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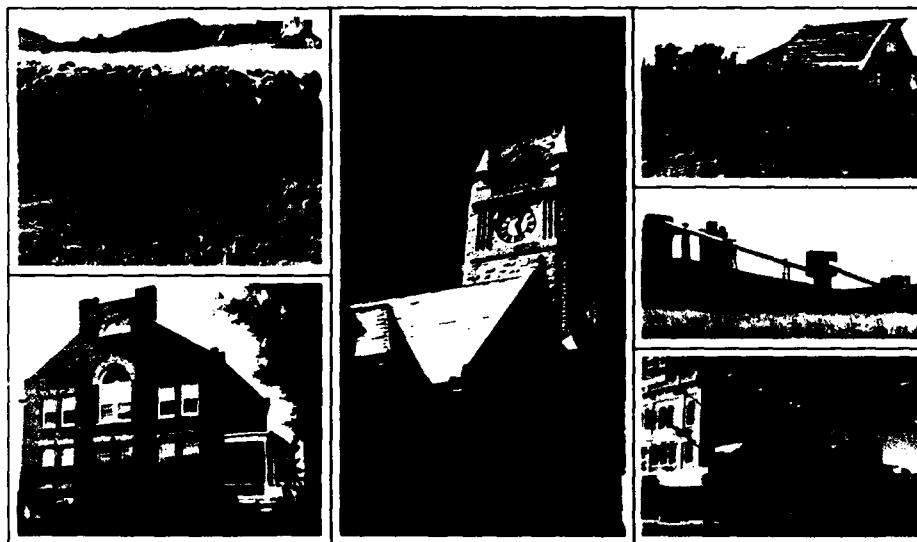
EXECUTIVE SUMMARY



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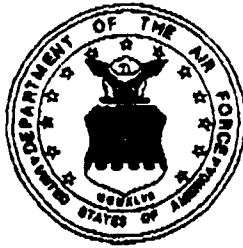
FINAL ENVIRONMENTAL IMPACT STATEMENT



**PEACEKEEPER IN MINUTEMAN SILOS
90th Strategic Missile Wing
F.E. Warren Air Force Base**

January 1984

Approved for Release to the
Department of Defense



**Air Force
Environmental Planning Division
(HQ USAF/CEVP)**

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EXECUTIVE SUMMARY

PROJECT PURPOSE The Air Force plans to deploy the Peacekeeper Missile system within the 90th Strategic Missile Wing at F.E. Warren Air Force Base (AFB) near Cheyenne, Wyoming. The Peacekeeper system is an advanced, land-based intercontinental ballistic missile system designed to improve the nation's strategic deterrent force. Land-based strategic missiles are an integral part of the United States nuclear deterrence strategy. Air, sea, and land-based weapons form a TRIAD of strategic forces, each with different capabilities and advantages to complicate Soviet offensive and defensive planning. The TRIAD also provides a hedge against technical problems that could temporarily disable a system and against technological breakthroughs or a rapid evolution of threats that might erode the survivability of one or more parts of our strategic forces.

The Scowcroft Commission was established by the President in January 1983 to study the nation's strategic modernization needs. The Commission concluded that the advantages of the land-based portion of the TRIAD (i.e., low maintenance costs, high reliability, rapid response, and great accuracy) in addition to its contribution to the effectiveness of the TRIAD, make it imperative that the land-based missile system be upgraded to address the challenges posed by the Soviet Union. As part of their recommendation on upgrading, the Commission urged deployment of 100 Peacekeeper missiles as an immediate measure to modernize the land-based missile system. The President, following review of the Scowcroft Commission report, decided on deployment of 100 Peacekeeper missiles in specific existing silos supported by F.E. Warren AFB and provided this decision in his report to Congress.

The Jackson Amendment to the 1983 Defense Appropriations Act (Public Law 97-377) exempted the President's report and proposals from the requirements of the National Environmental Policy Act. The 1984 Defense Authorization Act authorized the Air Force to procure Peacekeeper missiles and directed that they be deployed in existing Minuteman missile silos in the 319th and 400th Strategic Missile Squadrons at F.E. Warren AFB.

The purpose of the Final Environmental Impact Statement (FEIS) is to analyze the impacts of implementing actions and their alternatives, and to develop appropriate mitigation measures.



PROJECT DESCRIPTION

The Peacekeeper deployment plan calls for the replacement of 100 of the existing Minuteman III missiles with 100 Peacekeeper missiles. Existing missile Launch Facilities will be used with modifications (Figure S-1). Modifications to the Launch Control Centers will primarily involve electronic equipment. Missile replacement will occur within the two squadrons located nearest F.E. Warren AFB, the 319th and the 400th Strategic Missile Squadrons (Figure S-2). Five additional buried cables will be laid to link Squadrons 319 and 400. In addition, a number of support facilities will be constructed or altered at F.E. Warren AFB which currently serves as the Strategic Missile Support Base (referred to in this document as the Operating Base) for the 90th Strategic Missile Wing. Defense Access Roads will be upgraded as required to transport Peacekeeper stages from F.E. Warren AFB to the Deployment Area. The Peacekeeper missile system is scheduled to achieve initial operational capability in December 1986 and to be fully operational by late 1989. Construction at F.E. Warren AFB will occur between 1984 and 1986. Work in the Deployment Area will occur from 1985 to 1989.

Operations of the Peacekeeper system will be similar to the Minuteman system. The major differences are in the transport and emplacement of the missile. The Minuteman stages are transported fully assembled and emplaced in the silo with the same vehicle. Peacekeeper stages will be transported individually by one vehicle, and emplaced in the silo by another vehicle. Once fully operational, security and maintenance operations in the Deployment Area will be similar to those now in effect for the Minuteman system.

Total direct manpower will peak during 1986 when an average of nearly 1,600 persons will be required. In 1990, following deployment, the increase in operational workforce at F.E. Warren AFB will consist of about 475 persons.

PROJECT-ELEMENT ALTERNATIVES

Within this framework the FEIS addresses alternatives for several system elements. These are: 1) three alternative road configurations, each with several design options, for linking the new onbase Stage Storage Area with the existing onbase Weapons Storage Area, as well as achieving access offbase to the Deployment Area; 2) 11 alternative buried cable paths from which five would be selected, linking the 319th and 400th Strategic Missile Squadrons; and 3) three dispatch station alternatives formerly called staging areas in the Draft Environmental Impact Statement (DEIS) for providing temporary field storage and administrative centers during the project.

Three alternative roadway configurations (referred to as R1, R2, and R3 in Figure S-3) were developed for F.E. Warren AFB. As described below, these alternatives offer varying means of access from the Stage Storage Area and the Weapons Storage Area to roads in the Deployment Area. R1 provides access to Interstate 25 from Gates No. 5 and 2. R2 (the proposed action) provides the same access to

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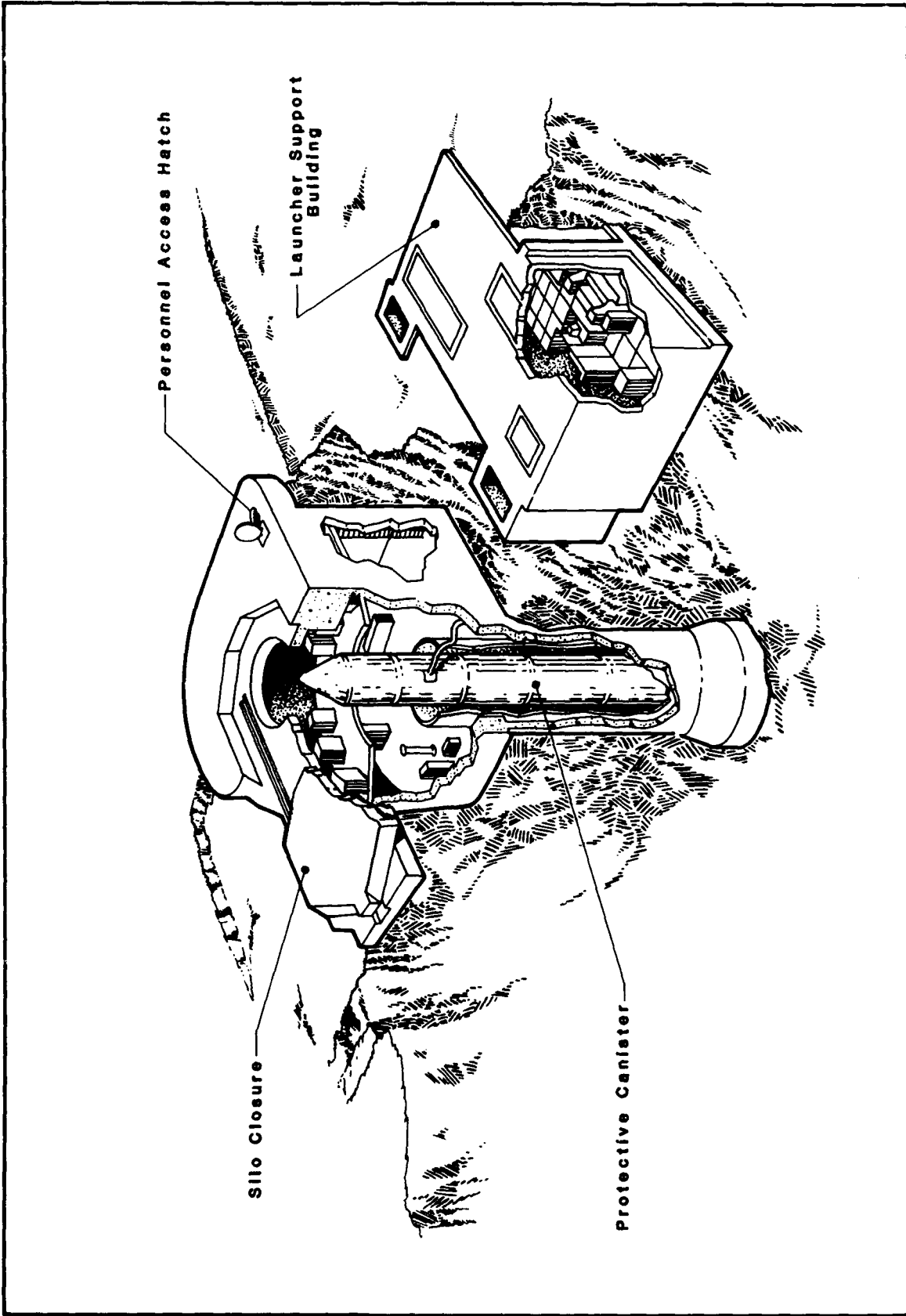


FIGURE S-1 PEACEKEEPER LAUNCH FACILITY

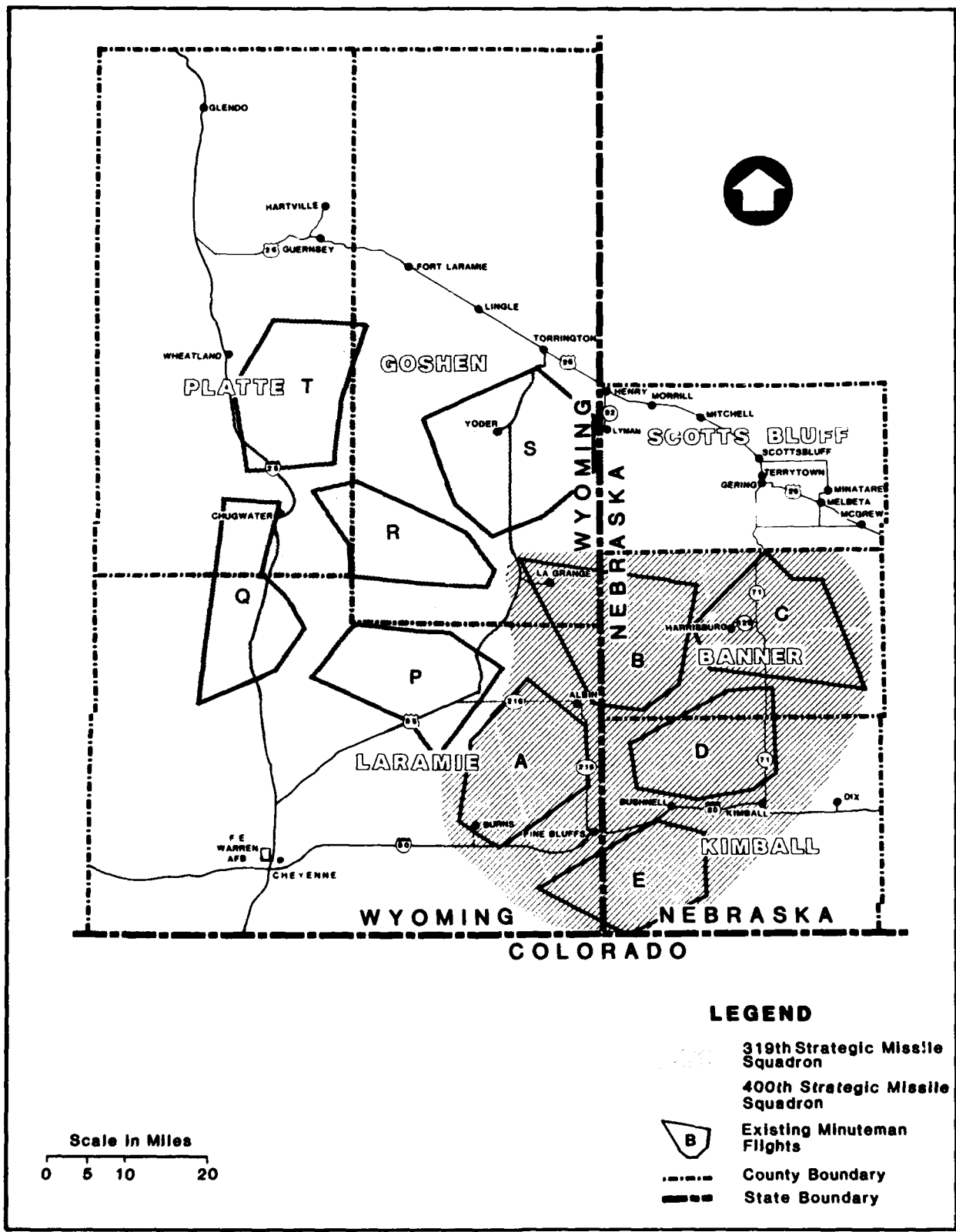


FIGURE S-2 PEACEKEEPER DEPLOYMENT AREA

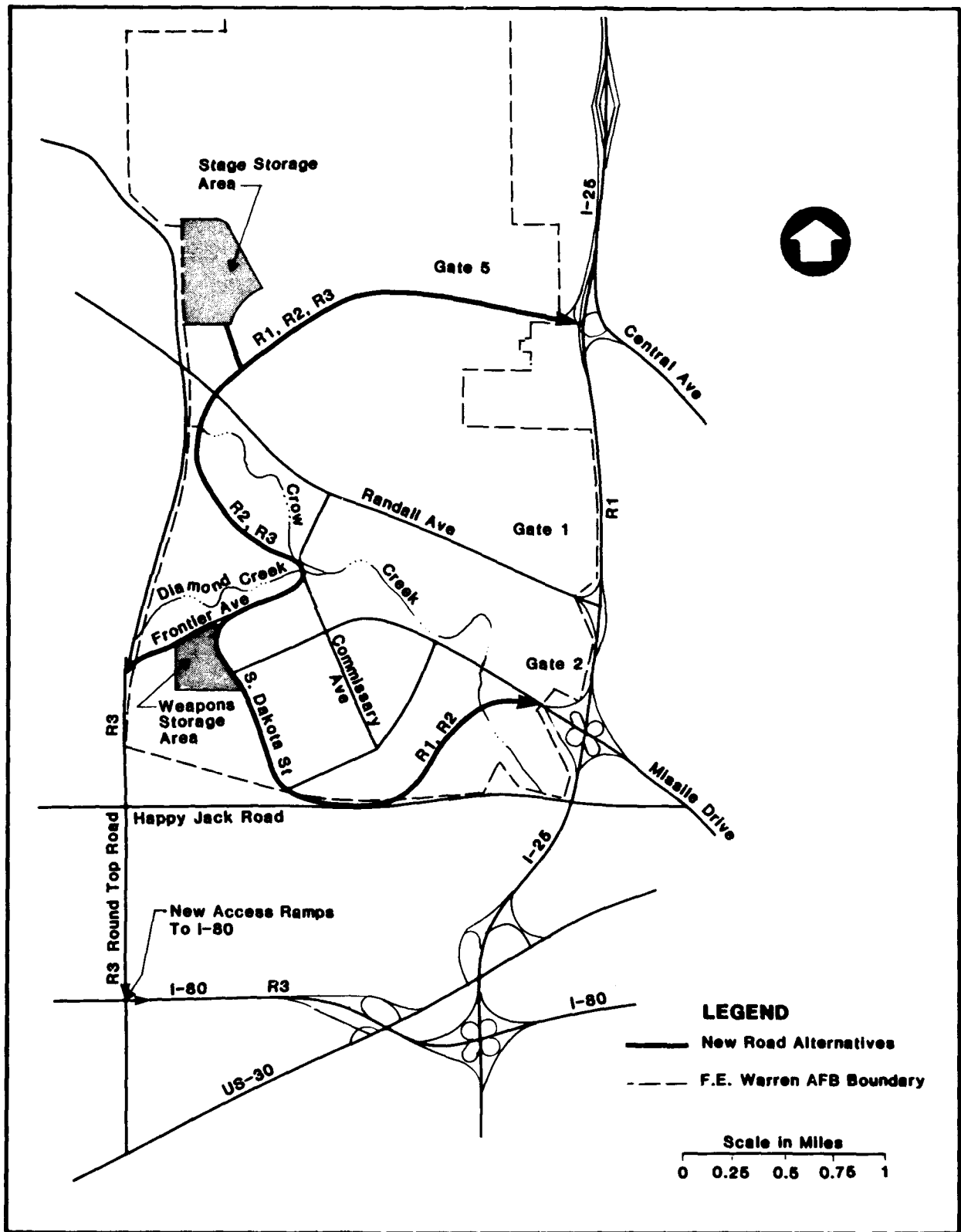


FIGURE S-3 ROADWAY ALTERNATIVES AT F.E. WARREN AFB

Interstate 25 as R1. In addition, R2 provides for an onbase connection between the Weapons Storage Area and the Stage Storage Area. R3 provides the same access to Interstate 25 from the Stage Storage Area as provided in R1 and R2. R3 provides the same connection between the Weapons Storage Area and the Stage Storage Area as R2. In addition, R3 is the only alternative which provides for a connection from the Weapons Storage Area to Interstate 80.

For each of the 11 buried cable alternatives (from which five would be chosen) a 1-mile wide path has been analyzed. For cable installation, a specific 35-foot wide temporary easement would be obtained for only 5 paths to install the cable. Following cable burial the permanent easement width will be 16.5 feet. The cable depth will be approximately three feet. Total buried length for all five cables will range from approximately 80 to 110 miles, depending upon final route selections.

Deployment contractors may be expected to establish up to two dispatch stations consisting of sites for temporary, open storage of equipment and material. Several small portable buildings will also be present at each site for contractor use. In the Proposed Action, two temporary dispatch stations would be established, one each in the northern and eastern portions of the Deployment Area. For purposes of analysis representative locations are Chugwater, Wyoming and Kimball, Nebraska. Two alternatives exist: 1) a single dispatch station in the eastern portion of the Deployment Area, and 2) no dispatch stations.

ENVIRONMENTAL CONSEQUENCES OF THE PROJECT

General Approach to Impact Assessment

Project-related impacts are measured by the change caused by the project, as compared to the No Action Alternative, on each of 18 environmental resources.

Two measures of impact are used in this document: level of impact and significance. Level of impact is a measure of environmental change resulting from the project as compared to the projected baseline (No Action Alternative). Four impact levels are used throughout the impact analysis: negligible, low, moderate, and high. A negligible impact indicates that the environmental resource being analyzed will receive either no impact or a very small impact due to the proposed project. In contrast, a high level of impact indicates that the proposed project will result in an extensive alteration in the availability or the quality of the environmental resource. Specific definitions of these levels of impact vary by environmental resource.

The term significant is used as a measure of the importance of the impact, and does not necessarily imply a separate judgment on the overall severity of the impact. Rather, it may indicate a judgment regarding which impacts warrant heightened attention, by the Air Force or others, during project planning; or it may reflect a judgment

as to the extent of the action necessary to avoid that impact. The criteria used to evaluate significance have been derived for each resource.

Two additional aspects of impact assessment have also been analyzed. First, an impact is assigned to one of three geographical levels: site (where direct project activities occur), local (within a city jurisdiction or district surrounding an impacted area), and regional (within the Region of Influence defined for each environmental resource).

Second, an impact may be categorized as short or long term, according to when it occurs. Short-term impacts will occur during construction (before 1990). Long-term impacts will occur during operation (after 1990) and reflect impacts which are generated during the operational period or which continue from the construction period. The operational impacts assessed for each resource would continue to be realized at the same level of impact for the foreseeable future.

To the extent practical in consideration of operational requirements, schedule, and budget, the Air Force has committed to implementing standard construction practices and other measures that help to reduce the environmental impact of the Proposed Action and project-element alternatives. These measures have been taken into account in the impact analyses of the project.

The conclusions drawn in the FEIS are based upon data and detailed analysis contained in the FEIS and in 13 companion environmental planning technical reports. The volumes are available for review at local libraries.

PROJECT IMPACTS This section summarizes, by resource category, the major impacts of the Proposed Action. Figure S-4 graphically depicts the impacts. In the impact summary matrix, adverse impacts are identified with various sized circles and are blackened if significant. If effects may also be beneficial, a dot pattern is included in the matrix cell. In some cases, there are both adverse impacts and beneficial effects for the same resource. Where impacts were judged not to be significant for a resource or an element of a resource, the discussion of impacts is minimized.

Employment Demand

Employment demand describes the available regional labor force which may be used by the project, and the demand for nonlocal labor which will result in the immigration of workers, job-seekers, and their families.

The project is forecast to create about 1,600 direct and 1,100 indirect jobs in the region in the peak years with about 55 percent of the jobs filled by people presently residing in the local area. Analysis indicates these jobs will cause a total maximum immigration of 3,200 persons in

LEGEND		ADVERSE IMPACTS	SIGNIFICANT ADVERSE IMPACTS
LEVEL OF IMPACT*	LOW	○	●
	MODERATE	○	●
	HIGH	○	●
POTENTIAL BENEFICIAL EFFECTS			□
* MEASURE OF THE AMOUNT OF ENVIRONMENTAL CHANGE			

	PROPOSED ACTION					
	SHORT TERM			LONG TERM		
	SITE	LOCAL	REGIONAL	SITE	LOCAL	REGIONAL
Employment Demand		□	□		□	
Housing		○				
Public Finance		●				
Construction Resources		□	□			
Social Well-Being		○			□	
Public Services and Facilities		●			○	
Utilities		●				
Energy Resources		○			○	
Transportation	●	●	●	□	□	□
Land Use	○	○		○	○	
Recreation		●	●		○	○
Cultural and Paleontological Resources	●			●		
Visual Resources	○					
Water Resources	○	●	○	○	○	○
Biological Resources	●		●	●		
Threatened and Endangered Species	●		●	●		
Geological Resources	○	○			○	
Noise						
Air Quality		○				

Note: Adverse impacts are identified with various sized circles and are blackened if significant. If there are also beneficial effects, a dot pattern is included. In some cases, there are both adverse impacts and beneficial effects for the same resource.

FIGURE S-4 SUMMARY OF PROPOSED ACTION IMPACTS

1987, with over 80 percent immigrating to the Cheyenne Urban Area (which has a current population of about 65,000). Immigration is also forecast during project construction for Chugwater, Pine Bluffs, Wheatland, and Torrington in Wyoming, and for Kimball and the Goering-Scottsbluff area in Nebraska. The project and resulting immigration will result in increased employment and income, and in decreased unemployment, producing a beneficial effect in these communities.

No adverse impacts are forecast due to changes in employment.

Housing

Housing includes the existing housing stock (single family, multifamily, mobile homes, and temporary housing accommodations) and the capability of the private housing industry to respond to changes in housing demand.

Analysis indicates a peak-year net demand for about 310 single family, 210 multifamily, and 210 mobile homes in the Cheyenne Urban Area. No shortage of temporary accommodations is forecast except perhaps during Cheyenne Frontier Days. Peak-year multifamily demands are also generated in Pine Bluffs and in Wheatland. Peak-year mobile home demand would occur in Pine Bluffs, Chugwater, and Kimball. Increased utilization of the existing housing stock and increased housing stock due to the project will be beneficial.

Even though overall impacts on housing are rated as beneficial, significant impacts could occur during the construction period on mobile homes in Cheyenne and on multifamily units in Wheatland due to potential price instability. Some excess supply of housing could cause long-term impacts in Pine Bluffs and Kimball.

No significant housing impacts are forecast for Pine Bluffs, Chugwater, or Kimball in the short-term.

Public Finance

Public finance describes the budgets, fiscal resources, and obligations of all major governmental entities, including school districts and urban service areas.

Analysis for the 16 such entities potentially impacted by the project indicate total revenue due to the project in the 1984 to 1992 period will increase by \$32.3 million while expenses due to the project will increase by \$28.3 million thus providing a beneficial effect. However, some entities will have expenses exceeding revenues.

The analysis indicates that there will be an overall moderate and significant impact in the short-term due to concentration of fiscal burden within Laramie County, Wyoming. Laramie County School District No. 1 would experience about a \$6.7 million revenue shortfall due to the need for additional staff and space.

Although generally not significant, some entities will have expenses that exceed revenues which lead to low or moderate impacts. This is due to reduced cash balances, the need to raise fees or tax rates, or reduce expenditures to a level lower than previously planned.

Construction Resources

Construction resources describe the construction materials market for cement, coarse and fine aggregate, ballast, asphalt, roofing, lumber, concrete block and brick, and other project-related materials of local importance.

Project demands for these resources are about 6,400 tons of cement, 4.6 million tons of aggregate, 2,800 tons of ballast, 111,000 tons of asphalt, 1 million square feet (sq ft) of roofing, 485,000 board feet of lumber, 134,000 concrete blocks and bricks, and 7,720 tons of steel products and several specialty material resource items related to buildings on F.E. Warren AFB. Increased utilization of production facilities and increased sales will produce beneficial effects for each construction material type.

The analysis indicates no significant adverse impacts resulting from the project on overall construction resources. Potentially significant adverse impacts could occur in aggregate and asphalt supplies due to projected use of 50 and 12 percent, respectively, of the regional production capacity which could interfere with other users.

Social Well-Being

Social well-being is an assessment of the social well-being of area residents developed from information on local issues, opinions, and selected indicators of behavior.

Although no large scale alterations to the existing social structure in Laramie, Platte, and Kimball counties are anticipated as a result of the project, some increase in existing social and economic-related problems are expected. Improvements in the area economy along with increased cultural diversity are expected to be generally beneficial to the well-being of the respective communities.

Overall, impacts on social well-being are rated low and not significant during project construction. However, social problems of alcohol and substance abuse, transients, and social conflict associated with population growth could increase and cause moderate and significant impacts in some communities. Some impacts could also occur from potential relocation of residents of the nine homes within the Quantity Distance zones near Launch Facilities.

No long-term adverse impacts are forecast for the resource as a whole.

Public Services

Public services are those services provided by governmental and other authorized agencies to meet the health, safety, and welfare needs of citizens. Included in this category are education, law enforcement, the justice system, fire protection, health care, human services, general government, and libraries.

The public services analysis examines needs for additional staffing, capital equipment, or capital facilities in order to maintain service levels at existing conditions or to meet certain standards of service.

Overall, public services will experience a moderate and significant impact due to the project. The analysis indicates that only education, human services, and law enforcement would experience significant adverse impacts during the construction period.

Within education, the primary impacts are projected for Laramie County School District No. 1. The additional staffing requirements in the peak year due to the Proposed Action would be 33 teachers and 25 other staff, while the additional space requirement would be 40,260 sq ft during the peak year. Due to the sizable square footage requirement, the District's level of impact is rated high. Other school districts will have much smaller staffing and space needs due to the project.

Human service agencies in Laramie County found to have moderate, significant impacts include the Alcohol Receiving Center Halfway House, the Cooperative Ministries for Emergency Assistance (COMECA) shelter, Salvation Army, and the Southeast Wyoming Mental Health Center. Additional staffing may be required due to the potential for disproportional demand for alcohol and mental health services and due to an increased number of unsuccessful job-seekers requiring support from the COMECA shelter and Salvation Army. Additional staffing required for each of these agencies would range from one to four individuals.

The law enforcement agencies of Laramie County and the City of Cheyenne are projected to require additional staffing in order to maintain levels of service. In the peak year additional staffing requirements are projected to be five sworn officers and two civilian staff for the County Sheriff's Department and six sworn officers and one civilian staff for the City Police Department.

No significant adverse impacts due to the project are forecast for the justice system, fire protection, health care, general government, or libraries.

Utilities

Utilities describes water treatment and distribution systems, wastewater systems, solid waste systems, stormwater facilities, and telephone service.

The utilities analysis examines needs for added staffing, capital equipment, or capital facilities to meet forecast demands. Cheyenne is the only community identified that will have to upgrade its utilities to serve project needs. Induced population will result in a 3 to 4-percent increase in peak water demand and in wastewater flow and solid waste generation. New development results in the need for about 1 mile of stormwater pipe. New equipment to handle local solid waste and telephone service will be needed. Although other communities may experience peak increases in utility demands of up to 10 percent, no additional facility expansions are needed to meet these demands. The overall impact on utilities is rated low and significant during project construction. Wastewater systems in the Cheyenne Urban Area will receive low but significant impacts from the project due to increased wastewater flow induced by the proposed project which will aggravate the problem of currently overloaded waste treatment facilities.

No significant adverse impacts due to the project are forecast for water treatment and distribution systems, solid waste systems, stormwater facilities, or telephone service.

Energy Resources

Energy resources include the supply and distribution systems for electrical power, natural gas, petroleum products and coal.

Consumption of these resources will increase by 1 to 6 percent over baseline for communities receiving immigration population. No new energy facilities will be needed as a result. Operation increases in electrical, coal, and fuel use will occur at F.E. Warren AFB, but new facilities are only required to meet the electrical needs. Peak electrical demand will increase at the Launch Facilities during system operation, but will not exceed the local line capacity.

Analysis indicates that supplying these energy needs will result in no significant adverse impacts for energy resources as a whole or for individual types of energy.

Transportation

Transportation describes the various modes of travel used for the movement of persons and goods, and includes transportation planning, design, and operation of roads, railroads, aviation facilities, public transit, pedestrian and bicycle facilities, and the interrelationships between these travel modes.

The analysis examines the impacts of increased use of these modes in urban areas as well as rural areas. The project would involve upgrade of several hundred miles of roads in the Deployment Area resulting in a long-term beneficial effect for the region.

Significant impacts on the transportation resource are expected due to short-term reductions in level of service at some intersections and

interchanges in Cheyenne. Additionally, traffic delays and inconvenience resulting from upgrades in the Deployment Area will generate significant impacts. However, the project-related improvements to designated roads will provide greater safety and level of service for the area.

No significant adverse impacts are expected for railroads, aviation facilities, public transit, or pedestrian and bicycle facilities.

Land Use

Land use comprises both urban land uses in developed communities where population immigration is expected, and rural land use and agriculture in the Deployment Area where direct and indirect impacts from project development will occur.

The project would create a need to develop 167 acres of vacant land in Cheyenne, 16 acres in Wheatland, 10 acres in Kimball, 9 acres in Pine Bluffs, and 3 acres in Chugwater for residential and support services. There is the potential for underutilization of project-related developed land in all communities except Chugwater during the project's decline cycle. In Cheyenne, a potential beneficial effect could occur as a result of using existing vacant lots. Up to 510 acres of rural land in agriculture will be affected by cable installation. In addition, nine homes occur within proposed Quantity Distance zones around Launch Facilities. Some interference with agricultural operations could occur due to interference with access to fields during road modifications.

Overall impacts to agriculture, rural land use, and urban land use are not significant.

Recreation

Recreation includes regional recreation which is related to federal, state, and other lands offering outdoor recreation opportunities and local recreation which is related to municipal and county-owned parks and facilities within urbanized areas.

Regional recreation demands will increase for specific facilities. Some facilities may suffer impairment during peak-use periods because they are presently near capacity. In some cases, additional law enforcement and management measures may be required to ensure public safety. On a local level, demand will create the need for an additional 16 acres of parkland in Cheyenne, as well as additional staff and other recreational facilities.

The overall impact on recreation is moderate and significant during the construction period. The recreation analysis indicates Medicine Bow National Forest and Glendo, Guernsey, and Curt Gowdy state parks could be overcrowded resulting in some deterioration of the quality of the recreational experience and an increased requirement for law enforcement. Moderate and significant impacts during the construction phase will occur on local facilities due to an increased

demand for parkland, facilities, and staffing. This impact is due to immigration and the absence of developed parkland in some neighborhoods in the Cheyenne Urban Area.

No significant long-term impacts are projected.

Cultural and Paleontological Resources

Cultural and paleontological resources include four major elements: prehistoric, historic, American Indian cultural resources, and paleontological resources.

Impacts are generally associated with ground disturbance or potential alteration of above-ground structures. Impacts to prehistoric and historic archaeological properties will result from the construction of new roads and utilities at F.E. Warren AFB, placement of buried cables in the Deployment Area, and widening and upgrading of Defense Access Roads. Historic architectural resources will also be impacted by the modification of existing buildings which lie within the Historic District at F.E. Warren AFB. However, it is expected that implementation of Air Force committed mitigation measures and continued use of these buildings will result in net beneficial effects to those onbase historic buildings that are scheduled to receive project modifications.

Overall, the impact upon cultural resources will be moderate and significant. This is due to the modification of buildings in the Historic District.

The prehistoric cultural resources analysis indicates that there will be no significant adverse impacts with advance planning to avoid or ameliorate loss of important archaeological sites.

The paleontological and American Indian cultural resources analyses indicate that there will be no significant adverse impacts resulting from the project.

Visual Resources

Visual resources include scenic resources and the visual environment, as well as evaluation of the visual quality of the region.

Impacts are generally associated with temporary land clearing.

The visual resources analysis indicates that there will be no significant adverse impacts resulting from the project.

Water Resources

The water resources analysis examined water use and demands, constraints on water use, and groundwater and surface water hydrology and quality.

Water use and demand due to the project will increase by a relatively small cumulative total of about 4,000 acre-feet over the entire 1984 to 1990 construction period and about 250 acre-feet per year from 1991 on as a result of the project. About 72 percent of the construction-period demand and all of the operating demand will occur in the Cheyenne Urban Area. In addition, increased development in the Cheyenne Urban Area will increase storm runoff and flood flows and related erosion and sedimentation.

The overall water resources impact has been rated as moderate and significant in the short-term due to project-related changes in the Cheyenne Urban Area with water use potentially interfering with other users, storm runoff in some areas potentially affecting public safety, and erosion causing some water quality degradation.

No project-related activities are expected to cause significant water resources impacts in the Deployment Area or on F.E. Warren AFB since water use is small and the Air Force will follow state water laws in water acquisition and follow standard construction practices to control storm runoff and erosion from project activities.

Biological Resources

Biological resources include vegetation, wildlife, fisheries, and unique and sensitive habitats.

The biological analysis assessed the impact of ground disturbance activities as well as population-generated changes to these resources. Direct impacts on biological resources include loss of vegetation and wildlife habitat, loss of fisheries habitat, disturbances to big game and raptors, and increased siltation in area streams. Indirect impacts include increases in hunting and fishing pressures, game and fish pressures, game and fish violations, and recreation pressure.

The overall impact level of the proposed project on biological resources will be moderate and significant during project construction largely as a result of the unique character of the vegetation types affected at F.E. Warren AFB and the value of affected riparian/wetland vegetation as wildlife habitat in the Deployment Area. Additionally, the slow recovery periods for these vegetation types generates low long-term impacts. Impacts, however, for the majority of individual wildlife and vegetation types range from negligible to low.

Nonsignificant project-related impacts include the loss of small amounts of short-grass prairie vegetation; small losses of furbearer, upland game, waterfowl, nongame mammal, and reptile and amphibian habitat; and increases in hunting and fishing pressure.

Threatened and Endangered Species

This category includes plants, wildlife, and aquatic species which are protected by federal law as threatened or endangered. Also included in this category are state-protected rare, threatened, or endangered species.

Within the project area, there are three federally listed species on the threatened and endangered list: the black-footed ferret (in prairie dog towns), the greenback cutthroat trout, and the bald eagle. With implementation of appropriate assumed mitigations, impacts on the habitat of the black-footed ferret located in the project area will be negligible. The expected minor increase in fishing pressure in the greenback cutthroat trout habitat is expected to have a negligible impact on the species. Increases in random shooting of raptors during the construction period will result in a low and significant impact on the bald eagle.

The Colorado butterfly plant, although not formally federally listed, is categorized by the U.S. Fish and Wildlife Service as a Category One species, which means that it meets the criteria for listing as a threatened or endangered species. Although the butterfly plant is not afforded federal protection as a threatened or endangered species, the U.S. Fish and Wildlife Service has a Memorandum of Agreement with F.E. Warren AFB for protection and management of this species until it is listed. With implementation of appropriate assumed mitigations, disturbance to this plant's habitat during construction will result in a moderate, significant, long-term impact. The woolly milkvetch is listed as rare by the Wyoming Natural Heritage Program and will have a moderate, significant, long-term impact due to habitat disturbance during construction.

The overall impact on threatened and endangered species is moderate in the short and long term due to impacts on the Colorado butterfly plant and the woolly milkvetch. Impacts to the bald eagle will be low during project construction. Since these species are of special federal or state concern, the impacts are significant.

Geologic Resources

Geologic resources include geologic hazards, energy and mineral resources (aggregate), and soil resources.

The project will require approximately 4.6 million tons of aggregate for construction. Estimates of available sand and gravel and crushed rock reserves in the region are in excess of 150 million tons. Additionally, exposed lands will be subject to erosion during construction.

The geologic analyses indicate that no significant adverse impacts will result from the project.

Noise

Sources of noise, defined as any sound considered undesirable, include vehicular, air and railroad transportation, and construction activity.

Barely perceptible increases in noise would occur due to increased vehicular, air, or railroad transportation. Most noise increases related to construction would attenuate within short distances from the construction activity. The potential for short duration or nuisance impacts resulting from construction activity exists.

The noise analysis indicates that there will be no significant adverse impacts resulting from the project.

Air Quality

Air quality addresses the condition of the atmosphere due to emissions from natural and manmade sources and is typically measured with respect to health and visibility implications.

The analysis evaluates the effects of project construction, operation, and related transportation activities upon the future air quality environment. The analysis indicates small increases in carbon monoxide over baseline due to urban vehicular transportation activities. Noticeable increases in fugitive dust would occur due to construction at F.E. Warren AFB, housing construction in Cheyenne, and near roads, cable paths, and Launch Facilities in the Deployment Area. No affect on regional visibility is expected.

The air quality analysis indicates that there are no significant adverse impacts resulting from the project.

IMPACT OF PROJECT-ELEMENT ALTERNATIVES

Feasible alternatives for road configurations, cable routes, and dispatch stations are identified and the impacts associated with these alternatives analyzed. The analysis demonstrates that for most of the resource areas the level of impact is either negligible or low and not significant, and does not vary within each of the three sets of project-element alternatives. For five resource areas (transportation, biological resources, land use, cultural resources, and energy) there are variations in the level of impact among alternatives and these are summarized here and in Figure S-5.

For transportation, Alternative R1 will have a high level of impact that will be significant due to delays associated with the construction of the Country Club Road bridge improvements.

For biological resources, six buried cable routes were found to have moderate and significant impacts while three additional routes will have a low, significant impact. These impacts generally stem from the likelihood of disturbance of unique or unusual habitat in the project area, particularly riparian, raptor, or aquatic habitat. All three road

alternatives at F.E Warren AFB will have a moderate and significant impact upon a rare plant species found on the base, the Colorado butterfly plant.

The remaining project-element impacts shown are not significant. For land use one of the base road alternatives (R3) may result in a low impact due to potential stimulation of land development resulting from the construction of a new interchange at Interstate 80 and Round Top Road. The individual buried cable paths may have low to high impacts from cultural resources due to their proposed location through areas of varying prehistoric site potential. One of the onbase road alternatives (R2) is rated as high because the right-of-way is adjacent to the Historic District and also passes through several potentially important archaeological sites. Finally, buried Cable Path PA1 will have a negligible energy impact due to its comparatively short length.

**MITIGATION
PLANNING EFFORTS**

Mitigation planning is an essential element of the Air Force Environmental Impact Analysis Process. The Air Force has committed to certain mitigations and has assumed the application of these within the impact analyses. Additionally, mitigations have been identified which may be implemented, either by the Air Force or others, to further reduce impacts. Under the Memorandum of Agreement between the Secretary of Defense and the Governors of Wyoming and Nebraska, a Mitigation Agreement will be developed after the filing of the FEIS. This agreement will set forth specific measures to be undertaken by the Department of Defense (DoD) within its existing authority to mitigate adverse impacts resulting from the Peacekeeper project. The Mitigation Agreement will also contain a plan for mitigation measures and funding that are beyond DoD authority. Additionally, mitigation planning will occur in response to other regulatory requirements applicable to this project, such as the Endangered Species Act and the National Historic Preservation Act.

**ISSUES RAISED
DURING PUBLIC
COMMENT PERIOD**

Comments on the DEIS were received in the form of verbal testimony during 7 public hearings held at various locations within the Deployment Area and in the form of written comments submitted during the 45-day public comment period. A total of 405 documents, including public hearing testimony, was received. The major concerns resulting from the public comment process are summarized below.

There were criticisms of the EIS process because no hearings were held outside the 5-county Deployment Area and because the 45-day public comment period was considered too short. The Air Force decided to conduct local public hearings only in the areas where construction and deployment activities would occur. Persons outside the Deployment Area who did not attend hearings still had an opportunity to provide written comments which were given equal consideration with verbal comments. The 45-day public comment period is in compliance with Council on Environmental Quality

regulations and also permits meeting a Congressionally mandated publishing date of January 31, 1984.

The content of the DEIS was also questioned. In particular, treatment of nuclear war, other basing modes and locations, and psychological effects of deployment were proposed for incorporation into the document. The Air Force considers the possibility of nuclear war to be remote and speculative. Because the purpose of this project is to deter war, nuclear war was not analyzed. Because the decision to deploy this missile in Wyoming and Nebraska had been made under the auspices of the Jackson Amendment referred to on page S-1, coverage of other basing modes and locations was not necessary in this document. Additionally, since the psychological effects could not be directly attributed to the physical changes in the environment caused by the project, this subject was not considered appropriate for inclusion in the FEIS.

Many commenters were concerned about the safety aspects of the deployment and peacetime operation of the system. Other commenters were concerned about Quantity Distance determinations and their impact upon nine homeowners living near Launch Facilities. In response to these concerns, the explanation of safety measures utilized in the operation, transportation, and maintenance of the system was expanded in the FEIS.

The impact of project construction and operation on Deployment Area roads was another issue of great interest. A more detailed explanation of the Defense Access Road Needs process was provided. In addition, more detailed analysis of the transportation impacts was accomplished.

Many persons from the city of Cheyenne were concerned about project impacts on public services. In response, a more thorough analysis of the capabilities of all such services in the community was conducted.

Farmers and ranchers in the area were concerned about the impact of the project on their water supply, their livestock, and on the access to fields or market. Additional analysis of all three areas of concern was conducted for the FEIS.

Agency and interest group comments were received relative to the impacts of the project on biological and cultural resources on F.E. Warren AFB and additional analyses were conducted for the FEIS.

Many other comments were received which contributed to the preparation of the FEIS.

FEIS Availability This Executive Summary is condensed from the complete Peacekeeper in Minuteman Silos Final Environmental Impact Statement (FEIS). Requests for copies of the FEIS should be made to AFRCE-BMS/DEV, Norton AFB, CA 92409.