

DECISION NOTICE & FONSI
PENROD ROAD - SHOW LOW TO PINETOP/LAKESIDE
APACHE/SITGREAVES NATIONAL FORESTS
LAKESIDE RANGER DISTRICT
NAVAJO COUNTY, ARIZONA

DECISION AND RATIONALE

It is my decision to implement Alternative D as described on page eight of the Environmental Assessment (EA). This alternative provides for the construction of a connecting two-lane paved roadway from the junction of U.S. Highway 60 and State Route 77 to U.S. Highway 260 at its intersection with Porter Mountain Road in the town of Pinetop/Lakeside. However, this decision only concerns those activities which would occur on National Forest System lands. The proposed action would place the roadway on the west side but adjacent to the existing Navopache Electric Cooperative transmission line. It would follow this alignment from U.S. 60 to the vicinity of Section 10 in T9N, R22E where it would turn east crossing under the power line and pass north of Jacques Marsh, connecting with Porter Mountain Road on the section line between Sections 13 and 14 in T9N, R22E. (Refer to attached map)

There will be approximately eight miles of new roadway construction with both sides of the roadway being fenced to exclude livestock for the full length of the new construction. At least two box culverts will be constructed to facilitate movement of livestock within the grazing allotments.

This proposed action produces the least environmental concern while providing the socio-economics benefit of an alternate road location.

All practicable means have been employed to avoid and/or minimize environmental harm. Mitigation measures specific to public safety are identified on page nine of the EA for this proposed action and on page eleven on the EA for all the action alternatives.

PUBLIC INVOLVEMENT AND SCOPING

Public involvement for this project was conducted concurrently with the "Citizens Utilities Natural Gas Pipeline" proposal, and began in July of 1993 with a mailing of the proposed projects to potentially interested individuals and organizations. Two open houses, announced by a press release, were also held in July of 1993 for the purpose of providing information and determining issues. A diversified group of individuals representing varied interests was assembled to discuss issues and provide information on alternatives and mitigation. Alternative D, the proposed action was published for "Public Notice and Comment" in June of 1994, and the "Draft" EA was mailed to those who have been substantively involved in the planning process. Fifty seven letters of comment were received as a result of the published notice. A summary of the comments and the Forest Service response are contained in Appendix G of the EA. This project has also appeared on the Lakeside Ranger District's list of proposed actions to implement the Forest's Land Management Plan since mid 1993

and this list has been mailed to an extensive list of interested publics. All comments received throughout the analysis were considered in this decision.

ALTERNATIVES CONSIDERED

The alternatives considered in detail consisted of a no action alternative and three action alternatives. Three other alternatives were considered but eliminated from further analysis.

-Detailed Alternatives-

Alternative A(no action): This alternative would result in no alternate route being constructed for U.S. Highway 260. Traffic would continue to use Highway 260 as the only primary route between Pinetop-Lakeside and Show Low.

Alternative C: This alternative is approximately 8.2 miles in length and would follow an alignment similar to alternative D and E for the north six miles of the project. However it differs from alternative D in that it passes south of Jacques Marsh and it differs from alternative E in that it passes north of Porter Creek Estates and connects with Porter Mountain Road.

Alternative D (selected alternative): This alternative is described in the first paragraph of this decision notice.

Alternative E: This alternative is approximately 6.6 miles in length and differs from the other detailed action alternatives in that it is the only one that connects with Hansen Lane and not Porter Mountain Road.

-Eliminated Alternatives-

Alternative B: This alternative is aligned similar to alternatives C, D and E for the north six miles but then passes south of Jacques Marsh and west of Porter Creek Estates. This alternative was eliminated because the anticipated impacts on visual and riparian resources and the impact of noise was expected to be too severe particularly for the residents of Porter Creek Estates.

Alternative F: This alternative road location would have connected with Show Low Lake Road and then Highway 260. It was eliminated because it did not adequately meet the objective of providing an alternate route for Highway 260.

Alternative G: This alternative called for widening Highway 260 by constructing two additional traffic lanes. It was eliminated because the socio-economic impact of right-of-way acquisition was not acceptable.

FINDINGS REQUIRED BY OTHER LAWS

The Penrod Road construction as proposed in the decision notice is entirely within the Woodland Management Area of the Apache/Sitgreaves National Forests. The project is consistent with the Forest's Land Management Plan as amended.

I agree with the "Biological Assessment/Evaluation" which was completed for the proposed action and which found that there are no threatened, endangered or sensitive species which will be adversely effected by the proposed action.

The cultural resource survey has been completed and a "Testing and Data Recovery Plan" has been approved by the State Historic Preservation Officer.

IMPLEMENTATION DATE

This project will not be implemented sooner than five days after the expiration of the appeal period which follows the publication of the "Legal Notice" in the White Mountain Independent.

APPEAL RIGHTS STATEMENT

This decision is subject to appeal pursuant to Forest Service regulations at 36 CFR 215. Appeals must be filed in writing and must be submitted to the Appeal Deciding Officer within 45 days following the publication of the legal notice in the White Mountain Independent. The Appeal Deciding Officer is the Regional Forester-Southwestern Region, 517 Gold Avenue SW, Albuquerque, NM 87102. The appeal must meet the requirements of 36 CFR 215.14 "Content of Appeal".

INFORMATION CONTACT PERSON

For additional information concerning this decision or the Forest Service appeal process, contact contact Ed Collins, District Ranger Lakeside Ranger District, Route #3 Box 50, Lakeside, AZ 85929.

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

Context This project is a site specific action that by itself does not have international, national, region-wide, or statewide importance. The significance criteria that follows applies to the intended action and is within the context of local importance in the area associated with the Apache-Sitgreaves National Forests.

Intensity The following is organized around the Ten Significance Criteria described in National Environmental Policy Act regulations 40 CFR 1508.27:

1. Impacts from this site specific project are both beneficial and adverse. The environmental effects are discussed in Section IV of the EA - Environmental Consequences. Beneficial effects are primarily the reduction of traffic congestion and the associated improved public safety on Highway 260 and the creation of an alternate route in the event of natural disasters, emergencies or other circumstances. There is also the benefit of improved access to private lands. Adverse effects are: removal of native vegetation; a slight reduction in grazing capacity; some disturbance to resident, migratory, and wintering birds; interference with wildlife movements; slight alteration in visual quality ; possible increase in vehicle collisions with wildlife; and an increase in noise impacts along the east side of Porter Creek estates.

2. There will be a net improvement in public health and safety due to a reduced flow of traffic on Highway 260 even though there may be a possible increase in vehicle collisions with wildlife along the newly constructed Penrod Road.

3. The project area is not in proximity to any unique historic or cultural resource (other than those for which a "Testing and Data Recovery Plan" has been approved by the State Historic Preservation Officer), park lands, prime farm lands, wetlands, wild and scenic rivers, or ecologically critical areas.

4. Analysis of the project during the "Integrated Resource Management" process has not revealed that the project is highly controversial.

5. The environmental effects are typical for this type action. Effects on the human environment are not highly uncertain or do not involve unique or unknown risks.

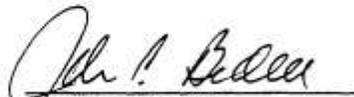
6. A decision to implement the intended action does not establish any future precedent for other actions that may have a significant effect nor does it represent a decision in principal about a future consideration.

7. There are no significant cumulative effects associated with the project. Cumulative effects, as specified under NEPA, are effects which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of which agency or persons undertake such actions. Contributions toward cumulative effects have been considered as a part of the analysis as discussed in Section IV, Environmental Consequences, and it was determined that these impacts did not contribute to an overall significant impact.

8. The action will not adversely affect any districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic places nor will the project cause loss or destruction of significant scientific, cultural, or historical resources.

9. A biological assessment and evaluation was completed for the project. A "may affect but are not likely to adversely affect" determination was made for the endangered bald eagle. This determination was concurred with by the U.S. Fish and Wildlife Service. No other endangered or threatened species or its habitat were determined to be affected.

10. This proposed action does not violate Federal, State, and local law or requirements imposed for the protection of the environment.


JOHN C. BEDELL
Forest Supervisor

9/29/94
Date

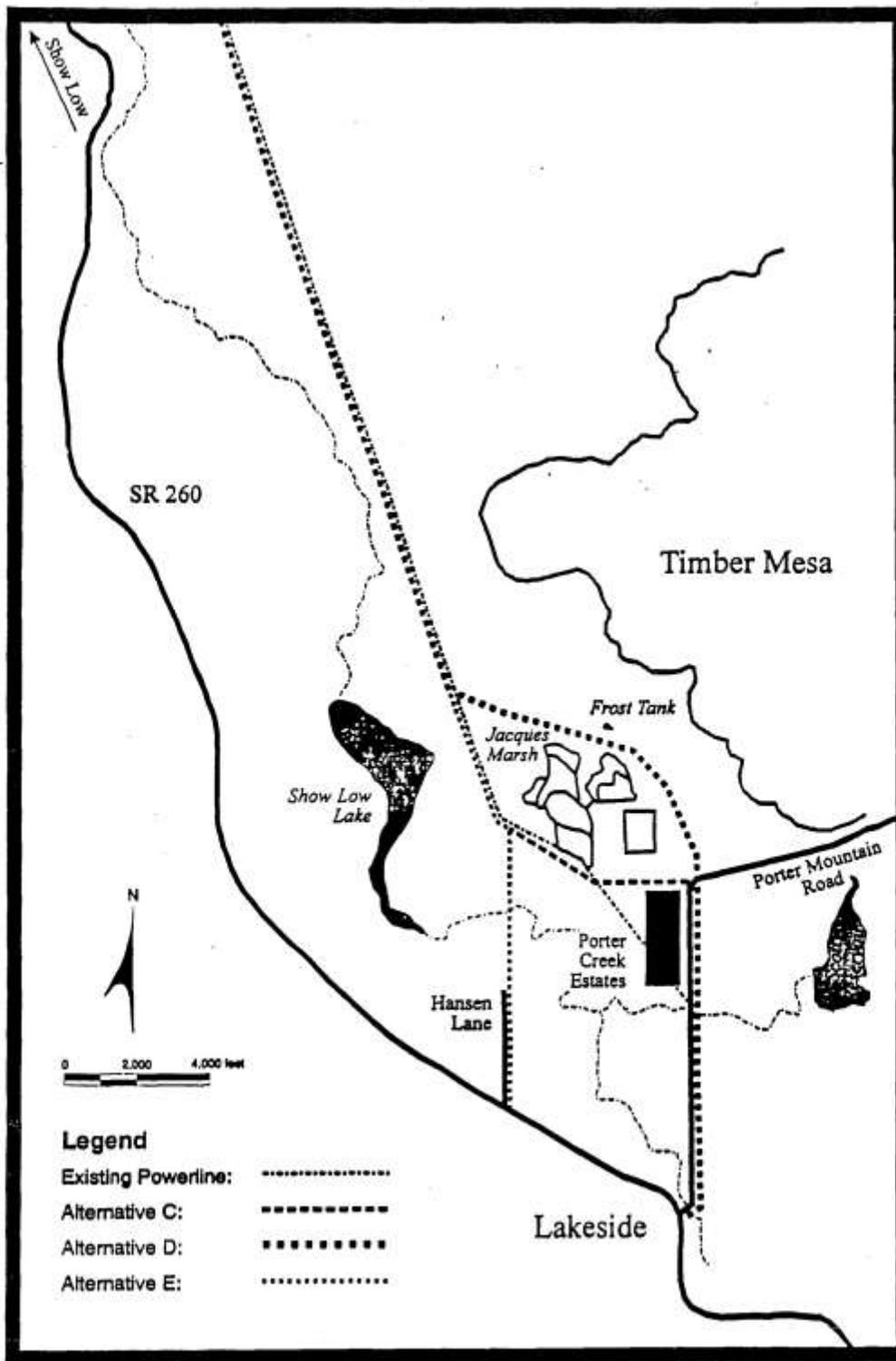


Figure 2. Action alternatives for the proposed Penrod Road project

**ADDENDUM TO NAVAJO COUNTY PROPOSED PENROD ROAD
ENVIRONMENTAL ASSESSMENT**

This addendum discusses the environmental consequences of two mitigation measures listed on page 11 of the final Environmental Assessment for the Navajo County Proposed Penrod Road on the action alternatives described in this document:

- Fencing of right-of-way boundaries for exclusion of cattle and to restrict public access in sensitive areas. Fencing will conform to designs which allow for movement of wildlife.

Environmental consequences of this mitigation measure would be similar for all action alternatives (Alternatives C, D, and E). Fencing may deter some wildlife movement across the proposed road, however, the use of wildlife fencing (bottom wire remains unbarbed) should allow for movement of most species, including antelope. Fencing would also discourage off-road vehicle use in areas adjacent to the proposed road.

- Excess rock, tree stumps, and/or slash resulting from construction activity would be buried, burned, and/or hauled off-site.

Environmental consequences of this mitigation measure would also be similar for all action alternatives (Alternatives C, D, and E). Little or no effects would be anticipated from the removal or burial of rock, tree stumps, or slash. Burning of slash and tree stumps within the project area would be expected to result in a localized and temporary degradation of air quality and visibility. No other impacts would be anticipated.

**FINAL
ENVIRONMENTAL ASSESSMENT**

**NAVAJO COUNTY
PROPOSED PENROD ROAD
SHOW LOW TO PINETOP-LAKESIDE
NAVAJO COUNTY, ARIZONA**

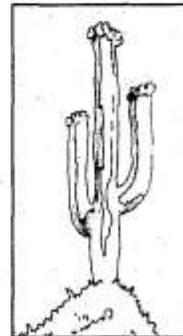
Prepared for

**APACHE-SITGREAVES NATIONAL FORESTS
LAKESIDE RANGER DISTRICT**

Prepared by

**SWCA Inc.
Environmental Consultants**

September 1994



FINAL
ENVIRONMENTAL ASSESSMENT

NAVAJO COUNTY
PROPOSED PENROD ROAD
SHOW LOW TO PINETOP-LAKESIDE
NAVAJO COUNTY, ARIZONA

Prepared for
Apache-Sitgreaves National Forests

Prepared by
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September 19, 1994

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SECTION I. PURPOSE AND NEED FOR ACTION

A. Introduction

Navajo County has proposed the construction and operation of a paved two-lane roadway from the junction of U.S. Highway 60 and State Route (SR) 77 in Show Low to the community of Pinetop-Lakeside. The corridor under consideration for placement of this road crosses lands administered by the Lakeside Ranger District of the Apache-Sitgreaves National Forests (ASNF). The Forest Service has required that environmental documentation be prepared under the guidelines of the National Environmental Policy Act (NEPA) to document potential environmental impacts associated with the proposed project.

B. Proposed Action

The proposed action is the extension of SR 77 east of Show Low to SR 260 in the community of Pinetop-Lakeside. The ASNF would authorize construction, operation, and maintenance of a paved roadway on Forest Service lands. In order to minimize environmental impacts, the ASNF has recommended the analysis of an alignment alternative which partly follows the existing Navopache Electric Cooperative electrical transmission line corridor. Planning and engineering for the road would occur in 1995 or 1996 and road construction would be initiated in 1999.

C. Purpose and Need for Action

An extensive traffic study prepared for the communities of Pinetop-Lakeside and Show Low identified a number of capacity and safety-related deficiencies of the existing transportation system (BRW 1987). These include lack of continuity of the local street system; lack of adequate traffic signaling at conflict points; design problems; seasonal capacity traffic flow; excessive delay for side street traffic, pedestrians, and cyclists along major routes; lack of street signing; and high accident rates. As part of this traffic study, alternatives were formulated to address these problems which included the creation of parallel alternate routes in order to minimize traffic delay and reduce congestion on the existing transportation system.

The action alternatives are based on recommendations made in this study and propose the construction of a new roadway parallel to the existing SR 260 between Show Low and Pinetop-Lakeside to address some of the problems associated with the existing system. The proposed action alternatives would reduce traffic congestion and minimize delay by providing a more balanced system, would eliminate the need for disruptive widening of existing and developed roadways and corridors, and would enhance emergency vehicle response (*Ibid.*). Additionally, the proposed action alternatives would create an alternative route between Show Low and Pinetop-Lakeside in the event of natural disasters or other circumstances which could block SR 260 between these communities.

D. Project Location

The proposed project corridor is located on the Lakeside Ranger District of the ASNF in Navajo County, Arizona (Figure 1). Specifically, the proposed action alternatives are located within Lakeside, Silver Springs, Show Low North and Show Low South USGS 7.5 minute quadrangles in Township 10 North, Range 22 East, Sections 21, 27, 28, 34 and Township 9 North, Range 22 East, Sections 3, 10, 11, 12, 13, 14, 15, 22, 23, 24.

E. Forest Plan Consistency

A Forest Plan defines the long-term direction for managing the lands and resources of a National Forest. It is designed to provide for multiple use and sustained yields of forest resources in a way that maximizes long-term net public benefits in an environmentally sound manner (CFR 219.1a). To accomplish this, a Forest Plan establishes long-range policies, goals, and objectives and contains specific management prescriptions planned to meet the policies and to achieve multiple-use goals and objectives. The ASNF Plan mission is "to effectively and efficiently manage National Forest lands and resources to meet the needs and desires of the public while enhancing the environment." (USDA 1987). The proposed action is consistent with the ASNF Plan by considering alternatives with the least environmental impacts.

F. Decision to be Made

The Forest Supervisor is responsible for deciding whether to:

- Disapprove placement of the proposed road on Forest lands;
- Approve placement of the proposed road adjacent to the existing Navopache Electric Cooperative powerline with the appropriate alignment alternative near Pinetop-Lakeside;
- Require further analysis and the preparation of an Environmental Impact Statement.

G. Public Involvement

A mailing list of approximately 217 addresses was compiled which included federal, state, and local agencies as well as individuals and organizations deemed most interested in and/or affected by the project. The mailer included a description of the proposed project, a map showing the corridor being considered, and a comment sheet for public response. A public display ad appeared in the *White Mountain Independent* and public service announcements were aired on KVSL and KRFM. Public open houses were held in Pinetop-Lakeside and Show Low on July 22, 1993 to solicit public comment. A public scoping document was prepared which summarized public input and identified issues associated with the proposed action. Alternatives to the proposed action, including the NEPA required No Action alternative, were generated from the issues raised during public scoping.

Due to a relatively high level of interest regarding the project, a Diversified Group for Additional Input (DGAI) was assembled. Representatives including residents, agencies, and

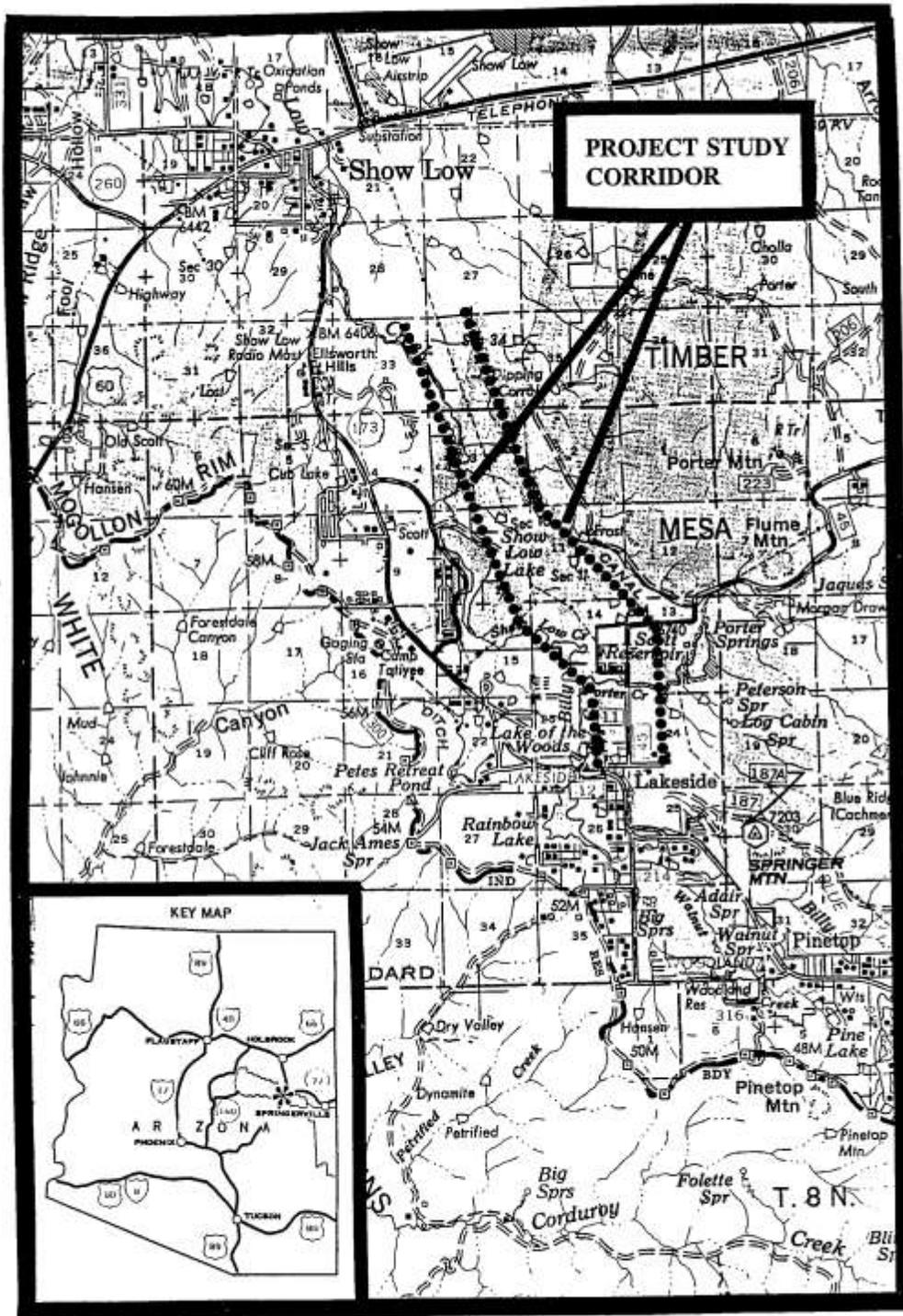


Figure 1. Project Study Corridor

Source: Apache-Sitgreaves National Forest Map 1977

other local entities were chosen that would be most directly affected by the proposed action and its alternatives. The DGAI met on October 5, 1993 in Pinetop-Lakeside to discuss the alternatives, issues related to alternatives, any new alternatives not considered to date, and mitigation that could be applied to the alternatives to address the issues. Input received during this meeting was used to re-evaluate and modify the alternatives and eliminate one of the alternatives from further consideration. Appendix A provides copies of the mailing list, public service announcement, newspaper advertisement, and sign-up sheets for the public open-houses held in Pinetop-Lakeside and Show Low and the DGAI meeting held in Pinetop-Lakeside.

H. Issues to be Analyzed

This section presents issues identified during public scoping, internal agency review, meeting of the DGAI, and Interdisciplinary (ID) Team deliberation. Evaluation criteria are listed for each major issue to be analyzed in detail.

Wildlife

The proposed project may adversely affect wildlife using Jacques Marsh, nearby riparian areas, and wildlife movement corridors. Impacts of the proposed project on the planned three-phase expansion of Jacques Marsh are also of concern.

Evaluation Criteria

- Extent, types, and locations of wildlife resources in the area.
- Proximity of proposed project alignment to wildlife resource areas.
- Compatibility of project location with locations planned for three phase expansion of the Jacques Marsh Wildlife Area.

Special Status Species

The proposed action may affect habitat for and populations of Threatened, Endangered, and Sensitive (TE&S) plants and animals.

Evaluation Criteria

- Number and status of TE&S species affected, including numbers of individuals and numbers of acres of habitat affected by the proposed project.
- Linear distance of road that would affect known individuals and proximity of road to known individuals.
- Mitigation measures implemented to avoid or reduce impacts to TE&S species.

Cultural Resources

The proposed action may affect cultural resources.

Evaluation Criteria

- Number and significance of sites impacted.
- Mitigation implemented for eligible sites.

Visual Quality

An adverse effect to visual quality may occur as a result of the proposed action.

Evaluation Criteria

- Changes in visual quality objectives in the immediate area as a result of the proposed project.

Noise

The proposed action and alternatives may increase noise levels near residential areas.

Evaluation Criteria

- Current levels and sources of noise.
- Projected increase in noise due to the proposed action.

Traffic

The proposed action may or may not alleviate traffic congestion on SR 260.

Evaluation Criteria

- Projected traffic volumes for SR 260 within the next twenty years.
- Volume of traffic projected to use an alternate route.

Public Safety

Projected increases in traffic volume on SR 260 may result in an increase in accident rates. The proposed action may result in wildlife-vehicle collisions on the proposed road.

Evaluation Criteria

- Current and projected traffic conditions on SR 260.
- Wildlife use patterns in the project area.
- Mitigation proposed for minimizing or eliminating hazards to public safety.

Socioeconomics

The proposed project may result in loss of revenue for businesses currently located along SR 260. Concern has been expressed regarding the cost and funding sources for the construction and subsequent maintenance of the road.

Evaluation Criteria

- Projected reduction in traffic on SR 260.
- Projected cost for the project.

I. Issues Considered but Eliminated from Further Analysis.

Air Quality

The proposed action may affect air quality in the area.

Rationale for Elimination

Air quality in the area is classified as attainment, meeting the criteria for federal ambient air quality standards. Implementation of the action alternatives would result in a short-term decrease in emissions by promoting more efficient traffic flow through the area (Mike Howeth, Arizona Department of Environmental Quality: Office of Air Quality, personal communication). Long-term effects on air quality are speculative, but would be expected to be similar for all alternatives, including the No Action alternative.

Water Quality

A surface water hydrologic connection exists between the Little Colorado River and the proposed project via existing waterways and drainages. Surface water drainage from the proposed road could potentially affect water quality in Porter Creek and Show Low Creek.

Rationale for Elimination

Mitigation measures and Best Management Practices (BMPs) that would be implemented, as well as mitigation measures conditional to Clean Water Act Section 404 and State Water Quality Section 401 permits, would minimize impacts to water quality

and water resources. No long-term direct effects to regional water quality would be anticipated.

Fire

The proposed road may increase the potential for wildfire through increased access to the area.

Rationale for Elimination

The majority of the area that would be crossed by the proposed road is fairly open with scattered pinyon-juniper and occasional ponderosa pine stringers and would not effectively propagate a wildfire. Although the proposed road may increase the potential for wildfires in this area through increased access, it would also allow easier and more efficient access for fire crews and equipment.

SECTION II. ALTERNATIVES

Seven alternatives have been developed after public scoping to reflect the issues presented above and the comments from public response. Analysis of further input by the DGAI has resulted in the elimination of Alternative B from further consideration. Alternative F was eliminated because it does not meet project objectives. Alternative G was eliminated due to socioeconomic reasons. The No Action alternative (Alternative A) is included for analysis as required by NEPA. This section describes the alternatives developed for the proposed action that will be analyzed in subsequent sections of this document and includes alternative specific mitigation. The three alternatives considered but eliminated from further analysis and the rationale for their elimination are presented in subsection B. Figure 2 depicts the alternatives to be further analyzed. Mitigation measures common to all action alternatives are presented in subsection C.

A. Description of Alternatives

Alternative A. No Action

Implementation of this alternative would result in no easement being granted to Navajo County for construction of the proposed Penrod Road. All traffic between the communities of Show Low and Pinetop-Lakeside, including emergency vehicle and truck traffic, would continue to use SR 260.

Alternative C. Alignment of Penrod Road along the Existing Transmission Line Easement and Connection With Porter Mountain Road North of Porter Creek Estates.

This alternative would place the road on the west side of the existing Navopache Electric Cooperative transmission line to connect with Porter Mountain Road north of Porter Creek Estates (Figure 1). Approximate length of this alignment is 8.2 miles. Construction of the road would require a crossing of the powerline easement and a crossing of a buried 12-inch diameter effluent line. A Pinetop-Lakeside Sanitary District monitoring well north of Porter Creek Estates would be avoided. This alignment would require a sharp turn to the east to join Porter Mountain Road north of the Porter Creek Estates. This alternative would require installation of traffic control at the intersection of the proposed road and Porter Mountain Road and at the intersection of Porter Mountain Road and SR 260. At least two box culverts would be constructed under the road to allow movement of livestock within grazing allotments. Navajo County would be responsible for the maintenance of the road following construction. Figure 3 illustrates a cross-section of the road proposed for construction.

Selected Alternative D. Alignment of Penrod Road North and East of the Jacques Marsh Area

Under this alternative, the road would be placed directly west and adjacent to the powerline transmission easement and would turn east and cross the transmission easement in Section 10 of T9N, R22E. The road would pass between Frost Tank and the northernmost pond of the Jacques Marsh Wildlife Area and would turn south to intersect Porter Mountain Road on the

section line between Section 13 and 14 of T9N, R22E. The road would connect to Porter Mountain Road north of Porter Creek Estates and would require traffic control at its intersection with Porter Mountain Road and at the intersection of Porter Mountain Road and SR 260. At least two box culverts would be constructed under the road to allow movement of livestock within grazing allotments. Approximate length of this alignment would be 8.0 miles. Navajo County would be responsible for maintenance of the road.

Mitigation Measures

The following mitigation measures address impacts to public safety due to the potential for elk movement across the road.

- Provide signing along the proposed road to warn motorists of potential elk crossings.
- Reduce speed limit from 45 mph to 40 mph on the segment between the existing powerline transmission easement and Frost Tank. Reduce the speed limit from Frost Tank to the intersection with Porter Mountain Road to 35 mph.
- Minimize curves in the road to the extent possible to maximize visibility for motorists.
- Lower vegetation density directly adjacent to the road to improve sight distance.

Alternative E. Alignment of Penrod Road along the Existing Transmission Line Easement and Connection with Hansen Lane

Under this alternative, the road would be placed adjacent and directly west of the existing Navopache Electric Cooperative transmission line and would continue south to intercept Hansen Lane on the section line between Sections 14 and 15 of T9N, R22E. This alignment would require the construction of a bridge across Show Low Creek, widening and improvement of Hansen Lane to SR 260, and installation of a traffic signal at the intersection of Hansen Lane and SR 260. Private land along Hansen Lane would have to be acquired to accommodate the road. At least two box culverts would be constructed under the road to allow movement of livestock within grazing allotments. Approximate length of this alignment would be 6.6 miles. Navajo County would be responsible for maintenance of the road.

Mitigation Measures

Mitigation measures for this alternative address potential impacts to water quality and aquatic TE&S species. Additional mitigation measures may apply as conditions of Clean Water Act Section 404 (Nationwide Permit #12) and a Section 401 State Water Quality certification.

- Construction across Show Low Creek would occur from September 15 to February 15, outside the breeding/spawning season for TE&S fish, amphibian, and reptile species.
- A rock and wire catchment or other sediment control device would be constructed directly downstream of the Show Low Creek crossing to reduce sediment input during construction.

- Natural streamside vegetation would be retained to the extent possible.
- Disturbed stream banks would be stabilized by revegetation with native riparian species. Species would be determined through consultation with the ASNF and/or the Soil Conservation Service.

B. Alternatives Considered but Eliminated from Further Analysis

Alternative B. Alignment of Penrod Road along the Existing Transmission Line Easement and Connection with Porter Mountain Road South of the Porter Creek Estates

This alternative would have placed the proposed road adjacent to the existing Navopache Electric Cooperative transmission line and would align just west of Porter Creek Estates to join Porter Mountain Road south of the development in Section 14 of T9N, R22E. A bridge or culvert would have to be constructed at the Porter Creek crossing. Traffic control would be required at the intersection of Penrod Road with Porter Mountain Road and at the intersection of Porter Mountain Road and SR 260.

This alternative was eliminated from further analysis due to adverse noise, visual, and riparian impacts. This alternative would have resulted in paved roadways, and associated noise and visual impacts, on both the east and west side of the Porter Creek Estates. This alternative would also have required an additional crossing of Porter Creek, likely resulting in additional adverse impacts to this riparian area.

Alternative F. Construction and Maintenance of Penrod Road South to Connect with SR 260 through Show Low Lake Road

Under this alternative, Penrod Road would have been extended into Section 10 to then connect with Show Low Lake Road and SR 260. This alternative would have required extending, widening and improving Show Low Lake Road and was eliminated from further analysis because it does not meet the objectives of providing an alternate route between Show Low and Pinetop-Lakeside for traffic, emergency vehicles, and in the event of natural disasters or other emergencies blocking access along SR 260.

Alternative G. Widening of SR 260

Under this alternative, SR 260 would have been widened to accommodate an additional two lanes of traffic. Although this alternative could have alleviated traffic congestion on SR 260, it was eliminated due to socioeconomic impacts associated with the acquisition of additional right-of-way, relocation of businesses along SR 260, cutting of trees along SR 260, and because it does not provide an alternate route between Show Low and Pinetop-Lakeside.

C. Mitigation Measures Common to all Action Alternatives

- Fencing of right-of-way boundaries for exclusion of cattle and to restrict public access in sensitive areas. Fencing will conform to designs which allow for movement of wildlife.
- Retention of topsoil where feasible for use in reclamation.
- Reseeding of portions of the right-of-way not encompassed by the road or related structures. Seed mix and application methods would be determined through consultation with the ASNF and/or the Soil Conservation Service.
- Construction of two box culverts to allow movement of cattle within grazing allotments.
- Maximum retention of trees and other existing vegetation where possible. Retention of topsoil where feasible for use in reclamation (reseeding).
- Construction activities on segments of the road within 0.5 mile of known bald eagle winter use areas (Show Low Lake and Jacques Marsh) would occur outside the general wintering season for this species (December 1 to March 1).
- Dust control watering of construction activity occurring within one-quarter mile of residences or paved roads on an as-needed basis.
- Excess rock, tree stumps, and/or slash resulting from construction activity would be buried, burned, and/or hauled off-site.

D. Mitigation Measures Common to Alternatives C and D Only

- Up to six perch structures would be created (as specified by the ASNF) at ponds most distant from the road alignment.
- Willows would be planted on berms of ponds adjacent to the road alignment. Protective fencing would be constructed around plantings, if necessary.

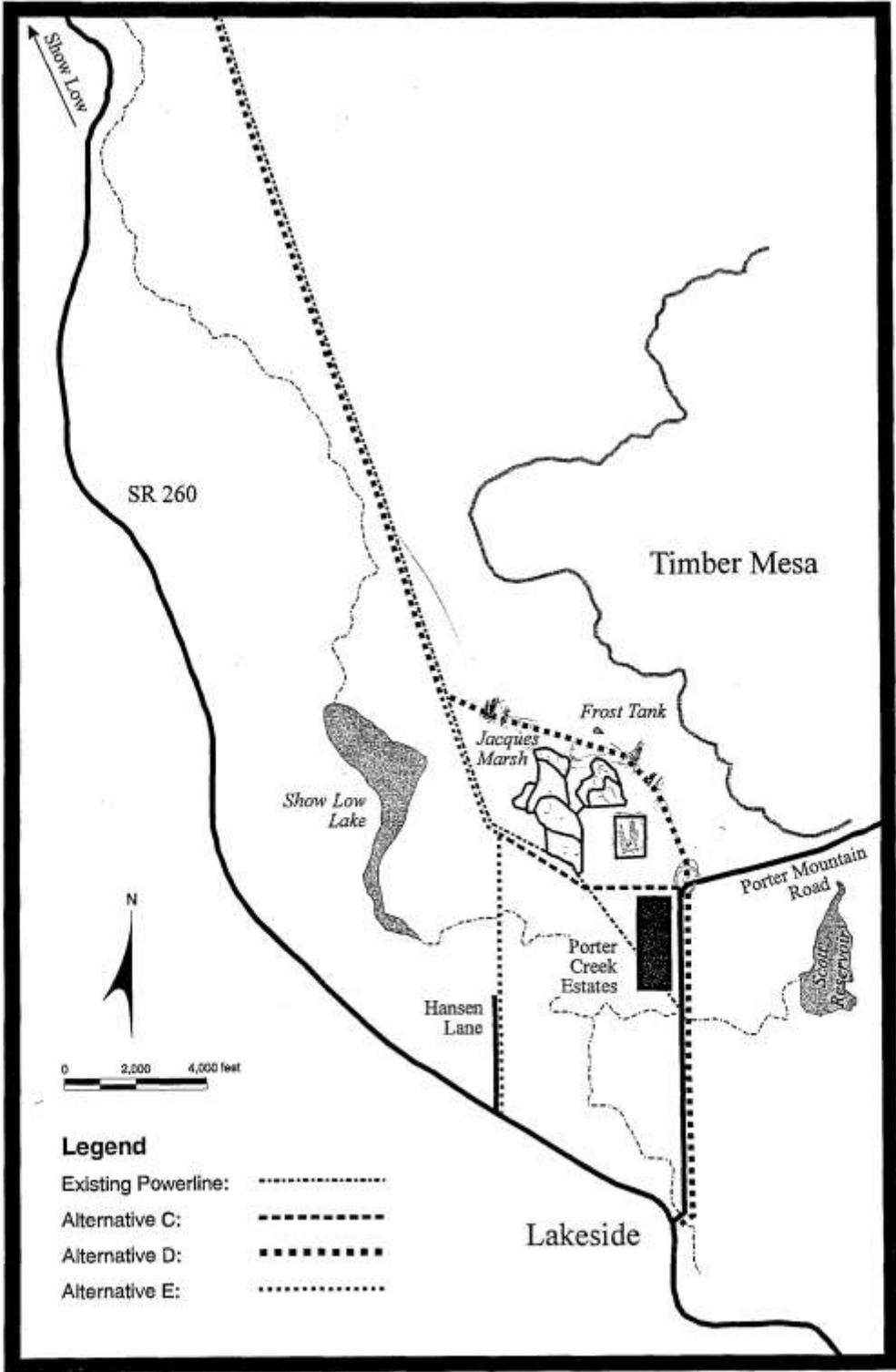


Figure 2. Action alternatives for the proposed Penrod Road project

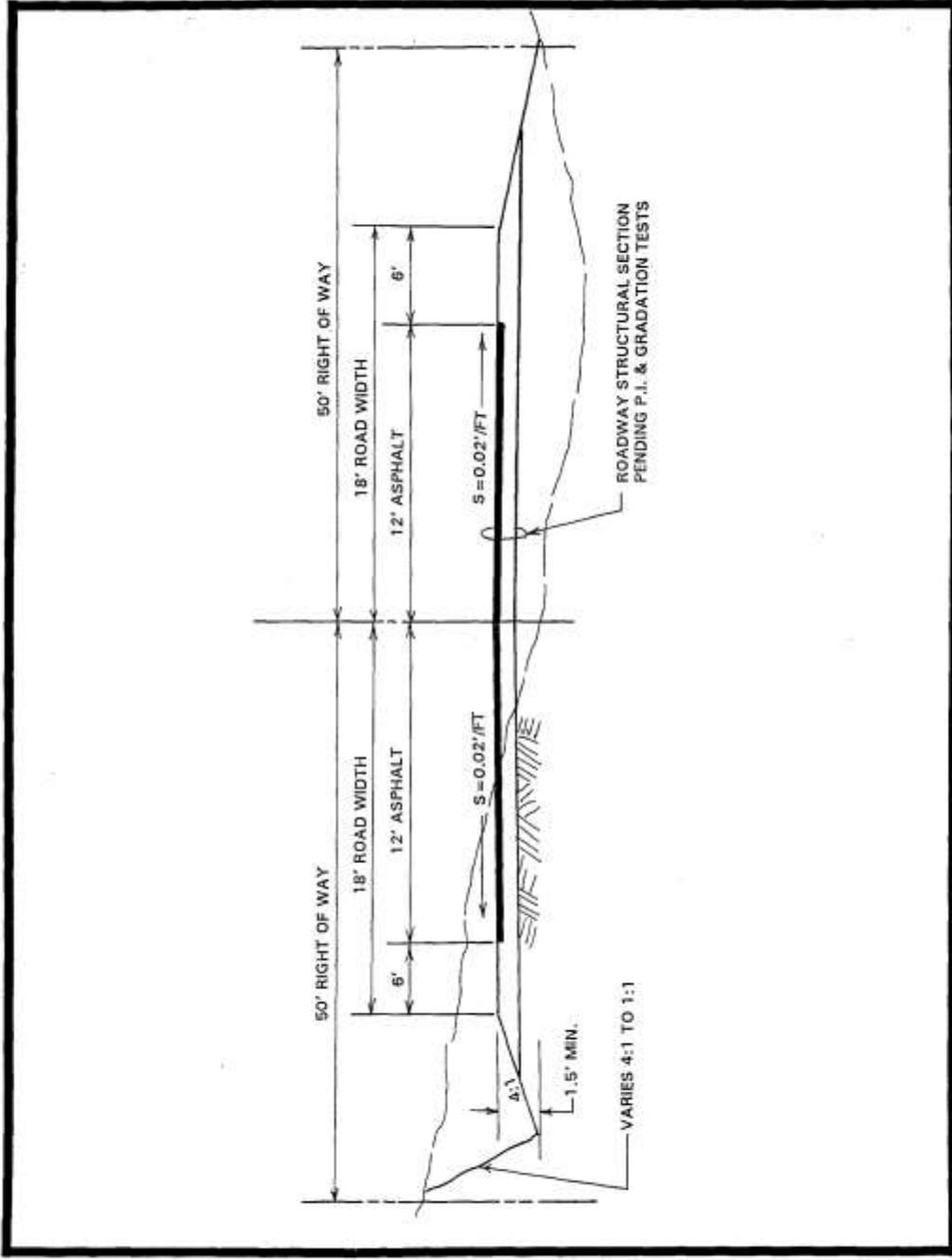


Figure 3. Typical Roadway Cross-section of Penrod Road

Table 1. Summary of Consequences

Issue/ Alternative	A	C	D	E
<i>Wildlife</i>	unaffected	Approx. 36 acres of habitat removed. Road within approx. 200 to 300 feet of the southernmost pond of Jacques Marsh for approx. linear distance of 1500 feet. Road within approx. 400 to 900 feet of the westernmost ponds for a linear distance of approx. 2500 feet. Area of most impact would be located closest to existing development (Porter Creek Estates).	Approx. 35 acres of habitat removed. Road within approx. 200 to 300 feet of the northernmost ponds of the Jacques Marsh for approx. linear distance of 2200 feet. Road within approx. 400 to 900 feet of easternmost pond for a linear distance of approx. 800 feet. Some visual screening provided by ponderosa pine stringers north of Jacques Marsh. Some wildlife using ponderosa pine stringers as movement corridors may be affected. Road would cross elk movement corridor. Alignment would come closest to north end of Jacques Marsh and area of most impact would be located furthest from existing development.	Approx. 29 acres of habitat removed. Road within approx. 800 to 1000 feet of the westernmost pond of Jacques Marsh for approx. linear distance of 250 feet. Reduced impact to waterfowl at Jacques Marsh due to increased distance.
<i>Special Status Species</i>	unaffected	Potential disturbance impacts to wintering and foraging bald eagles and six other Forest Service Sensitive species known to occur at Jacques Marsh. Approx. 4000 feet total linear road length within 900 feet of Jacques Marsh.	Approx. 3000 feet total linear road length within 900 feet of Jacques Marsh. Reduced disturbance to wintering and foraging bald eagles and six recorded Forest Service Sensitive species due to vegetative screening along north end of Jacques Marsh.	Potential temporary impacts to aquatic species of concern that may occur in Show Low Creek. Reduced disturbance to wintering and foraging bald eagles and six Forest Service Sensitive species at Jacques Marsh due to distance. Potential impacts to two Forest Service Sensitive species recorded along Show Low Creek.
<i>Cultural Resources</i>	unaffected	Two sites impacted.	Two sites impacted.	Three sites impacted.

Table 1 (continued).

Issues/ Alternatives	A	C	D	E
<i>Visual Quality</i>	unaffected	Visual impact on residents on north end of Porter Creek Estates.	Visual impact of road way located north and east of the Jacques Marsh Wildlife Area.	Visual impact of widened road on residents of Hansen Lane.
<i>Noise</i>	Noise levels near residential areas would remain similar to existing levels.	Increase in noise of 1 to 6 dB over existing levels for residences along north end (approx. 1300 feet) and east end (approx. 3000 feet) of Porter Creek Estates.	Increase in noise of 1 to 6 dB over existing levels primarily for residences along east end (approx. 3000 feet) of Porter Creek Estates.	Increase in noise of 1 to 6 dB over existing levels for Hansen Lane residences adjacent to the proposed road.
<i>Traffic</i>	SR 260 from Show Low to Woodland Road in Lakeside forecast to be deficient by 2007, with 31,000 to 33,000 ADT.	Projected reduction of 5,000 to 6,000 ADT on SR 260 from Show Low to Woodland Road during the peak season by 2007. Segment from Show Low Lake Rd to Porter Mountain Rd non-deficient during peak season. Segment from U.S. 60 to Show Low Lake Road would remain deficient during peak season, but would have approx. 5,000 ADT less than under Alternative A.	Same as Alternative C.	Projected reduction of 5,000 to 6,000 ADT on SR 260 from Show Low to Hansen Lane during the peak season by 2007. Segment from Show Low Lake Rd to Hansen Lane non-deficient during peak season. Segment from U.S. 60 to Show Low Lake Road would remain deficient during peak season, but would have approx. 5,000 ADT less than under Alternative A. Segment from Hansen Lane to Porter Mtn Rd would remain deficient, with 31,000 ADT as projected under Alternative A.

Table 1 (continued).

<i>Public Safety</i>	Potential increase in accident rates on SR 260.	Potential decrease in accident rates on SR 260.	Potential decrease in accident rates on SR 260. Increased potential for elk/vehicle collisions on new road.	Potential decrease in accident rates on SR 260.
<i>Socio-economics</i>	Reduced quality of life for residents along SR 260 due to increased congestion. Increased revenues for existing businesses along SR 260. No road construction related socioeconomic benefits.	Reduced quality of life for residents along north and east ends of the Porter Creek Estates due to increased traffic, noise, and visual quality impacts. Temporary employment and increase in local revenue due to road construction. Reduced revenues for businesses along SR 260.	Reduced quality of life for residents primarily along east end of the Porter Creek Estates due to increased traffic, noise, and visual quality impacts. Temporary employment and increase in local revenue due to road construction. Reduced revenues for businesses along SR 260.	Decrease in quality of life for residents of Hansen Lane due to increased traffic flow and associated noise. Required purchase and/or condemnation of private land to accommodate road easement. Temporary employment and increase in local revenue due to road construction. Reduced revenues for businesses along SR 260. Estimated additional cost of 0.5 to 1.5 million dollars to construct bridge.

SECTION III. AFFECTED ENVIRONMENT

This section of the document describes the existing environment in the proposed project area. Important factors include wildlife, special status species, cultural resources, visual quality, noise, traffic, public safety, and socioeconomics. These are discussed in detail and effects on them analyzed in Section IV. Discussions of the general environmental setting are provided as background information and include project location, topography, soils, vegetation, water resources and water quality, existing human improvements, and current land uses. A listing of resources that are absent from the project and therefore are not discussed is provided at the end of the section.

A. General Environmental Setting

The proposed project area is located between the communities of Show Low and Pinetop-Lakeside at an elevation ranging from 6500 to 6700 feet in elevation. The project area is bounded to the west by Show Low Creek and Show Low Lake and to the east by Timber Mesa and Scott's Reservoir. Average annual precipitation ranges from 20 to 25 inches. Topography can generally be described as flat mesas and plains deeply cut in places by Show Low and Porter Creek on the south and west. Soils are well-drained and derived from residuum and alluvium of basalt and volcanic materials (Hendricks 1985). A fair potential for the production of livestock and wildlife forage exists in the area, but is limited by the rocky, cobbly surface. Physical characteristics of the soils are high shrink-swell, clay textures, slow permeability, and excessive rock fragments on the surface. These characteristics limit the potential for development of homesites and recreation sites in the area (*Ibid.*).

Predominant vegetation in the project area is classified as juniper-pinyon woodland and plains grassland with species including blue, hairy, and sideoats grama; tobosa; wolftail; algerita; squirreltail; and ring muhly (Lowe 1964, Hendricks 1985). Vegetation along Timber Mesa to the east and along Porter Creek and Show Low Creek to the south and to the west is pine-oak woodland composed predominantly of ponderosa pine, Gambel's oak, and pinyon-juniper, and a number of riparian species along the perennial streams.

Water resources and riparian habitat within the proposed project area include Show Low Creek, Porter Creek, and the Jacques Marsh Wildlife Area. Water resources located in the general vicinity of the project area include Billy Creek to the south, Show Low Lake to the west, and Scott's Reservoir to the east.

A surface water assessment of the Little Colorado River Basin was completed by the Arizona Department of Environmental Quality (ADEQ) from 1988 to 1992. Show Low Creek was monitored as non-supporting for sediment, turbidity, and pH due to siltation from channel erosion, poor watershed condition, off-road vehicle use, habitat modification from rangeland, and other unknown causes in 1988 and monitored as non-support for turbidity in 1992 (ADEQ 1988, ADEQ 1992). Porter Creek was evaluated as partial support for sediment and turbidity in 1988 due to siltation from rangeland and unknown causes (ADEQ 1988). Billy Creek was

evaluated as partial support in 1988 for sediment, turbidity, and bacteria due to on-site disposal systems and siltation from off-road vehicles (*Ibid.*). Show Low Lake was evaluated as partial support for turbidity and nutrients due to sand and gravel operation, urban runoff, recreation, rangeland, and land disposal (ADEQ 1990, ADEQ 1992).

The term "monitored" implies that extensive sampling was conducted. Monitored as non-support indicates that for any one pollutant criteria were exceeded in more than 25 percent of measurements taken, mean of the measurements exceeded the criteria, and pollutants were found at levels of concern. Monitored as partial support indicates that for any one pollutant criteria were exceeded in 11-25 percent of measurements taken and the mean of the measurements was less than the criteria or the criteria were exceeded in less than 10 percent of the measurements but the mean of the measurements exceeded the criteria, and pollutants were not found at levels of concern.

The term "evaluated" implies that insufficient data was available for monitoring assessment and that assessment was based on other sources of information (previous assessments, upstream sampling, biological evaluations, etc.). "Evaluated as non-support" indicates that, based on other sources, one or more designated use of the water resource is not supported.

Existing human improvements within the immediate project area include a powerline corridor with two 69 kV transmission lines and an associated maintenance road, a complex of seven effluent holding ponds comprising the Jacques Marsh Wildlife Area (Jacques Marsh), a residential development, a paved two-lane roadway in the southern end of the project area, and an unimproved roadway along the base of Timber Mesa. Other land use in the project area includes seasonal cattle grazing. Allotments within the project area include the Ellsworth, Show Low, Johnson, Blue Ridge, and Phelps Dodge allotments. The Phelps Dodge allotment is to be divided among the three permittees in the project area upon completion of a land exchange between Phelps Dodge Corporation and the ASNF (proposed Show Low Lake Land Exchange). The Johnson allotment currently holds 14 head of cattle, corresponding to 70 AUMs (Animal Unit Month); the Ellsworth Allotment holds 33 head of cattle, corresponding to 165 AUMs; and the Blue Ridge Allotment holds 131 head of cattle, corresponding to 655 AUMs. The allotments are grazed five months out of the year.

Due to limited access and limited recreational resources, public use of the immediate project area is limited to wildlife observation and hunting at and near Jacques Marsh. Recreational activities at nearby Scott's Reservoir include dispersed camping and fishing. Other destinations near the project area include Show Low Lake, Show Low Creek, and Porter Creek. The Timber Mesa Trail provides opportunities for hiking and backpacking. The U.S. Forest Service classifies areas according to a Recreation Opportunity Spectrum (ROS) which is divided into six major classes; urban, rural, roaded natural, semi-primitive motorized, semi-primitive non-motorized, and primitive; listed from the most developed to most undeveloped. These classes are categorized by seven setting indicators which are access, remoteness, naturalness, facilities, social encounters, visitor impacts, and visitor management. The current management objective for the proposed project area is semi-primitive motorized.

B. Wildlife

A variety of bird, mammal, reptile, and amphibian species are known from the project vicinity. The Jacques Marsh Wildlife Area (Jacques Marsh) is used by resident, wintering, and migratory waterfowl. Six species of waterfowl are known to nest regularly and three additional species have historic breeding records in the area. Mallards and American coots are the most abundant nesting and resident species (Fleming 1959). An elk movement corridor exists between Timber Mesa and the Jacques Marsh. Elk use throughout the marsh system is high, with heavy grazing occurring in unflooded ponds and on berms and dikes (AGFD 1987). Riparian areas as well as other upland areas provide habitat for a number of wildlife species. Appendix B provides listings of species known to occur on or near Jacques Marsh.

The Jacques Marsh Wildlife Area was created in 1978 as a cooperative agreement between the ASNF, the AGFD, and the Pinetop-Lakeside Sanitary District to use sewage effluent for the management of waterfowl and other wildlife. It consists of seven effluent holding ponds located within the town limits of Pinetop-Lakeside. Expansion of the marsh complex has been planned and approved in order to more effectively manage existing resources as well as manage projected effluent increases due to local population growth (ASNF 1987). Planned expansion involves three phases. Phase I involves the construction of a storage basin south and east of the existing pond complex (Figure 5) to hold excess water and for use in maintaining optimum water levels in the other existing ponds. Phase II involves riparian enhancement of an unnamed drainage which runs from the north end of Jacques Marsh through Frost Tank, and eventually into Show Low Creek. Excess water in the holding ponds will be released via spillways in the east berms of ponds 3 and 6, will flow into Frost Tank and into meadows located north and northeast of the pond complex, and eventually into Show Low Creek. Phase III involves the enhancement of rangeland to the northwest of the existing ponds by overland irrigation. Excess water would be released from pond 4 and spread uniformly over the area using irrigation outlet devices. Phase I has been constructed. Phases II and III have not yet been initiated due to insufficient effluent volume to date. Figure 5 illustrates the existing ponds and the planned improvements.

C. Special Status Species

The U.S. Fish and Wildlife Service (USFWS), the Arizona Game and Fish Department (AGFD), and the ASNF were contacted for lists of Threatened, Endangered, and Sensitive (TE&S) species that may occur in or near the project area. A comprehensive listing of these species, their status, habitat requirements, and known occurrence, as well as methodology for and results of species-specific surveys and habitat evaluations is presented in the Biological Survey Report, provided as Appendix C.

One federally listed endangered species, the bald eagle, is known to winter and forage at Jacques Marsh Wildlife Area (Jacques Marsh). Bald eagles are not known to breed at this location and there are currently no nesting records for the Sitgreaves Forest. Six other species, listed as Forest Service (FS) Sensitive, are also known from Jacques Marsh. They include belted kingfisher, prairie falcon, osprey, double-crested cormorant, white-faced ibis, and gray vireo.

There are no confirmed nesting records for these species at this location. Additionally, Jacques Marsh provides potentially suitable habitat for seven other migrating and/or wintering species listed as FS Sensitive and/or federal Category 2. These include migrating black-necked stilts and American avocets, black-crowned night herons, soras, and migrating or transient great and snowy egrets and American bitterns. None of these species are known to have been recorded at this location. This area also provides potentially suitable habitat for FS Sensitive and/or federal Category 2 amphibian and reptile species including Arizona southwestern toads, Chiricahua and northern leopard frogs, and narrow-headed garter snakes. None of these species are currently known to occur at Jacques Marsh.

Show Low, Porter, and Billy Creeks provide potentially suitable habitat for most of the aquatic species of concern including reptile, amphibian, fish, mollusk, and insect species. Degradation of these streams as a result of impoundment, livestock, recreational use, and other human uses, as well as the introduction of non-endemic predatory fish and amphibian species significantly compromises their potential for supporting these species. These perennial streams are currently not considered suitable habitat for the federally threatened Little Colorado spinedace. There are no recent records for this species in these locations, although a historic record exists for Show Low Creek below Show Low Lake Dam. More recent surveys have not recorded Little Colorado spinedace above or below Show Low Lake.

Riparian habitat along these perennial streams provides potentially suitable habitat for the coati and desert shrew, although these species have not been recorded on or near the project area. A belted kingfisher and osprey, both FS Sensitive species, were recorded on Show Low Creek in 1994, but nesting status could not be confirmed. A limited portion of Show Low Creek provides marginal to poor habitat for Southwestern willow flycatchers and gray catbirds. Neither species was recorded during surveys in 1993 and 1994.

Upland reaches throughout the project area provide suitable habitat for gray vireos, flammulated owls (FS Sensitive), and occult little brown bats (FS Sensitive and federal Category 2). Potentially suitable habitat exists for spotted bats, ferruginous hawks, Swainson's hawks, zone-tailed hawks, and paper-spined cactus although none of these species have been recorded for the area. Two years of survey were conducted for northern goshawks, but no individuals were recorded.

D. Cultural Resources

An archaeological survey was conducted in late November and early December of 1993 and included all alternative alignments (C,D,E). Five archaeological sites and nine isolated occurrences were recorded during the survey. One site appears eligible and three others appear potentially eligible for inclusion into the National Historic Register. The first site is located west of Porter Mountain Road, between the Porter Creek Estates and SR 260. Of the three potentially eligible sites, two are located west of the transmission line easement within the proposed alignment for all action alternatives and one site is located within the proposed

alignment for Alternative E (Hansen Lane). A copy of the Archaeological Survey Report is provided as Appendix D.

An ethnographic survey was conducted in late 1993. All tribes potentially having traditional cultural properties (TCPs) within the project area were contacted and sent information about the proposed project as well as results of the archaeological survey. Tribes contacted include the Zuni, Navajo, Hopi, White Mountain Apache, Tonto Apache, San Carlos Apache, Salt River Pima, Gila River Pima, and the Fort McDowell Mohave-Apache. No comments have been received to date from the tribes. The Ethnographic Survey Report is provided as Appendix E.

E. Visual Quality

The current managed Visual Quality Objective (VQO) for the area is foreground retention. This management designation provides for activities which are not visually evident. Existing structures or improvements within the project area that currently affect visual quality include Porter Mountain Road (two-lane paved roadway), a residential development (Porter Creek Estates), and two 69-kV transmission lines including pole structures and associated easement.

F. Noise

Commercial and vehicle traffic on SR 260, and to a lesser extent on Porter Mountain Road and Hansen Lane, is the primary source of noise for residents of the Porter Creek Estates and Hansen Lane areas. Other sources of noise include barking dogs, airplane fly-overs, birds, wind, and neighborhood activities such as home, yard, and vehicle maintenance, and social activities, and by intermittent local traffic within the residential area. Noise levels increase with proximity to Porter Mountain Road and depend upon the type and speed of vehicular traffic. Mean readings 65 feet from the centerline of Porter Mountain Road ranged from 51.1 to 54.3 decibels (dB). Noise generated by Hansen Lane is intermittent and does not contribute greatly to overall sound level; however, SR 260 creates a continuous low background noise. Mean readings 65 feet from the centerline of Hansen Lane ranged between 48.8 and 54.4 dB. Noise levels at these two residential locations are currently within the range generally associated with residential neighborhoods. Appendix F provides a copy of the noise analysis report.

G. Traffic

The existing roadway system consists of major thoroughfares (U.S. 60, SR 260, and SR 77) and discontinuous local streets. The majority of these are two-lane roads with opposing traffic. U.S. 60 through Show Low and SR 260 from Show Low through Pinetop-Lakeside have two lanes in each direction separated by a continuous left turn lane in the center.

Average daily traffic volumes (ADT) for 1987 ranged from approximately 22,000 ADT near the intersection of SR 260 and U.S. 60 in Show Low to 14,000 ADT near the Porter Mountain Road intersection with SR 260. Traffic volume ranged from approximately 21,000 to 31,000 vehicles

per day on U.S. 60 through Show Low (BRW 1987). Highest traffic volumes occur during the peak season in July and lowest volumes occur in February.

Level of service (LOS) is evaluated qualitatively and considers factors such as speed and travel time, maneuverability, traffic interruptions, comfort and convenience, and safety. It is rated as A (best conditions) through F (worst conditions), with level (LOS) E considered at capacity for traffic operations (*Ibid*). During the peak season, the intersection of U.S. 60 and SR 260 operates near or at capacity (level D and E). Left turn and through traffic at unsignalized intersections throughout both the U.S. 60 and SR 260 corridors in the Show Low and Pinetop-Lakeside area are experiencing long (level D) to very long (level E) delays during the peak summer months. Average delay periods (levels B and C) are experienced during the remainder of the year (*Ibid*).

H. Public Safety

A total of 820 accidents occurred in the Show Low and Pinetop-Lakeside area from 1983 to 1986, the majority of which occurred on U.S. 60 in Show Low and on SR 260 between Show Low and Pinetop-Lakeside (BRW 1987). Accident rate on SR 260 averaged 130 per year in 1983 through 1985 and decreased to 86 in 1987, presumably due to roadway improvements made by the Arizona Department of Transportation (ADOT) (*Ibid*).

I. Socioeconomics

The city of Show Low has a population of over 5,000 people and lists tourism and recreation as important factors in the local economy. Wholesale concerns include three oil company bulk plants, two ready-mix concrete plants, and three bottled gas firms. Manufacturing consists primarily of forest products industry and provides employment for contract loggers. A machine shop and pellet mill are also present. Civilian labor force is projected at approximately 2,000 and unemployment rate is approximately 5 percent. The city provides community services including leisure, educational, financial medical, governmental, and airport facilities and communications services (Arizona Department of Commerce 1992).

The Town of Pinetop-Lakeside has a population of approximately 2,500 people. The local economy is geared primarily toward trade and services for tourists and recreationists, including the provision of lodging and services to skiers. Manufacturing in the area is based on the forest products industry. The Civilian labor force in Pinetop-Lakeside is projected at approximately 1,500 with an unemployment rate of approximately 15 percent. Community services include educational and governmental facilities. Medical facilities are shared with the city of Show Low and air transportation is provided at the Show Low Airport (*Ibid*).

J. Resources Absent from Project Area

- Wilderness
- Wild and Scenic Rivers

- Floodplains
- Farmlands

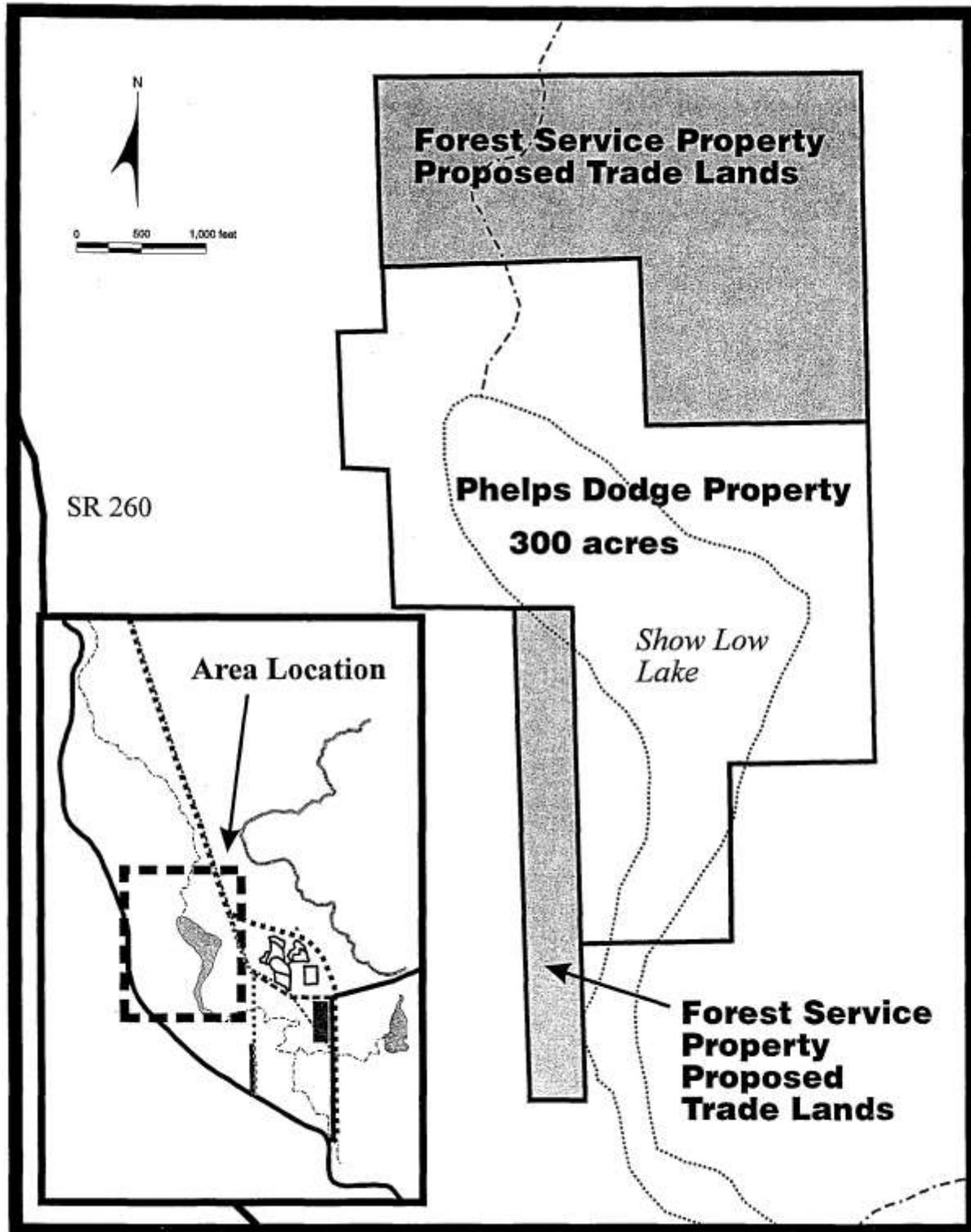


Figure 4. Show Low Lake Land Exchange

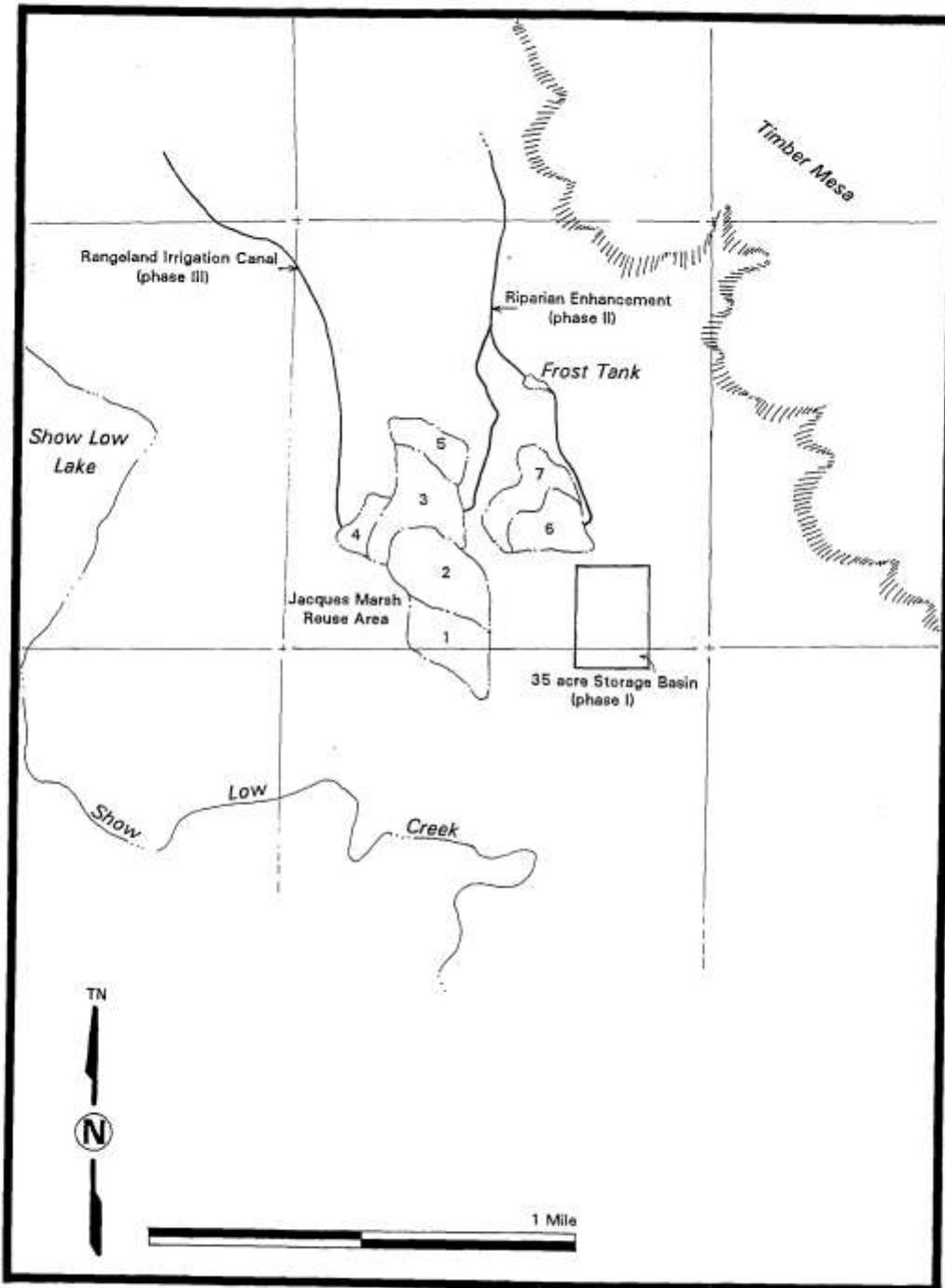


Figure 5. Jacques Marsh Wildlife Area and Planned Expansion

SECTION IV. ENVIRONMENTAL CONSEQUENCES

Alternative A (No Action)

The following resources would remain unaffected under this alternative.

- A. General Environmental Setting
- B. Wildlife
- C. Special Status Species
- D. Cultural Resources
- E. Visual Quality

Noise, traffic, public safety, and socioeconomics would be affected by this alternative.

F. Noise

Noise levels on SR 260 between Show Low and Pinetop-Lakeside would be expected to increase with the increase in traffic volume. Noise levels at the Porter Creek Estates and Hansen Lane would remain similar to existing noise levels, but may increase if development projects occur adjacent to roadways nearby.

G. Traffic

Under this alternative, traffic would continue to be routed on existing roadways. Some of the traffic congestion may be alleviated by modifications to traffic control timing, intersection design, and the addition of turn lanes (BRW 1987). Within 20 years, based on the existing and committed system, SR 260 from Show Low (U.S. 60) to Woodland Road in Lakeside is forecast to be deficient (operating near or at full capacity) in the peak season, with traffic volume averaging from 23,000 to 24,000 ADT year-round and ranging from 31,000 to 33,000 ADT during the peak season. SR 260 between Pine Lake and Buck Springs Roads is forecast to be deficient year-round, with an estimated 23,000 ADT during the peak season and 3,000 to 9,000 ADT less as the year-round condition (*Ibid.*). U.S. Highway 60 between Whipple Street (near the intersection with SR 260 west to Heber) and White Mountain Road (SR 260 south to Pinetop-Lakeside) is forecast to be deficient year-round, with an estimated 25,000 ADT year-round and 34,000 ADT during the peak summer season.

Roadway deficiency is defined as a volume to capacity ratio of 0.85 or greater, 1.00 representing full capacity at a level of service (LOS) of E. Deficient roadways would be characterized by undesirable operating conditions which would likely include high congestion and difficulty of joining the traffic stream from sidestreets or businesses (*Ibid.*).

H. Public Safety

The accident rate on SR 260 between Show Low and Pinetop-Lakeside may increase as traffic volume and congestion increase. Accident rates, however, are dependent on a number of factors and do not necessarily exhibit a linear relationship with increasing traffic volume (John Harper, Regional Traffic Engineer, Arizona Department of Transportation). Response times for emergency vehicles would be expected to increase with increasing traffic volume. Emergency situations resulting in temporary closure of SR 260 between the intersection of U.S. 60 and SR 260 in Show Low and the intersection of Porter Mountain Road and SR 260 in Pinetop-Lakeside would result in traffic delay and further increase in emergency vehicle response times.

I. Socioeconomics

The No Action alternative would result in an increase in traffic congestion on SR 260 which could adversely affect the quality of life for local residents in Show Low and Pinetop-Lakeside. This alternative could result in increased revenues for existing businesses along SR 260 between Show Low and Pinetop-Lakeside. Economic benefits resulting from the construction of Penrod Road under the action alternatives would not be realized under the No Action alternative.

J. Cumulative Impacts

Cumulative impacts associated with this alternative are related to traffic, public safety, and socioeconomics. Implementation of this alternative without expansion of the existing system would be expected to result in deterioration of local and regional traffic conditions. Increased traffic volume on the existing system could affect public safety through increased accident rates and increased response times for emergency vehicles. Implementation of the No Action alternative may limit or delay future expansion of Show Low and Pinetop-Lakeside and may adversely affect or impede local and regional socioeconomic growth.

Alternative C. Alignment of Penrod Road along the Existing Transmission Line Easement and Connection With Porter Mountain Road North of Porter Creek Estates.

A. General Environmental Setting

Change to general environmental setting under this alternative would include the presence of a paved roadway adjacent to the existing transmission line easement, directly west and south of Jacques Marsh, and just north of the Porter Creek Estates. This alternative would not impact topography and would not be expected to significantly impact soils, drainage patterns, or local or regional water quality.

Alternative C would result in the removal and/or disturbance of up to approximately 100 acres of native vegetation within the proposed easement. Approximately 36 acres, corresponding to the proposed roadway, would remain clear of vegetation. Portions of the right-of-way not

encompassed by the road or associated structures would be reseeded with a seed mix determined through consultation with the ASNF and/or the local Soil Conservation Service office. Right-of-way fencing and gates would reduce or minimize effects to vegetation due to off-highway vehicle use.

Construction of the road along this corridor will change the current ROS management objective by two increments. The new designation would be rural for the following reasons. All seven setting indicators would be affected by the construction of a new road corridor. Access would be changed from a primitive character where high clearance vehicles are necessary to one that accommodates all licensed vehicles including semi-trucks. Remoteness would be greatly changed because of traffic volumes and noise levels. Social encounters would be increased greatly because of the vehicle use. Visitor management would change in that a visitor's freedoms along the corridor would be greatly reduced by managed access points and fencing of the right-of-way. Facilities would increase from what is currently existing by the construction of culverts, signs, and fencing. Visitor impacts to the area would include more litter and increased public use. The naturalness of the area would be reduced from its current character by the addition of the road and the clearing involved.

This alternative would not be anticipated to significantly impact hunting activities at Jacques Marsh. Opportunities would continue to exist for hunters wishing to use the Jacques Marsh area. At the intersection with Porter Mountain Road, this alternative would be approximately 1900 feet (between 1/4 and 1/3 mile) from the start of the Timber Mesa Trail. Visual impacts of this alternative on users of the Timber Mesa Trail would be minimized by distance and by screening provided by natural vegetation along the trail.

Implementation of this alternative would result in the removal of three mother cows or 15 AUMs total from the allotments. Livestock movement within the allotments would be accommodated by box culverts installed under the proposed road.

B. Wildlife

Direct effects to wildlife would include the permanent loss of approximately 36 acres of habitat associated with construction and maintenance of the road, disturbance effects in the immediate vicinity of the road as a result of traffic flow, and an unquantifiable increase in wildlife mortality due to road kills.

This alternative would result in construction of a road within approximately 200 to 300 feet of the southernmost pond of Jacques Marsh (pond 1, Figure 5) for an approximate linear distance of 1500 feet. Approximate distance from the road to the westernmost ponds (1, 2, 3, and 4) would range from approximately 400 to 900 feet for a linear distance of approximately 2500 feet. Little is known about the effects of roads on nesting waterfowl in the Southwest. Studies in North Dakota have found that highway rights-of-ways can provide nesting habitat for significant numbers of mallards, pintails, and gadwalls and are used by a variety of other bird and mammal species (Oelting and Cassel 1971). In that region of the U.S., it appears that these

species tolerate a considerable level of disturbance, as that associated with an interstate highway. Nesting species have been shown to adapt to traffic flow, and nesting activity and success generally remain unaffected as long as increased access by people to nesting areas can be controlled (Louis Cowardin, Biologist, USFWS North Prairie Wildlife Research Center, pers. comm.).

Wetland areas in Arizona, and the project area in particular, differ in two significant ways from waterfowl habitat in other parts of the country. First, vegetation in areas immediately surrounding wetlands may be sparse and may not provide a high (or any) degree of visual screening. This is the case around the western and southern edges of Jacques Marsh, where vegetation consists of primarily of scattered juniper and montane grassland. Second, wetland areas are much more limited in the Southwest than in other parts of the U.S. and impacts to nesting waterfowl can be expected to be proportionally greater. Some disturbance impacts would likely occur on ponds closest to the road alignment. Migrating and wintering waterfowl are less likely to be affected by the presence of a road, especially by roads with higher and more regular traffic flow. Effects of the proposed road on wintering and migrating waterfowl at Jacques Marsh under this alternative are not likely to be significant (Mike Godwin, Wildlife Manager, Arizona Game and Fish Department, pers. comm.). The relatively greater proportion of truck traffic expected to use the proposed road may result in higher noise impacts to waterfowl than those resulting from traffic comprised predominantly of passenger vehicles.

Some disturbance impacts would likely occur to breeding resident waterfowl due to traffic and any construction that takes place during the breeding season. These impacts could include disturbance, possible nest failure, and displacement of birds nesting in close proximity to the road. These impacts may affect only a portion of the breeding population at Jacques Marsh. Migratory and wintering birds would also be subject to disturbance impacts during the construction period. Alignment of the road under this alternative would place the primary area of impact (south end of pond 1) nearest to existing human development (Porter Creek Estates), where some disturbance impacts may already be occurring. Current use patterns of the different ponds or the effects of Porter Creek Estates on the distribution of waterfowl are not known at this time.

An indirect effect of this alternative would be the potential for increased human disturbance to important wildlife foraging or nesting areas as a result of improved access provided by the road. This impact would be reduced by fencing of the right-of-way boundaries to restrict public access in areas adjacent to the road.

This alternative would not affect planned expansion of the Jacques Marsh Wildlife Area which is to occur predominantly north of the marsh complex (Figure 5).

C. Special Status Species

Some disturbance impacts may occur to wintering bald eagles at Jacques Marsh and/or Show Low Lake. A study in Nebraska estimates that 98 percent of wintering bald eagles will tolerate human activities 328 yards (984 feet) from them and that 50 percent of wintering bald eagles will

tolerate disturbance at 164 yards (492 feet) (U.S. Fish and Wildlife Service 1978). Automobile traffic appears to be one of the least disturbing human activities to wintering bald eagles and some individuals may become conditioned to cars (*Ibid.*). Generally, impacts to wintering bald eagles as a result of traffic are low. Protection and maintenance of riparian areas, perch sites, and communal roost sites are considered most important (Dennis Flath, Ph.D., University of Montana, personal communication). There are no documented winter roost sites for bald eagles in or near Jacques Marsh, Show Low Lake, or Scott's Reservoir. Bald eagles are known to winter and forage at these locations, however, and have been observed perching south of ponds 3 and 4 and west of ponds 1 and 2 of Jacques Marsh (Mike Godwin, Wildlife Manager, Arizona Game and Fish Department, pers. comm.). As construction activities would likely result in greater disturbance to individuals than traffic, road construction would not take place during the bald eagle wintering season (Dec 1 - Mar 1) in this area. There are no records of nesting bald eagles on the Sitgreaves National Forest, although nesting has been recorded on the Apache National Forest.

Six FS Sensitive bird species that have been recorded at Jacques Marsh may also experience disturbance impacts related to road construction and traffic. None of these species are known to nest at Jacques Marsh and some or all of these species are likely to be transient at this location. The road may also potentially disturb seven other FS Sensitive and/or federal Category 2 bird species that may use Jacques Marsh in winter or during migration. None of these species are known to have been recorded from Jacques Marsh to date.

Like for other wildlife species, construction of the road under this alternative may increase human disturbance to areas that are used by TE&S species by improving access to Jacques Marsh and increasing its visibility to the public.

D. Cultural Resources

Alternative C would impact two archaeological sites located west of the powerline easement, between Show Low and Jacques Marsh. Avoidance is recommended for these sites and if avoidance is not possible it is recommended that a testing program be implemented to determine the need for data recovery. Testing and data recovery would be conducted per State Historic Preservation Office (SHPO) and ASNF approval and guidelines. No traditional cultural properties have been identified in the project area.

E. Visual Quality

Alternative C would temporarily alter the visual quality objective within the project area. Seeding of all areas within the right-of-way not encompassed by the road or related structures would mitigate impacts to visual quality over time. Residences located at the northern end of the Porter Creek Estates would be most affected. Figure 6 depicts projected visual impacts looking north from the Porter Creek Estates. Figure 7 depicts projected visual impacts at the intersection of the proposed road and existing Porter Mountain Road, directly northeast of the Porter Creek Estates.

F. Noise

Under Alternative C, traffic volume is expected to increase from less than 1,000 to approximately 4,000 to 7,000 ADT year-round and 6,000 to 10,000 ADT during the peak season on Porter Mountain Road as a direct result of traffic originating from the proposed Penrod Road. In order to determine approximate increase in noise, a comparison is made with a segment of Buck Springs Road. This segment has 6,800 ADT year-round and a mean decibel range of 55.4 to 57.0 dB. Based on these figures, it is estimated that residences along the north and east end of the Porter Creek Estates will experience an increase of approximately 1 to 6 decibels at a distance of 65 feet from the centerline of the proposed Penrod Road and existing Porter Mountain Road, respectively. The approximate linear distances of this effect are 1300 feet along the north end of the Estates and 3000 feet along the east end of the Estates. The Arizona Department of Transportation (ADOT) defines a noise increase of 12 decibels over existing levels resulting from a project as a substantial increase requiring mitigation measures. Based on studies of annoyance to non-travelers as a function of noise, 55 dB is considered "not at all" annoying while 57 dB is considered "slightly" to "moderately" annoying (Croker 1978). Noise levels of this alternative on residents of Hansen Lane would be similar to or less than noise currently generated by traffic on SR 260 at this location.

G. Traffic

Under Alternative C, a two-lane paved roadway would be constructed between the communities of Show Low (at the intersection of SR 77 and U.S. 60) and Porter Mountain Road. Projections indicate that within twenty years (1987-2007) traffic volumes for SR 260 would decrease by 4,000-5,000 ADT year-round and 5,000-6,000 ADT during the peak season compared to volumes projected under the No Action alternative (A). The segment of SR 260 from Show Low Lake Road to Woodland Lake Road would become non-deficient in the peak summer season, with a projected volume of 26,000 ADT. The segment of SR 260 between the intersection with U.S. Highway 60 and Show Low Lake Road would remain deficient during the peak season, with a projected 24,000 ADT, but would experience an estimated reduction of 5000 ADT both year-round and during the peak season (*Ibid*). Year-round deficiency for the segment of SR 260 from Pine Lake to Buck Springs Road and the segment of U.S. Highway 60 from Whipple Street to White Mountain Road would not be affected by this alternative, and would therefore be expected to remain deficient.

These projections were based on an alternative that included connections between the proposed road and SR 260 at Ellsworth and Show Low Lake Roads (*Ibid*). These connections are not a part of this alternative at this time, but would be foreseeable in the future under this alternative. Alternative C would provide an alternate route for local and commercial traffic and in the event of closure of SR 260 between Porter Mountain Road and U.S. Highway 60 in Show Low, would reduce traffic volume on this segment of SR 260, and would improve response times for emergency vehicles.

H. Public Safety

Motorist safety may be affected by the movement of wildlife, deer and elk in particular, across the proposed roadway but would not be expected to be higher than hazards on other existing roads in the area, including SR 260. As no major elk movement corridor exists along this proposed alignment, hazards to motorists would be less than under Alternative D.

Alternative C would provide alternate access for emergency vehicles and during events which result in closure of SR 260 between the intersection of SR 77 and U.S. Highway 60 in Show Low to the intersection of SR 260 and Porter Mountain Road in Pinetop-Lakeside. Diversion of some of the traffic on SR 260 to the proposed road may improve public safety by alleviating traffic congestion and potentially reducing accident rates on SR 260.

I. Socioeconomics

As both the City of Show Low and the Town of Pinetop-Lakeside list tourism and recreation as major contributors to the local economy, impacts can be evaluated by examining the flow and volumes of traffic through these communities.

Traffic on U.S. 60, from SR 77 to the SR 260 east turn-off to Heber-Overgaard and Payson averaged approximately 26,000 ADT in 1987. Of all inbound, through traffic on U.S. 60 from St. Johns or Springerville, 5 percent turns on SR 77 (direction Holbrook); 31 percent turns on SR 260 south (through Pinetop-Lakeside); and 64 percent travels through Show Low to the intersection of U.S. 60 and SR 260 to Heber-Overgaard and Payson. An unknown but likely significant proportion of the traffic turning onto SR 260 south from this direction would use the proposed new road to access destinations south and east of Pinetop-Lakeside. Businesses along this segment of U.S. 60 in Show Low would remain largely unaffected as 64 percent of the traffic from St. Johns and Springerville would continue to travel through Show Low.

Traffic flow (and consequently businesses) from U.S. 60 (west) or SR 260 from Heber-Overgaard and Payson on U.S. 60 through Show Low to its intersection with SR 260 would remain largely unaffected by the proposed road.

Traffic on SR 260 south from the intersection with U.S. 60 to the intersection with Porter Mountain Road averaged approximately 18,000 ADT in 1987. A significant but unknown proportion of local traffic from St. Johns and Springerville and from Holbrook would be expected to use the new road to Pinetop-Lakeside and beyond. A significant but unknown proportion of the traffic originating from U.S. 60 west (Globe) and SR 260 east (Heber-Overgaard and Payson) would also be expected to use the new road. Twenty-year projections indicate a 4,000-5,000 ADT decrease year-round and a 5,000-6,000 ADT decrease in the peak season on SR 260 south under Alternative C (BRW 1987). This amount roughly equals the expected increase in traffic volume over 20 years. In effect, traffic volume on SR 260 would likely decrease upon the opening of Penrod Road but could return to current traffic levels or higher (projected at 19,000 ADT) within approximately 20 years. Businesses located along SR

260 may experience some decrease in revenues initially as some of the traffic on SR 260 would be diverted to the new road. As the current distribution of local versus tourist traffic on SR 260 south is not known, the projected distribution of travelers that would use Penrod Road instead of SR 260 south is also unknown.

Implementation of this alternative would result in reduced quality of life for residents along the north and east ends of the Porter Creek Estates due to increased traffic flow and associated noise and visual quality impacts. Direct socioeconomic benefits resulting from construction of Penrod Road under this alternative would likely entail temporary employment opportunities and an increase in local revenue.

J. Cumulative Impacts

Cumulative impacts could include the potential for future road connections between Penrod Road and SR 260 at Show Low Lake and Ellsworth Road; the proposed construction and operation of a natural gas pipeline within the same general corridor; the proposed Show Low Lake Land Exchange; the potential acquisition, through exchange, and subsequent development of lands directly adjacent to the road, and increased feasibility for upgrade of the Sky Hi Road (FR 182) in the near future.

Potential future connections between Penrod Road and SR 260 would affect setting and could affect water and wildlife resources along segments of Show Low Creek through additional disturbance resulting from improved access. Connections between Penrod Road and SR 260 would improve access and efficiency for emergency vehicles and may alleviate congestion by diverting more traffic onto Penrod Road.

The proposed construction and operation of a natural gas pipeline from Show Low to Pinetop-Lakeside would not be expected to significantly impact resources in the area. The availability of natural gas could improve socioeconomic conditions for the Town of Pinetop-Lakeside by providing a less expensive, more efficient source of energy. Construction of the natural gas pipeline would result in an additional 30 acres of impact to vegetation, wildlife habitat, and visual quality from clearing. These impacts would likely be restricted to the construction and vegetation re-establishment period.

The proposed Show Low Lake Land Exchange would be expected to impact setting in the general project area and may impact other resources. It would likely result in development of up to 210 acres surrounding Show Low Lake and could result in development along the portion of Penrod Road which crosses the proposed exchange lands. The cumulative effect of this action would result in further reduction of total acreage available for wildlife, livestock grazing, and recreation. The exchange would likely result in socioeconomic growth for the communities of Show Low and Pinetop-Lakeside.

Future development of lands adjacent to the proposed road is a foreseeable cumulative impact under this alternative. The Town of Pinetop-Lakeside is evaluating the feasibility of an

industrial park between Billy Creek and Porter Mountain Road. Potential future development along the proposed Penrod Road would provide for economic growth and expand the local tax base. Inversely, if future land-exchanges and development do not occur along the proposed road, the local tax base may be adversely impacted due to loss of revenues for businesses along SR 260. Although the proposed road would facilitate development in this area, future development may occur whether or not Penrod Road is constructed. The area most likely to become developed in the future would encompass lands from Show Low Creek east to the proposed Penrod Road alignment and/or lands immediately adjacent to (east side) of the proposed road alignment. Development of lands extending from Show Low Creek to 1/4 mile east of the proposed road would result in alteration of approximately 3,800 acres. These lands would likely become unavailable for wildlife, recreation, and livestock grazing. Development to this extent would also impact wildlife, including TE&S species, using the Jacques Marsh Wildlife Area. Although the ASNF would retain a riparian corridor of currently unspecified width along the portion of Show Low Creek north of Show Low Lake, impacts would likely occur to wildlife along portions of Porter Creek, Show Low Creek and Billy Creek.

Navajo County has identified other future road plans in its 1991 Transportation Plan (Navajo County 1991). One alignment would follow Porter Mountain Road (FS 45) to its intersection with Sky Hi Road (FS 182) and then follow this road to the Pinetop Country Club and eventually join SR 260. This alignment would use existing roadway easements but could result in altered traffic flow and associated impacts to local residents. Implementation of Alternative C would contribute to the feasibility of the Sky Hi Road (FS 182) upgrade in the near future.

Alternative D. Alignment of Penrod Road North and East of the Jacques Marsh Area

A. General Environmental Setting

Change to general environmental setting under this alternative would include the presence of a paved roadway adjacent to the existing transmission line easement and north and east of Jacques Marsh to join Porter Mountain Road just north of the Porter Creek Estates. This alternative would not be expected to impact topography, soils, drainage patterns, or water quality.

This alternative would result in the removal and/or disturbance of up to approximately 97 acres of native vegetation within the proposed easement. Approximately 35 acres, corresponding to the proposed roadway, would remain clear of vegetation. Portions of the right-of-way not encompassed by the road would be reseeded with species which would be determined through consultation with the ASNF and/or the local Soil Conservation Service office. Right-of-way fencing and gates would reduce or minimize effects to vegetation due to off-highway vehicle use.

As under Alternative C, implementation of this alternative would result in the removal of 3 mother cows or 15 AUMs total from the allotments. Livestock movement within the allotments would be accommodated by box culverts installed under the proposed road.

Effects of this alternative on the current ROS management objective would be the same as those described under Alternative C, and would involve a change from a semi-primitive motorized to a rural management objective. Wildlife observation and hunting opportunities would remain largely unaffected under this alternative. Alignment under this alternative would place a larger portion of the proposed road near Timber Mesa. As for Alternative C, the closest point on the road to the start of the Timber Mesa Trail (at the intersection of the proposed Penrod Road with Porter Mountain Road) would be approximately 1900 feet (between 1/4 and 1/3 mile). Vehicle noise from the road would be expected to be more audible to recreationists on Timber Mesa Trail than under Alternative C. Implementation of Alternative D would not be expected to affect recreational use of the Timber Mesa Trail.

B. Wildlife

Direct effects to wildlife would include permanent loss of 35 acres of habitat associated with construction and maintenance of the road, disturbance effects in the immediate vicinity of the road as a result of traffic flow, and an unquantifiable increase in wildlife mortality due to road kills.

This alternative would result in construction of a road within approximately 200 to 300 feet of the northernmost ponds of the Jacques Marsh Wildlife Area (ponds 5 and 7, Figure 5) for an approximate linear distance of 2200 feet. Distance of the road to the easternmost pond of the Jacques Marsh (pond 6) ranges from approximately 400 to 900 feet for a linear distance of approximately 800 feet. Traffic flow on the proposed road would be expected to result in some disturbance of resident, migratory, and wintering birds. Some waterfowl would likely adjust to traffic flow on the road and continue using the ponds. Disturbance would likely occur to breeding resident waterfowl during any road construction that takes place in the breeding season. These impacts could result in possible nest failure and/or displacement of birds nesting in close proximity to the construction area. These impacts may affect only a portion of the breeding population in the Jacques Marsh Wildlife Area. Migratory and wintering birds would also be subject to disturbance impacts during the construction period. These birds may adjust to the level of disturbance, move to ponds more distant from the construction area, or use other water resources in the area such as Show Low Lake or Scott's Reservoir. Disturbance effects would be partially mitigated under this alternative by the presence of trees between portions of the road and the Jacques Marsh Wildlife Area, which would provide some visual screening. The alignment of the road under Alternative D would intersect several ponderosa pine stringers that extend from Timber Mesa to Jacques Marsh. This may impact some wildlife that use the stringers as movement corridors to access Jacques Marsh. Implementation of planned expansion and enhancement of the Jacques Marsh, discussed in more detail below, would effectively create water resources between the proposed road and Timber Mesa and would reduce impacts to wildlife movement corridors.

An indirect effect of this alternative would be the potential for increased human disturbance to important wildlife foraging or nesting areas as a result of improved access provided by the road.

right-of-way fencing will reduce impacts from increased human presence by restricting access in areas adjacent to the road.

Alternative D would allow full implementation of Phases II and III of the Expansion of Jacques Marsh Wildlife Area with Riparian/Rangeland Enhancement, approved by the ASNF in 1987. Phase II of this plan comprises riparian enhancement through the release of excess water from the ponds into two drainages leading to Frost Tank and eventually into meadows located north and east of this tank. Phase III of this plan involves the irrigation of rangeland located northwest of Jacques Marsh through release of water from the pond system into a one-half mile long ditch. Water from this ditch would be dispersed northward through 25 irrigation outlet structures. As the proposed road alignment under this alternative runs between Frost Tank and the northernmost ponds of the Jacques Marsh complex and would likely cross the rangeland irrigation ditch, both riparian enhancement and rangeland irrigation objectives could be accommodated through construction of appropriate crossings including culverts or other drainage structures. Enhancement of rangeland north of the Jacques Marsh Wildlife Area and north and east of the proposed alignment may attract elk to these areas, potentially diverting a portion of the wintering elk herd to these locations and may reduce their impacts on wetlands vegetation at Jacques Marsh.

C. Special Status Species

Like Alternative C, some disturbance impacts may occur to wintering bald eagles at Jacques Marsh and/or Show Low Lake. Alternative D has more linear road distance within 200-300 feet of Jacques Marsh than Alternative C (approx. 2200 feet vs. 1500 feet), but has less linear road distance within 400-900 feet (approx. 800 feet vs. 2500 feet). Total linear road length for Alternative D (approx. 3000 feet) is less than Alternative C (approx. 4000 feet) and more vegetative screening is provided along Alternative D due to the presence of ponderosa pine stringers and other native vegetation. Disturbance impacts due to construction activities would be largely avoided by restricting construction to periods outside the general bald eagle wintering season.

Other FS Sensitive species that have been recorded at Jacques Marsh may also experience disturbance impacts related to road construction and traffic. These species are not known to nest at Jacques Marsh and many are likely to be transient in the area. Seven other FS Sensitive and/or federal Category 2 bird species that may use Jacques Marsh during winter or migration, but have not been recorded here, may be impacted by road construction and subsequent traffic. Natural vegetative screening along the north end of Jacques Marsh, consisting of pinyon-juniper woodland and ponderosa pine stringers, would reduce disturbance impacts to these species and would reduce visibility of the Marsh to motorists.

D. Cultural Resources

The same two sites impacted under Alternative C would be impacted under this alternative, and would either have to be avoided or mitigated through testing and/or data recovery. No known traditional cultural properties have been identified along or adjacent to this alternative.

E. Visual Quality

Alternative D would temporarily alter the visual quality objective within the project area. Seeding of all areas within the right-of-way not encompassed by the road or related structures would mitigate impacts to visual quality over time. Visual quality impacts for residents along the northern boundary of the Porter Creek Estates would be less under this alternative than under Alternative C.

F. Noise

Similar noise impacts described under Alternative C would occur along approximately 3000 feet linear distance corresponding to the east side of the Porter Creek Estates. Noise impacts along the northern boundary of the Estates, a linear distance of approximately 1300 feet, would be less under this alternative than under Alternative C.

G. Traffic

Traffic volume patterns and projections under this alternative would be expected to be similar to those described for Alternative C. Based on twenty-year projections, traffic volumes for SR 260 would decrease by 4000-5000 ADT year-round and 5000-6000 ADT during the peak season compared to projected traffic volumes under the No Action alternative. The segment of SR 260 from Show Low Lake Road to Woodland Lake Road would become non-deficient in the peak summer season, with a projected volume of 26,000 ADT. The segment of SR 260 between the intersection with U.S. Highway 60 and Show Low Lake Road would remain deficient during the peak season, with a projected 24,000 ADT, but would experience an estimated reduction of 5000 ADT both year-round and during the peak season (BRW 1987). Year-round deficiency for the segment of SR 260 from Pine Lake to Buck Springs Road and the segment of U.S. Highway 60 from Whipple Street to White Mountain Road would not be affected by this alternative, and would therefore be expected to remain deficient.

Projections for SR 260 between Show Low and Pinetop-Lakeside were based in part on the assumption that connections between the proposed road and SR 260 would be made at Ellsworth and Show Low Lake Roads. These connections are not part of this alternative but are foreseeable in the future. Like Alternative C, Alternative D would provide an alternate route for local and commercial traffic both year-round and during potential closures of the segment of SR 260 between Porter Mountain Road and U.S. Highway 60 in Show Low. Traffic volume on this segment of SR 260 would be reduced and response time for emergency vehicles would be improved.

H. Public Safety

This alternative could result in an increase in vehicle collisions with wildlife, most notably elk. An elk movement corridor exists between Timber Mesa and the Jacques Marsh area. Elk frequent the Jacques Marsh area because of the availability of higher quality forage and water. Hazards created by elk crossing the proposed road would be highest during dawn and dusk and at night, when the elk are most likely to cross the road and when visibility for motorists is most limited. Implementation of Phases II and III of the Expansion of Jacques Marsh Wildlife Area with Riparian/Rangeland Enhancement may partially mitigate effects to motorist safety between the transmission line and Frost Tank by improving the quality of forage in areas north and east of the proposed road. Elk use in these areas would be expected to increase and subsequently less elk would be expected to cross the road. A reduction of speed limit along the segment from Jacques Marsh to the intersection with Porter Mountain Road would decrease stopping time for motorists who encounter elk on the road. Warning signs along this segment of the road would increase motorists awareness and eliminating curves in the road to the extent possible would increase visibility for motorists. Lowering of vegetation density immediately adjacent to the road would increase sight distance for motorists. Fencing of the road to exclude elk is not recommended at this time due to resulting effects on the movement of other wildlife species. Like Alternative C, Alternative D would provide alternate access for emergency vehicles and during events which result in closure of SR 260 between the intersection of SR 77 and U.S. Highway 60 in Show Low to the intersection of SR 260 and Porter Mountain Road in Pinetop-Lakeside. Expected use of the proposed road may improve public safety by alleviating traffic congestion on SR 260, and may consequently reduce accident rates.

I. Socioeconomics

As under Alternative C, projected traffic volumes, and consequently expected business income, on U.S. 60 through Show Low would remain largely unaffected under this alternative. Revenues for businesses along SR 260 from Show Low to the Porter Mountain Road may initially decrease as some of the traffic on SR 260 would be diverted to Penrod Road. Road alignment under this alternative would result in reduced quality of life for residents primarily along the east end of the Porter Creek Estates due to increased traffic flow and associated noise impacts. Road construction under Alternative D may result in immediate benefits to the local economy from temporary employment opportunities and an increase in local revenue.

J. Cumulative Impacts

Cumulative impacts under this alternative are similar to those described for Alternative C and include the potential for future road connections between Penrod Road and SR 260 at Show Low Lake and Ellsworth Road; the proposed construction and operation of a natural gas pipeline within the same general corridor; the proposed Show Low Lake Land Exchange; the potential acquisition, through exchange, and subsequent development of lands directly adjacent to the road; and an increased feasibility for upgrading of FR 182 (Sky Hi Road) in the near future.

These potential future actions would most notably impact setting, wildlife, special status species, livestock grazing, recreation, and socio-economics. Connections between the proposed Penrod Road and SR 260 would improve emergency vehicle response time and may further alleviate traffic congestion. Construction of a natural gas pipeline would provide a more economical source of energy to the Town of Pinetop-Lakeside. These potential future actions as well as development adjacent to the road and west to Show Low Creek could reduce or fragment up to 3800 acres of habitat for wildlife and livestock and would be expected to impact riparian areas including Show Low Creek, Billy Creek, and Porter Creek. Special status species associated with Jacques Marsh, Show Low Lake, and Scott's Reservoir, and the perennial streams may experience encroachment and fragmentation of habitat.

Future development of lands adjacent to the proposed road is a foreseeable cumulative impact under this alternative. Inversely, if future land-exchanges and development do not take place along the proposed road, the local tax base may be adversely impacted due to loss of revenues for businesses along SR 260. Some development is likely to occur in areas crossed by the proposed road alignment regardless of whether or not Penrod Road is constructed. Implementation of Alternative D would contribute to the feasibility of an upgrade of the Sky Hi Road (FR 182) in the near future, which may affect local residents through altered and increased traffic flow and associated impacts.

Alignment of the road under this alternative would place the primary area of impact to Jacques Marsh (north end of ponds 5, 6, and 7) furthest from existing human development (Porter Creek Estates) where some disturbance impacts may already be occurring. Depending on the response by wildlife, this may effectively reduce the area that would be used by breeding, migratory, or wintering birds by creating another area of impact at the opposite end of Jacques Marsh. Current use patterns of the different ponds or the effects of Porter Creek Estates on the distribution of waterfowl are not known at this time.

Socioeconomic growth resulting from the expansion of Show Low and Pinetop-Lakeside would be facilitated by construction of the road and would likely improve local and regional economies. Implementation of Alternative D would create an opportunity to reduce erosion on the lower portion of the Timber Mesa fire road (FR 9710 J) by connecting this road to the proposed Penrod Road.

Alternative E. Alignment of Penrod Road along the Existing Transmission Line Easement and Connection with Hansen Lane

A. General Environmental Setting

Changes to general environmental setting under this alternative would include the presence of a paved roadway adjacent to the existing transmission line easement to connect with Hansen Lane. The segment of the proposed road from where it leaves the transmission line easement to where it joins Hansen Lane would cross previously undeveloped lands. A bridge would be

constructed across Show Low Creek and Hansen Lane would have to be widened to accommodate the proposed road. This alternative would not be expected to impact topography or soils.

This alternative would result in the removal and/or disturbance of up to approximately 80 acres of native vegetation within the proposed easement. Approximately 29 acres, corresponding to the proposed roadway, would remain clear of vegetation. Portions of the right-of-way not encompassed by the road would be reseeded with a seed mix determined through consultation with the ASNF and/or the local Soil Conservation Service office.

Some temporary and localized disturbance of the stream bed and stream banks would likely occur during construction of the bridge across Show Low Creek. Direct effects to water quality would include a temporary increase in sedimentation and total dissolved solids in the segment of Show Low Creek directly downstream of the proposed crossing. Mitigation measures conditional to Clean Water Act Section 404 and State Water Quality Section 401 permits would minimize impacts to water quality and water resources. No long-term direct effects to regional water quality would be anticipated.

Effects of this alternative on the current ROS management objective would be the same as those described under Alternative C, and would involve a change from a semi-primitive motorized to a rural management objective. Wildlife observation and hunting opportunities at the Jacques Marsh Wildlife Area would be largely unaffected under this alternative. At its closest point, this alternative would be located more than one mile away from the start of the Timber Mesa Trail and would not be expected to have significant visual or noise impacts on recreationists using the trail.

Like Alternatives C and D, implementation of this alternative would result in the removal of 3 mother cows or 15 AUMs total from the allotments. Livestock movement within the allotments would be accommodated by box culverts installed under the proposed road.

Implementation of this alternative would require the acquisition of additional private lands along Hansen Lane, as the existing right-of-way (50-foot width) would not be wide enough to accommodate the planned road.

B. Wildlife

Direct effects to wildlife would include permanent loss of 29 acres of habitat associated with construction and maintenance of the road, disturbance effects in the immediate vicinity of the road as a result of traffic flow, and an unquantifiable increase in wildlife mortality due to road kills. This alternative would result in construction of a road within approximately 800 to 1000 feet of the westernmost pond of Jacques Marsh (pond 4, Figure 5) for an approximate linear distance of 250 feet. Some disturbance impacts could occur to breeding, migratory, and wintering waterfowl using the Jacques Marsh Wildlife Area, but would be considerably less under this alternative due to increased distance.

C. Special Status Species

As under Alternatives C and D, some disturbance impacts may occur to wintering bald eagles and other FS Sensitive species that have been recorded at Jacques Marsh. These impacts would be less than under the previous alternatives due to a reduced road length that would be constructed within 1000 feet of Jacques Marsh. Disturbance impacts to bald eagles due to construction activities would be largely avoided by restricting construction to periods outside the general bald eagle wintering season.

Bridge construction over Show Low Creek under this alternative could result in impacts to TE&S aquatic species in Show Low Creek, assuming these species are present. Effects would likely include a temporary increase in sediment loading downstream from the construction area due to physical disturbance of the stream banks and loss of bank stabilizing streamside vegetation. Impacts to the stream from physical disturbance would be short-term and temporary and would be minimized by implementation of specific mitigation measures outlined for this alternative in Section II and for mitigation measures conditional to Clean Water Act Section 404 and Section 401 State Water Quality Certification permits.

This alternative may result in some disturbance impacts to two FS Sensitive species that have been recorded along Show Low Creek. There are no nesting records for belted kingfisher in this area and this species is likely to be transient at this location. A historic osprey nest site has been reported for Show Low Creek above Show Low Lake, but is not recently known to be active. Field surveys in both 1993 and 1994 failed to locate any nest sites for this species.

D. Cultural Resources

Alternative E would impact the same two sites impacted by Alternatives B and C and would impact an additional site between the powerline transmission easement and Show Low Creek. Avoidance is recommended for all sites and if avoidance is not possible it is recommended that a testing program be implemented to determine the need for data recovery. Testing and data recovery would be conducted per State Historic Preservation Office (SHPO) and ASNF approval and guidelines. No known traditional cultural properties have been identified to date along this alternative by the local and regional tribes contacted.

E. Visual Quality

Alternative E would temporarily alter the visual quality objective within the project area. Seeding of all areas within the right-of-way not encompassed by the road or related structures would mitigate impacts to visual quality over time. Visual quality for residents of the Porter Creek Estates would remain largely unaffected. Visual quality for residents of Hansen Lane would be affected by the widening of the road and the increase in traffic volume. Visual quality would also be affected by construction and operation of a bridge across Show Low Creek.

F. Noise

Noise impacts on residents of Hansen Lane would be similar to impacts on residents of the Porter Creek Estates under alternatives C and D. Noise levels of this alternative on residents of the Porter Creek Estates would be expected to be similar to or less than noise currently generated by traffic on SR 260 at this location.

G. Traffic

Traffic volume patterns and projections under this alternative would be expected to be similar to those described for Alternatives C and D. Within twenty-years (by the year 2007), traffic volumes for SR 260 would decrease by 4000-5000 ADT year-round and 5000-6000 ADT during the peak season compared to those projected for the No Action alternative. In contrast to Alternatives C and D, within twenty years this alternative would reduce traffic volumes on SR 260 from the intersection with U.S. Highway 60 to the intersection with Hansen Lane only (compared to the No Action alternative). The segment of SR 260 between Hansen Lane and Woodland Lake Road would remain deficient during the peak season and would experience traffic volumes projected under the No Action alternative (31,000 ADT during the peak season). The segment of SR 260 between the intersection with U.S. Highway 60 and Show Low Lake Road would remain deficient under this alternative, but would experience a reduction of 5,000 ADT during the peak season compared to the No Action alternative. Year-round deficiency for the segment of SR 260 from Pine Lake to Buck Springs Road and for U.S. Highway 60 from Whipple Road to White Mountain Road would not be affected, and these segments would be expected to remain deficient.

These projections were based in part on the assumption that connections between the proposed road and SR 260 would be made at Ellsworth and Show Low Lake Road. These connections are not a part of this alternative at this time, but would be foreseeable in the future. As for alternatives C and D, Alternative E would provide an alternate route for motorists year-round as well as during closure of SR 260 between Show Low and Hansen Lane, and would improve response times for emergency vehicles. Approximately 1.5 less miles of SR 260 (Hansen Lane to Porter Mountain Road) would become non-deficient during the peak season compared to Alternatives C and D.

As under the previous alternative, Alternative E would provide an alternate route for local and commercial traffic and would reduce traffic volume on SR 260 between Show Low and the Hansen Lane intersection in Pinetop-Lakeside.

H. Public Safety

Motorist safety may be affected by the movement of wildlife, deer and elk in particular, across the proposed roadway but would not be expected to be higher than hazards on other existing roads in the area, including SR 260. As no major elk movement corridor exists along this proposed alignment, hazards to motorists would be less than under Alternative D.

Like Alternatives C and D, Alternative E would provide alternate access for emergency vehicles. This alternative would also provide alternate access during events which result in closure of SR 260 between the intersection of SR 77 and U.S. Highway 60 in Show Low to the intersection of Hansen Lane and SR 260 in Pinetop-Lakeside. Expected use of the proposed road may improve public safety by alleviating traffic congestion and potentially reducing accident rates on SR 260.

I. Socioeconomics

As under Alternatives C and D, projected traffic volumes, and consequently expected business income, on U.S. 60 through Show Low would remain largely unaffected under this alternative. Revenues for businesses along SR 260 from Show Low to Hansen Lane may initially decrease as some of the traffic on SR 260 would be diverted to Penrod Road. Alignment of road under Alternative E would result in reduced quality of life for residences along Hansen Lane due to increased traffic flow and associated noise impacts. In order to accommodate a 100-foot wide road easement, this alternative would require the purchase and/or condemnation of private lands along Hansen Lane.

Immediate socioeconomic benefits, such as temporary employment opportunities and an increase in local revenue, would likely result from road construction. Estimated cost for a bridge constructed across Show Low Creek (at 250 feet length and 43 feet width) would likely range between \$500,000 and \$1,500,000 (Dick Brusck, State Engineer, Arizona Department of Transportation, pers. comm.).

J. Cumulative Impacts

Cumulative impacts under this alternative would be similar to those described for Alternatives C and D and include the potential for future road connections between Penrod Road and SR 260 at Show Low Lake and Ellsworth Road; the proposed construction and operation of a natural gas pipeline within the portion of the same general corridor extending from Show Low to near Jacques Marsh; the proposed Show Low Lake Land Exchange; the potential acquisition, through exchange, and subsequent development of lands directly adjacent to the road. This alternative would not increase the feasibility for an upgrade of FR 182 (Sky Hi Road) in the near future.

Resources most notably impacted due to these potential future actions include setting, wildlife, special status species, livestock grazing, recreation, and socio-economics. Construction of the natural gas pipeline, potential future road connections to SR 260, and development adjacent to the road and west to Show Low Creek resulting from the ongoing Show Low Lake Land Exchange as well as potential future land exchanges would reduce or fragment habitat for wildlife and livestock and would be expected to impact Show Low Creek, Billy Creek, and Porter Creek. Special status species associated with Show Low Lake, Show Low Creek, and Jacques Marsh would experience encroachment and potential reduction and/or fragmentation of habitat. If all land between the proposed road alignment (including a 1/4 mile corridor on the east side of the road) and Show Low Creek become developed, this would result in an alteration

of up to approximately 3800 acres of habitat. Some development is likely to occur in areas crossed by the proposed road alignment regardless of whether or not Penrod Road is constructed.

Future development of lands adjacent to the proposed road and/or between the proposed road and Show Low Creek would likely result in local and regional socioeconomic growth. Potential future connections between the proposed road and SR 260 would improve emergency vehicle response times and may further alleviate traffic congestion on SR 260. Construction and operation of a natural gas pipeline would provide a more economical source of energy for Pinetop-Lakeside.

**ADDENDUM TO NAVAJO COUNTY PROPOSED PENROD ROAD
ENVIRONMENTAL ASSESSMENT**

This addendum discusses the environmental consequences of two mitigation measures listed on page 11 of the final Environmental Assessment for the Navajo County Proposed Penrod Road on the action alternatives described in this document:

- Fencing of right-of-way boundaries for exclusion of cattle and to restrict public access in sensitive areas. Fencing will conform to designs which allow for movement of wildlife.

Environmental consequences of this mitigation measure would be similar for all action alternatives (Alternatives C, D, and E). Fencing may deter some wildlife movement across the proposed road, however, the use of wildlife fencing (bottom wire remains unbarbed) should allow for movement of most species, including antelope. Fencing would also discourage off-road vehicle use in areas adjacent to the proposed road.

- Excess rock, tree stumps, and/or slash resulting from construction activity would be buried, burned, and/or hauled off-site.

Environmental consequences of this mitigation measure would also be similar for all action alternatives (Alternatives C, D, and E). Little or no effects would be anticipated from the removal or burial of rock, tree stumps, or slash. Burning of slash and tree stumps within the project area would be expected to result in a localized and temporary degradation of air quality and visibility. No other impacts would be anticipated.

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