary, it will be conducted by methods approved by BLM.
5. Topsoil (6 inches) will be removed and stockpiled from on top of the drilling fluid pits. The topsoil will be replaced after the pits are backfilled.
6. A water quality test will be performed on all wells that are to be pump tested. The water sample will be taken as soon as the drilling fluids have been purged from the well and not in excess of 4 days into the pump testing. The results of the water quality test will be turned over to the Schell Area Manager as soon as possible. Electrical Conductivity or Total Dissolved Solids test will be continued during the pump test. The pump test will only be terminated if the Schell Area Manager determines from the data that the water is doing harm to the ecosystem or the permittee determines there is a problem on site testing. If the permittee identifies a potential problem he will contact the Schell Area Manager.

The following is the recommended maximum limits set for livestock and wildlife water uses as developed by the U.S. Environmental Protection Agency under Public Law 92-500:

- (1) Temperature: No Standard
- (2) Total Dissolved Solids (TDS): 2,000 mg/l for Wildlife
3,000 mg/l for Livestock
TDS = Electrical Conductivity X 0.85.
- (3) pH: 5.0 - 9.0 for drinking water
- (4) Alkalinity - No Standard
- (5) Hardness - No Standard
- (6) Calcium - No Standard
- (7) Sodium - No Standard. A high Sodium Adsorption Ratio (SAR) can be hazardous to some plants.
- (8) Potassium - No Standard
- (9) Chloride - 250 mg/l for drinking water
- (10) Sulfate - 250 mg/l for drinking water
- (11) Carbonate/Bicarbonate: No Standard
- (12) Copper - 0.5 mg/l for Livestock
0.02 mg/l for Fisheries
Toxicity is dependent on pH and alkalinity.
- (13) Arsenic: 0.2 mg/l for Livestock

- (14) Iron: 1.0 mg/l for Fisheries. Dependent upon hardness, pH, Alkalinity.
- (15) Mercury: 0.010 mg/l for Livestock
0.00005 mg/l for Fisheries & Wildlife
- (16) Manganese: No Standard
- (17) Zinc: 25 mg/l for Livestock
Toxicity dependent upon hardness.

- 7. If it is determined necessary to utilize water, from wells drilled on public land, that may be harmful to the ecosystem, an additional set of stipulations will be required before any pumping begins.
- 8. Prior to the pump test an authorized person representing the permittee will contact the Fly District Manager and an authorized BLM person will schedule an "on-site meeting" to discuss the water dispersion from the well.
- 9. Under no circumstances will water be discharged from the end of a pipe directly onto the ground. A spreading device of some sort, i.e. pile of rocks, will intercept the flow.
- 10. Water will be discharged into existing drainage channels where feasible. Where this is not feasible perforated pipe will be used to spread the water evenly over the ground. Water will not be dispersed into a perennial stream or in a manner that will flow into a perennial stream during the pump test.
- 11. During pump testing the water will be diverted away from roads. If roads are eroded or flooded during the test the permittee will repair the roads.
- 12. During pump testing the wells that are within a 3-mile radius of the test well will be monitored to insure that the water pumping capacity of the existing wells are not impaired. If it is determined that the drawdown test is adversely affecting the BLM wells, all pumping will cease.
- 13. Springs within a 3-mile radius will be monitored every 48 hours to insure that the flow rate of springs are not impaired. If during the pumping test the flow of springs are reduced by 20 percent, all pumping will cease. If the permittee wishes to pump test the well after the 20 percent reduction, the Schell Area Manager should be contacted, and he will make the decision as to whether further pumping of the well will be permitted.
- 14. If the BLM wells in the area cannot produce a minimum of 5 gallons per minute at the end of the proposed project the permittee shall supply water in some manner to the area of the BLM well. How the water will be supplied will be the decision of the Schell Resource Area Manager.
- 15. Wells of good quality that are not needed by the Air Force for construction of the MX project or to supply the clusters after construction will be turned over along with any water rights to the BLM Ely District.

16. Wells accepted by the BLM are not to be backfilled. A cap will be affixed in some manner as to close the opening of each well.
17. Wells that are drilled into aquifers of harmful quality that are not needed by the Air Force will be plugged in the following manner to prevent any groundwater pollution. Cement plugs will be placed in cased or uncased portions of the well to protect all fresh water aquifers. Such plugs shall extend a minimum of 30 feet below and 30 feet above all aquifers to prevent contamination. The top 50 feet of the well shall be filled with cement and capped two feet below the ground surface and the location staked.
18. A copy of the drilling logs and all pertinent aquifer information will be sent to the Schell Resource Area Manager at the Ely District Office.
19. All refuse or trash will be hauled to an approved sanitary landfill site after testing.
20. Upon completion of all activities under the permit, the BLM, Ely District, Schell Resource Area Manager will be notified.
21. The disturbed area will be seeded if determined necessary according to the specifications of the Schell Area Manager.
22. The operator shall make every effort to prevent; control, or suppress any fire in the operating area. Reports of uncontrolled fires must be sent immediately to the District Manager or his representatives.
23. No activity will take place at the site located at T. 6 N., R. 60 E., Sec. 6 in White River Valley.



United States Department of the Interior

IN RE:
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BUREAU OF LAND MANAGEMENT

Ely District Office
Star Route 5, Box 1
Ely, Nevada 89301

July 22, 1981

Col. D.M. Riddle
AFRCE/DEE
Norton A.F.B., CA 92049

Dear Col. Riddle:

In response to your request to drill to a depth greater than that stated in the Letter of Authorization issued June 2, 1981, the following amended Letter of Authorization is issued.

Pursuant to the Cooperative Agreement between the Bureau of Land Management and the U.S. Air Force dated May 15, 1981, the U.S.A.F. is hereby authorized to use or occupy the public lands in accordance with the following provision:

- A. Description of use: Aquifer testing by ERTEC Western consisting of drilling water wells to depths of 1200 feet and pump testing to determine level of drawdown. Two wells will be drilled at each site, one for pump testing and the other for observing the drawdown. Mud pits are needed for the drilling of each well.
- B. Duration: Authorization will be in effect until June 2, 1982.
- C. Legal Description: See attached list of sites and their legal descriptions.
- D. Special Stipulations: Standard Stipulations have been made a part of the Cooperative Agreement. Special Stipulations attached to the original Letter of Authorization were discussed at a meeting held at the Ely District BLM attended by Leonard B. Stephens, AFRCE-MX (DEEC); James L. Jack, AFRCE-MX (DEEC); George W. Cropper, Acting Ely District Manager; and other BLM personnel on July 7, 1981. It was agreed that on the Muleshoe Valley well site, the test well will be purged, water quality samples taken, and low level pumping of the well can continue. The water quality test results are to be phoned -- within 48 to 72 hours -- from the laboratory to ERTEC, and from ERTEC to the Ely District BLM hydrologist. Written test results will be mailed to the Ely District Office.

The BLM has modified stipulation No. 26 to include self-contained trailers, and stipulation No. 2 now requires that seeding be done by drilling.

cc: Mike Fogliani
Dick Morrison
Jim Miller


George W. Cropper
Acting District Manager

MX WATER RESOURCES PROPOSED VALLEY-
FILL WELL LOCATIONS (Ely District)

<u>Valley</u>	<u>Location</u>
Jakes	(17N - 60E) 11dd
Jakes	(16N - 59E) 13b
Jakes	(15N - 59E) 1d
Muleshoe	(6N - 65E) 6cd
Muleshoe	(5N - 65E) 6ca
Muleshoe	(4N - 64E) 7dc
Lake	(6N - 67E) 7dc
Lake	(4N - 67E) 20bd
Lake	(3N - 67E) 19ab
Lake	(2N - 67E) 5ad

EGAN RESOURCE AREA
Special Stipulations

1. The following designated representatives of the Ely District Manager in the order shown below will be notified a minimum of two (2) days in advance of moving any well drilling trucks and related equipment and structures on each site:

MX Compliance Officer - Leonard Brouse, Cleone Jonas
Area Realty Specialist- Dave Redmond
Area Manager - Wayne Lowman
Chief Division of Operations - Duncan MacDonald
Environmental Specialist - not specified
Area Biologist - not specified

2. A minimum of two (2) days advanced notification will also be given as explained in stipulation one above for:
 - a. Beginning well pump test in order that an authorized person representing the permittee and an authorized representative of the Ely District Manager can schedule an "on-site meeting" to discuss the water dispersion from the well.
 - b. Completion of well pump tests and before site is abandoned and equipment removed.
 - c. After completion of all activities and restoration of site as specified by the BLM Ely Office authorized representative.
3. Water will be discharged from the well at a minimum of 100 feet to a maximum of one mile from the test well at each site in a manner determined by an authorized representative of the Ely District Manager.
4. Under no circumstances will water be discharged from the end of a pipe directly onto the ground. A spreading device of some sort, i.e. pile of rocks, will intercept the flow.
5. Water will be discharged into existing drainage channels where feasible. Where this is not feasible perforated pipe will be used to spread the water evenly over the ground. Water will not be dispersed into a perennial stream or in a manner that will flow into a perennial stream during the pump test unless authorized by the Ely District Manager or his authorized representative.
6. Water quality tests will be performed on all wells that are to be pump tested. The water sample will be taken as soon as the drilling fluids have been purged from the well and not in excess of 4 days into the pump testing. A copy of

the results of the water quality tests will be submitted to the Area Manager as soon as they are completed.

Electrical Conductivity or Total Dissolved Solids test will be continued during the pump test. The pump test will be terminated if the Area Manager determines from the data that the water is a potential hazard to the ecosystem or the permittee determines there is a problem on site testing. If the permittee identifies a potential problem he will contact the Area Manager.

The following are the recommended maximum limits set for livestock and wildlife water uses as developed by the U.S. Environmental Protection Agency under Public Law 92-500:

- (1) Temperature: No Standard
- (2) Total Dissolved Solids (TDS): 2,000 mg/l for Wildlife
3,000 mg/l for Livestock
TDS = Electrical Conductivity X 0.85
- (3) pH: 5.0 - 9.0 for drinking water
- (4) Alkalinity - No Standard
- (5) Hardness - No Standard
- (6) Calcium - No Standard
- (7) Sodium - No Standard. A high Sodium Absorption Ratio (SAR can be hazardous to some plants.
- (8) Potassium - No Standard
- (9) Chloride 0 250 mg/l for drinking water
- (10) Sulfate - 250 mg/l for drinking water
- (11) Carbonate/Bicarbonate: No Standard
- (12) Copper - 0.5 mg/l for livestock
0.02 mg/l for Fisheries
Toxicity is dependent on pH and alkalinity.
- (13) Arsenic: 0.2 mg/l for Livestock
- (14) Iron: 1.0 mg/l for Fisheries. Dependent upon hardness, pH, Alkalinity.
- (15) Mercury: 0.010 mg/l for Livestock
0.00005 mg/l for Fisheries and Wildlife
- (16) Manganese: No Standard
- (17) Zinc: 25 mg/l for Livestock

7. A copy of the drilling logs and all pertinent aquifer information will be sent to the Area Manager at the Ely District Office.
8. During the pump testing all wells that are within a 3-mile radius of the test well will be monitored to insure that the water producing capacity of the existing wells are not impaired. If it is determined that the drawdown test is adversely affecting any of the wells, all pumping will cease.
9. If wells in the pump testing areas are not producing enough water (approximately 5 gallons/minute) for the number of livestock permitted for that area at the end of the project,

the permittee (Ertec Western, Inc.) will be responsible for supplying livestock water to the area in the amounts and methods determined by the Area Manager.

10. Springs within a 3-mile radius will be monitored every 48 hours to insure that the flow rate of springs are not impaired. If during the pump test the flow of springs is reduced by 20 percent, all pumping will cease. The area Manager will be contacted, and he will make the decision whether further pumping of the well will be permitted.
11. Wells not needed for construction or support of the MX project, as determined by the Air Force, will be turned over to the BLM along with the water rights. The Ely District Manager will determine which wells the BLM will accept.
12. Wells drilled into aquifers of low water quality that are not needed by the Air Force will be plugged in the following manner to prevent any ground water pollution. Cement plugs will be placed in cased or uncased portions of the well to protect all fresh water aquifers. Such plugs shall extend a minimum of 30 feet below and 30 feet above all aquifers to prevent contamination. The top 50 feet of the well shall be filled with cement and capped two feet below the ground surface and the location staked.
13. If it is determined necessary to utilize water from wells drilled on public land that may be harmful to the ecosystem, and additional set of stipulations will be required before any pumping begins.
14. Wells accepted by the BLM will not be backfilled. A cap will be affixed to close the opening of each well. The PVC pipe in observation wells will not be removed, but will be turned over to the Ely District to be utilized in the District Water Study. All PVC pipe will be reinforced by external metal stakes extending to the height of the cap to prevent livestock from breaking the pipe.
15. During pump testing the water will be diverted away from roads. If roads are eroded or flooded during the test the permittee will repair the damage.
16. No activity will be conducted when the moisture content of the soil is such that the vehicle traffic will cause in excess of a 2-inch rut in a road. All surface damage to roads and/or surrounding areas of the project sites will be restored by the permittee with the method of restoration and the time approved by the Area Manager.
17. No new roads will be constructed. All vehicle travel will be restricted to existing roads. No cross-country driving will be allowed.

18. If road maintenance is necessary, it will be conducted by methods approved by the BLM (see attached Road and Ditch Maintenance Specifications Drawing NV-040-9110-44-1).
19. Absolutely no earth moving work will be done except to remove topsoil from mud pits, constructing mud pits, or repair road damage.
20. Before the drilling fluid (mud) pits and well sites are constructed, the top 6 inches topsoil will be removed and stockpiled off to the side. The topsoil will be replaced after the pits are backfilled and the pit and well site areas returned to as near their former slope as possible.
21. Reseeding may be requested for any disturbed areas at a well site. A site specific seed mixture and the method and time when the reseeded will be done will be identified by the Area Manager or his authorized representative if reseeded is requested.
22. All refuse and/or trash will be hauled to an approved sanitary landfill site after testing. No burying or burning of refuse will be permitted.
23. At each site, the four corners of the area cleared by district or contract archaeologists shall be identified with flagging tape on 3 foot laths. No activities are to be conducted outside of this area.
24. When antiquities or other objects of historical or scientific interest, including historic or prehistoric ruins, vertebrate fossils or artifacts are discovered, they will be left intact and immediately brought to the attention of the Area Manager.
25. The operator shall make every effort to prevent, control, or suppress any fire in the operating area. Reports of uncontrolled fires must be sent immediately to the District Manager or his representatives.
26. Use of porta-johns will be required at any site where length of time exceeds three (3) days.
27. Access and easements to test sites JK-VK-2 and JK-VK-3 will not be used during the period from March 15 to May 30 to avoid disturbing Sage Grouse during a critical phase in their reproductive cycle.
28. No oil changes will be performed, whereas the oil would be deposited on the soil or vegetation. Soil contaminated from accidental spills, mechanical breakdowns, or leakages (i.e., from hydraulic lines) will be spread over existing road surfaces.

7.0 SECTION 7 - CONSULTATION

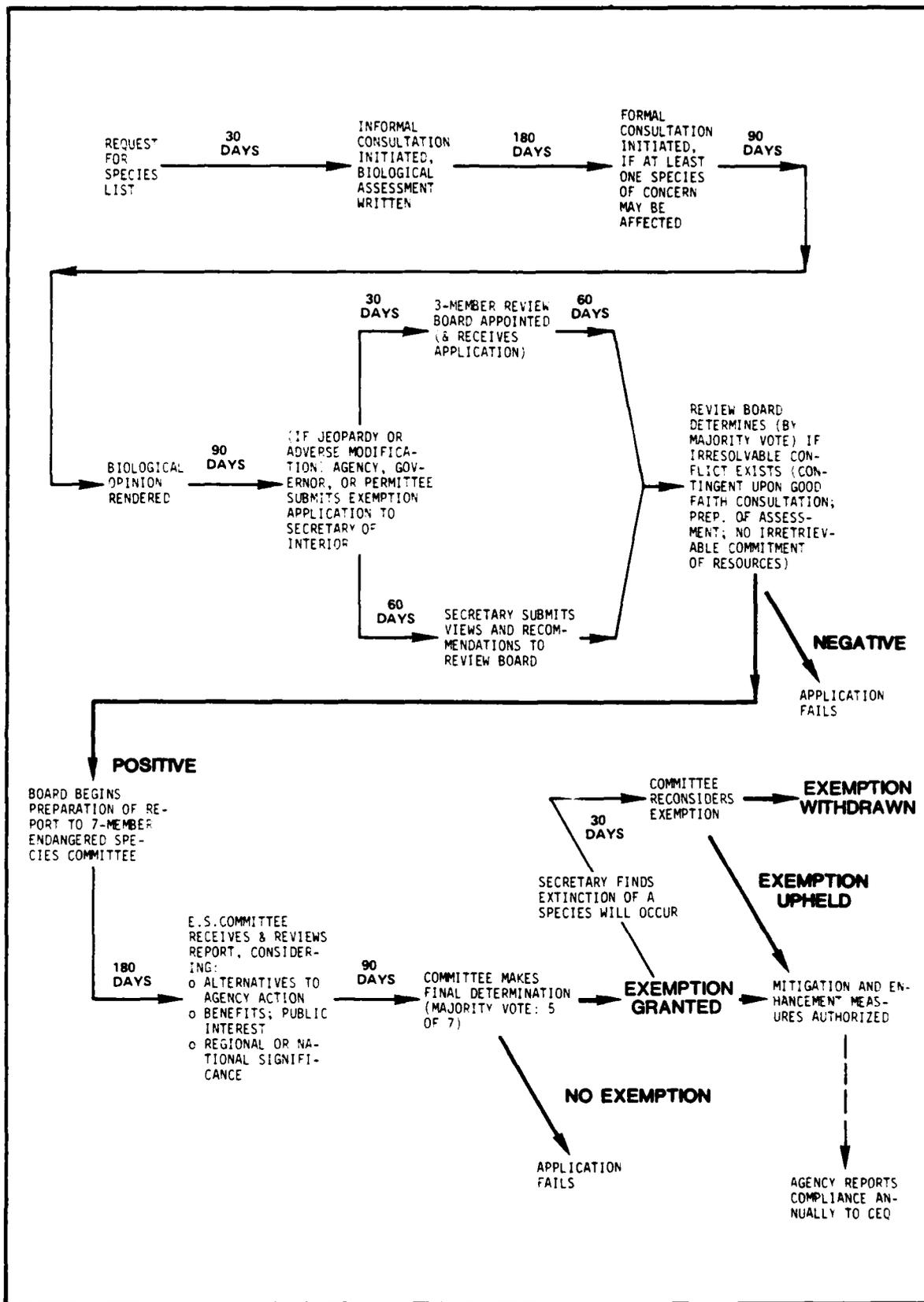
The project areas of Nevada, Utah, Texas, and New Mexico proposed for potential deployment of the M-X missiles contain a wide variety of both native and introduced species of aquatic biota, wildlife, and plants. Among the native forms are numerous unique and rare taxa, many of which are protected by the Endangered Species Act (ESA) of 1973, as amended in 1978. Within the U.S. Department of the Interior, the U.S. Fish and Wildlife Service (USFWS) determines and publishes lists of terrestrial and aquatic species which are considered to be endangered or threatened. The ESA requires that all federal agencies ensure that the actions they authorize or implement will not jeopardize the existence of endangered species or modify their critical habitats. Under Section 7 of the ESA, the procedure for consultation involves coordination between the acting agency, and both the affected state and the regional USFWS office representatives. As a basis for formal consultation between these agencies, a biological assessment is prepared by the acting agency which describes distributions of species of concern within the project area and expected impacts of the project upon those species. In the biological assessment, prudent alternatives for conservation and mitigation of project impacts upon the species are presented.

A request for a list of species of concern precedes initiation of the informal consultation and the writing of the biological assessment (Fig. 1). During informal consultation, which usually lasts 180 days or a time span mutually agreeable to both the USFWS and the acting agency, criteria are established for the extent to which data regarding the species of concern should be collected, and the precision with which impacts should be predicted.

Formal consultation begins when the biological assessment is presented to the USFWS. The USFWS determines whether the assessment includes sufficient information to render a decision regarding jeopardy to species of concern which may result from the project. If the USFWS feels that information is inadequate, it may request the acting agency to gather more information in order to facilitate its decision. This request may indefinitely extend the period of formal consultation. However, if exchange of information and guidance is adequate during informal consultation, requests for further information during the formal consultation should be minimized to expedite the schedule. The formal consultation ends when the USFWS decides it has sufficient information to render an opinion. Formal consultation takes up to 90 days, unless extended by mutual agreement. If a jeopardy opinion is rendered on any species, the USFWS suggests reasonable and prudent alternatives.

A 1978 amendment established a procedure to allow certain projects to proceed despite the strict prohibitions of the ESA. The 1978 amendments created an Endangered Species Committee composed of selected cabinet members and senior government officials. This committee is empowered to grant exemptions if there are no reasonable or prudent alternatives, the action is in the public interest, and it is of regional or national significance. The ESA also provides an exemption procedure for Department of Defense projects if the Secretary of Defense finds that such an exemption is necessary for reasons of national security.

The Section 7 consultation process for the proposed M-X program has involved contact with federal and state officials from the four states (Nevada, Utah, Texas



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Figure 1. Section 7 and The Exemption Process.

and New Mexico). Coordination began in November 1979 (Table 1) with meetings in Las Vegas, Nevada; Sacramento, California; Reno, Nevada; Salt Lake City, Utah; and Wendover, Utah. These meetings, involving USFWS, Bureau of Land Management, Nevada Department of Wildlife (NDOW), Utah Division of Wildlife Resources (UDWR), and Nevada Division of Forestry, were held to review available data, define issues, identify species of concern, discuss methodological approaches, and generally define the scope of the Deployment Area Selection and Land Withdrawal/Acquisition DEIS.

The current and continuing responsibility for Section 7 consultation on M-X is with the Boise, Idaho office of USFWS. Since assignment of lead responsibility to this office, a meeting has been held in Albuquerque with USFWS, BLM and New Mexico Department of Game and Fish representatives to determine Texas/New Mexico species of concern, and to identify key issues to be addressed in the biological assessment for Texas/New Mexico that is currently being prepared and delivery to USFWS is scheduled for late 1981.

A meeting was convened in Reno with USFWS, BLM, USFS, NDOW, and UDWR to determine Nevada/Utah species of concern, and to identify key issues to be addressed in the biological assessment for Nevada/Utah. The Department of the Interior's review of the M-X Deployment Area Selection and Land Withdrawal/Acquisition DEIS included the judgement that the environmental technical report on threatened and endangered species (ETR-17, "Protected Species") could be submitted to the USFWS as a biological assessment for the Nevada/Utah area. At this time, the Air Force intends to submit ETR-17 of the FEIS as a basis for initiation of formal consultation in November, 1981. A draft version (PFEIS) of ETR-17 has been provided to the USFWS as part of the informal consultation, as per agreements reached at a meeting of the USFWS with the Air Force in Santa Barbara in August, 1981.

Additional studies within the selected deployment areas will be planned and carried out by the Air Force, the BLM, and the Corps of Engineers. These studies and appropriate mitigations and conservations measures will be developed with the USFWS through the formal consultation process and subsequent coordination programs.

Table 1. Key meetings and correspondence involving the Air Force as part of the Section 7 consultation process for threatened and endangered species (Page 1 of 3).

Meetings:

<u>Date</u>	<u>Location</u>	<u>Attendees</u>	<u>Subject</u>
8 Nov 79	Las Vegas	USFWS, UNLV, HDR	Field sampling for aquatic species
11 Nov 79	Sacramento	AF, USFWS, HDR	Summary of protected species information
6-7 Dec 79	Reno	AF, HDR, USFWS, TRW, NDOW, BLM	Protected species info requirements, NV/UT
6 Mar 80	Salt Lake City	HDR, BLM, EPA, USFWS, USGS, USFS, SCS	Summary of protected species information
9 May 80	Wendover,	AF, HDR, NDOW,	Section 7 initiation UDWR, USFWS, BLM meeting, NV/UT
17 Mar 81	Albuquerque	AF, HDR, USFWS,	Section 7 initiation NMDGF meeting, TX/NM
15-17 Apr 81	Reno	AF, HDR, TRW,	NV/UT, Species of Concern USFWS, NDOW, UDWR and studies thereof
26 Aug 81	Santa Barbara	AF, HDR, TRW, USFWS, COE	Requirements for biological assessment
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Table 1. Key meetings and correspondence involving the Air Force as part of the Section 7 consultation process for threatened and endangered species (Page 2 of 3).

Letters:

<u>Date</u>	<u>To</u>	<u>From</u>	<u>Subject</u>
20 Mar 80	HDR - AF Environmental Consultants	Robert Shields/ Area Manager USFWS-SLC	Information require- ments and Section 7 initiation request
26 Mar 80	HDR	William Sweeney Area Manager USFWS-Sacramento	Protected species sampling
6 June 80	Col. Burgess, AF	Robert Shields/ Area Manager USFWS-SLC	First species list, NV/UT
18 June 80	Don Minnich Reg.Dir. USFWS Denver	Col. Verkest, AF	Section 7 initiation request TX/NM
15 July 80	Don Minnich Reg Dir., USFWS, Denver	Joan Caton Anthony USFWS, Wash.D.C.	Section 7 tiering approved
20 Aug. 80	Col. Verkest, AF	R.F. Stephens/ Acting Dep Reg. Director, USFWS- Albuquerque	First species list, TX/NM
3 Sept 80	Col. Verkest, AF	R. F. Stephens	Second species list, TX/NM
28 Nov 80	A.L. Clark, AF	Sandra H. Hansen, Act.Reg.Director, USFWS-Albuquerque	Affirmed second species list, TX/NM

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Table 1. Key meetings and correspondence involving the Air Force as part of the Section 7 consultation process for threatened and endangered species (Page 3 of 3).

Letters: (continued)

15 Jan 81	Col. Verkest, AF	L.A. Mehrhoff Area Manager, USFWS-Boise	Second species list, NV/UT
4 Feb 81	Col. Verkest, AF	W.D. Carter for L.A. Mehrhoff	Third species list, TX/NM Third Species list, TX/NM
19 Feb 81	Col Verkest, AF	L.A. Mehrhoff	Second plant species list, NV/UT
23 Apr 81	HDR	J.M. Moorhouse Chief, Div. Resources, BLM-SLC	Endangered Species Conservation Policy
1 May 81	Sec. Weinberger, Dept. of Defense	Sec. Watt, Dept. of Interior	Adequacy of ETR-17 for for Biological Assess- ment
21 May 81	HDR	Don Sada/ Fisheries Biologist USFWS-Reno	Field studies

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8.0 CONCLUSION

The discussion in this ETR is illustrative of the magnitude of planning that will be accomplished to minimize the impacts associated with M-X deployment. The planning process has already begun and will continue as an integral part of the M-X program. The planning efforts will generate the level of detail and the degree of analysis requested by many DEIS commentors. These details will be generated when they are relevant to the decision at hand, and not for the purpose of abstracted analysis. Finally, these planning efforts will create those mitigations and safeguards that become a part of the tiered decisionmaking process. Like data analysis, mitigations are not abstractions, but relevant input to site specific and time specific decisions.

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mailed to

The BLM h
trailers,
by drilli

cc: Mike Fogliani
Dick Morrison
Jim Miller

