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MONUMENTAL ABUSE: THE CLINTON ADMINISTRATION'S CAMPAIGN OF MISINFORMATION IN THE ESTABLISHMENT OF THE GRAND STAIRCASE-ESCALANTE NATIONAL MONUMENT

R E P O R T

OF THE

COMMITTEE ON RESOURCES
HOUSE OF REPRESENTATIVES

together with

DISSENTING VIEWS

OCTOBER 16, 1998.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

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LETTER OF TRANSMITTAL

HOUSE OF REPRESENTATIVES,
COMMITTEE ON RESOURCES,
Washington, DC, October 16, 1998.

Hon. NEWT GINGRICH,
Speaker, House of Representatives,
Washington, DC.

DEAR MR. SPEAKER: By direction of the Committee on Resources, I submit the Committee's report to the 105th Congress on "Monument Abuse: The Clinton Administration's Campaign of Misinformation in the Establishment of the Grand Staircase-Escalante National Monument." The report was adopted and ordered reported to the House of Representatives by voice vote on October 7, 1998.

Sincerely,

DON YOUNG, *Chairman.*

Enclosure.

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MONUMENTAL ABUSE: THE CLINTON ADMINISTRATION'S CAMPAIGN OF MISINFORMATION IN THE ESTABLISHMENT OF THE GRAND STAIRCASE-ESCALANTE NATIONAL MONUMENT

INTRODUCTION

On September 18, 1996, President Bill Clinton stood in the Arizona sun on the rim of the Grand Canyon and announced the establishment of the 1.7-million-acre Grand Staircase-Escalante National Monument (Utah Monument), seventy miles away in Utah. He quoted Teddy Roosevelt and praised the beauty of the Utah lands he and Vice President Al Gore had chosen to "protect." From what threat was the President protecting these lands? "I am concerned about a large coal mine proposed for the area," the President said. "[W]e shouldn't have mines that threaten our national treasures."[1]

Far from threatening our national treasures, the mine project inappropriately killed by the Clinton Administration would have provided millions in funds for Utah's schoolchildren—which Clinton and Gore call "the greatest resource in the country."[2]

At the time the Utah Monument was designated by Presidential Proclamation No. 6920, an environmental impact review of the "large coal mine" (the Smoky Hollow Mine) referred to by the President had been underway for nearly seven years.[3] As required by the National Environmental Policy Act (NEPA), the Bureau of Land Management (BLM) and the Office of Surface Mining and Reclamation (OSM) had produced a comprehensive preliminary draft environmental impact statement (PDEIS) that was prepared for public comment. This report reviews that PDEIS and shows that *the characterization of the project as a threat to the lands designated under the Antiquities Act was purely a pretext and not supported by the record.* The substance of that review is contained in this report.

The American public, watching the Escalante campaign event, may have believed the President when he warned of the mine's supposed impact on sensitive lands. People had no reason not to take the President at his word at that time. Documents and records obtained by the House Committee on Resources and reviewed in this report now show that the President's statement was as far away from accuracy as he was from Utah. The only thing the President was trying to protect by designating the Utah Monument was his chance to win reelection. The "threat" motivating the President's action was electoral, not environmental.

The Utah Monument was designated pursuant to Section 2 of the Act of June 8, 1906 (Antiquities Act), which allows the President to reserve parcels of federal land as national monuments by public

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[1] Remarks Announcing the Establishment of the Grand Staircase-Escalante National Monument at Grand Canyon National Park, Arizona, 32 Weekly Comp. Pres. Doc. 1785 (Sept. 23, 1996).

[2] *Gore Pushes Technology, Better Pay for Teachers,* Greensborough News & Record, May 29, 1997, at B5.

[3] Proclamation No. 6920, 61 Fed. Reg. 50,223 (1996).

proclamation.[4] The language of the Antiquities Act makes clear, however, that the land reserved "shall be confined to the *smallest area compatible with the proper care and management* of the objects to be protected."[5] The Act contemplates that objects to be protected must be threatened or endangered in some way. For example, a proclamation withdrawing Devil's Hole in Nevada was upheld in court because it was not *solely* for the purpose of preserving the unique limestone formations in Devil's Hole pool, but also to protect the endangered pupfish from possible extinction due to agricultural use of the pool's water.[6]

It follows that for the designation of the Utah Monument to be proper its lands had to be somehow threatened or endangered. The Clinton Administration knew that they were not. In a March 25, 1996, email message to T.J. Glauthier at the Office of Management and Budget (OMB) and Linda Lance at the Council on Environmental Quality (CEQ), Kathleen McGinty (the Chair of CEQ) stated her doubts about the planned designation:

> I'm [sic] increasingly of the view that we should just drop these utah [sic] ideas. we [sic] do not really know how the enviros will react and I do think there is a danger of "abuse" of the withdraw/antiquities authorities especially because *these lands are not really endangered.*[7] [Emphasis added.]

To have at least the appearance of credibility, the President had to point to some sort of threat. As far as the Clinton Administration was concerned, the coal mine fit the bill. After all, in a campaign where image reigned supreme, reality was of little consequence. After election day, however, reality remained. As the campaign dust settled, a new question arose: was the development of the coal mine actually a threat sufficient to justify sealing off 1.7 million acres of southern Utah? The PDEIS makes it clear the answer is no. In fact, the Clinton Administration's own agencies determined after a full review, that between killing the mine and approving it, approval was the "preferred alternative."[8]

COMMITTEE JURISDICTION AND SCOPE OF REVIEW

The Committee on Resources has jurisdiction over the Antiquities Act and the creation of the Grand Staircase-Escalante National Monument under Articles I and IV of the U.S. Constitution, Rules X and XI of the Rules of the U.S. House of Representatives, and Rule 6(a) of the Rules for the Committee on Resources (Committee Rules), jurisdiction that is delegated under Rule 6(d) of the Committee Rules to the Subcommittee on National Parks and Public Lands.

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[4] 16 U.S.C. § 431 et seq.

[5] *ID.*

[6] *U.S.* v. *Cappaert,* 508 F. 2d 313 (9th Cir. 1974), *aff'd,* 426 U.S. 128 (1976). For further discussion of Congressional intent regarding the limited application of the Antiquities Act see the House debate at 40 Cong. Rec. H7888 (June 5, 1906). *See also* Report to accompany S. 4698, Rpt. No. 3797, 59th Cong., 1st Sess. (May 24, 1906).

[7] Staff of House Comm. on Resources, *Behind Closed Doors: The Abuse of Trust and Discretion in the Establishment of the Grand Staircase-Escalante National Monument,* H.R. Rep. No. 105–D, 105th Cong., 1st Sess. at 28 (Comm. Print 1997) (emphasis added). Attachment 1.

[8] Warm Springs Project PDEIS 2–1 (Dec. 11, 1995) [hereinafter PDEIS (1995)]. For all references to the PDEIS, refer to Attachment 2 of this report.

The Subcommittee has a continuing responsibility under Rule 6(b) of the Committee Rules to monitor and evaluate administration of laws within its jurisdiction. In relevant part, that Rule states:

> Each Subcommittee shall review and study, on a continuing basis, the application, administration, execution, and effectiveness of those statutes or parts of statutes, the subject matter of which is within that Subcommittee's jurisdiction; and the organization, operation, and regulations of any Federal agency or entity having responsibilities in or for the administration of such statutes, to determine whether these statutes are being implemented and carried out in accordance with the intent of Congress.

In accordance with its Rule 6(d) responsibility, the Committee and Subcommittee Chairmen initiated a review of the creation of the Grand Staircase-Escalante National Monument. The initial review focused on the actions of the Executive Branch in the designation of the Monument. This review resulted in a majority staff report entitled "Behind Closed Doors: The Abuse of Trust and Discretion in the Establishment of the Grand Staircase-Escalante National Monument."[9] The report made several findings supported by evidence discovered by the Committee. The significant findings, as summarized in the report, are as follows:

(1) the designation of the Monument was almost entirely politically motivated to assist the Clinton-Gore reelection effort;

(2) the plan to designate the monument was purposefully kept secret from Americans and the Utah congressional delegation;

(3) the Monument designation was put forward even though Administration officials did not believe that the lands proposed for protection were in danger;

(4) use of the Antiquities Act was intended to overcome Congressional involvement in land designation decisions;

(5) use of the Antiquities Act by the Clinton Administration was planned to evade the National Environmental Policy Act (NEPA). Indeed, its use was specifically intended to evade the provisions of NEPA and other Federal administrative requirements.

As a consequence of this report, the Subcommittee requested a further review of the question whether there was any actual threat posed by development of the Smokey Hollow Mine that was sufficient to justify the use of the Antiquities Act to "protect" Utah's "threatened" national treasures. On November 5, 1997, the Committee sent a letter to Secretary of Interior Bruce Babbitt requesting each version of the preliminary draft environmental impact statement prepared for the Warm Springs Project/Smokey Hollow Mine. The Committee's request was met with the threat of a claim of privilege based upon the "predecisional" nature of the documents, in spite of the fact that *no such privilege applies to Congress*. On November 12, 1997, consistent with the Committee's oversight powers, a subpoena was served on the Department of In-

[9] H.R. Rep. No. 105–D, 105th Cong., 1st Sess. (Comm. Print 1997).

terior and the requested documents were received by the Committee one week later.

The subpoenaed materials included not only the complete text of all versions of the PDEIS but also copies with marginal notes and correspondence regarding the Warm Springs Project. This report, based on a review of the documents provided, was developed for and provided to Members of the Committee on Resources for their information so that Members can undertake their legislative and oversight responsibilities under the Constitution, the Rules of the House of Representatives, and the Rules for the Committee on Resources.

While the earlier staff report demonstrates that the President acted without legal authority in designating the Utah Monument, this Committee report shows that the President's environmental conservation justification was just as illusory.

History of Coal Mining on the Kaiparowits Plateau

The proposed Smoky Hollow Mine was to be located on the Kaiparowits Plateau.[10] The sweeping, arid plateau covers approximately 1,650 square miles of southern Utah. It extends 65 miles north to south, 20 miles across its northern boundary, and 55 miles across its southern boundary. The Plateau contains an original coal resource of 62.3 billion short tons, though only about 30 billion short tons are in areas where geologic conditions are favorable for current underground mining technology. Overall, the Kaiparowits Plateau contains about 1.5 percent of the Nation's total coal resource in the lower forty-eight states. The low sulfur content of Kaiparowits coal creates a relatively low polluting power plant fuel, while the thickness of the seams make it attractive for mining. Except for the Monument designation, the region would be an important source of low-cost, environmentally safe fuel for the Nation's needs in the 21st century.[11]

Coal in the region was first mined by settlers in the late 1800's near the town of Escalante, Utah, with several small mines producing coal for local needs until the early 1960's. In the 1970's, about 12,000 tons of coal were mined from a test mine (the Missing Canyon Coal Mine) which was part of a larger project to develop a 3,000-megawatt coal-burning power plant. Construction plans for the plant were eventually halted due to development difficulties.

The prior incidence of development in southern Utah caused BLM to exclude most of the land in the mining area from its wilderness review. In BLM's initial review three areas (Warm Creek, Nipple Bench, and Head of the Creeks) were excluded because they "clearly and obviously" did not meet wilderness criteria. In BLM's Final Utah Wilderness EIS, released in 1990, the remaining two areas (Wahweap and Burning Hills) were also not recommended for wilderness. This was due to the fact that neither Burning Hills nor Wahweap's geologic features were considered to be of National or regional importance and their potential for energy mineral extrac-

[10] Refer to maps at Attachment 10.

[11] *See* U.S. Geological Survey Open-File Report 96–539, *Preliminary investigations of the distribution and resources of coal in the Kaiparowits Plateau, southern Utah* (1996).

tion outweighed their low wilderness values.[12] *According to BLM's scientists and land managers, the land that would be affected by the proposed coal mine was not, as President Clinton would later say "the most remarkable land in the world.".*[13] Its high potential for future energy development outweighed its low wilderness values.[14]

"ROPE IN THE KAIPAROWITS"

If, as BLM concluded, the Kaiparowits Plateau's greatest value was for energy development and it "clearly and obviously" did not meet wilderness criteria, what is the Plateau doing in a national monument? The answer has more to do with political expediency than environmental protection.

To invoke the Antiquities Act, the President needed to point his finger at a credible threat. The northern end of the Utah Monument (which does arguably have geologic features of significance) was not threatened in the least and could not have been designated standing alone. *The President faced a Catch-22: the geologically and culturally significant lands were not threatened, while the purportedly "threatened" lands were not significant.* Faced with this difficulty in the campaign scheme, the Council on Environmental Quality (CEQ) was ready to drop the project altogether. On March 25, 1996, Kathleen McGinty, Chair of CEQ, expressed her doubts about the planned designation in an e-mail message to T.J. Glauthier at OMB and Linda Lance at CEQ, stating:

> I'm [sic] increasingly of the view that we should just drop these utah [sic] ideas. we [sic] do not really know how the enviros will react and I do think there is a danger of "abuse" of the withdraw/antiquities authorities especially because *these lands are not really endangered.*[15] [Emphasis added.]

Two days later, however, the campaign-style event was back on track. Someone at CEQ had the idea of simply adding the 1,650-square-mile Kaiparowits Plateau to the planned monument package. Doing so would provide a pretext that would allow the Administration to claim the land was "threatened" by the mine and in need of "protection" through a withdrawal. The fact that the supposedly "threatened" area and the "significant" area were separated by a considerable distance was of no importance to the President.

The first mention of this idea is in a March 27, 1996, e-mail message by Tom Jensen at CEQ directed to Linda Lance, T.J. Glauthier, and Kathleen McGinty:

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[12] "BLM concluded that although the Wahweap WSA is in a natural state, only about 10 percent of the WSA has outstanding opportunities for solitude. About 17 percent of the WSA has high scenic values, in six scattered locations. Opportunities for primitive recreation are not outstanding. About 1,000 acres of comparatively old pinyon and juniper trees and 11,700 acres of features with geologic interest in the WSA are not considered to be of National or regional importance." PDEIS 3–89 (1995).

[13] PDEIS 3–89 (1995).

[14] PDEIS 3–89 (1995).

[15] Staff of House Comm. on Resources, *Behind Closed Doors: The Abuse of Trust and Discretion in the Establishment of the Grand Staircase-Escalante National Monument,* H.R. Rep. No. 105–D, 105th Cong., 1st Sess. at 28 (Comm. Print 1997) (emphasis added.) Attachment 1.

> KM[16] and others may want to *rope in the Kaiparowits* and Escalante Canyons regions if this package ultimately doesn't seem adequate to the President's overall purpose.[17] [Emphasis added.]

"Roping in the Kaiparowits" may have given the Administration what it wanted—the appearance of credibility in the designation of the Utah Monument. However, it also meant that the Utah Monument's area had to be expanded to 1.7 million acres. Since there is no actual justification for the inclusion of the Kaiparowits in the Utah Monument, the Utah Monument violates the requirement of the Antiquities Act that the land reserved "shall be confined to the smallest area compatible with the proper care and management of the objects to be protected."[18] And, if the other lands were not appropriate as a stand-alone monument, then "roping-in" the allegedly "threatened" Kaiparowits did not make them so.

The fact that the "roping in" of Kaiparowits was unjustified is clearly demonstrated by the Warm Springs Project EIS, discussed below. It is equally clear, for the Clinton Administration, facts were of little consequence. In its view, the ends justified the means.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) PROCESS FOR THE WARM SPRINGS PROJECT

The Warm Springs Project (Project) was the collective name given to the proposed Smoky Hollow Mine and the facilities necessary to mine and deliver the coal to market, including its power, communication, and loadout facilities, the Fredonia/Hurricane truck maintenance facility, and the Warm Creek/Benchtop Road. Andalex Resources, Inc. (Andalex), the largest federal leaseholder in the southern part of the Kaiparowits coal field, proposed reopening the inactive Missing Canyon Mine and mining 100 to 120 million tons of coal over a 45-year period.

The company began contacting various entities involved with possible development of their leases as early as 1988. In May 1990, it was determined that an environmental impact statement (EIS) should be prepared. An EIS is an analytical document which evaluates potential impacts to the human environment of a proposed course of action and its reasonable alternatives as required by the National Environmental Policy Act of 1969 (NEPA).[19] NEPA compliance is overseen by the Council on Environmental Quality (CEQ), chaired by Kathleen McGinty.

The Bureau of Land Management and the Office of Surface Mining Reclamation and Enforcement (the agencies) were jointly responsible for preparing the EIS, including the determination of content, the level of analysis, and the assessment of any impacts. In addition, private third-party contractors were retained to provide outside expertise and independent analysis. Under the terms of the contract, the third-party contractors were specifically barred from any communication with Andalex or others affected by the EIS.

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[16] Probably Kathleen McGinty.
[17] *Id.* at 29 (emphasis added). Attachment 3.
[18] 16 U.S.C. § 431 et seq.
[19] 42 U.S.C. § 4321, *et seq.*

The NEPA process requires two documents before a significant federal action can occur: (1) a public draft EIS which fully analyzes the proposed actions and their potential impacts; and (2) a final EIS which incorporates public comments to the draft and is used by the decision-maker to make a final determination.[20]

According to the regulations implementing NEPA, the draft "must fulfill and satisfy to the fullest extent possible the requirements established for final statements * * *"[21] This means that a "draft" EIS is expected to be as close to a final as possible, lacking only public comment. The regulations do not address the relative authority of a "preliminary" draft EIS. Though the draft stage for the Warm Springs Project was substantially completed, the document was never released to the public and the effort to finish it was abandoned soon after the designation of the Utah Monument.

Over a period of nearly seven years at an estimated cost to Andalex of $8 million, federal agencies completed *six iterations* of the EIS leading to a preliminary draft environmental impact statement (PDEIS) in December 1995.[22] The 1995 iteration of the PDEIS was distributed to other federal agencies for their comments. Their comments were integrated into the seventh iteration of the PDEIS which was nearing completion at the time the Utah Monument was designated.[23] A member of the EIS team estimated that, but for the designation, the draft EIS would have been completed and ready for public comment in the spring of 1997.[24]

The last complete version of the EIS to be produced before the designation is a comprehensive, 561-page document reflecting nearly seven years of study and analysis. If the Smoky Hollow Mine was indeed the threat alleged by President Clinton, some indication of its danger would be evident in the documents produced by the federal scientists and managers who studied the project for seven years. *No such indication of environmental threat exists*.

Of the PDEIS's eight chapters and five appendices, the most significant is chapter four, entitled "Environmental Consequences." It discusses the anticipated impacts to the human environment, both with the Warm Springs Project (Alternative 1) and without the Project (Alternative 2). The chapter contains an analysis of the impacts of the Project on 14 broad subject areas such as wildlife, geology, paleontology, socioeconomics, hydrology, and recreation. Each potential impact was assessed both in terms of its anticipated magnitude and its anticipated importance to the human environment. The magnitude scale ranges from "none" to "major." The importance scale ranges from "insignificant" to "significant." Impacts were assumed to be insignificant unless otherwise indicated.[25]

It is notable that, as detailed in the earlier staff report, Andalex was required by CEQ to comply with the NEPA process at the same time CEQ—through its Chair, Kathleen McGinty—was advising the President on how to evade NEPA's requirements in the cre-

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[20] 40 CFR § 1502.9 (1997).

[21] 40 CFR § 1502.9(a) (1997).

[22] The dates of the iterations are: Round #1, 10/19/94; Rd. #2, 2/8/95; Rd. #3, 6/6/95; Rd. #4, 8/3/95; Rd. #5, 12/11/95; Rd. #6, 12/12/95.

[23] The seventh iteration began on or around 6/18/96 and was finally abandoned around 11/20/96.

[24] Staff Communication with Warm Springs EIS team member 5/14/98.

[25] For a full definition of "significantly" as used in NEPA, see 40 C.F.R. § 1508.27 (1997).

ation of the Utah Monument.[26] No environmental impact statement was ever conducted or requested by CEQ on the possible ecological or socioeconomic consequences of the Monument, yet Andalex was required by CEQ to fully observe NEPA's provisions.

ECOLOGICAL CONSEQUENCES OF THE WARM SPRINGS PROJECT

Chapter four of the PDEIS *does not list a single major impact associated with development of the Warm Springs Project* that would affect the list of "environmental values" supposedly protected by the designation of the Utah Monument:

1. In his proclamation, President Clinton specifically mentioned the "world class paleontological sites" he wanted to protect from the mine.[27] The PDEIS, however, states that impacts to paleontological resources in the Smoky Mountain area would be "*minor* over the short term, *negligible* over the long term."[28] [Emphasis added.]

2. President Clinton mentioned the important "cultural resources" he wanted to protect from the mine.[29] The PDEIS states that the Project's impact in this area would be "*minor*."[30] [Emphasis added.]

3. President Clinton also mentioned the "spectacular array of unusual and diverse soils" and "cryptobiotic crusts" that he wanted to protect from the mine.[31] Again, the PDEIS states clearly that the Project's impact on soils would be "minor to moderate over the short term, minor over the long term," and the impact on cryptobiotic soils in the Smoky Mountain area would be "minor over both the short and long terms."[32] The impact on soils due to mining-related subsidence were determined to be "*negligible to minor* over the short term and *negligible* over the long term."[33] [Emphasis added.]

4. President Clinton's concerns for the "many different vegetative communities and numerous types of endemic plants" were also exaggerated and overblown. The agencies concluded that "impacts to vegetative productivity and community stability in the proposed Warm Springs Project area with mining-related activities would be *minor* over the short term and *negligible to minor* over the long term."[34] [Emphasis added.]

5. The same holds true for President Clinton's concerns over wildlife. The agencies concluded that "the impacts to wildlife habitat and productivity in the Smoky Mountain area with Project-related activities would be *minor* over the short term and *negligible* over the long term."[35] [Emphasis added.] President Clinton had no credible reason to "protect" Utah's wildlife with a 1.7 million acre land lockup.

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[26] Staff of House Comm. on Resources, *Behind Closed Doors: The Abuse of Trust and Discretion in the Establishment of the Grand Staircase-Escalante National Monument,* H.R. Rep. No. 105–D, 105th Cong., 1st Sess. at 12, 13 (Comm. Print 1997).
[27] Proclamation No. 6920, 61 Fed. Reg. 50,223 (1996).
[28] PDEIS 4–12 (1995).
[29] Proclamation No. 6920, 61 Fed. Reg. 50,223 (1996).
[30] PDEIS 4–118 (1995).
[31] Proclamation No. 6920, 61 Fed. Reg. 50,223 (1996).
[32] PDEIS 4–21,22 (1995).
[33] PDEIS 4–21 (1995).
[34] PDEIS 4–24 (1995).
[35] PDEIS 4–30 (1995).

The "protection" of the above resources was cited by the President as the rationale for the Utah Monument's designation. Given that the underlying rationale was false, no environmental or safety justification for the Utah Monument designation exists. The Clinton-Gore Monument was constructed on a very flimsy foundation.

There were no major anticipated impacts associated with the Warm Springs Project because Andalex, together with the agency scientists and managers on the ground worked with concerned parties at the local, state, and federal level to identify potential problems and create solutions *before* a final decision had to be made. This is a model the Administration *should* have followed when considering the Utah Monument designation.

For example, the initial plan was to locate the mine's surface facilities on the upper benches of Spring Point and Smoky Mountain so that they would be closer to the actual mine site. The agencies and Andalex realized, however, that locating the facilities there would cause impacts to visual resources and require more surface disturbance through road building. They modified the plan and came up with a better solution, thereby reducing the impacts of the Project.[36]

Instead of building the surface facilities on top of Smoky Mountain which would have had a significant impact on the visual resources of the area, the agencies and Andalex agreed to locate the facilities in a 400-foot deep, enclosed part of Smoky Hollow Canyon. According to the PDEIS, because of "the deep, confined nature of this canyon site, the proposed facility complex would not be visible from the WSA's[37] or any other sensitive viewpoints outside Smoky Hollow."[38]

Similarly, the initial alignment of the Benchtop Road was more convenient to the mine but had the potential of causing impacts to areas with cultural and wetland values. Andalex and the Agencies worked together to solve the problem—the route was adjusted and the magnitude of the impacts dropped.[39]

Due to these and similar changes, the agencies were able to accurately predict that:

> *Construction and operation of the proposed Project would have no direct, physical impact on any of the wilderness study areas (WSAs) or the potential designation of wilderness areas in the Smoky Mountain area.*[40] [Emphasis added.]

The conclusion of the federal scientists and managers who studied the Project for seven years is in direct opposition to what President Clinton told the American people.

In addition to solving problems before they arose through changing the Project's design, the agencies and Andalex agreed to a series of *proactive* measures that would have ensured the *avoidance of future problems.*

As a condition of permit approval, Andalex agreed to conduct "intensive field inventories" for the presence or absence of endangered

[36] PDEIS 2–3 (1995).
[37] Wilderness Study Areas.
[38] PDEIS 4–104 1995).
[39] PDEIS 2–4 (1995).
[40] PDEIS 4–11 (1995) (emphasis added).

plant species *two years prior to any disturbance.*[41] Similar conditions were agreed to for the *protection of the desert tortoise, the Mexican spotted owl, and the peregrine falcon.*[42] Alternate routes for roads and methods of coal transport were considered at length and only those with minimal impacts were included in the final analysis. Andalex agreed to the changes up front. Although there were less costly and more convenient ways to mine the coal in their leases, the company participated in the process in an effort *to plan a safe project with minimal impacts.* While lengthy and expensive, the PDEIS is testimony to the success of that process.

As a result of the conditions agreed to by Andalex *there may have been more protection of the area's unique resources, not less, if the Project were approved.* For example, with disapproval of the Project "[n]o information surveys on the primrose or the biscuitroot [both endangered plants] would be obtained from proposed surveys in the Project area."[43] The same goes for proposed wildlife resource environmental education programs, baseline studies on raptor nests, and Mexican spotted owl inventories.[44]

The PDEIS also notes that with disapproval of the Project "[f]ossil resource discoveries and scientific data that could potentially be gained from mining-related survey and mitigation activities would not occur."[45]

The PDEIS shows conclusively that the proposed mine was *not the ecological threat that President Clinton alleged when he designated the Utah Monument.* This conclusion was reached not only by Resources Committee staff, but also by Dave Alberswerth, a Clinton Administration political appointee in the Department of Interior, who noted in an April 9, 1996, memorandum that the two alternatives "appear to indicate no significant difference in environmental impacts for the area of either permitting or not permitting the proposed Smoky Hollow Project."[46]

SOCIOECONOMIC CONSEQUENCES OF THE WARM SPRINGS PROJECT

In addition to misinforming the American people by exaggerating any potentially negative impacts of the Warm Springs Project, President Clinton failed to mention the value of the project to southern Utah and northern Arizona communities. The PDEIS states that "[a]t full production over the life of the Project, the combined direct and secondary employment would create a total of 822 to 832 jobs * * * in Kane, Coconino, and Washington Counties."[47]

The direct jobs would have paid an annual wage of about $35,000, "considerably above prevailing wages in the region," and the secondary jobs would "benefit the region's economy and the residents by expanding the economic opportunities available and increasing the volume of business activity."[48]

The secondary impacts of the Project on the region were also discussed at length in the PDEIS. It was estimated that purchases of

[41] PDEIS 2–2 (1995).
[42] PDEIS 2–2 (1995).
[43] PDEIS 4–127 (1995).
[44] PDEIS 4–128, 9 (1995)
[45] PDEIS 4–123 (1995).
[46] Memorandum from Dave Alberswerth to A. Strasvogel dated Apr. 9, 1996. Attachment 4.
[47] PDEIS 4–61 (1995).
[48] PDEIS 4–61, 65 (1995).

locally available goods and services by the mine and trucking firm would be $7.4 million annually.[49] At full production, "an additional $7.7 million in annual earnings would be realized by workers filling secondary jobs supported by the proposed project."[50]

According to the PDEIS, the "combined direct and secondary wage and salary earnings associated with the proposed Project are projected at about $23.5 million annually."[51] These earnings would have been a significant increase in the affected communities.

As the agencies noted, "the Project-related wages and salaries represent a substantial potential benefit to residents of the three Utah counties and Coconino County, Arizona, where the projected increase is equivalent to about 1.7 percent of the wages and salaries paid in 1992."[52] The effects might have been even greater in Kane County where "the proposed Project could generate up to a 50 percent increase in annual wage and salary payments in Kane County compared with those in 1992."[53]

These and other positive impacts would "benefit the local economies in Kane and Coconino Counties by increasing the economic diversification of the region, by creating higher wages and year-round employment, and by generating additional support for local businesses."[54]

The Project was anticipated to have similarly beneficial impacts on state and federal government fiscal resources. A Utah study concluded that "the net fiscal impact of the proposed Project would be positive over the life of the Project, with indirect revenues accruing to the State projected to average about $2.25 million per year."[55] Direct revenues from the Project accruing to the State of Utah, including sales and use taxes, mineral lease royalties, and State land payments, were estimated to average about $3.3 million annually.[56]

One of the most significant benefits that would have accrued to the State of Utah was the royalty revenue derived from the development of Utah's State Trust Lands. Such royalties are deposited in a permanent trust fund and the income is used to support children's education in the State. Because these royalties are invested and managed in a permanent fund, the Project would have continued to benefit children even after it had ceased operations.[57] Thus, President Clinton's decision to sweep the PDEIS under the rug was to pull the rug out from under Utah's school children.

The mine would have also returned substantial revenues to the federal treasury from sources such as personal and corporate income taxes and excise taxes, as well as the mining-specific revenues. At full production these revenues would include: "$1.75 million annually from the retained share of mineral royalties, $2.15 million in payments into the Federal Black Lung Program, and $375,000 for the Abandoned Mine Land Reclamation (AML) Fund.

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[49] PDEIS 4–65 (1995).
[50] PDEIS 4–65 (1995).
[51] PDEIS 4–65 (1995).
[52] PDEIS 4–65 (1995).
[53] PDEIS 4–65 (1995).
[54] PDEIS 4–67 (1995).
[55] PDEIS 4–72 (1995).
[56] PDEIS 4–73 (1995).
[57] PDEIS 4–76 (1995).

Federal highway user's revenues would exceed $1.24 million annually at full production."[58]

The effect of the Project on local governments was also expected to be positive. According to the PDEIS, [n]et revenues to local governmental units, after accounting for projected increases in public service expenditures, were estimated at $1.8 million annually."[59]

All of these benefits would have accrued to an area already hit hard by the Clinton Administration's efforts to shut down Western resource development. The three Utah counties that would have benefitted most from the Warm Springs Project (Iron, Washington, and Kane) each suffer from subpar incomes (ranging from 26 to 41 percent below National averages) and limited growth.

According to the PDEIS, the cause of these difficulties can be traced to "losses of mining and timbering jobs, and the heavy dependency on tourism-related employment" which is "characterized by lower paying, seasonal and/or part-time jobs."[60]

Towns like Kanab and Fredonia have had to struggle after major employers such as Energy Fuels and Kaibab Forest Products were forced to cut back or shut down due to Clinton Administration policies. Fredonia's logging and mining employment base, for example, "has declined since 1990 by more than 300 jobs and ceased to exist in February 1995."[61] The Project would have benefitted these communities immensely.

Instead President Clinton chose to ignore their needs in his effort to appease the political whims of false environmentalism and partisan political gain.

ABUSE OF THE NEPA PROCESS

The Warm Springs Project case illustrates not only an abuse of the Antiquities Act, it also provides an example of how the Clinton-Gore Administration uses NEPA as both a sword and a shield, abusing and manipulating the process to achieve its political ends.

The decision to "rope in the Kapairowits" was made in CEQ on or around March 27, 1996. Within a week, on April 3, 1996, top staff at BLM were suddenly very interested in the Warm Springs Project PDEIS. An e-mail message from Willie Taylor, Director of the Office of Environmental Policy and Compliance (OEPC),[62] to Terry Martin and Vijai Rai (also of OEPC) expresses this interest:

> I talked to Brooks[63] this afternoon and he was interested in the status of an EIS for coal mining on the Kaparowitz ((?) I know the place, but I am not sure how to spell it!) Plateau. *We know that it is at the PDEIS stage, but need to know how far along they are.* I believe that this is a delegated EIS (between BLM & OSM, but in the AS/LM[64]). *Without "raising any alarms,"* please check on the

[58] PDEIS 4–74 (1995).
[59] PDEIS 4–68 (1995).
[60] PDEIS 3–60 (1995).
[61] PDEIS 3–74 (1995).
[62] OEPC is an office within the U.S. Department of Interior.
[63] Brooks Yeager, Deputy Assistant Secretary for Policy and International Affairs, Department of Interior.
[64] Bob Armstrong, Assistant Secretary for Land and Minerals Management (AS/LM), Department of Interior. The AS/LM oversees the Bureau of Land Management (BLM), the Minerals

> status (delegated vs. non-delegated and time frame for the DEIS) of this EIS and then let's get together to discuss tomorrow (Brooks needs the information tomorrow).[65] [Emphasis added.]

Due to the fact that the Warm Springs Project EIS was delegated and that it had been progressing for seven years without any involvement from Washington, D.C., it would have "raised alarms" if OEPC sought to become involved. So OEPC, under the direction of Brooks Yeager, created the false appearance of being "invited" in as a consultant by the Assistant Secretary for Land and Minerals—*by writing its own invitation.* In an e-mail message from Willie Taylor to Brooks Yeager dated April 4, 1996, Taylor describes the invitation they have written:

> Below is a forwarded message with the information you requested. Vijai drafted the document. While it is longer than the paragraph you requested, I suggest that if you wish to rewrite it you maintain the essential element for this Office [OEPC]: (1) potential for controversy *(a logical reason for our participation)* and (2) *that some mechanism be kept to get any comments made by this Office fully addressed* (since the EIS will continue to be delegated). [Emphasis added.]
>
> As we discussed, any review by this Office at this point is likely to be resented by the bureaus and has the potential to significantly increase the time required for the completion of the PDEIS. As such, if AS/LM sends out a memo like the one we have discussed, he needs to make it clear to his people (in staff meetings, not just through the memo) that *we have been invited into this process*.[66] [Emphasis added.]

Of course, OEPC was not actually invited into the process. They sought involvement because Clinton Administration officials in the Department of Interior knew that the designation of the Utah Monument was in the works and they wanted to ensure that the PDEIS for the Warm Springs Project indeed presented the threat they hoped it did. They used the pretext of controversy ("a logical reason for our participation") as a means to cover their true intention. Once again, as detailed in the earlier staff report, the Administration needed to create a phony paper trail to justify their actions.

OEPC's involvement was improper *not simply* because it fabricated a paper trail and disguised their motives, it was improper because it was a violation of due process. The decision to approve or deny the permits necessary for the Warm Springs Project (the whole reason an EIS was required) rested with the Assistant Secretary for Land and Minerals (AS/LM) Armstrong. If the AS/LM had denied the permits, the applicant (Andalex) could then appeal

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Management Service (MMS), and the Office of Surface Mining Reclamation and Enforcement (OSM).

[65] E-mail message from Willie Taylor to Terry Martin & Vijai Rai dated Apr. 3, 1996, 4:59 PM (emphasis added). Attachment 5.

[66] E-mail message from Willie Taylor to Brooks Yeager dated Apr. 4, 1996, 2:03 PM (emphasis added). Attachment 6.

the decision to DOI's Office of Hearing and Appeals. Jurisdiction over the appeal is also retained by the Secretary of Interior under title 43 Code of Federal Regulations part 4.5. The Office of Hearing and Appeals is organizationally under OEPC, as is the AS/LM.[67]

The inappropriateness of OEPC's effort to ensure that its comments were addressed and incorporated in the predecisional PDEIS lies in the fact that if OEPC is eventually asked to contribute its analysis to an appeal of its own decision they will be unable to offer an unbiased review. Their involvement in effect denies applicants the ability to make meaningful administrative appeals and therefore denies their rights to due process—a Constitutionally protected right.

Once Administration officials gained access to the PDEIS, they were disappointed by what they saw. In an April 9, 1996, memorandum Dave Alberswerth[68] expressed his feelings: "it strains credulity to base a 'go' or 'no go' decision on an analysis of two alternatives which *appear to indicate no significant difference in environmental impacts for the area* of either permitting or not permitting the proposed Smokey Hollow Project."[69] [emphasis added]. He appears to be saying that there should be an alternative that *does* have significant impacts for the area. Alberswerth proposes such an alternative in his memo: "In the minds of many, the potential future development activities that could utilize or improve upon the infrastructure created by this project is the most significant issue with the proposal."[70]

OEPC's involvement also appears to have been largely an effort to "dirty up" an EIS that presented no significant impacts, and therefore no threat, to the environment. Andalex had proposed mining only 100 to 120 million tons of coal over the life of the project. OEPC wanted to include an alternative that would have Andalex mining significantly more coal than Andalex planned. The result of such an alternative would be greater and more significant impacts, especially in the transport of the coal (e.g., more trucks hauling coal). A permit based on an EIS that contained such an alternative would be much easier to deny than the one reflecting Andalex's actual plans that presented minor impacts.

OEPC sent the Utah EIS team its recommendations in a June 6, 1996, memorandum. The suggestions were not taken well. The people on the ground who had been working on the Project for seven years recognized the recommendations for what they were: an effort by Washington to kill the mine. In a June 21, 1996, e-mail message to Willie Taylor, Vijai Rai described their reaction: "[a]s expected, the field personnel are very unhappy. They feel that I was not given all the information that should have been reviewed by me as part of the review process. They feel that had I looked at all the information, some of my recommendations may have been different."[71]

The dispute over whether to add another (more environmentally harmful) alternative to the PDEIS was never finally resolved.

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[67] Please refer to the DOI organizational chart, Attachment 7.

[68] In 1996, the Special Assistant to Bob Armstrong (AS/LM).

[69] Memorandum from Dave Alberswerth to A. Strasvogel dated Apr. 4, 1996 (emphasis added). Attachment 4.

[70] *Id.*

[71] E-mail message from Vijai Rai to Willie Taylor dated June 21, 1996. Attachment 8.

OEPC, led by Vijai Rai, was attempting to have it included (over the opposition of the Utah EIS team) almost until the time of the Utah Monument designation.

On September 16, 1996, two days before the designation, Vijai Rai received an e-mail from Willie Taylor letting him know that he would no longer need to argue OEPC's case. "I just spoke to Dave Alberswerth about the subject review. He wanted me to know that he thought you had done exactly what was asked and that you had done a good job."[72] Exactly what was asked, apparently, was to make every attempt to dirty up the EIS to make the Project appear more threatening than it was.

Soon after receiving his commendation, Vijai Rai wrote a handwritten note to "Geoff" [73] which explained another reason for including a third, more harmful, alternative in the EIS:

> I do wish to reiterate to you once again that the PDEIS should evaluate in depth the environmental and economic issues related to higher annual coal production. If the detailed analysis were to conclude that higher annual coal production is not feasible within the life-of-mine (40 years) Andalex's claims, if any, under *taking* [sic] will be based on a relatively small coal mine. In my view, if the mine plan and/or the permit were not approved, Andalex is likely to sue the Govt. based on the *value* of all the coal under its leases. I believe that the public and the Government will come out better if we were to do the full analysis up front.[74]

Vijai Rai's comments highlight the overall goal of OEPC's last-minute involvement in the Warm Springs Project EIS to kill the Project, not to make it better, and to prepare a litigation weapon, not an EIS. Through manipulating the environmental review, the Clinton Administration was attempting to depress the value of a private company's holdings to improve its own position later in court. Such a manipulation of the NEPA process, using it as both a shield and a sword, is an abuse of both the letter and spirit of the law.

It is ironic that in this case Andalex had more respect for the NEPA process than the Clinton Administration. Chapter 5 of the PDEIS contains the following example:

> A variety of Federal, State, and local agencies, interest groups, and private individuals have been contacted by Andalex since the permitting process for the Smoky Hollow Mine began. Between 1988 and 1996, company representatives contacted over 2,500 people and held more than 500 meetings to provide their explanation of the proposed Project and resolve as many issues and concerns as early in the process as possible. Although these contacts were not made by the Agencies as part of the formal scoping process for the EIS, they did afford the interested public additional opportunities to become familiar with the various components that would eventually make up the Warm

[72] e-mail message from Willie Taylor to Vijai Rai dated September 16, 1996. Attachment 9.
[73] Probably Geoff Webb, a Department of Interior political appointee.
[74] Handwritten note from "Vijai" to "Geoff" dated Sept. 16, 1996: Attachment 9.

> Springs Project. As a result of these initial contacts by Andalex, many of these groups and individuals were more active in their participation during the formal EIS scoping activities conducted by the Agencies.[75]

Andalex, according to the federal agencies themselves, was committed to involving the public in an open process from very early on in the Project. This commitment is exactly what CEQ Chair Kathleen McGinty was speaking of when she testified to the importance of NEPA before the Senate Energy and Natural Resources Committee within days of the Utah Monument designation (September 26, 1996):

> In many ways, NEPA anticipated today's call for *enhanced local involvement* and responsibility, sustainable development and government accountability. By bringing the public into the agency decision-making process, NEPA is like no other statute and is an extraordinary tribute to the American people to build on shared values * * *
>
> [NEPA] gives *greater voice to communities.* It provides the Federal Government an opportunity for collaborative decision-making with state and local governments and the public.[76] [Emphasis added.]

Of course, when the Utah Monument was designated by President Clinton, there was no effort to comply with NEPA. There was no effort to involve the public. In fact, as the earlier staff report shows, there was a calculated effort to evade NEPA and hide the decision from the public.

What did affected communities think of the Utah Monument? What effects will it have on the local and state economies? On the environment? No one knows because the analysis for the Utah Monument designation, required under NEPA, was never done.

Andalex and the agencies, by contrast, spent $8 million and seven years involving the public and assessing the impacts of the Project. It is clear what the ecological and socioeconomic impacts of the decision would have been. It is clear that the Project, in spite of the Clinton Administration's best efforts, was not the "threat" that the President said it was.

Just as it had done when making the decision to designate the Grand Staircase-Escalante Monument, the Administration decided that the EIS on Andalex would say what the Administration needed it to say to justify the Utah Monument. And, as before, the Clinton Administration fabricated a paper trail to rationalize their actions. For the Clinton Administration, the ends of political expediency justified the means of abusing the process and the rights of the people of Utah.

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[75] PDEIS 5–6 (1995).

[76] *Quoted in* Staff of House Comm. on Resources, *Behind Closed Doors: The Abuse of Trust and Discretion in the Establishment of the Grand Staircase-Escalante National Monument.* H.R. Rep. No. 105–D, 105th Cong., Ist Sess. at 8 (Comm. Print 1997).

ATTACHMENT 1

E-mail Message from Kathleen McGinty
to T.J. Glauthier & Linda Lance
March 25, 1996

RECORD TYPE: FEDERAL (EXTERNAL MAIL)

CREATOR:MCGINTY_K@A1@CD

CREATION DATE/TIME:25-MAR-1996 13:21:00.00

SUBJECT:RE: redraft of president's babbit letter and question

TO:T J Glauthier
READ:26-MAR-1996 23:33:25.62

CC:CN=Linda L. Lance/O=OVP
READ:NOT READ

CC:JENSEN_T
READ:NOT READ

CC:BEAR_D
READ:25-MAR-1996 13:25:17.49

CC:CRUTCHFIEL_J
READ:25-MAR-1996 13:33:43.47

CC:BEARD_B
READ:25-MAR-1996 13:42:49.31

TEXT:

i'm increasingly of the view that we should just drop these utah ideas. we do not really know how the enviros will react and i do think there is a danger of "abuse" of the withdraw/antiquities authorities especially because these lands are not really endangered.

ATTACHMENT 2

Chapter 4 & Related Excerpts
Warm Springs Project PDEIS
December 11, 1995

CONGRESSIONAL SUBPOENA
U.S. BUREAU OF LAND MANAGEMENT, KANAB RESOURCE AREA OFFICE

U.S. Department of the Interior

Bureau of Land Management
Salt Lake City, Utah

Office of Surface Mining Reclamation
and Enforcement
Denver, Colorado December 1995

Preliminary Draft
Environmental Impact Statement

WARM SPRINGS PROJECT

KANAB RESOURCE AREA
318 NORTH FIRST EAST
KANAB, UTAH 84741

[OSM Seal]

2.1 DESCRIPTION OF THE ALTERNATIVES ANALYZED

This environmental impact statement (EIS) evaluates two prospective actions that constitute the range of reasonable alternative decisions available to the Bureau of Land Management and the Office of Surface Mining Reclamation and Enforcement (the Agencies) regarding the various plans of operation associated with the proposed Warm Springs Project (the Project), including the Smoky Hollow Mine and associated ancillary facilities.

2.1.1 Alternative 1: Approval of the Applicants' Proposals, With Conditions (the Preferred Alternative)

Under Alternative 1, the Agencies would approve the Applicants' plans of operation for the proposed Project (summarized in Appendix A), subject to conditions identified by the Agencies. These conditions (listed below) are necessary to bring the proposals into compliance with the minimum requirements of the R-645 Coal Mining Rules for the State of Utah (Utah Rules); the Surface Mining Control and Reclamation Act of 1977, as amended (SMCRA); the Mineral Leasing Act of 1920, as amended (MLA); the Department of the Interior's Federal Lands Cooperative Agreement with the State of Utah; the Federal Land Policy and Management Act of 1976, as amended (FLPMA); and all other applicable State and Federal laws, such as the Endangered Species Act of 1973; the National Historic Preservation Act of 1966, as amended; the Archaeological and Historic Preservation Act of 1974; the Archaeological Resources Protection Act of 1979; the American Indian Religious Freedom Act of 1978; the Native American Graves Protection and Repatriation Act of 1990; the Clean Air Act of 1955, as amended; and the Federal Water Pollution Control Act of 1977, as amended (i.e., the Clean Water Act). (See Appendix D for a discussion of the role that Federal and State agencies have in Project approval.)

For the Project, the Agencies' conditions of approval would include, but not be limited to, the following:

- Condition No. 1. — The coal mine operator shall submit a detailed evaluation of the Smoky Hollow life-of-mine area to the Authorized Officer, identifying all areas that have a high probability for future surface disturbances due to mining-related subsidence. This evaluation shall be submitted at least 2 years prior to disturbance. In coordination with the Utah State Historic Preservation Officer (SHPO) and others, the Authorized Officer will identify additional paleontological and cultural resource inventory, evaluation, and mitigation measures that may be required.

- Condition No. 2. — The operator/grantee shall mitigate anticipated development and development-related impacts to paleontological resources of significant scientific interest and/or prehistoric or historic resources, or Native American traditional cultural properties found to be eligible for nomination to the National Register of Historic Places. The operator shall submit a mitigation/data recovery plan to the Authorized Officer at least 2 years prior to disturbance. An approved mitigation/data recovery plan must be successfully completed prior to disturbing the development site(s).

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- Condition No. 3. — If, during development, operation, and/or reclamation activities, previously undiscovered paleontological, prehistoric, or historic resources, or traditional cultural properties of significant scientific interest are discovered, the operator/grantee shall ensure that the resources are not further disturbed and shall notify the Authorized Officer of their nature and location. The operator/grantee shall take all such necessary actions as are required by the Authorized Officer to protect the resource, in coordination with the responsible SHPO. If required, an approved mitigation/data recovery plan must be successfully completed prior to reinitiating development, operation, and/or reclamation activities at the site(s).

- Condition No. 4. — The operator/grantee shall conduct intensive field inventories in that part of John Henry Canyon (i.e., north-facing slopes) that could be affected by the construction of the proposed Benchtop Road for the presence or absence of the Smoky Mountain evening primrose and those Tropic Shale areas that could be affected by the proposed reconstruction of the Warm Creek Road for the presence or absence of the Higgins biscuitroot. A report of findings must be prepared and submitted to the appropriate Federal and State agencies no more than 2 years prior to initiation of disturbance activity. Additional inventory, evaluation, and mitigation measures, if necessary, would be coordinated with the agencies involved.

- Condition No. 5 — The operator/grantee shall comply with all terms and conditions of the biological opinion from the U.S. Fish and Wildlife Service necessary for the continued existence of the Mojave population of the desert tortoise during all development, operation, and/or reclamation activities at the proposed unit-train loadout facility near Moapa, Nevada. Intensive inventories for the presence of desert tortoises or eggs in or around the unit-train loadout facility would be conducted, and a report of findings must be prepared and submitted to the appropriate Federal and State agencies no more than 1 year prior to initiation of disturbance activities. Additional inventory, evaluation, and mitigation measures, if necessary, would be coordinated with the agencies involved.

- Condition No. 6 — The bulk carrier transport company will be responsible for compliance with either Section 7 or Section 10 of the Endangered Species Act of 1973, as amended, and with provisions of the Washington County Habitat Conservation Plan for the threatened desert tortoise if: (1) it is determined that the proposed truck maintenance facility should be located in or around Hurricane, Utah, and (2) desert tortoise habitat is determined to be present in the area.

- Condition No. 7 — The operator/grantee shall conduct intensive field inventories in (1) that part of Wesses Canyon that could experience the surface effects of proposed underground mining (subsidence) at the Smoky Hollow Mine for the presence or absence of the Mexican spotted owl; (2) that part of John Henry Canyon that could be affected by the construction of the proposed Benchtop Road for the presence or absence of the Mexican spotted owl; (3) those areas in and around Lake Powell that could be affected by the proposed reconstruction of the Warm Creek Road for the presence or absence of the peregrine falcon; and (4) those areas in and around Iron Springs that could be affected by activities associated with the proposed Iron Springs unit-train loadout for the presence or absence of the ferruginous hawk. A report of finding must be prepared and submitted to the appropriate Federal and State agencies no more than 1 year prior to initiation of disturbance activity.

Document provided pursuant
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Additional inventory, evaluation, and mitigation measures, if necessary, would be coordinated with the agencies involved.

2.1.2 Alternative 2: Disapproval of the Applicants' Proposals

Under this alternative, the Agencies would disapprove the Applicants' plans of operation for the proposed Project (summarized in Appendix A) because (1) they did not meet the requirements of all applicable Federal and State laws, or (2) they would incur, or had the potential to incur, unacceptable impacts on the human environment.

2.2 OTHER ALTERNATIVES CONSIDERED

Several additional alternatives were identified by both the public and the Agencies during scoping activities for this EIS but are not being fully analyzed for a variety of reasons. The President's Council on Environmental Quality (CEQ) is very specific when it directs Federal agencies to reduce excessive paperwork by using scoping activities to narrow the scope of the environmental impact statement process (CEQ 1978, 40 CFR §1500.4(g)). It also points out that the range of alternatives discussed in an EIS includes all reasonable alternatives, as well as those other alternatives which are eliminated from detailed study. "Reasonable alternatives include those that are *practical* or *feasible* from the technical and economic standpoint and using common sense, rather than simply *desirable* from the standpoint of the applicant" (46 FR 18026-18027). The following alternatives were considered by the Agencies during the preparation of this EIS but were eliminated from further, detailed analysis.

2.2.1 Alternatives to the Proposed Location for Project Components

- Alternate locations for the Smoky Hollow Mine and its surface facilities complex within the 36,419 acres of Federal and State coal reserves currently under lease to Andalex in the Smoky Mountain area were evaluated. In particular, the Agencies reviewed those locations proposed by The Resources Company in the mid-1970s in conjunction with the proposed Kaiparowits Power Project. Environmental issues associated with the development of coal resources from these proposed facilities were addressed by BLM and USDOI in earlier environmental documents (Section 1.5, Scope of the EIS Analysis). The Agencies also reviewed several locations on the upper benches of Spring Point and Smoky Mountain and in the drainages along John Henry, Wesses, Smoky Hollow, and Squaw Canyons for placement of the proposed surface facilities complex for the Smoky Hollow Mine. These locations were initially considered because of their proximity to this proposed life-of-mine area but were eliminated from further consideration by the Agencies as a result of (1) their nearness to, and visibility from, the Wahweap and Burning Hills Wilderness Study Areas; (2) the amount of excess waste rock that would be generated during rock slope development; and (3) the additional access road and powerline infrastructure that would be required to develop and eventually operate a facility at those particular sites.

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- Several alternatives to the Applicants' proposed alignment for the Benchtop Road were evaluated by the Agencies. One alignment, proposed by Utah DOT in the 1970s for access to Nipple Bench as part of the Kaiparowits Power Project, would have left U.S. Hwy. 89 northwest of Big Water, crossed Wahweap Creek north of the Wahweap Warm Water Fish Hatchery, traversed the Entrada Cliffs, and followed the existing Nipple Creek Road up Nipple Creek Canyon to the base of Nipple Butte. Environmental issues associated with the development of this access road were addressed by BLM in earlier environmental documents (Section 1.5, Scope of the EIS Analysis). The Agencies considered other routes that would have used the existing Head of Creeks Road along the edge of the Wahweap and Burning Hills Wilderness Study Areas to connect Nipple Creek Road with the existing Smoky Hollow Road, or followed Mustard Canyon to the top of Nipple Bench. In addition, routing adjustments were evaluated that would have placed the road in the vicinity of both Nipple and Tibbet Springs, had the road descend into John Henry Canyon near the head of the canyon or had the road parallel the streambed from the top of Smoky Hollow Canyon.

  These alternatives were determined not to be reasonable for a variety of reasons: (1) the potential for increased impacts to areas with cultural and wetland values; (2) the nearness to, and visibility from, the Wahweap and Burning Hills Wilderness Study Areas; (3) the increased visibility of certain stretches from U.S. Hwy. 89, Big Water, or the Glen Canyon NRA; or (4) increases in engineering complexity and cost of construction. In addition, many of these alternatives would have involved a longer roadway, thereby increasing the amount of construction and the subsequent amount of surface disturbance.

- Several possible alignments for the proposed 138-kV power transmission line from its tap point to the proposed mine were evaluated. They included several possible routes proposed as part of the Kaiparowits Power Project, as well as (1) branching off from the Garkane line on the flank of Flat Top Mountain, southwest of Big Water, and following a direct route to Nipple Bench; (2) branching off of the UP&L line west of Big Water and crossing Wahweap Creek near the Wahweap Warm Water Fish Hatchery; and (3) using the proposed alignment as far as Big Water, but placing the line adjacent to either the existing Warm Creek Road through the Glen Canyon NRA or the proposed Benchtop Road over Nipple Bench. In addition, routing adjustments were evaluated that would have either placed the tap point along U.S. Hwy. 89 or placed the powerline in the immediate vicinity of the Wahweap Warm Water Fish Hatchery or in areas containing cultural resources.

  These alternative alignments were eliminated from further consideration because of Agency concerns with cultural resources, and the visibility of the alignments, or parts of the alignments, from U.S. Hwy. 89, the Glen Canyon NRA, and the Wahweap Wilderness Study Area. The lack of available access for powerline construction and the increase in engineering complexity and construction costs involved were also considered. Environmental issues associated with powerline right-of-way development in the Smoky Mountain area were addressed by BLM in earlier environmental documents (Section 1.5, Scope of the EIS Analysis).

- Several alternative locations for the proposed unit-train loadout facility near Moapa were evaluated. Two sites along the Union Pacific railline (north of Moapa and east of the powerplant, and along Weiser Wash, east of Moapa) were eliminated because of local industrial siting concerns. A third site, along

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the Union Pacific railline in The Narrows segment of the Muddy River Canyon, was eliminated because of the difficulty in designing a facility that could take advantage of the limited road access but which would lie outside of the Muddy River floodplain.

- The Agencies evaluated alternate locations for the unit-train loadout facility in the Iron Springs area, including several parcels of private and private/public land north of the Iron Springs Road along Iron Springs Wash, and a disturbed part of an abandoned iron mining site adjacent to the Iron Springs Road. Concerns about floodplains, wetlands, and alluvial valley floors eliminated the first group of locations from further consideration, and legal concerns associated with possible hazardous material issues eliminated the other.

- The Agencies initially evaluated an additional (i.e., third) unit-train loadout facility that could have been located near either Williams or Flagstaff, Arizona. This loadout, along the main railline for the Santa Fe Railroad, would have provided access to those additional coal markets served by that rail system. The possibility of a third loadout in Arizona was eliminated from further consideration when it became obvious that truck and highway load limits in the State of Arizona would have required the operator to haul smaller, nonstandard loads of coal. As a result, the proponent withdrew the right-of-way applications for those sites.

- Several hypothetical locations for the truck maintenance facility were examined by the Agencies. These included several other private land parcels in Hurricane and Fredonia, as well as locations along the proposed truck route in or near Big Water, Kanab, Hildale/Colorado City, Cedar City, and Moapa. The truck maintenance facility locations identified in the EIS are hypothetical for the purposes of the impact analysis. The actual location and number of facilities would be selected by the specific contractor chosen to provide truck haul and maintenance services. Alternate locations were eliminated because they were located in areas already receiving social or economic impact from the Project, or were not conveniently accessed from both truck routes.

2.2.2 Alternatives to the Proposed Method and Route of Coal Haulage

- Several alternate methods for the transportation of the produced coal to prospective markets were evaluated. Coal transport by airplane, conveyor belt, boat, or private haul road were eliminated as being obviously unfeasible. Possible development of either a railroad or a slurry pipeline for coal haulage (to the south, through the Navajo Indian Reservation connecting with the existing Santa Fe railline near Flagstaff, Arizona, or to the west, connecting with the existing Union Pacific railline near Cedar City, Utah) was determined to be unreasonable owing to Agency concern over wilderness, environmental, water, and Native American issues, as well as the engineering, cost, and maintenance problems associated with these alternatives.

- The use of either a conveyor or a rail system to transport coal from the mine to a truck loadout facility near Big Water was evaluated because of the potential to eliminate the need for either the reconstruction of the Warm Creek Road or the construction of the Benchtop Road. Several factors made these options unreasonable, including Kane County's desire to improve vehicular access in the

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Smoky Mountain area; the continuing need for workers and equipment to gain access to the Smoky Hollow minesite; the need for another new loadout facility; the complexity of the engineering that would be required; the amount and cost of construction material; and the lack of any reasonable reduction in the predicted level of surface disturbance or other environmental impact from that of the proposal.

- Several alternate highway routes were suggested for use by trucks hauling coal between Big Water and the Iron Springs and Moapa unit-train loadouts. The Agencies evaluated alternate routes that would have utilized existing roadways: following State Street in Hurricane, rather than making two 90-degree turns along Utah Route 59; avoiding La Verkin by routing all traffic to Interstate-15 along Utah Route 9; or, avoiding west Hurricane by routing all traffic through La Verkin along Utah Route 9/17. The Agencies also evaluated alternate routes that would have required new highway construction on the part of the proponent, Utah DOT, Iron County, Washington County, or Kane County: a new private haul road bypassing Kanab to the south; a new private haul road bypassing Hurricane to the south; several possible realignments of Utah Route 59 east and south of Hurricane (extend the Hurricane grade around town, follow Gould Wash, follow the Utah/Arizona State line from the Hildale Industrial Park, or pass through Warner Valley); reconstruction of the Old Sheep Road to bypass Hurricane Hill and access either Utah Route 9 or Utah Route 17 to the north of Hurricane; and/or, a new Iron County road leaving Interstate-15 at the Hamilton Fort Interchange and passing west of Cedar City. The Agencies eliminated these routing options, both existing and new construction, from further consideration because of (1) the presence of an adequate, federally funded public highway system and (2) the lack of planning, funding, or identified need on the part of the government entities involved that would be essential for expansion of the public highway system.

2.2.3 Alternatives to the Proposed Method for Providing Power or Telephone Services for the Smoky Hollow Mine

- The Agencies evaluated the possibility of generating power onsite for use in the underground mining operations in order to eliminate the need for construction of a new 138-kV power transmission line. The option of using either solar panels or diesel engines to supply the permanent power needs at the Smoky Hollow Mine were eliminated because of the tremendous size of both the facility and the various support operations that would be required to provide a continuous supply of 12,500-volt power and assure safe underground operations. The potential for impacts to air quality, visual, aesthetic, cultural, and wildlife resources made these alternatives unreasonable. Environmental issues associated with the use of diesel power at the Smoky Hollow minesite were addressed by BLM in earlier environmental documents (Section 1.5, Scope of the EIS Analysis).

- The Agencies also evaluated the possibility of burying the 138-kV power transmission line to avoid the visual impacts of an aboveground installation but eliminated this option from further consideration. Although possible, this approach to powerline installation would be contrary to established industry practices for such a large power transmission line. In addition, the small gains from a reduction in visibility would not offset the higher levels of disturbance that would be necessary, along with the associated impacts to sensitive resources in the area. This would be particularly true in Nipple, Tibbits, and John Henry Canyons, where extensive sections of the line would need to be placed in solid rock.

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- A recommendation to install a wire-based telephone communication system within the 138-kV power transmission line corridor to eliminate the need for the Spring Point reflector and the Mustard Point repeater facilities was reviewed by the Agencies. Installing the system aboveground, on the same poles used for the powerline, would be contrary to established industry practices for such a large power transmission line, primarily due to interference and power transmissivity problems. A buried communication line, within the powerline right-of-way or any other possible corridor, would introduce the same problems with increased levels of disturbance and the associated impacts to sensitive resources that were discussed above concerning the possible burying of the powerline. The Agencies determined that the possible advantages did not outweigh the negative aspects of the alternative.

- Construction of the powerline and the microwave communication facilities using helicopters was suggested to reduce the amount of surface disturbance necessary to gain reasonable road access. The Agencies determined that the extensive road network already present in and around the areas proposed for the powerline and microwave rights-of-way made this alternative unnecessary. Past reclamation success in the area suggests that these areas could be successfully reclaimed to be substantially unnoticeable.

2.2.4 Other Alternatives

- The no action alternative, or the refusal on the part of the Agencies to act on the applications that have been submitted, was evaluated and determined not to be reasonable, considering the various applications associated with the Project. The Applicants have fulfilled the requirements of applicable laws and filed the necessary application packages with the Agencies. Therefore, a decision (action) by the Agencies on whether or not to approve the various applications is required by law.

  However, for the Agencies, the impacts to the human environment of implementing the no action alternative would be essentially the same as those of disapproving the Applicants' proposals (Alternative 2). Thus, for the purpose of this EIS, these alternatives are considered equivalent, and the no action alternative is not analyzed further.

- The alternative to approve the proposed mining plan for the Smoky Hollow Mine without additional conditions was evaluated and determined to be inappropriate. The Utah Rules, SMCRA, and the Department of the Interior's Federal Lands Cooperative Agreement with the State of Utah require the Secretary of the Interior to approve, conditionally approve, or disapprove the mining plan submitted by Andalex for the Smoky Hollow Mine (Section 1.1, Purpose and Need for an Environmental Impact Statement). However, if additional conditions are necessary for the mining plan to be acceptable under the applicable regulations, approving it without those conditions would not be a reasonable alternative.

- Alternatives that would have analyzed various combinations of approval or disapproval of Project elements were evaluated and determined to be unnecessary. The Agencies anticipate that the decision to approve or disapprove either the mining plan or any one of the various rights-of-way that make up the Warm Springs Project would be made by the specific Authorized Officer for that particular action, based on the merits of the specific proposal. The full range of impacts associated with the Project

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(maximum and minimum) are encompassed within the approval/disapproval scenarios contained in the current analysis. Selective disapproval of certain "key" elements, such as the mining plan, would of course eliminate the need for most of the other elements, a situation in which the resulting impacts would be similar, if not identical, to Alternative 2: Disapproval of the Applicants' Proposals. These alternatives are not analyzed further.

- Several alternatives to the development of the coal resources at the Smoky Hollow Mine have been suggested. They would essentially provide energy at some other location or through some means other than coal mining, thereby eliminating the need to develop these specific coal resources. Many of these issues were addressed by the Department of the Interior and the Bureau of Land Management in earlier environmental documents (Section 1.5, Scope of the EIS Analysis). These issues are inappropriate in the present analysis because Andalex holds valid leases for coal resources in the Smoky Mountain area, including those within the proposed Smoky Hollow life-of-mine area, and has the legal right to develop those resources, subject to full compliance with all applicable Federal and State laws. Therefore, these alternatives are not analyzed further.

- An alternative that would have evaluated development of all or, at least, a larger portion of the 200-400 million tons of Federal and State coal contained in the 36,419 acres currently under lease to Andalex in the Smoky Mountain area was eliminated from further analysis by the Agencies. As required by Federal law, Andalex has provided the Agencies with a resource recovery plan that would mine all 17 of their leases (the entire leasehold) over a 100- to 150-year period, based on currently available coal quality and geologic data. The Agencies anticipate that Andalex will eventually establish a Logical Mining Unit (LMU) in the Smoky Mountain area that would combine their minable coal reserves into a single administrative unit. The life-of-mine area described in Appendix A of this EIS (Section A.2.1, Smoky Hollow Mine) is one scenario of an LMU at the Smoky Hollow Mine, but other possible scenarios do exist. An LMU would allow mining activities at the Smoky Hollow Mine to represent due diligence for that area during a sustained coal removal period of 40 years. At the time the LMU is formed, the Agencies also expect Andalex to relinquish any excess lease acreages to the Federal Government that would not be part of the LMU and that could not be mined prior to expiration of the leases involved. Additional coal quality and geologic data must be obtained before the final LMU boundaries can be established by Andalex in cooperation with BLM. That activity will not be required for several years (i.e., prior to the end of the 10-year lease term).

  The Agencies also anticipate that Andalex probably would eventually require modifications to its Federal coal leases, logical mining unit, mining plan, or permit to mine coal at some point during the life of the mine. Actual conditions encountered during underground mining operations routinely force changes in the overall mining program to ensure that both maximum economic recovery and environmental protection occurs. Federal regulations recognize this problem and allow for such modifications as new leases, emergency bypass leases, incidental boundary changes, etc., to meet the needs of the coal operator. As with the LMU, additional coal quality and geologic data must be obtained before final boundaries for these various modifications can be established or are even determined to be necessary. That activity may not occur for as many as 30 to 40 years (i.e., when the underground workings reach the outer limits of the current mining plan).

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For the purposes of this analysis, the Agencies chose to limit the period for coal removal at the proposed mine to 40 years. Evaluating any large development proposal in the coal industry for periods longer than 40 years is difficult, if not impossible, because of changes in coal marketing, mining technology, and energy production and consumption trends. A variety of economic review parameters (the rate-of-return analysis, present value determinations, etc.) and the limited design life of the equipment necessary to operate the various facilities are all factors in these evaluations. The Agencies are aware that coal mining activity at the Smoky Hollow Mine would probably extend beyond 40 years, so long as the coal reserves continue to be available and the coal market continues to be strong. Limiting the coal removal period to 40 years for the purpose of this analysis follows standard industry planning practices, aligns the mining proposal with the maximum allowable limit for an LMU once it is established, and allows the Agencies to evaluate the impacts of project development, coal removal and transport, mine closure, and bond release within a reasonable time period.

The Agencies have reviewed the resource recovery and protection plan submitted by Andalex as part of their permit application package and are satisfied that maximum economic recovery of the Federal coal resource would take place under the current proposal. Proposed coal removal activities at the Smoky Hollow Mine would not isolate or bypass any Federal reserves, preventing them from being recovered in the future. The Agencies are also fully aware that future expansions of mining activity for LMUs, new leases, or other routine modifications beyond the current proposal, if and when they occur, would require additional approvals from a variety of Federal and State agencies along with the environmental, technical, and economic evaluations that must accompany those decisions. Environmental issues associated with the development of coal resources contained within a 47,768-acre composite of Federal and State lands in the Smoky Mountain area were addressed by BLM and USDOI in earlier environmental documents (Section 1.5, Scope of the EIS Analysis).

- Alternatives that would evaluate the impacts from unplanned or premature closure of the Smoky Hollow Mine were evaluated. The Agencies determined that those impacts, primarily social and economic, would be essentially the same whether mine closure occurred in year 10 or at any other time during the 41- or 42-year life of the proposed operation. The Agencies chose to limit the coal removal period at the proposed mine to 40 years, specifically for the purpose of analyzing the impacts of mine closure within a reasonable time period. The social and economic impacts of mine closure are analyzed in Chapter 4 (Section 4.2.9, Socioeconomics).

- An alternative that would have evaluated coal development at the Smoky Hollow Mine at a higher production rate, possibly as high as 8 million tons per year, was eliminated from further analysis by the Agencies. Andalex and other companies control sufficient coal reserves in the Smoky Mountain area to support higher levels of production, either from this mine or from other new mines. However, neither Andalex nor any other coal company has given any indication that additional development activities are likely to be requested in this area within a reasonably foreseeable time period. The uncertain long-range market for coal and the limitations associated with the existing transportation infrastructure would prevent the development of these reserves at a rate substantially higher than that currently proposed.

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Production from the Smoky Hollow Mine is proposed to average about 2.5 to 3.0 million tons per year, with actual production rates expected to fluctuate between 2.0 and 3.0 million tons per year in response to mining conditions, unavailability of equipment, marketing, and/or worker productivity. The Agencies are aware that any substantial increase in annual production at the Smoky Hollow Mine over an extended period would require a proportionate increase in the number of employees, the amount of equipment required, the number of trucks needed to deliver the coal to unit-train loadouts, and the extent of impacts to the environment. Depending on the increase, it could require the addition of one or more longwall mining systems at a cost of over $20 million for each longwall and additional mine, road, and power facilities to meet the additional access, ventilation, and coal storage needs. Future expansions of the mining activity beyond the current proposal, should they occur, would require approvals from a variety of Federal and State agencies, along with the environmental, technical, and economic evaluations that must accompany those decisions. Environmental issues associated with the development up to 12 million tons of the coal resource per year at five separate coal mines in the Smoky Mountain area were addressed by BLM and USDOI in earlier environmental documents (Section 1.5, Scope of the EIS Analysis).

- Alternatives that would require the use of room-and-pillar mining methods throughout the Smoky Hollow Mine, rather than the proposed combination of room-and-pillar and longwall methods, were determined to be unreasonable due to the increased costs and decreased levels of coal recovery that would result. Environmental impacts associated with room-and-pillar methods were determined to be comparable to those associated with longwall methods over the long term. (See Appendix C for a discussion of the methods and equipment associated with the underground mining of coal.)

- An alternative that would require the use of coal silos at the truck and train loadout facilities, rather than allowing open coal piles, was determined to be unreasonable due to increased cost and visual resource concerns and the very limited improvement in erosion and air quality that could result. About 100,000 tons of crushed coal could be stored in the primary stockpile at the loadout at any one time (Appendix A). With an average capacity of 10,000 tons of coal per silo, each loadout would need at least 10 silos to maintain their design storage capability.

- Alternatives that would require partial-day or daytime-only coal hauling operations, rather than permitting the 24-hour-a-day operations currently proposed, were eliminated from further consideration. The increased number of trucks per hour required to deliver 2.5 to 3.0 million tons of coal during a restricted time period would cause a proportionate increase in Agency concern for the noise, safety, and traffic congestion issues already present along the haul route. The Applicant's proposal involves the use of the existing, federally funded public highway system; a system that does not place restrictions on the time of day or, with the proper permits in place, the type of traffic allowed.

- An alternative that would require Kane County to completely reclaim the Warm Creek/Benchtop Road after operations cease at the Smoky Hollow Mine was eliminated from further consideration because it is contrary to Kane County's stated intentions for the road. Specifically, Kane County intends to "provide and maintain public road access into the Smoky Mountain area in fulfillment of its responsibilities to provide safe and convenient accommodation of traffic associated with the

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management and responsible utilization of public land resources within the county to benefit the interests of Kane County," (excerpt from the Resolution of the County Commission of Kane County, Utah; November 16, 1993). Kane County's need for the proposed road would extend far beyond the end of any mining-related activity at the Smoky Hollow Mine.

2.3 COMPARISON OF ALTERNATIVES

Table 4-17 provides a complete listing, by discipline, of all impact comparisons from the Chapter 4 analysis. Table 2-1 provides a selected listing of those comparisons that include the more important impacts. Summaries of the comparisons follow:

- Alternative 1 (approval of the Applicants' proposals, with conditions): If the Agencies choose this alternative, significant impacts could be expected to occur to certain aspects of the socioeconomic resource. Impacts that have the potential to become significant include certain aspects of the paleontological, transportation, noise, socioeconomic, and cultural resources. Certain aspects of the geology and topography, paleontological, soils, vegetation, wildlife, visual/aesthetic, and cultural resources could be irretrievably lost.

- Alternative 2 (disapproval of the Applicants' proposals): If the Agencies choose this alternative, impacts to the resources of the area would continue at existing levels. Certain aspects of the paleontological transportation, socioeconomic, and cultural resources have the potential to become significant. Certain aspects of the geology and topography resource would be irreversible. Certain aspects of the paleontological, vegetation, wildlife, and cultural resources could be irretrievably lost. Incremental impacts resulting from development of the various Project elements would not occur.

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ENVIRONMENTAL CONSEQUENCES

CHAPTER 4

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4.1 ASSUMPTIONS OF THE IMPACT ANALYSIS

In order to perform the impact analysis contained in this chapter, certain assumptions were made. The following assumptions are for the purposes of this analysis only and are not intended to be the final projection of future activities that may or may not materialize in the area over the next 54 years.

4.1.1 Assumptions for the Approval Alternative

The assumptions used by the Agencies to perform the impact analysis for the approval alternative include:

- The Permit Application Packages submitted by Andalex for mining and mining-related operations associated with the proposed Warm Springs Project, with conditions attached, are in compliance with applicable State and Federal laws.

- The proposed Project facilities, mine layout, and development schedules described in Appendix A may be refined by the Applicants upon final detailed engineering, acquisition of permits/authorizations, and implementation.

- Final reclamation of some permanent facilities, such as the Warm Creek/Benchtop Road, the UP&L 34.5-kV power distribution line near Iron Springs, and the truck maintenance facility, may not take place when other final reclamation activities would be expected to take place (year 41 or 42 of the Project).

- The proposed truck maintenance facility locations at Fredonia and Hurricane are hypothetical for the purposes of this analysis. The actual location and number of facilities would be selected by the specific private contractor chosen to provide truck haul and maintenance services for the Project.

- Mining and reclamation technology would not change substantially throughout the life of the Smoky Hollow Mine.

- Labor, equipment, and/or market shortages/surpluses would not materially change projected levels of development associated with the Project.

- Impacts to the coal supply or demand of market coal (regional or otherwise) are beyond the scope of this EIS.

- The life of the Smoky Hollow Mine would be about 54 years: 1 to 2 years for premining development, equipment installation, and limited coal recovery and delivery; 40 years to recover and

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deliver 100 to 120 million tons of coal; 2 years to complete necessary postmining reclamation activities; and at least 10 years to obtain final bond release.

- Activities associated with the proposed Warm Springs Project, as described in Appendix A, would be initiated in 1998.

- Final reclamation would be initiated when a disturbed area was no longer needed for either mining or production operations. No reclaimed acres would be available for postmining land use until the end of the mine life (e.g., postmining land use at the surface facilities complex, 138-kV power transmission line, microwave communication sites, and the Moapa and Iron Springs unit-train loadouts would begin after final bond release at the Smoky Hollow Mine).

- The local short-term impacts of the Project are those that would occur during the period from premining development through final bond release at the Smoky Hollow Mine (i.e., about 54 years). Long-term impacts of the Project are those that would persist beyond or occur after final bond release.

- An irreversible and irretrievable commitment of resources would occur when resources were consumed, committed, or lost as a result of the Project-related activities. The commitment of a resource would be "irreversible" if Project-related activities started a "process" (chemical, biological, and/or physical) that could not be stopped. As a result, the resource, or its productivity, and/or its utility would be consumed, committed, or lost forever. Commitment of a resource would be considered "irretrievable" when Project-related activities directly eliminated the resource, its productivity, and/or its utility.

- Qualitative terms are used to describe the anticipated magnitude of impacts and, where appropriate, the anticipated importance of impacts to the human environment. The terms "major," "moderate," "minor," "negligible," and "none" describe magnitude. "Significant," "potential to become significant," and "insignificant" describe importance. Impacts are assumed to be insignificant unless identified otherwise.

- Cumulative impacts are defined as collective impacts of the Project when considered in conjunction with other past, present, and reasonably foreseeable activities. (These activities are described in Appendix B of the EIS.) Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

- The geographical limits for the analysis of probable impacts in this EIS primarily encompass the acreages directly involved with the proposed Smoky Hollow life-of-mine area, the Benchtop and Warm Creek Road corridors, the proposed 138-kV power transmission line corridor, the microwave

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communication sites, the truck maintenance facility sites, the truck haul routes, and the Moapa and Iron Springs unit-train loadouts. Larger geographical limits were established in some areas to allow for required analyses and assessment of impacts. They include:

Geology and Paleontology. The geologic rock units of concern evaluated during the analysis of the Smoky Mountain area included all members of the Middle Jurassic to upper Cretaceous Age formations, with emphasis on the Upper Cretaceous Straight Cliffs Formation. Geographically, the area of analysis ranged from Escalante Bench on the south to Nipple Bench on the north and from Wahweap Creek on the west to Rees Canyon on the east.

Surface Water Hydrology. The impact analysis considers that area drained by the major surface drainages and their tributaries that cross the proposed Smoky Hollow life-of-mine area, including Weese's Canyon, Smoky Hollow Canyon, and Squaw Canyon. The impact analysis for the construction of the proposed Warm Creek/Benchtop Road includes those drainages that are potentially affected by disturbance activities including Warm Creek Canyon, John Henry Canyon, Tibbet Canyon, and Wahweap Creek. The impact analysis also considers the potential surface water impacts to the drainages that cross or are immediately adjacent to the proposed loadout locations. At the proposed Iron Springs loadout, the potential impacts to Iron Springs Creek are considered, and at the proposed Moapa loadout, the potential impacts to California Wash are considered.

Groundwater Hydrology. The impact analysis in the Smoky Mountain area concentrated on the strata in the Straight Cliffs and Navajo Sandstone Formations. Geographically, the area of analysis ranged from Escalante Bench on the south to Nipple Bench on the north and from Wahweap Creek on the west to Rees Canyon on the east. The impact analysis in the Iron Springs and Moapa areas included the potential aquifers that underlie the proposed loadout locations.

Wildlife. The wildlife study areas relevant to the proposed Project components allowed for an adequate buffer area surrounding each component. These buffer areas were typically resource dependent and were intended to reflect the limits that wildlife resources may be influenced by proposed Project development.

Socioeconomics. The geographic extent of the socioeconomic study area for the proposed Warm Springs Project encompasses six counties in three States: Kane, Washington, and Iron Counties in Utah; Clark County in Nevada; and Coconino and Mohave Counties in Arizona. However, Mohave County, Arizona, one of the six counties, is not being considered for location of any of the proposed facilities and would only be affected by traffic on highways through a sparsely populated area and, thus, is not addressed further. Incorporated municipalities of primary interest in the study area include Fredonia and Page, Arizona; Moapa and Glendale, Nevada; and the communities of Big Water, Cedar City, Hurricane, Kanab, La Verkin, St. George, and Toquerville, Utah. Although

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indirect and induced impacts would be expected to occur outside the study area, their geographic dispersion and magnitude relative to the underlying baseline environmental conditions allow them to be excluded from further analysis.

Visual Resources. A limit of 15 miles was established as the outside limit of potential visual impact for all proposed project facilities except the 138-kV power transmission line; a limit of 5 miles was established as be the outside limit of potential adverse visual impact for the proposed 138-kV power transmission line.

Cultural Resources. The geographical area of study for solicitation of Native American concerns relative to culturally or religiously sensitive localities was expanded to include all tribes in the greater southern Utah, northern Arizona, and southeastern Nevada region because of the fluidity of cultural boundaries over time, particularly during the historic period.

Additional assumptions for specific resource analysis include:

Transportation. The transportation analysis assumes that all loaded coal trucks (100%) would go to one of the proposed unit-train loadouts; either the Iron Springs loadout or the Moapa loadout. All coal trucks would go to the proposed truck maintenance facility location, which hypothetically would be located in either Fredonia or Hurricane.

- Coal haul trucks would operate continuously over 24-hour periods. Mine employees, loadout employees, and truck maintenance employees would be on shift operations of three shifts per day. Andalex would not sponsor employee transportation; the mine employees, loadout employees, and truck maintenance facility employees would provide their own transportation. The vehicle occupancy for employee traffic would average 1.3 employees per vehicle.

- The existing haul route roadway lineage, intersection geometry, and traffic control, plus any improvements currently under construction or immediately planned, would remain in place throughout the life-of-mine. Current accident rates per vehicle mile traveled would continue throughout the life-of-mine. Routine maintenance and reconstruction of area roads would occur on a regular basis.

Socioeconomics. The socioeconomic analysis assumes that either the hypothetical Fredonia truck maintenance facility or the hypothetical Hurricane truck maintenance facility would be built, but not both, (i.e., all of the impacts related to a truck maintenance facility would occur because of development at one site).

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- Baseline economic and demographic projections for Utah counties have been assembled by the State of Utah (Utah GOPB 1993). The current analysis contains no assessment or evaluation of the economic or demographic assumptions underlying those projections.

- Projected population and employment effects of the proposed Project are characterized at two points in time: the point at which maximum employment occurs during premining development and the point at which mining production levels and operations employment stabilize for the life-of-mine.

- Local residents would be hired for 21 percent of the new jobs generated directly and indirectly by the Warm Springs Project. This may be a conservative (low) employment figure.

- The number of secondary jobs created within the study area for each direct Project-related job is represented by an average employment multiplier of 0.84. This means that 84 new jobs would be created in the secondary job market for every 100 new direct Project-related jobs. Additional jobs would be created outside the study area, but the economic impact on other economies would be so widely dispersed that the effects would be negligible compared to existing and projected conditions.

- The average population-to-employment ratio for in-migrating workers would be 2.56. This means that the total population would increase by 2.56 people for every worker who newly establishes residency in the study area to take a direct or secondary job associated with the proposed Project.

- The residency distribution of in-migrating workers reflects detailed assumptions made for each proposed Project facility. Impacts on a particular community may reflect the combined effect of in-migration due to more than one proposed Project facility.

- The fiscal and public facilities and services analysis addresses the local governments and communities identified as being the most vulnerable to impacts from the proposed Project. Therefore, the local governments and communities discussed may differ from impact topic to impact topic.

- Intergovernmental revenue sharing mechanisms would remain unchanged over the life of the mine. A key example is apportionment of truck registration fees and motor fuel taxes among the States in which Project coal haul trucks would operate.

- The contract sales price of coal produced by the Project would average $19.50 per ton (1994 dollars) for the life-of-mine.

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Air Quality. Assumptions used in the air modeling analysis were conservative. For the haul truck analysis, TSP emission rates derived from AP-42 formulas were doubled. TSP emissions included engine exhaust emissions. For the two-lane roads, emissions from 350 trucks per day were modeled, inasmuch as 175 trucks would be loaded per 24-hour day. For the four-lane road, 175 trucks on each side of the median were modeled. Forty-nine days of worst-case meteorological data were used for the haul truck modeling study. Seventy-two days of worst-case meteorological data were utilized for input to the surface facility/mine models. Emissions estimates were derived from EPA-approved standard emission factors.

- The analysis includes impacts of Project activities at the surface facilities complex and loadouts that require permits from the governing State agency, as well as an assessment of impacts on public areas due to coal truck traffic on haul routes. The responsible State agency has reviewed and accepted the modeling impact analyses submitted with the air permit applications for the facility.

Visual Resources. The visual resource analysis assumes that the 138-kV power transmission line construction would not involve physical disturbance to cliff/escarpment faces; construction would be accomplished by driving around these prominent and visually sensitive features.

- To provide a standardized basis for the visual assessment, the BLM Visual Contrast Rating process was utilized. On public lands with natural dominated landscapes that had not been inventoried by BLM for visual resources, an interim VRM Class designation was assigned for study purposes. At the two privately owned hypothetical truck maintenance facility locations, visual impacts were assessed on the basis of compatibility with the character and condition of the existing landscape.

Wilderness. Wilderness characteristics in the Smoky Mountain area have been extensively inventoried and evaluated by BLM and others (e.g., Utah Wilderness Coalition). This EIS does not recreate the work already completed and published concerning wilderness in the proposed Warm Springs Project area, which includes BLM Utah Final Initial Wilderness Inventory, 1979; Utah BLM Statewide Wilderness Final Environmental Impact Statement, 1990; and Utah Wilderness Coalition's Wilderness at the Edge, 1990. This EIS does not resolve the differences between various wilderness recommendations, including the differences between BLM's recommendations, HR Bill 1500, and others.

4.1.2 Assumptions for the Disapproval Alternative

The assumptions used by the Agencies to perform the impact analysis for the disapproval alternative include:

- The Warm Springs Project would be placed on indefinite hold, and the permit application packages for the Smoky Hollow Mine and all right-of-way applications would be withdrawn.

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- Existing resources in the proximity of the Project would not be disrupted by any activity related to coal mining. They would, however, be subject to the continuing human and natural processes, including those uses and management activities currently being applied. To accurately evaluate the impacts of disapproving proposed mining-related activity on these resources, analysis of impacts under this alternative examine, to the extent possible, the effects of current management and natural processes on existing resources through the year 2052, the year assumed for final bond release (1998 plus 54 years).

- The life-of-mine area and ancillary facility sites would be managed for grazing, wildlife habitat, and recreation:

  - Livestock stocking rates and management practices would continue at current, premining levels.

  - Wildlife management and recreation opportunity would correspond to current agency management plans for the area.

- The area surrounding the Project would be maintained in its current or proposed use:

  - No new coal mines would be developed.

  - State, county, and county-maintained roads would be subject to existing maintenance schedules and current use levels.

4.2 IMPACTS OF APPROVAL UNDER ALTERNATIVE 1

4.2.1 Geology and Topography

4.2.1.1 Impacts to Topography in and Around the Smoky Mountain Area with Mining-Related Subsidence

The effects of subsidence from proposed longwall mining can be described by three impact zones (Appendix C, Figure C-3): the fragmented zone, the fractured zone, and the deformation zone. The fragmented zone, which would fracture and collapse, would begin immediately above the active mined-out area and may extend up to as much as 90 to 120 feet in the overburden above the coal extraction area. The next zone, the fractured zone, may extend 450 to 600 feet above the extraction area, where rocks of the overburden in this zone would fracture and deform. The deformation zone would extend upward from the fracture zone to the surface. In the deformation zone, it is expected that the rocks would deform without

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major fracturing, but some cracking may develop at the surface. Most of the cracks and all other surface subsidence effects are expected to weather and close during the first few months following subsidence.

The surface effects of subsidence depend on characteristics of the overburden, depth of mining below the surface, height of the coal removed, mine layout, and mining direction. For the proposed Project, the average overburden depth would be 650 feet (Andalex Resources, Inc. 1994a); the average mining height would be 9 feet (varying from 5 to 12 feet depending on seam thickness); the subsidence factor would be 65 percent; and the angle of draw would be about 30 degrees. (Appendix C provides a discussion of these subsidence parameters.) The estimated angle of draw is based on experience with similar rocks (Upper Cretaceous) in other mining areas in Utah. The maximum average subsidence that could be expected to occur is nearly 6 feet (65 percent of 9 feet). This may vary from 4 to 8 feet, depending upon the mining height in any particular area. The subsidence in any particular trough (the surface expression of subsidence above the mined-out area) would be deepest above mined out areas, graduating to little or no subsidence about 375 feet beyond the maximum extent of coal extraction (based on the angle of draw, as discussed in Appendix C). The bulking factor (the property of fractured rocks to increase in overall bulk volume, as described in Appendix C) may result in subsidence that would be less than what might be predicted from the mining height and subsidence factor relationship.

Mining-related subsidence has the greatest potential to alter drainage patterns and impact slope stability where steep slopes, weathered materials, and unstable ground conditions exist within the subsidence trough. The lowering of the ground surface, sloughing of slopes, and related filling of drainages and alteration of drainage patterns would be most evident around the bases of canyons. Sloughing of slopes related to subsidence, and resulting changes, would be an acceleration of natural erosional processes that act on the topography above the coal removal area. Erosion and weathering would continue to occur at natural rates in all areas beyond the limits of subsidence activity.

Slope instability and failure, rock toppling, and alteration of topography and drainage patterns have the greatest potential to occur where thinner overburden, steep slopes, weathered materials, and unstable structural conditions exist over the subsidence trough. The overburden over the proposed mining panels ranges from 100 feet in the southern parts of the life-of-mine area to over 800 feet on Smoky Mountain and as much as 1,790 feet under Ship Mountain Point (Appendix A, Figure A-4). Thicker overburden would lessen the surface effects of subsidence because those surface effects would be dominated by the characteristics of the deformation zone. The effects of subsidence in these areas of thick overburden are expected to be characterized by gentle troughs with cracks and slumps above the limit of the mined-out coal. In areas where the overburden is not as thick, the deformation zone would be smaller and the surface effects would be dominated by characteristics of fragmented or fractured zones.

The effects of subsidence would predominantly occur over the short term because the failure of rock above a mined-out panel would occur immediately after support is removed. These effects would be expected to

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occur for 2 to 5 years after the specific coal panel has been mined. Subsidence would occur in the southern and eastern sections of the life-of-mine area for the first years of the mine life. Subsequent subsidence would occur in the western and northern parts of the mine (Appendix A, Figure A-4). After mining activity ceased in a particular area, limited subsidence activity would continue for several more years as the barrier pillars between panels eventually are crushed by the weight of the overburden. Most subsidence-related activity would be complete within 5 to 10 years in a particular area after mining had ceased. Subsidence effects may continue for many years beyond the end of the mine life in some areas. The surface effects of barrier pillar failure are expected to be less than those effects that would be expected over mined-out voids.

Andalex would conduct monitoring of the subsidence at the surface (Appendix A, Section A.3.5.6.4, Subsidence). Photogrammetric measurements over mined-out areas would allow for calculation of site-specific subsidence parameters (angle of draw, subsidence factor, extent of subsidence). Knowledge of site-specific parameters and visual monitoring for cracks and other surface effects would enable the mine operators to close off areas to access and ensure the safety of the public until the cracks or other effects are repaired or close naturally.

Following mine closure, subsidence would continue for several years in some areas until the mined area stabilized, after which, subsidence should cease. Subsidence monitoring would continue for a minimum of 10 years during this period. Topographic, hydrologic, and erosional changes due to subsidence would be permanent and would continue after mine closure.

The Agencies conclude that impacts to topography in and around the life-of-mine area with mining-related subsidence would be minor to moderate over the short term and negligible to minor over the long term. The impacts on topography would be irreversible.

4.2.1.2 Impacts to Mineral Resources in and Around the Smoky Mountain Area with Project-Related Activities

Because of coal seam thickness and extensiveness in the Smoky Mountain area, longwall mining would be the most efficient and technologically advanced method of coal extraction for this project. However, because of height, quality, and environmental limitations (Appendix C), some coal within the area would not be removed. This coal would be lost as a resource, given present technology, because the coal not minable through longwall mining would not be recoverable. Longwall mining cannot recover coal that remains in a seam that is thicker than the longwall mining height (12 feet). Also, coal that is less than 5 feet thick cannot be mined. Coal that is reduced in quality because of rock content or other factors that prevent it from meeting contract specifications would not be mined. Coal in barrier pillars, underlying other mined seams, or with shallow overburden under drainages would also not be recovered. It is estimated that within

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the life-of-mine-area, 200 to 300 million tons of the coal resource would not be recoverable. Other coal reserves located outside the life-of-mine area would remain available for future recovery.

The extraction of coal and subsequent subsidence may interfere with the potential development of oil and natural gas. Oil and gas exploration would be precluded during coal mining operations and access could be limited over subsidence areas until activity ceases. Current oil and gas leases are present within the life-of-mine area; however, there are no active oil- and gas-producing fields in the nearby vicinity, and there are no current applications for drilling permits in the life-of-mine area.

If, during the operation of the mine, an applicant wishes to drill an oil or gas well in the proposed mining area, the applicant would be required to comply with BLM policy concerning issuance of new oil and gas permits on coal lands. New oil and gas leases on coal lands would be issued with no surface occupancy (NSO) or controlled surface use (CSU) stipulations, which would restrict access and modify oil and gas well production facility design until coal operations had been completed (BLM 1994).

The presence of the Warm Springs/Benchtop Road and the 138-kV power transmission line could enhance the potential for further development of coal, oil and gas, and other mineral resources. Improved access and the availability of electricity in the area could facilitate exploration in the Smoky Mountain area and possible development of resources. This enhancement would not apply to areas beyond the Smoky Mountain area.

The proposed Project could create a demand for the gravel resources identified at Wahweap Creek, the nearest source of gravel. Gravel would mainly be used in road construction. It is not anticipated that the proposed Project would require a large amount of local sources of gravel, inasmuch as most material is expected to be obtained from within the Warm Creek/Benchtop Road ROW.

The Agencies conclude that impacts to mineral resources in and around the Smoky Mountain area with Project-related activities would be minor over the short term and negligible to minor over the long term. Removal of coal would be an irretrievable commitment of the resource.

4.2.1.3 Impacts to Topography Along the Warm Creek/Benchtop Road with Construction and Reclamation Activities

The proposed construction of the Benchtop Road or the reconstruction and realignment of the Warm Creek Road would introduce permanent changes in topography along segments of the proposed route. The effects would be most noticeable in those parts of the road in the Nipple Creek, John Henry, Warm Creek, and Smoky Hollow Canyons. Construction of bridges, relocation of the road up out of the streambed, placement of riprap, installation of culverts, blasting to facilitate removal of solid rock, and numerous cuts and fills would be necessary to meet the design criteria. In areas of steep canyon topography, the cuts

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would be more noticeable than on flatter terrain. Impacts on flatter terrain, particularly on Nipple and Tibbett Benches and along the Warm Creek Road from Big Water to Warm Creek would be limited to a raised roadbed and small cuts and fills.

The proposed construction of the Warm Creek/Benchtop Road would increase access into the area and may increase off-road-vehicle (ORV) impacts to the terrain. After construction, disturbed areas outside the maintained segment of the road would be regraded, revegetated, and blended into the surrounding topography, except in areas of talus or rock outcrops. Also, excess cut-and-fill material would be removed from the right-of-way as much as possible.

Kane County's plans to provide long-term public access to Smoky Mountain suggests that changes to topography along the proposed Warm Creek/Benchtop Road would be permanent and remain in place following mine closure. Access into the area provided by the proposed Warm Creek/Benchtop Road could increase ORV use in the area and the potential for increased disturbance in the future.

The Agencies conclude that impacts to topography along the Warm Creek/Benchtop Road with construction and reclamation activities would range from minor to moderate over both the short and long terms.

4.2.2 Paleontology

4.2.2.1 Impacts to Paleontological Resources in the Smoky Mountain Area with Mining-Related Activities

Construction of Project components and mining-related activities have the potential to cause the loss of paleontological resources. Excavation and construction related to Project components would occur on or disturb geologic formations that may contain fossil resources. If sensitive or important resources, particularly previously unidentified fossil deposits, are disturbed as a result of mining-related activities, the scientific value of those resources could be lost. Construction of the proposed Warm Creek/Benchtop Road would allow greater access to areas that are relatively inaccessible at present. Increased access and the resulting increase in people, including mine workers, in the area could result in ORV damage, vandalism, and unauthorized collecting of important fossils. Fossil collection by amateurs could result in the loss of valuable scientific information. Paleontological deposits potentially located under the proposed Warm Creek/Benchtop Road would be made permanently inaccessible by construction of the road.

Construction of Project facilities and operation of the mine may result in the discovery of fossil resources not known at present. Excavation for the construction of the surface facilities complex and other components of the proposed Project might uncover important fossils that are not readily apparent because of their placement under surficial deposits. Because of their previously unidentified nature, however, these resources could also be damaged by mining-related activities.

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Coal extraction may result in the discovery of fossils associated with the Cretaceous environment during which the coal was deposited. Other Cretaceous coal-bearing strata in Utah, similar to that located at the proposed Smoky Hollow Mine, have yielded dinosaur tracks and bones (Lockley and Jennings 1987). Such fossils would not be apparent until the coal is actually mined. Additional scientific study of paleontologic resources would help to more accurately define the area's potential for important fossil resources. The original position of the proposed Benchtop Road was also located near fossil localities, including one important pelecypod deposit identified during paleontological surveys along the route (Madsen 1994b, d). The road, as currently proposed, has been rerouted to avoid as many of these sensitive fossil localities as possible. The 138-kV power transmission line is located near the formation in which pelecypod deposits were found; however, the line would span the area but would not disturb the formation.

Although the Warm Creek Road crosses fossil-bearing formations considered to have important sensitivity, no fossils have been identified along the road or in areas of realignment (Madsen 1994c). The road is located near previously identified fossil localities, but proposed construction activities would not interfere with these localities.

Monitoring during construction activities, agency notification of potential disturbance areas, and mitigation of paleontological resources would help prevent the loss of previously unidentified and scientifically valuable fossils during construction (Chapter 2, Section 2.1.1, Alternative 1: Approval of the Applicants' Proposals, with Conditions (the Preferred Alternative)). After cessation of mining, there would continue to be impacts to paleontological resources resulting from ORV traffic, vandalism, and natural erosional processes.

The Agencies conclude that impacts to paleontological resources in the Smoky Mountain area with mining-related activities would be minor over the short term and negligible over the long term, with the potential to become significant if important fossil deposits are discovered during Project construction and operation, or if vandalism, collection, or destruction of potentially important fossil deposits occur. Loss of paleontological resources would be irretrievable.

4.2.2.2 Impacts to Paleontological Resources in the Iron Springs and Moapa Areas with Mining-Related Activities

Construction of the proposed Iron Springs and Moapa unit-train loadouts may cause the loss of paleontological resources. The Iron Springs and Muddy Creek Formations have the potential to contain important fossils that are not readily observable now (Madsen 1994f; Reynolds and Scott 1992). Excavation and construction could cause impacts because of the potential loss of scientific data. If sensitive or important resources, particularly previously unidentified fossil deposits, are disturbed as a result of mining-related activities, the scientific value of those resources could be lost. The increase in people in the areas as a result of loadout operation activities could result in unauthorized important fossil collecting and vandalism. Fossil collection by amateurs could result in the loss of valuable scientific information. Once

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mining ceased, the loadout facilities would be dismantled, and no further mining-related effects would be expected to occur; however, ORV traffic, amateur collecting, vandalism, and natural erosional processes could continue to have impacts.

Construction of mine facilities and operation of the mine may result in the discovery of fossil resources not known at present. Excavation for the construction of loadout facilities may uncover important fossils that are not readily apparent because of their placement under surficial deposits. Because of their previously unidentified nature, however, these resources could also be damaged by mining-related activities.

No important fossils have been found at the Iron Springs loadout site (Madsen 1994e). Four fossil localities have been identified within the boundaries of the Moapa unit-train loadout site, some of which may be important since they contain vertebrate fossils (Reynolds and Scott 1992). Agency notification of potential disturbance areas and mitigation of important paleontological deposits would prevent the loss of scientifically important data. Construction activities would be monitored to ensure that important paleontologic localities are not disturbed and, where feasible, facilities within the site would be located to avoid disturbance of identified localities (Appendix A, Section A.3.5.5, Archaeological and Paleontological Conservation). If facilities cannot be located to avoid sensitive sites, appropriate mitigation measures would be taken to ensure that scientific data are not lost. Identified localities near the loadout facilities would be protected from vandalism and unauthorized collection while the facility is in operation.

The Agencies conclude that impacts to paleontological resources in the Iron Springs and Moapa areas with mining-related activities would be negligible over both the short and long terms, with the potential to become significant if important discoveries of previously unidentified fossil deposits are made during construction, or if unauthorized collecting or vandalism occurs. Any loss of paleontological resources would be irretrievable.

4.2.3 Hydrology

4.2.3.1 Impacts to Water Quality and Quantity in the Smoky Mountain Area with Mining-Related Construction, Operation, and Abandonment

Construction of the surface facilities complex and other operations within the life-of-mine area could impact surface water and groundwater quality and supplies by: altering surface drainages; increasing sediment loads in surface waters; and increasing the potential for the accidental release of hazardous materials, such as diesel fuel, into surface water and groundwater. Operation of mine facilities could divert surface flow through the surface facilities complex, lead to the potential formation of acidic mine drainage, allow infiltration of sewage into the groundwater from the septic system, and lead to the potential for fuel spills into surface water. Mine closure and reclamation could result in increased sediment loads to surface water in reclaimed areas prior to the reestablishment of vegetative cover. Construction of the proposed Warm

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Creek/Benchtop Road could temporarily increase suspended solids in runoff in the vicinity of the route. Up to 180 acre-feet of water for road construction purposes would be obtained each year over a period of 1 to 2 years from the subsurface gravels (alluvium) of Wahweap Creek by pumping water from sumps excavated in the alluvium (Appendix A, Sections A.2.4.2, Warm Creek Road, and A.2.4.3, Benchtop Road).

During construction and reclamation of the surface facilities complex area, sediment control structures (straw bales and/or silt fences) would be placed in strategic areas, such as in drainage ditches and at the base of reclaimed slopes, to contain sediment materials. Topsoil storage piles would be seeded and bermed to reduce erosion during mine construction and operation.

Given the elevated amounts of total suspended solids already present in surface runoff in the area, particularly during flood events, construction activities are expected to have a minimal effect on sediment quantities in surface runoff. The surface drainages in the surface facilities complex area would be routed to divert natural drainage under the complex. Culverts would be installed underneath the facilities to divert drainage from Smoky Hollow, as well as side drainages. The culverts would be designed to accommodate a 100-year, 6-hour precipitation event. During mine closure reclamation, these culverts would be removed and the drainages regraded and restored. Internal drainage within the surface facilities complex area would be separate from the natural drainage system. (See Appendix A, Section A.3.4.3, Backfilling and Grading.)

Surface runoff within the surface facilities complex would be diverted and routed to a sedimentation pond (Appendix A). Water that collects in the impoundment would be released after suspended material had settled. Controlled release of impoundment water would be permitted and conducted in accordance with applicable Federal and State regulations governing the surface discharge of water.

Fuel storage and handling during mine operation would be conducted according to the Spill Prevention Control and Countermeasure (SPCC) Plan for the mine. The SPCC Plan provides for secondary containment for the aboveground fuel storage tanks and proper handling of smaller storage containers. Underground storage tanks would not be used to store fuel. The onsite sedimentation pond would also help prevent the accidental discharge of spilled hazardous materials (such as fuel) into the surface drainages.

Septic systems would be designed, installed, and operated according to applicable rules and regulations. Septic systems are not expected to have an impact on groundwater, owing to the lack of groundwater in the alluvium underlying the surface facilities.

Increased acidity of surface and groundwater as a result of acid mine drainage and acidic leachate from the coal stockpile is not expected to be a problem because of the coal's low sulfur content, the region's low precipitation levels, the carbonate content of the coal and overburden, and the limited availability of groundwater in the strata that would be affected by mining (Andalex Resources, Inc. 1994a).

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Following mine closure, all structures at the surface facilities complex would be removed, drainages would be returned to their natural channels, and reclamation would be completed. Kane County would retain the Warm Creek/Benchtop Road as permanent access into the Smoky Mountain area. Surface and groundwater quality and quantities are expected to return to premining conditions.

Construction of the paved Warm Creek/Benchtop Road would reduce erosion in the Warm Creek drainage and consequently reduce the amount of sediment available for erosion. The use of silt fences and placement of riprap would minimize the amount of sediment eroded into surface water. Reclamation and revegetation after construction would also minimize erosion (Appendix A, Section A.2.4.2, Warm Creek Road). Given the elevated amounts of total suspended solids already present in surface runoff in the area, construction activities are expected to have a minimal effect on sediment quantities in surface runoff. The use of water from Wahweap Creek would require the regular withdrawal of small quantities during the 1 to 2 years of road construction but should not create any shortages of water in this perennial stream. All applicable water rights and permits have been obtained.

The Agencies conclude that impacts to water quality and quantity in the Smoky Mountain area with mining-related construction, operation, and abandonment would be minor over both the short and long terms.

4.2.3.2 Impacts to Water Quality and Quantity in and Around the Warm Creek Drainage System

Subsidence resulting from coal mining has the potential to alter the flow of groundwater, disrupt the flow of seeps and springs in the life-of-mine area, and change the pattern of surface runoff, which could, in turn, affect the infiltration of water into the ground (Price et al. 1987). Temporary seeps or springs could be created until subsidence cracks heal. Subsidence also has the potential to affect the quality of water by diverting subsurface flow and allowing groundwater to come into contact with strata, such as Tropic Shale, which could leach constituents and cause an increase in TDS and acidity (Dunrud 1984). Permeability increases may be experienced as tensional stresses open cracks and fractures and accentuate the flow of water. Once subsidence cracks have weathered over, this effect should be minimal and would be of relatively short duration. Some changes in recharge and flow characteristics would be permanent. Because subsidence has the potential to alter surface drainage patterns, it could indirectly increase erosion in canyon walls. The effects of subsidence would generally be limited to strata above mined-out areas. Subsidence resulting from mining has the potential to disrupt perched groundwater that may be present in the strata above the coal.

Perched groundwater present in the life-of-mine area has generally not been found in large enough quantities to be usable for drinking water or livestock watering (Andalex Resources, Inc. 1994d, 1995). Of the nine seeps located within the life-of-mine area, Seeps S-1 through S-8 are fed by the Drip Tank Member, whereas

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the Upper Wesses Seep is fed by the Wahweap Formation. Only four of these seeps have been observed to be potential sources for wildlife use (Andalex Resources, Inc. 1994d, 1995). Given the limited flow, the seeps do not appear to be very usable as sources of water and do not appear to contribute measurably to regional tributary flows. The only spring located within the life-of-mine area, Wesses Spring, is also fed by the Drip Tank Member and has been identified as a source of water for both livestock and wildlife (Andalex Resources, Inc. 1994d).

Mining-related subsidence has the potential to disrupt the rock continuity and divert the water flow associated with Wesses Spring and the nine seeps. Tensional stresses could open cracks and fractures that would affect the flow of water. However, the discharge from these water sources is low, and, if they were to be disrupted of diverted, the effects would be limited to the immediate area adjacent to the source. The depth of overburden in the areas where the seeps and spring are located is such that the subsidence effects should be minimal. Following the initial deformation of subsidence, ultimate settlement would tend to compress tensile fracture widths to some extent, and partial recovery of premining conditions could be anticipated.

The Drip Tank and Needle Eye Water Springs are located outside the proposed life-of-mine area on the eastern flank of the Smoky Mountain Anticline. Although the Drip Tank Spring is also fed by the Drip Tank Member, it lies more than a mile to the north of the proposed subsidence area and is on the opposite flank of the anticline from the nearest subsidence activity. It should not be affected by mining operations. The Needle Eye Water Spring, however, lies less than a quarter of a mile east of the proposed subsidence area and is fed by parts of the Drip Tank strata and the drainage basin that could potentially be affected by subsidence. As with Wesses Spring, above, tensional stresses could open cracks and fractures that would affect the flow of water at this spring. However, the depth of overburden in the area should ensure that subsidence effects would be minimal.

The 14 North and 14 South Springs and the Tibbet Canyon Sandstone Seep, which are sourced by the Tibbet Canyon Member, are located stratigraphically below the coal seams to be mined. They lie outside the subsidence area; therefore, no effects from subsidence on these sources of water are expected to occur. The Section 10 Seep that emanates from the John Henry Member is not expected to be affected by proposed mining activities, as it lies south of John Henry Canyon and is therefore hydrologically separate from the John Henry Member strata that could be affected by mining.

Five other springs and seeps of interest have been identified in the Smoky Mountain area outside the proposed life-of-mine area. Most lie on the southwestern flank of the Smoky Mountain Anticline, are hydrologically isolated from the proposed subsidence area by topography and intervening drainages, and would not be affected by mining-related subsidence activity (Chapter 3, Figure 3-6).

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Although the springs and seeps located above or near the subsidence area are not believed to be at substantial risk, they would be monitored to determine what, if any, effects occur as a result of mining and subsidence. Alternate water sources would be provided for wildlife if mining activities result in the disruption of any water sources used by wildlife (Appendix A, Section A.3.5.3, Wildlife Enhancement).

Subsidence would continue to affect the life-of-mine area for several years after the cessation of mining. After the support pillar areas have subsided, subsidence effects on surface and groundwater would be reduced. If subsidence has caused any change in surface drainage patterns, these patterns may remain. The topography of the area may be permanently changed by subsidence. Over time, settling would compress fracture widths, and partial recovery of premining hydrologic conditions would be anticipated.

The Agencies conclude that impacts to water quality and quantity in and around the Warm Creek drainage system with mining-related subsidence would be minor over both the short and long terms.

4.2.3.3 Impacts to the Navajo Aquifer in the Smoky Mountain Area with Mining-Related Activities

The Navajo Aquifer would be tapped as a water source for the proposed mine, with the well expected to provide 550 acre-feet per year during the life of the mine. Use of the water supply well would reduce the amount of water available in the aquifer and would cause a lowering of the potentiometric surface of the aquifer in the vicinity of the well. This lowering of the potentiometric surface would be at a maximum at the well and would decrease away from the well in a radial zone of drawdown until, at some distance from the well (about 8 miles), there would be no effect (Appendix E, Section E.2, Hydrology Drawdown Calculations).

The amount of recoverable water in the Navajo Aquifer in the area is estimated at 140 million acre-feet, with annual discharge from wells south and west of the Kaiparowits Plateau at 1,500 to 1,700 acre-feet (Blanchard 1986). Given that the nearest water supply wells in the Navajo Aquifer are 12 to 15 miles from the proposed surface facilities complex, the proposed withdrawal of water from the aquifer should have minimal effect on these wells or on the total amount of recoverable water in the Navajo Aquifer. Since the Navajo Sandstone, in which the aquifer is found, does not crop out within 8 miles of the proposed surface facilities complex, the well should have little effect on natural discharge (seeps and springs) from the aquifer. None of the surrounding surface drainages are sourced by the aquifer. Andalex has received all necessary water rights and permits for construction and use of the well. The Navajo Aquifer lies at least 2,000 feet below the coal to be mined. Because of the depth to the aquifer, extraction of coal and related surface operations should not have a direct effect on water quality in the aquifer. Following mine closure, use of the well would cease, and potentiometric surface levels and water quantities available for use in the area should gradually return to premining levels.

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The Agencies conclude that impacts to the Navajo Aquifer in the Smoky Mountain area with mining-related activities would be minor over both the short and long terms.

4.2.3.4 Impacts to Water Quality and Quantity in and Around the Iron Springs and Moapa Areas with Mining-Related Activities

The proposed unit-train loadouts in Iron Springs and Moapa would obtain water from public offsite sources and would haul water into the sites (Appendix A, Section A.2.5.2, Loadout Facilities). Construction activities at the unit-train loadouts could alter drainage flow, increase sediment loads in surface waters, and increase the potential for fuel spills. Operation of mine facilities could divert surface flow through the unit-train loadout facilities, lead to the potential formation of acidic drainage from the coal stockpiles, allow infiltration of sewage into the groundwater from the septic tank system, and lead to the potential for fuel spills into surface water. Mine closure and reclamation could result in increased sediment loads to surface water in reclaimed areas prior to the reestablishment of vegetative cover.

During construction and reclamation of the unit-train loadout facilities, sediment control structures (straw bales and/or silt fences) would be placed in strategic areas, such as in drainage ditches and at the base of reclaimed slopes, to contain sediment materials. All runoff onsite would be diverted into sedimentation ponds to prevent sediment and coal fines from entering the watershed during operation of the loadouts. Topsoil storage piles would be seeded and bermed to reduce erosion during mine construction and operation (Appendix A, Section A.2.1.2.3, Ancillary Facilities).

The low sulfur content of the coal and its low acid-generating potential reduces the possibility of acidic drainage from the coal storage pile that could potentially impact surface water or groundwater quality. Fuel would be stored in aboveground tanks with secondary containment to prevent spilled fuel from entering the watershed. Septic systems would be designed, installed, and operated according to applicable regulations. Following completion of mining operations, all structures at the unit-train loadouts would be removed, and the areas would be reclaimed. (See Appendix A, Section A.3.4, Reclamation Activities, for a complete discussion on loadout closure.) Surface flow is expected to return to premining conditions.

The Agencies conclude that impacts to water quality and quantity in and around the Moapa and Iron Springs areas with mining-related activities would be negligible to minor over both the short and long terms.

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4.2.4 Soils

4.2.4.1 Impacts to Soil Productivity in the Warm Springs Project Area with Mining-Related Surface Disturbance

Development activities associated with the Warm Springs Project would result in the disturbance and alteration of in-place, previously undisturbed, native soils from clearing and construction activities; excavating, salvaging, and storing growth medium; cut and fill/grading preceding construction of roads; development of storage areas and facilities; and initiation of exploration drilling programs.

Surface disturbances related to construction, operation, and reclamation have the potential to affect the productivity of soils throughout the project area. Soil structure, including the character and texture of the soil, would be permanently altered as a result of soil salvage, stockpiling, and redistribution activities. Soil textures and organic matter and chemical concentrations in soils would be altered during soil salvage operations and reclamation by the mixing of surface and subsurface soil layers. Soil development, including soil structure and profile development, would be temporarily impeded during construction and operation.

Stockpiling of soil materials would temporarily reduce soil micro-organism populations, soil fertility, seed viability, nutrient levels, and soil development. Soil biological activity could be substantially reduced or eliminated during stockpiling as a result of anaerobic conditions created in deeper parts of the stockpiles depending upon the length of time that the soil is stockpiled. After soil redistribution, biological activity would slowly increase and eventually reach presalvage levels.

Wind and water erosion of exposed and disturbed soils may be accelerated during construction and operation activities and would continue into reclamation until vegetation became reestablished. Excavation, transportation, and placement of growth medium could also promote the breakdown of soil aggregates into loose soil particles and increase the potential for wind and water erosion on topsoil stockpiles. Blading and/or excavation of remaining subsoil materials to achieve desired grades and soil conditions for the surface facilities complex area could result in steeper slopes on some exposed soils, mixing of soil materials, and the additional breakdown of subsoil aggregates. Soil compaction may result from vehicle and equipment traffic during construction, operation, and reclamation.

Construction of the proposed Warm Creek/Benchtop Road would also create improved access into the area and, as a result, recreational off-road vehicle (ORV) travel could increase in the area. ORV traffic would result in additional erosion and compaction of soils, leading to losses in soil productivity. Recovery of soil productivity along power transmission line access roads may be hindered, depending on the frequency of use for maintenance or upgrade of the powerline during the period of time the powerline is in use. Also, recovery may be impaired by the unauthorized use of the access roads for recreation.

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Erosion control and reclamation of disturbed areas would occur throughout the Project area (Appendix A, Section A.3.4, Reclamation Activities). Reclamation would include those areas previously disturbed by past road building and facility construction, as well as areas of new disturbance. Currently unreclaimed soils disturbed during past mining operations in the surface facilities complex area would be reclaimed (Appendix B, Section B.2.12, Missing Canyon Coal Mine).

Erosion problems currently associated with segments of the existing Warm Creek Road underlain by Tropic Shale should be alleviated by the construction of a permanent road. The installation of culverts to direct runoff and the cutting back of slopes to lessen gradients to slow runoff would help reduce erosive effects of water in these areas. Reseeding of disturbed sites in these areas would also enhance erosion control.

At the onset of construction, topsoil at the sites would be salvaged and stockpiled. During construction, sediment impoundments and other erosion and sediment control measures, such as silt fences and straw bales, would be put in place to reduce soil erosion (Appendix A, Section A.2.1.2.4, Stormwater and Sediment Control Facilities). Work areas would be treated with dust suppressants to control wind erosion of disturbed soils (Appendix A, Section A.2.1.2.2, Coal Handling Facilities). At the completion of construction, areas disturbed but not utilized would be reclaimed. At the cessation of mining, all facilities would be removed except for the 12.5-kV power distribution line at the Iron Springs loadout, the Warm Creek/Benchtop Road, and the truck maintenance facility. In these areas some soil material could be permanently buried and removed from use.

Measures, such as seeding, to stabilize and protect growth-medium stockpiles, disturbed areas not in use, and embankments would be implemented to minimize soil loss and additional disturbance (Appendix A, Section A.3.4, Reclamation Activities). Tilling, proper seedbed preparation, erosion control, and revegetation should reduce the effects of stockpiling, and soil profiles would eventually redevelop in disturbed soils. However, the losses in soil productivity resulting from stockpiling cannot be entirely replaced, and these soils may have reduced productivity into the long term, until natural processes allow the soil to recover. Ripping or loosening of compacted soil would take place prior to placement of growth medium and seeding.

During reclamation, stockpiled topsoil would be spread onto all disturbed areas. It is expected that most of the soil for reclamation would be obtained from topsoil stockpiled at the beginning of mine facilities construction. In the surface facilities complex area, most of the soils present are suitable for reclamation, with the primary limitation being the abundance of gravel and rock fragments (Andalex Resources, Inc. 1994). Rock fragments may be beneficial, however, in holding soil for the use of plants. The soils rate either good to fair suitability for effective rooting of plants (Andalex Resources, Inc. 1994). If not enough reclaimable soil is available at the surface facilities complex area, then a topsoil borrow area on Smoky Mountain would be utilized (Appendix A, Section A.2.1.3.2, Topsoil Borrow Area). The borrow area, if excavated to a depth of 6 inches, would provide nearly 38,000 cubic yards of soil for use in reclamation at the surface facilities complex and still allow for reclamation at the borrow area.

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Monitoring of topsoil stability and suitability in all mine component areas would be conducted throughout the life of the mine and, if needed, appropriate changes to reclamation would be made (Appendix A, Section A.3.5.6, Environmental Monitoring). Over the long term, ORV use, grazing, and natural erosional processes would continue to have impacts on soil productivity.

The Agencies conclude that impacts to soil productivity in the proposed Warm Springs Project area with mining-related surface disturbance would be minor to moderate over the short term and minor over the long term. The permanent loss of soil productivity underneath the running surface of the proposed Warm Creek/Benchtop Road and at the truck maintenance facility and the loss of soil development during stockpiling would be irretrievable.

4.2.4.2 Impacts to Soils in the Smoky Mountain Area with Mining-Related Subsidence

Subsurface stresses caused by subsidence may induce cracks, fissures, and bulges in surficial soil materials. The surface effects of subsidence could result in the disruption of soil horizons or layers. Where soil cover is thin over bedrock, subsidence effects may result in a temporary increase in erosion and the uprooting of plants. In thicker soils, the effects would not be as pronounced, as thicker unconsolidated materials would deform, rather than crack. Cracks and fissures created by subsidence could temporarily channel surface run-off and potentially increase erosion within the subsidence area. The effects of subsidence would occur during the period of active mining of any given longwall panel. Most subsidence effects would occur over a period of 2 to 3 years. Impacts are not expected to continue once subsidence in each particular area is complete.

The soils of the benchtops over the expected subsidence areas are generally deep to moderately deep and have slight water erosion hazard, moderate wind erosion hazard, and a low sediment yield. Formation of cracks or fissures in these soils not expected to constitute a serious loss of productivity. The surface cracks in unconsolidated soils would close over in a relatively short period of time. Monitoring of subsidence areas would be conducted and repairs would be initiated if necessary (Appendix A, Section A.3.5.6.4, Subsidence). Over the long term, after subsidence has ceased, ORV use, grazing, and natural erosional processes would continue to impact soil productivity.

The Agencies conclude that impacts to soils in the Smoky Mountain area with mining-related subsidence would be negligible to minor over the short term and negligible over the long term.

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4.2.4.3 Impacts to Cryptogamic Soils in the Smoky Mountain Area with Mining-Related Activities

Cryptogamic soils, which comprise a minor component of the soils in the Smoky Mountain area, may be disturbed by mining activities. The erosion control and nitrogen-fixing aspects of cryptogamic soils would be lost for a number of years, inasmuch as reestablishment of cryptogamic soils is a slow process and would not occur for some time following reclamation. There is a potential that cryptogamic soils may not reestablish in the disturbed areas, owing to the difficulty these soils have in forming.

Only small areas of cryptogamic soils are present in the proposed disturbance area. Extensive areas have not been identified anywhere in the Smoky Mountain area.

After the cessation of mining activities, ORV use, grazing, and natural erosional processes would continue to impact cryptogamic soils in the area. Improved access into the area provided by the Warm Creek/Benchtop Road and increases in regional population could increase the number of ORV users in the area and could lead to increased disturbance of cryptogamic soils.

The Agencies conclude that impacts to cryptogamic soils in the Smoky Mountain area with mining-related activities would be minor over both the short and long terms.

4.2.5 Vegetation

4.2.5.1 Impacts to Vegetative Productivity and Community Stability in the Warm Springs Project Area with Mining-Related Activities

Impacts to vegetative productivity, vegetative cover, species diversity, and forage availability would result from disturbance of vegetation during construction and operation activities. Impacts would also result from increased ORV use and plant collecting activities that may occur as a result of the increased access into the area provided by construction of the proposed Warm Creek/Benchtop Road. Native vegetation would be permanently removed beneath the running surface of the proposed Warm Creek/Benchtop Road and the buildings and work areas at the truck maintenance facility. Weedy species may invade disturbed areas and replace native species, temporarily causing localized plant community instability. Plant community stability is related to species diversity present within a plant community and to the native species composition within that plant community.

Vegetative productivity (i.e., forage production) would decrease during the construction phases of the proposed Project, owing to the disturbance and loss of vegetation. Construction and topsoil salvage operations could also alter existing soil profiles and composition and could change the floristic composition of existing plant communities. Most native vegetation is adapted to particular soil types and any alteration

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of the soil character may affect the type of vegetation that would reestablish on the disturbed soil. The low productive potential of some soils in the Project area, including soils found at the proposed Moapa unit-train loadout, along segments of the proposed Warm Creek/Benchtop Road, along segments of the proposed 138-kV power transmission line, and at the proposed surface facilities complex, could also limit reclamation success (Appendix E, Table E-1).

Construction activities, including sidecasting during road construction activities, road and bridge construction, leveling of soil for facilities foundations, and rail spur and power transmission line construction activities, would result in the disturbance of vegetation. Vegetation could be partially or fully buried by soil as a result of subsidence. Plant roots could also be disturbed.

ORV use of lands adjacent to the various project components (e.g., Warm Creek/Benchtop Road) would increase the potential for physical damage of vegetation, disturbance and compaction of soil, soil erosion, and soil sedimentation impacts to vegetation. In addition, the increase in accessibility to these areas could increase the probability that native plants, especially cacti, would be illegally removed from these areas. Plant roots may be exposed, owing to soil erosion, and vegetation may be partially covered or buried as a result of sedimentation effects.

Interim reclamation activities would be implemented immediately after the construction and development of each facility had been completed (Appendix A, Section A.3.4, Reclamation Activities). Revegetation activities would provide plant cover in a relatively short period of time and reduce the rate of soil erosion on previously disturbed land. The implementation of these reclamation measures would sustain the floral diversity in the proposed disturbance areas and would reduce the amount of soil erosion. Successful reclamation of the proposed disturbance areas would replace vegetation removed during construction activities and reduce erosion and sedimentation rates. Successful reclamation also would ensure that species diversity, vegetative cover, and vegetative productivity present in natural plant communities prior to construction would be present in the reclaimed plant communities.

Vegetative productivity would increase after the completion of construction and reclamation activities. Weedy species would predominate, produce the majority of forage, and provide the majority of plant cover during the first 1 to 2 years following initial reclamation. This forage could be considered less desirable for use by some wildlife species since the plant community would primarily consist of weedy species. Weeds would be controlled wherever they become a problem (Appendix A, Section A.3.5.1, Vegetation Enhancement).

Native species and weedy species should equally contribute to vegetative productivity and plant cover in the first 2 to 3 years after the completion of reclamation activities. Native species should predominate in the reclaimed plant communities and contribute the majority of forage to vegetative productivity and plant cover 4 to 5 years after the completion of reclamation activities. Plant community stability and species diversity

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would be low during the construction and initial reclamation phases because weedy species would predominate these areas. After these disturbed areas have been reclaimed and the native plant seedlings have become established, community stability and species diversity would increase.

Species used in the reclamation seed mixtures have been developed to be representative of the species composition currently present at the various sites (Appendix A, Section A.3.5.1, Vegetation Enhancement). Seeds used during reclamation would be collected and/or purchased in the local area to promote genetic uniformity and increase revegetation success. Reclamation areas would be prepared prior to seeding.

Subsidence impacts would be temporary and localized. Seeds present in the surface soil horizon would enhance the reestablishment of plants in areas disturbed by subsidence activities.

Mining-related traffic would be limited to areas previously designated for vehicle use. Undisturbed areas and reclaimed areas would be considered off-limits to avoid the degradation of existing vegetation and revegetated areas.

Previously disturbed land would be reclaimed and returned to production. Release of the final reclamation bond and liability for each Project component would not be approved by the applicable regulatory agency until reclamation had been deemed successful (Appendix A, Section A.3.4, Reclamation Activities). Revegetation success would be monitored on all disturbed areas associated with the Project and evaluated for cover, density, and productivity following seeding or planting. If monitoring indicated that further work was needed, corrective action would be taken. Revegetation test plots would also be used to determine the most effective reclamation procedure (Appendix A, Section A.3.5.6.2, Vegetation).

The Agencies conclude that impacts to vegetative productivity and community stability in the proposed Warm Springs Project area with mining-related activities would be minor over the short term and negligible to minor over the long term. The permanent loss of vegetation under the running surface of the proposed Warm Creek/Benchtop Road and at the hypothetical Fredonia/Hurricane truck maintenance facility and the temporary loss of vegetative productivity in areas disturbed during construction would constitute an irretrievable commitment of the resource.

4.2.5.2 Impacts to Wetland and Riparian Communities in the Smoky Mountain Area with Mining-Related Activities

Existing, low-value wetland and riparian communities in the Smoky Mountain area, predominantly nonnative tamarisks, would be impacted by Project-related construction activities. A total of 5.7 acres of riparian vegetation would be impacted by the proposed construction of the Benchtop Road. About 1 acre of riparian vegetation would be permanently removed by bridge, riprap barrier, and road construction activities at the proposed Benchtop Road crossing of Wahweap Creek. In addition, about 4.7 acres of riparian vegetation

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would be temporarily disturbed during Benchtop Road construction activities at Wahweap Creek (3.6 acres) and along Warm Creek in John Henry Canyon (1.1 acres).

A total of 6.7 acres of riparian vegetation would be impacted by the proposed reconstruction of the Warm Creek Road. About 0.5 acre of riparian vegetation would be permanently removed by construction activities at the proposed Warm Creek Road crossing of Wahweap Creek. In addition, about 6.2 acres of riparian vegetation would be temporarily disturbed during bridge and road construction activities in Warm Creek Canyon.

Infrequent flash-flooding may continue to periodically disrupt riparian communities and periods of drought may reduce seep and spring flows. Recreational use of the area would gradually increase in response to population increases in the area and may result in an increase in impacts from ORV use and riparian plant collecting.

Water from the Wahweap Creek would be used during the construction of the Warm Creek/Benchtop Road (a period of 1 to 2 years). This would not likely affect riparian and wetland vegetation, inasmuch as the amount of water used during construction would be minimal relative to the total amount of water available for use by the riparian vegetation.

The limited riparian communities located at nine seeps and one spring within the life-of-mine area may be temporarily lost as a result of mining-related subsidence. If the seeps and the spring are impacted, they would be replaced by developing other water sources (i.e., guzzlers) and the related riparian community in the vicinity. It is unlikely that the riparian communities at the other 11 seeps and springs outside the life-of-mine area would be impacted, as mining would not occur in the geologic formation that feeds the springs, and most springs are separated by canyons (Section 4.2.3.2, Impacts to Water Quality and Quantity in and Around the Warm Creek Drainage System with Mining-Related Subsidence).

Riparian areas and springs temporarily impacted by creek crossing construction would be reclaimed, and a program to monitor the seeps and springs in the Project area during mining construction, operation, and reclamation would be implemented (Appendix A, Sectin A.3.5.6.5, Hydrologic Monitoring). Reclamation of disturbed wetland and riparian communities would occur immediately after construction activities are completed. The seed mixture developed for reclamation of disturbed riparian areas includes a greater species diversity than that currently present in the riparian areas (Appendix A, Section A.3.5.1, Vegetation Enhancement). Successful reclamation of these areas should increase species and vegetative structural diversity (i.e., tree, shrub, and herbaceous layer) within the reclaimed areas.

After bridge and road construction activities have been completed for the Benchtop Road, reclamation activities would be completed for about 9.5 acres adjacent to the Wahweap Creek crossing and along those segments of Warm Creek affected by sidecasting operations. About 5.7 acres of the reclaimable floodplain

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area at the proposed Benchtop Road crossing of Wahweap Creek currently consist of barren, exposed floodplain. Successful reclamation of the 9.5-acre reclaimable floodplain area adjacent to Wahweap Creek and areas along the new stream channel areas of Warm Creek would replace and potentially exceed the 5.7 acres of riparian vegetation impacted during Benchtop Road construction and operation activities.

After construction activities have been completed for the Warm Creek Road, reclamation activities would be completed for about 11.8 acres adjacent to the Wahweap Creek crossing. Roughly 5.0 acres of the reclaimable floodplain area at the proposed Warm Creek Road crossing of Wahweap currently consists of barren, exposed floodplain and disturbed areas. Successful reclamation of the 11.8-acre reclaimable floodplain area adjacent to Wahweap Creek would replace and potentially exceed the 6.7 acres of riparian vegetation impacted during Warm Creek Road construction and operation activities.

The Agencies conclude that the impacts to wetland and riparian communities in the Smoky Mountain area with mining-related activities would be negligible to minor over the short term and negligible over the long term. The temporary loss of riparian productivity would be irretrievable.

4.2.5.3 Impacts to the Smoky Mountain Evening Primrose and Higgins Biscuitroot with Mining-Related Activities

The annual, herbaceous Smoky Mountain evening primrose is a Federal candidate, category 2, species. The proposed alignment for the Benchtop Road indicates that individuals of the Smoky Mountain evening primrose should not be directly impacted during construction, although records indicate that one population exists near the proposed crossing of John Henry Canyon (Holland 1994). A survey for Smoky Mountain evening primrose would be conducted in this area prior to construction to determine the presence or absence of individuals in the construction ROW and proposed sidecast areas. Adequate mitigation would be applied if necessary.

The perennial, herbaceous Higgins biscuitroot is also a Federal candidate, category 2, species. One historically documented population of Higgins biscuitroot could be affected by reconstruction activities associated with the Warm Creek Road (NPS 1991). A survey for Higgins biscuitroot would be conducted in potential habitat along the route alignment prior to construction to ascertain the presence or absence of individuals in the construction ROW. If individuals are located within the construction ROW, additional inventory, evaluation and mitigation measures would be identified by the Agencies (Appendix A, Section A.3.5.1, Vegetation Enhancement).

Regional increases in population, increased ORV use, and improved access created by the paved Warm Creek/Benchtop Road could lead to increased impacts to the Smoky Mountain evening primrose and Higgins biscuitroot through habitat disturbance and collecting.

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The Agencies conclude that the impact to the Smoky Mountain evening primrose and Higgins biscuitroot with mining-related activities would be negligible to minor over both the short and long terms.

4.2.6 Wildlife

4.2.6.1 Impacts to Mule Deer Movement During Migrational Periods Along Interstate-15 and U.S. Highway 89 with Mining-Related Traffic

Deer are the primary big game animal affected by highway traffic within the United States. The availability of succulent green forage along open roadways and the crossing of highways during daily or seasonal movements contribute to deer mortalities along highways and roads, (USDOT 1975). Studies conducted on deer-vehicle collisions (USDOT 1975) suggest that patterns can be established in certain areas, such as seasonal increases in mortalities of adult males during the fall rut and increases in mortalities of adult females in the spring as they disperse from winter ranges (Jahn 1959). Daily patterns also become apparent, particularly during crepuscular (twilight and dawn) and nocturnal (nighttime) periods when deer are the most active (USDOT 1975). Important habitat factors include forage availability, cover proximity, topography, and weather (Dickerson 1939; USDOT 1975).

The incidence of deer mortalities along U.S. Hwy. 89 and Interstate-15 could increase with the addition of mining-related traffic, particularly during the migrational periods. Slight disruption of seasonal migratory routes could also occur.

The Paunsaugunt Mule Deer Herd crosses U.S. Hwy. 89 during its seasonal movements between summer range on the Paunsaugunt Plateau and winter range in the Buckskin Mountains. Migration between these two seasonal ranges is typically concentrated during April/May and October/November (Messmer 1994), with the migration route primarily crossing U.S. Hwy. 89 between Big Water and Kanab, Utah.

This section of highway has exhibited deer mortalities in recent years, particularly during the migrational periods. Records indicate that 39 deer were killed in this section between 1984 and 1987, 28 mortalities were recorded from 1989 to 1990, 32 mortalities between 1990 and 1991, and 18 mortalities from 1991 to 1992 (Lamb 1993). The majority of these mortalities occurred between mile posts 41 and 51 east of Kanab (Utah DWR 1992). Utah DWR, in cooperation with BLM, recently removed all the tree cover within the 400-foot highway ROW to improve visibility for both deer and motorists in an effort to reduce deer mortality in the area.

Other observers have recorded deer mortalities along U.S. Hwy. 89 between Kanab and Big Water, with 10 deer struck in 1991, 15 in 1992, and 32 in 1993 (Utah Highway Patrol 1994, unpublished data). Of the total reported deer/vehicle accidents, nearly 97 percent involved automobiles, while only 3 percent involved

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large trucks; trucks accounted for less than half of the reported strikes that would be expected on the basis of their proportionate traffic volume.

Traffic projections along this segment of highway indicate an increase in average daily traffic volume during Project construction and production when compared to estimated future traffic without the Project (Section 4.2.7, Transportation). Typical traffic levels on a two-lane road such as U.S. Hwy. 89 tend to be very light during the nighttime hours, a period when most deer movement occurs. Because coal hauling during full production would occur 24 hours per day, the percentage increase in truck traffic at night is expected to be even higher than the average daily traffic volume increases would indicate.

The segment of Interstate-15 between Utah Route 17 and exit 59 in Cedar City, which would serve the Iron Springs unit-train loadout, passes directly through designated mule deer critical winter habitat. Because of past deer mortality problems along Interstate-15 south of Ash Creek Reservoir, a segment of this highway has been fenced to restrict mule deer access to the roadway. North of the reservoir, the unfenced segment of the haul route to the proposed Iron Springs unit-train loadout has not exhibited this same problem with deer kills. Traffic projections for this segment of Interstate-15 indicate a small increase in average daily traffic volume during construction and production, when compared to estimated future traffic without the project (Section 4.2.7, Transportation).

The anticipated incidence of vehicle-related mortalities for mule deer along the proposed haul route would be proportional to the amount, speed, and timing of traffic relative to deer movements and concentrations, with the greatest potential for mortality to occur during the spring and fall migration periods and at night. The gradual increase in regional population and in tourist traffic projected for the future would add to deer mortalities and migration route disruption along U.S. Hwy. 89 and Interstate-15. As recreational and other traffic increases in the area, the percentage of mining-related traffic on these roads would decrease proportionally.

In an effort to determine whether increased truck traffic along U.S. Hwy. 89 between Kanab and Big Water would adversely affect the Paunsaugunt Mule Deer Herd, the Applicants have committed to providing assistance to the Utah DWR for the evaluation of existing deer populations. If the studies indicate the need, the Applicants would also participate in the development of appropriate mitigation measures to minimize impacts to the seasonal deer migration (Appendix A, Section A.3.5.3.4, Other Enhancements).

Following mine closure, mining-related traffic on U.S. Hwy. 89 and Interstate-15 would be discontinued, and impacts to deer from mining-related traffic would end. Regional traffic levels would continue to gradually increase with increased regional population and would continue the effects on deer.

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The Agencies conclude that impacts to mule deer movement during migrational periods along Interstate-15 and U.S. Hwy. 89 with mining-related traffic would range from negligible to minor over both the short and long terms. Highway deer mortalities would constitute an irretrievable commitment of the resource.

4.2.6.2 Impacts to Wildlife Habitat and Productivity in the Smoky Mountain Area with Project-Related Activities

Project construction and mining-related subsidence within the Smoky Mountain area could result in both adverse and beneficial impacts to area wildlife species. Direct adverse effects to wildlife could include disturbance to underground den sites, hibernacula, nest sites, and communal roosting areas and a resultant potential reduction in species productivity or the loss of adults or young (e.g., bats, birds, reptiles). Subsidence could benefit wildlife habitat by changing topographic conditions and creating cover or den sites for animals. Because topography influences the individual microclimate and microhabitats, variations in the ground surface could result in a greater diversity of habitat types.

Disturbance of native habitats along both the Warm Creek Road and the Benchtop Road could result in the direct loss of less mobile species (e.g., small mammals, bird nestlings, reptiles) and the displacement of more mobile species (e.g., medium-sized mammals, adult birds, and big game animals). The greatest direct impact of habitat removal and disturbance to wildlife along either of the two roads would be (1) the loss of nesting or breeding habitat, (2) disturbance to foraging territories, (3) loss of cover, and (4) disturbance to important habitat features (e.g., hibernacula, communal den sites). Direct effects to important habitat would result in displacing animals, increasing competition, and reducing the available carrying capacity within the adjacent habitats. Displaced individuals may or may not be able to establish new territories, depending on such variables as the species' behavior, density, and individual habitat requirements and availability.

Construction of the Warm Creek Road would involve realignment of the right-of-way out of the creek channel, resulting in beneficial impacts to wildlife resources. With this realignment, the damage to the Warm Creek and Wahweap Creek drainages from existing traffic use (Utah DWR 1992) would be expected to decrease. Therefore, the ongoing disturbances to riparian vegetation and associated water quality from public use would decline.

Gradual increases in regional population and recreational uses in the Project area may also add to minor changes in wildlife habitat and productivity from such activities as ORV use and collecting.

Intensive field inventories would be conducted to determine important habitat for wildlife species (e.g., raptors, reptiles, amphibians, bats) in the Smoky Mountain area that may be disturbed by construction and operation activities. These surveys would be conducted within 1 year prior to disturbance. If these surveys identify important habitat (e.g., high-priority chukar winter habitat, bat hibernacula, raptor nest sites),

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additional inventory, evaluation, and mitigation measures would be coordinated with the agencies involved, if necessary (Appendix A, Section A.3.5.3.4, Other Enhancements).

Since available water is the limiting factor in the Smoky Mountain area, riparian habitats support a greater population diversity and density of wildlife species per acre than any other habitat type occurring in the region. Nine seeps and one spring (Wesses Spring) occur in the proposed life-of-mine area and could be impacted by mining-related subsidence (Section 4.2.3.2, Impacts to Water Quality and Quantity in and Around the Warm Creek Drainage System with Mining-Related Subsidence). Water availability, forage, and cover for area wildlife could be affected. Because of the sensitivity of this issue, a monitoring program for the natural seeps and springs within the area would be implemented during the life-of-mine operations. In the event that adverse effects do occur from ground subsidence, appropriate mitigation measures would be developed, such as providing alternative sources of water for wildlife use (Appendix A, Section A.3.5.3.4, Other Enhancements).

Available habitat in areas of projected disturbance would be lost during the life of the Project. Interim reclamation measures would help reduce the impacts from habitat lost during construction and operation. After mine closure, reclamation measures would aid in replacing the majority of habitat disturbed during construction and operation (Appendix A, Section A.3.4, Reclamation Activities, and Section A.3.5, Enhancement Activities).

The proposed Warm Creek/Benchtop Road would continue to provide public access into the area after mine closure. Use would gradually increase over time as the regional population increases. Impacts to wildlife productivity and habitat from public use of the area would continue over time and would increase as the population increases.

The Agencies conclude that the impacts to wildlife habitat and productivity in the Smoky Mountain area with Project-related activities would be minor over the short term and negligible over the long term. Temporary habitat loss and potential reduction in wildlife productivity could constitute an irretrievable commitment of the resource.

4.2.6.3 Impacts to Wildlife in the Smoky Mountain Area from Increased Human Presence with Project-Related Activities

Impacts to highly visible wildlife species in the Smoky Mountain area is proportional to the size of the construction force, number of employees, transportation options, land use and recreation demands, and other associated development and activities in the region. Construction and/or improvement of the proposed Warm Creek/Benchtop Road would allow additional public access into the Smoky Mountain area, resulting in increased human effects (e.g., vehicle/wildlife mortalities, harassment, poaching, increased hunting pressure, noise, ORV use).

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The peak construction and operational workforces are estimated to be 50 and 150 for the Smoky Hollow Mine, respectively (Chapter 1, Figure 1-2). Personnel commuting to and from the mine would increase the potential for vehicle-related mortalities of big game species, particularly mule deer. The use of ORVs during recreational activities could result in increased wildlife harassment and physiological stress, breeding disturbance, and habitat degradation for resident and migratory species. Additional hunting pressure would occur, and poaching or illegal shooting could increase in the area. Poaching is often the greatest adverse impact to wildlife from increased human presence (Streeter et al. 1979), particularly for big game species. However, other wildlife species are often harassed, including large raptors (e.g., eagles and hawks) and predators (e.g., coyote), because of their high visibility and how they are typically perceived by humans. Any increase in either legal or illegal hunting could result in increased law enforcement needs and responsibilities for Utah DWR.

Noise generated during Project development and operation (Section 4.8, Noise) would result in varying impacts to area wildlife species. Common responses of animals to noise disturbances are either avoidance or accommodation. Except at extreme levels, the more secretive and smaller animals would coexist with the noise sources. Other animals, particularly those that rely most on vocal or auditory cues for communication and orientation, would avoid the vicinity of a noise source, moving out of the area until the source dropped to an acceptable background level for that species. After initial avoidance of human activity and noise-producing areas, some wildlife species may acclimate and begin to reinhabit adjacent areas formerly vacated. Abrupt and intermittent noises (e.g., blasting) are less likely to be accommodated than are the more steady continuous noises (e.g., truck traffic).

The predominant cumulative effects of increasing human presence would be the additional public use of recreational areas surrounding the Smoky Mountain area that are currently used on a limited basis. The development of the proposed Warm Creek/Benchtop Road would provide additional access into the Burning Hills WSA, Paria-Hackberry WSA, and Wahweap WSA. Modifications to the Warm Creek Road would also provide improved access into the Glen Canyon National Recreational Area.

All construction and operational personnel would be informed about the appropriate Utah game laws and cautioned not to harass or poach game and nongame animals (Appendix A, Section A.3.5.3.4, Other Enhancements). Employees would also maintain records of wildlife observed in the Project area and any highway mortalities. The employees would receive annual training to develop an awareness of and sensitivity to wildlife issues and concerns specific to the area. Speed limits of 25 mph would be established for Project personnel on unpaved access roads through the area to reduce wildlife/vehicle collisions (Appendix A, Section A.3.5.3.1, Wildlife Habitat).

Following mine closure, mining-related traffic and mine employee presence would cease. The proposed Warm Creek/Benchtop Road would remain permanently open and available for public access into the area.

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Use of the area and the road would gradually increase, owing to increasing regional population, with resultant increases in wildlife disturbance.

The Agencies conclude that the impacts to wildlife in the Smoky Mountain area from increased human presence with Project-related activities would be minor to moderate over the short term and minor over the long term. Wildlife mortalities and reduced productivity would constitute an irretrievable commitment of the resources.

4.2.6.4 Impacts to the Ferruginous Hawk, Golden Eagle, Peregrine Falcon, and Other Raptors in the Warm Springs Project Area with Project-Related Activities

Raptor mortality could increase along the haul routes from mining-related traffic collisions with scavenging birds. Construction of transmission and lines in the Smoky Mountain area and at the Moapa and Iron Springs unit-train loadouts could increase raptor electrocution hazards. Construction disturbance could also affect raptor breeding and nesting in proposed Project areas. Disturbance from the construction of Project components could adversely impact breeding birds, potentially resulting in nest abandonment and loss of productivity for that breeding season. Impacts to nesting birds would depend on the nest location relative to the construction activities, the phase of the breeding period, and the duration of the disturbance.

An average of three to five dead or injured golden eagles have been documented per year along Utah Route 56 west of Cedar City, from injuries received during scavenging along the road (McDonald 1994). Traffic projections along this segment of highway indicate an increase in average daily traffic volume during construction and production, when compared to estimated future traffic without the project (Section 4.2.7, Transportation). Projected traffic from construction would not likely result in increased golden eagle kills; however, the increase in traffic during the years of Project operation may result in an increase in mortality potential. Additional projects that may cumulatively affect traffic and eagle mortality along Utah Route 56 would include the WECCO facilities and the Cedar City Industrial Park (Appendix B).

The proposed 138-kV power transmission line across Tibbet Canyon would span the canyon width. This 1,500-foot span could increase the risk of birds colliding with the transmission line conductors and static wires. Raptor use of proposed distribution lines in the surface facilities complex area, at the Iron Springs unit-train loadout, and at the Moapa unit-train loadout could result in direct impacts to individual birds from electrocution hazards.

Intensive field inventories would be conducted to determine the presence or absence of breeding raptors, including the golden eagle, peregrine falcon, and ferruginous hawk, in and around proposed Project-related construction and/or subsidence activities. These surveys would be conducted within 1 year prior to potential disturbance activities and would follow the agency-approved protocol for nesting raptors. The presence or absence of breeding raptors would be monitored on a regular basis throughout the life of the

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Project. Additional inventory, evaluation, and mitigation measures, if necessary, would be coordinated with the agencies involved (Appendix A, Section A.3.5.3.4, Other Enhancements).

Powerline markers would be installed on the overhead static wires of the proposed 138-kV power transmission line across Tibbet Canyon in order to increase the line's visibility and minimize avian strikes (Appendix A, Section A.3.5.3.4, Other Enhancements). Marking the static wires at the canyon crossing may reduce bird collision rates as much as 45 percent (Beaulaurier et al. 1982). To prevent electrocution hazards, smaller powerlines (less than 69-kV) would be constructed in accordance with Rural Utility Service standards and other suggested design recommendations (Appendix A, Section A.2.2, 138-kV Power Transmission Line). No electrocution impacts to raptor species are anticipated from operation of either the 69-kV or the 138-kV power transmission lines. Electrocution of raptors is not considered to be a problem with powerlines of these sizes. The physical dimensions and configuration of the structures and conductors would meet or exceed design recommendations for raptor protection and would not introduce an electrocution hazard (Ollendorf et al. 1981).

Following mine closure, mining-related traffic would cease, and the transmission powerlines and most of the distribution powerlines would be removed. Potential impacts to raptors from mining-related activities would cease. Increased regional traffic on area highways would continue to impact raptors from traffic accidents over time.

The Agencies conclude that impacts to the ferruginous hawk, golden eagle, peregrine falcon, and other raptors in the Warm Springs Project area with Project-related activities would be minor over both the short and long terms. Any raptor mortalities would be an irretrievable commitment of the resource.

4.2.6.5 Impacts to the Mexican Spotted Owl in the Smoky Mountain Area with Project-Related Activities

John Henry and Wesses Canyons have been identified as containing potential suitable habitat for the Mexican spotted owl during habitat surveys in and around the life-of-mine area (Chapter 3, Section 3.7.5, Wildlife). No Mexican spotted owls, nests, or other indication of the species' presence has ever been found in the area, however. Construction and operation of the Benchtop Road into John Henry Canyon may disturb nesting spotted owls, if present within the canyon. The degree of impacts to breeding birds would depend on the location of nesting sites relative to the road right-of-way. These impacts could include the loss of nesting and foraging habitat, disturbance of adults resulting in nest abandonment, and displacement of roosting owls. Indirect effects could encompass impacts from construction and operational noise and increased public access into the Smoky Mountain area. Increased human presence and disturbances could result in nest abandonment and/or reduced productivity (Utah Mexican Spotted Owl Technical Team 1994).

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Mining-related subsidence could result in topographic elevation changes (Section 4.2.1, Geology and Topography) and cause rock cliffs to collapse. Loss of nest sites, eggs, or nestlings could occur. Subsidence, however, would be more likely to create rather than destroy rock outcrop cavities, which could increase nesting sites for spotted owls.

An intensive field inventory would be conducted for the presence or absence of the Mexican spotted owl in and around the parts of Wesses Canyon that could experience mining-related subsidence effects. An inventory would also be conducted in and around the part of John Henry Canyon that could be affected by the construction of the proposed Benchtop Road. These inventories would be conducted for 2 years prior to any potential disturbance activities and would follow the agency-approved protocol for the Mexican spotted owl, documenting the presence, if any, of spotted owls, and recording the associated habitat quality of the canyon systems that would be impacted. Additional inventory, evaluation, and mitigation measures, if necessary, would be coordinated with the agencies involved (Appendix A, Section A.3.5.3.4, Other Enhancements).

The field inventory and mitigation program would (1) identify the presence or absence of the Mexican spotted owl in these canyon systems; (2) establish the appropriate Core Area or Management Territory, if Mexican spotted owls are present; (3) initiate formal Section 7 consultation with the USFWS, if applicable; and (4) protect individual owls from the potential mining effects. This would avoid jeopardizing the continued existence of any populations that may be present. If inventories confirm that no Mexican spotted owls occupy the John Henry and Wesses Canyon systems, no impacts to this species would be anticipated as a result of Project-related activities.

Within its range, the Mexican spotted owl is experiencing cumulative pressure from a variety of activities, such as outdoor recreation, tourism, mineral exploration, and residential development. If owls are present in the Smoky Mountain area, the increased human presence, disturbances from Project construction and operation, and public use of the area would result in greater cumulative impacts to the Mexican spotted owl in southern Utah. Continued public use of the proposed Warm Creek/Benchtop Road following mine closure could increase human presence in the area gradually over time and, if spotted owls are present, could result in increased disturbance to breeding owls.

The Agencies conclude that impacts to the Mexican spotted owl in the Smoky Mountain area with Project-related activities would be none to minor over both the short and long terms.

4.2.6.6 Impacts to the Desert Tortoise in the Moapa and Hurricane Areas with Project-Related Activities

Construction and operation of the proposed Moapa unit-train loadout and the Hurricane truck maintenance facility could result in direct physical disturbance of desert tortoise habitat. Desert tortoise surveys

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conducted at the proposed Moapa unit-train loadout discovered 63 tortoise burrows and 3 tortoise remains in 1990, and 40 usable burrows, 9 collapsed burrows, 2 tortoise remains, and 1 live tortoise in 1992 (Global Research Corporation 1990; Harry Reid Center for Environmental Studies 1992). Suitable tortoise habitat in the Hurricane area is currently being evaluated in a countywide Habitat Conservation Plan (HCP) (Mader 1994). Desert tortoises may be killed or injured by vehicles or heavy equipment during construction or by coal truck traffic during operation. The elevated railroad bed at the Moapa site for the loop railroad track may impair the movement of, and possibly entrap, desert tortoises. Additional impacts to the tortoise could occur from increased levels of human activity, noise, and ground vibrations; attraction of ravens to the area, if all trash is not removed immediately; and capture of tortoises by construction and maintenance crews for pets (USFWS 1992).

The Agencies have determined that activities at the Moapa unit-train loadout "may affect" the desert tortoise or its habitat in that area and entered into formal consultation with USFWS as required under Section 7 of the Endangered Species Act of 1973, as amended. Activities at the hypothetical location selected for the Hurricane truck maintenance facility could affect the desert tortoise or its habitat if the facility were located in desert tortoise habitat. (See Chapter 5, Section 5.3.1, Issues Concerning Threatened or Endangered Wildlife or Plant Species Protected by the Endangered Species Act, for a complete description of the Agencies' efforts to comply with the Act.) With the cooperation of USFWS, Andalex committed to a series of measures to protect the desert tortoise and its habitat during the construction and operation of these facilities. These include thorough tortoise surveys of all construction areas, ensuring tortoise passage under road and railroad beds, installation of tortoise-proof fencing and trenches in high traffic areas, an active litter-control program, and worker awareness training, (Appendix A, Section A.3.5.3.2, Desert Tortoise Habitat). At the conclusion of the formal Section 7 consultation, USFWS concurred with the Agencies' "may affect" finding in the Moapa area but determined that the proposed operation and mitigation activities would not likely jeopardize the continued existence of the Mohave population of the desert tortoise. In the Hurricane area, BLM, OSM, and USFWS agreed that informal consultation should continue until such time as the actual location for the truck maintenance facility is selected, the desert tortoise habitat is determined to actually be present, and the countywide HCP is finalized.

The Hurricane truck maintenance facility would be located on private land in Washington County, and the habitat review and the impact assessment are hypothetical for the purpose of this analysis. If constructed, the Hurricane truck maintenance facility could fall under Section 10 of the Endangered Species Act. If the facility were located in desert tortoise habitat, the private bulk carrier transport company would be responsible for compliance with either Section 7 or Section 10 of the Act. Development of the proposed Hurricane truck maintenance facility would be in accordance with applicable Federal and State regulations, and the applicable permitting and compliance regulations would be addressed in the HCP process.

Cumulatively, the proposed Project would contribute to an overall decrease in available desert tortoise habitat in the Moapa area, in association with a number of other existing and proposed projects, including

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the Los Angeles Department of Water and Power Intermountain and Navaho-McCullough 500-kV power transmission lines, Kern River gas transmission pipeline, Reid Gardener Powerplant, and the Moapa area Overton to Las Vegas fiber optic communication line (Appendix B). Cumulative effects to tortoise habitat in the Hurricane area would occur from such projects as the proposed Hurricane Industrial Park, the Wal-Mart Regional Distribution Center, and the Gateway Center Planned Unit Development. However, all existing projects have had to comply with either Section 7 or Section 10 of the Endangered Species Act to minimize impacts to tortoises and to mitigate individual "takes" (tortoise mortalities or harassment). Future projects also would fall under the regulations of the Act. The Clark County Desert Tortoise Habitat Conservation Fund has been established to secure tortoise management areas, enhance available habitat, and contribute to tortoise research. Similar conservation funds would be anticipated for the Hurricane area under the future HCP in Washington County. The implementation of enhancement measures, such as those presented in Appendix A and requirements for compliance with the HCP and Sections 7 and/or 10 of the Endangered Species Act, would minimize the effects to the tortoise population at the proposed Moapa unit-train loadout and the Hurricane truck maintenance facility if it were constructed.

Following mine closure, the Moapa unit-train loadout would be reclaimed and native vegetation and tortoise habitat would be expected to reestablish over time. The proposed Hurricane truck maintenance facility, however, would remain in place, and tortoise habitat in the facility area could be permanently lost.

The Agencies conclude that impacts to the desert tortoise in the Moapa and Hurricane areas with Project-related activities would be minor over the short term and negligible to minor over the long term. Any tortoise mortality would be an irretrievable commitment of the resource.

4.2.7 Transportation

4.2.7.1 Impacts to Open Road Traffic Flow in the Warm Springs Project Area with Mining-Related Traffic

Traffic in the proposed Warm Springs Project area will gradually increase over time to projected future background traffic levels (Table 4-1). These increases in traffic volume, unrelated to the proposed Project, would affect the levels of service (LOS) along area roadways. With the addition of Project-related construction, production, and reclamation activities, traffic levels in the study area would increase further.

Construction of the proposed mine surface facilities complex, the loadout facilities, the truck maintenance facilities, and the Warm Creek/Benchtop Road would occur over a 2-year period, during which time the construction-related employee, truck, and vendor traffic would add to existing traffic on the public roadway systems directly adjacent to the construction sites in Utah, Arizona, and Nevada. Because these traffic increases would be minimal and generally localized to the construction areas and their immediate associated

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Table 4-1 — Future[1] Average Daily Traffic Volume Projections on Selected Area Roads

		Without Proposed Project (Future)			With Proposed Project (Future)		
Roadway	Section	ADT[2]	Percent Trucks	LOS[3]	ADT[2]	Percent Trucks	LOS[3]
COMMON ROUTE TO HURRICANE							
Warm Creek Road	All.	20	5.0	A;A	592	59.3	A;A
U.S. Hwy. 89	Big Water to Kanab.	2,980	8.0	A;B	3,472	16.9	B;B-C
Utah Route 11	Kanab to Arizona State line.	3,990	7.6	A;B	4,340	15.0	A;B
U.S. Hwy. 89A	Utah State line to Fredonia.	6,600	11.0	B;C	7,230	14.9	B;C
Arizona Route 389	Fredonia to Colorado City/Utah State line.	7,000	11.0	B;C	7,350	15.2	B;C
Utah Route 59	Hildale/Arizone State line to Hurricane.	3,420	11.4	B;C	3,770	19.6	C;D
ROUTE TO MOAPA							
Utah Route 9	Hurricane to Interstate-15.	20,180	5.0	A;A	20,765	6.5	A;A
Interstate-15	Utah Route 9 to Arizona State line.	25,990	25.0	A;A	26,340	26.0	A;A
Interstate-15	Utah/Arizona State line to Arizona/Nevada State line.	23,800	25.0	A;B	24,150	26.1	A;B
Interstate-15	Nevada/Arizona State line to Exit 88 in Nevada.	15,500	25.0	A;A	15,860	26.6	A;A
Hidden Valley Road	Interstate-15 to Moapa.	400	25.0	A;A	770	58.4	A;A
ROUTE TO IRON SPRINGS							
Utah Route 9	Hurricane to La Verkin.	21,475	2.3	A;A	21,825	3.9	A;A
Utah Route 17	La Verkin to Interstate-15.	2,640	9.3	B-C;C	2,990	19.9	C-D;D
Interstate-15	Route 17 to Exit 59.	22,300	25.0	A;B	22,650	26.2	A;B
Utah Route 56	Interstate-15 to Iron Springs Road.	3,800	8.0	A;B	4,190	15.6	A;B
Iron Springs Road	Utah Route 56 to Iron Springs.	1,615	5.0	A-B;B	2,005	37.6	B;B

Source: Jager 1993.
JHK & Associates 1993.
Berger 1993.

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[1]Future volumes are based on 15-year projections for Utah and Nevada and 25-year projections for Arizona.
[2]ADT = Average daily traffic.
[3]LOS = LOS "A" is highest level of service, LOS "F" is the lowest, or worst level of service. Two letters with a semicolon indicate level of service in morning (7 a.m. to 8 a.m.);afternoon (5 p.m. to 6 p.m.) peak times. Two letters separated by a dash indicates that the level of services is close to the dividing line between the two ranges.

roadways, no decrease in LOS is projected; however, some brief periods of delay due to construction at site access points could be anticipated.

Construction of the proposed Moapa unit-train loadout would add a maximum of 50 vehicle trips per day to Interstate-15 beyond projected future traffic levels, with as many as 90 additional vehicle trips per day on the Hidden Valley Road. On the average, two of these construction-related trips per day would be truck trips. The proposed Iron Springs unit-train loadout construction would add 70 to 80 vehicle trips per day to Utah Route 56 and Iron Springs Road near Cedar City; 2 of the trips would be truck trips. Construction of the proposed Hurricane/Fredonia truck maintenance facilities would add 8 to 10 vehicle trips per day to the roadways adjacent to each site. On the average, two of those trips per day would be truck trips. Construction of the mine and the Warm Creek/Benchtop Road would add about 156 vehicle trips per day to future traffic levels expected for the existing Warm Creek Road; 16 of these trips would be truck trips. About 70 vehicle trips per day would be added to future projected traffic levels on U.S. Hwy. 89 in the vicinity of Big Water.

Baseline traffic and truck volumes on regional highways would continually increase, during the period of full mine production until beginning of reclamation. (Table 4-1 outlines future projected baseline traffic and truck volumes with and without the proposed Project during the expected period of mine production.) During full production, mine workers, loadout employees, and truck maintenance facility employees would commute between home and work. Trucks would haul coal to the Moapa and Iron Springs unit-train loadouts, and service-related vehicles would travel to and from these facilities to deliver supplies and perform construction and maintenance operations. Trucks hauling coal from the mine and returning to reload would add to the number of trucks travelling along the haul route. The haul trucks would operate 24 hours a day, 365 days a year, with loaded trucks being dispatched from the mine at 8- to 10-minute intervals (Appendix A, Section A.2.7.6, Truck Haul). This schedule would add a maximum of 175 mine-related truck round-trips daily to the truck haul routes. This amount of truck traffic would increase the percentage of projected future truck traffic along the haul routes during the full mine production period, ranging from 1 percent along Interstate-15 between Utah Route 9 and the Arizona State line to about 54 percent along the Warm Creek/Benchtop Road (Table 4-1).

Mining-related impacts would be constant with very little fluctuation during the 40-year period of active coal mining. General traffic, however, is expected to gradually increase throughout this period as a result of increases in the regional population. The actual percentage of mine-related truck traffic along the haul routes and at intersections would decrease over time as regional traffic increases.

Rural two-lane highway LOS is a function of the traffic volume and vehicle composition, the directional split of the traffic, the terrain, and the number of no-passing zones. Because any passing maneuvers must occur in the opposing lane, the opposing traffic volume has an effect on capacity. As traffic volumes increase, the demand for passing increases and the passing capacity of the opposing lane decreases. Heavy vehicles

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within the traffic stream tend to increase the demand for passing, particularly in rougher terrain, where steeper grades can cause heavy vehicles to slow considerably. The difficulty of the passing maneuver is also increased owing to the longer vehicle length of those vehicles and associated passing distance and to the increased difficulty in seeing around a heavy vehicle.

Small traffic increases due to the proposed Project (such as 15 trucks per hour in each direction) could affect the LOS sufficiently to lower it one level, or letter designation, on some roads. Each LOS designation covers a range of traffic volumes, specific to the number of heavy vehicles, type of terrain, and number of no-passing zones. As increasing traffic volumes approach the threshold between two levels, small increases in the number of heavy trucks could decrease the level of service by one letter designation.

For the purpose of this analysis, impacts to LOS are evaluated on various roadway segments in the proposed Warm Springs Project area during morning and afternoon peak traffic hours (7 a.m. to 8 a.m. and 5 p.m. to 6 p.m.). Peak traffic hours are used to help determine the effects of increased traffic on traffic flows and LOS during high-use periods. In general, LOS "A" represents free-flow conditions and LOS "F" represents congested, or forced-flow, conditions. LOS "D" is considered to be acceptable during periods of peak usage (Chapter 3, Section 3.7, Transportation). Coal trucks would add 15 vehicles to any hour (peak or off-peak) on all roadway segments, whereas other mine-related traffic would add vehicles to certain roadway segments only.

With approval of the proposed Project, either a new road, the Benchtop Road, would be constructed or the existing Warm Creek Road would undergo reconstruction. Traffic flow capabilities and road quality would improve. Traffic volumes along the Warm Creek/Benchtop Road are projected to increase from the existing 20 vehicles per day (vpd) to 592 vpd; 350 of these trips would be mine-related coal trucks, and 222 trips would be mine employee and other traffic. The employee trips would occur throughout the day, with peak traffic at times when work-shift changes occurred. It is anticipated that there would be a small number of mine service-related vehicle trips during daytime hours. The current and projected LOS "A" during both peak traffic periods should be maintained under this volume of traffic.

Increased traffic along U.S. Hwy. 89 between Big Water and Kanab could result in a projected future average daily traffic (ADT) of 3,472 vpd, 350 of which would be mine-related coal trucks and 142 of which would be mine employee traffic. LOS during morning hours is currently "A" and during afternoon hours is currently "B"; future traffic increases would maintain the afternoon peak-hour level of service. Project-related traffic could contribute to a lowering of the projected level of service for the morning peak hour to LOS "B" and the projected afternoon to a LOS of "C."

On Utah Route 11 between Kanab and the Arizona State line, LOS is currently "A" at the morning peak traffic hour and "B" at the afternoon peak traffic hour. Future traffic increases would not reduce the LOS at either

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peak. Project-related traffic should not be sufficient to further decrease the level of service from the projected morning and afternoon peak hour LOS of "A" and LOS of "B," respectively.

On U.S. Hwy. 89A in Arizona between the Utah State line and Fredonia, the future ADT is projected to be 7,230 vpd, 350 of which would be mine-related coal truck traffic and 280 of which would be Fredonia truck maintenance facility employee traffic. Non-Project traffic would reduce morning and afternoon peak-hour LOS from LOS "A" to LOS "B" and LOS "B" to LOS "C," respectively. Project-related traffic volumes should not decrease the level of service for this segment from its projected future levels.

On Arizona Route 389 between Fredonia and the Utah State ine, future traffic increases would reduce morning peak-hour LOS from "A" to "B" and afternoon peak-hour LOS from "B" to "C." The volume of Project-related traffic should not decrease the projected level of service further.

On Utah Route 59 between the Arizona State line and Hurricane, a decrease in future LOS for morning and afternoon peak hours is not projected. However, in this area, Project-related traffic could contribute to a decrease from the projected morning peak-hour LOS of "B" and the afternoon peak-hour LOS of "C" to LOS "C" and LOS "D," respectively.

The section of Utah Route 9 between Hurricane and Interstate-15 is projected to experience a future traffic volume of 20,765 vpd with the inclusion of mine-related traffic; 350 of these trips would be coal haul trucks and 235 trips would be related to the Hurricane truck maintenance facility component of the proposed Project. Improvements to widen Utah Route 9 to four lanes (scheduled for 1996) should improve the LOS levels in the area throughout the 20-year planning horizon. Future traffic volumes without the proposed Project would be at LOS "A" for all periods. Traffic associated with the Project should not reduce the level of service below LOS "A" for either peak period.

The section of Interstate-15 between Utah Route 9 and the Arizona/Nevada State line is not projected to experience future LOS reductions from LOS "A" during morning or afternoon peak hours. Mining-related truck traffic in these segments would not be expected to affect the projected baseline morning and afternoon peak-hour levels of service.

In Nevada, traffic volumes on Interstate-15 between the Arizona/Nevada State line and exit 88 at the Hidden Valley Road are not projected to decrease the level of service from LOS "A" during either the morning peak hour or the afternoon peak hour. The addition of Project-related traffic to anticipated future traffic volumes would increase traffic to 15,860 vpd in the future; 350 of these trips would be Project-related trucks, and 10 would be employee traffic. This small volume of mining-related traffic would not contribute to a decrease from either the projected morning peak-hour LOS or the projected afternoon peak-hour LOS.

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In Nevada, the Hidden Valley Road has a current and projected LOS "A" during both peak periods, and the volume of traffic associated with the proposed Project should not reduce this level of service.

The section of Utah Route 9 between Hurricane and La Verkin would experience a decrease in the existing morning and afternoon peak-hour levels of service of LOS "C" during morning peak hours and LOS "D" during afternoon peak hours as a result of future traffic. The volume of mining-related traffic would not further affect the projected two-lane morning and afternoon peak hour level of service of LOS "E." Future plans to widen this section of roadway to four lanes should, however, eventually improve the LOS levels to LOS "A" during all periods with or without the addition of Project-related traffic.

On Utah Route 17, between La Verkin and Interstate-15, the addition of mining-related traffic would contribute 15 vehicles to the peak-hour volume and could contribute to the decrease from the projected levels of service of LOS "B" and LOS "C" during the morning and afternoon peak hours to LOS "B-C," and LOS "C-D," respectively.

The section of Interstate-15 between Utah Route 17 and exit 59 in Cedar City is projected to experience a future decrease in level of service for the afternoon peak hour from LOS "A" to LOS "B." The addition of mine-related truck traffic to projected traffic volumes, while only a small percentage of the total, could contribute to this decrease from the projected afternoon peak-hour level of service. Projected morning peak-hour LOS should not be affected.

Future traffic volume on Utah Route 56 between Interstate-15 and Iron Springs Road would decrease the afternoon peak LOS from "A" to "B." Morning peak LOS would remain at "A." Mining-related traffic would not be expected to affect the projected morning or afternoon peak-hour levels of service.

The Iron Springs Road would experience an increase in ADT to 2,005 vpd; 350 of these trips would be Project-related coal truck trips, and 40 trips would be Iron Springs unit-train loadout employee trips. Without the proposed Project, level of service is projected to decrease from LOS "A" to LOS "B" during both peak-hour periods. Mining-related traffic volumes should not result in any further reduction from the projected level of service during either peak hour.

During the final reclamation phase of the proposed Project, when coal production and hauling operations have ended, Project-related traffic would decrease substantially and would be localized to the areas immediate to the mine and loadout facilities. This traffic would be limited to reclamation operations employees and to any heavy trucks or equipment used in the reclamation process. This level of traffic would not be sufficient to affect future area traffic operations.

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The Applicants would require coal trucks to stay in radio contact to help maintain adequate spacing between trucks and avoid congestion. Coal trucks would also be required to stay on the identified haul roads and to avoid using other roadways (Appendix A, Section A.2.7.6, Truck Haul).

After mine closure, general traffic levels in the area would drop slightly and then begin to gradually increase in response to continuing increases in regional population. No additional effects from mine traffic are anticipated following mine closure. The Warm Creek/Benchtop Road would be permanently available to the general public. Cumulative effects from other projects (Appendix B), such as the Navajo Generating Station, have been considered in the future baseline LOS ratings and traffic volumes discussed above.

The Agencies conclude that impacts to open road traffic flow in the Warm Springs Project area with mining-related traffic would be minor to moderate over both the short and long terms. Impacts along some segments of U.S. Hwy. 89, Utah Route 59, Utah Route 17, and Interstate-15 would have the potential to become significant.

4.2.7.2 Impacts to Traffic Flow at Intersections in the Warm Springs Project Area with Mining-Related Traffic

Traffic in the Warm Springs Project area will gradually increase over time to projected future background traffic levels (Table 4-1). These increases in traffic volume unrelated to the Project would change LOS ratings at area intersections. With the addition of Project-related construction, production, and reclamation activities, traffic levels in the study area would increase further (Table 4-1). This could lead to an additional increase in traffic at intersections in the study area, with the greatest increase occurring during mine production. Traffic levels during peak traffic hours (7 a.m. to 8 a.m. and 5 p.m. to 6 p.m.) are the most important for determining traffic flow and LOS ratings at intersections.

Employee-, vendor- and construction-related truck traffic generated by construction of the mine, the loadouts, the truck maintenance facilities, and the Warm Creek/Benchtop Road would use intersections immediately adjacent to the construction areas during the 2-year construction phase of the proposed Project. The construction of new access roads to serve the loadouts and maintenance facilities would create new turning movement conflicts at the intersections within the existing roadway system.

Traffic related to the construction of the mine and the Warm Creek/Benchtop Road would add 70 vehicle trips per hour to the projected peak-hour traffic at the U.S. Hwy. 89/Warm Creek Road intersection near Big Water. Construction of the Iron Springs loadout would add 36 vehicle trips per hour to the existing peak-hour traffic at the intersection of Utah Route 56/Iron Springs Road intersection near Cedar City. Construction of this loadout would also create a new access intersection with the Iron Springs Road. Construction-related traffic would add 40 peak-hour turning movements at this new intersection. Construction of the Moapa loadout would add 45 vehicle trips per hour to the projected peak-hour traffic

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at the Interstate-15/Hidden Valley Road interchange in Nevada. Construction of this loadout would also create a new access intersection with the Hidden Valley Road. Construction-related traffic would add 50 peak-hour turning movements at this new intersection. Because the traffic increases at the intersections are expected to be minimal and generally localized to the construction areas and their immediate associated roadways, no decrease in future LOS would be projected for adjacent intersections; however, some brief periods of delay due to construction at site access points would be anticipated. Construction of the Fredonia or the Hurricane truck maintenance facilities and their associated new access roads would add only minimal amounts of construction-related traffic to the adjacent roadways and should not reduce projected levels of service in these areas.

When the proposed coal mining and hauling operations begin there would be more traffic at public roadway system intersections along the haul routes in Utah, Arizona, and Nevada. In general, coal trucks accelerate and maneuver slowly and require more space and time to make turns at intersections. This may slow traffic flow slightly at intersections along the haul route. Also, coal trucks require more time to accelerate to a normal travel speed from a stopped position. Mine worker, loadout employee, and truck maintenance facility employee traffic increases and coal trucks and their operating characteristics could lower the LOS at these intersections.

Mining-related impacts would be constant with very little fluctuation during the 40-year period of active coal mining. General traffic, however, is expected to gradually increase throughout this period because of increases in the regional population. The actual percentage of mine-related truck traffic along the haul routes and intersections would decrease over time as regional traffic increases.

Mine-related traffic would add a maximum of 104 peak hour vehicle trips (15 of which would be truck trips) to the intersection of Warm Creek/Benchtop Road and U.S. Hwy. 89 in Big Water. Unsignalized traffic operations, currently at LOS "A" during both peak hours, would experience a reduction in traffic operational conditions in the future to LOS "B" during the afternoon peak hour on the Warm Creek Road approach. Addition of Project traffic should not reduce the projected LOS further.

At the signalized intersection of U.S. Hwy. 89/Utah Route 11 in Kanab, mining-related traffic would add 15 truck trips to the existing peak-hour traffic. Under projected future conditions without the proposed Project, the existing signalized intersection operations would be lowered from a current LOS "B" during both peak hours to LOS "C" during the afternoon peak hour. Addition of Project-related traffic should not affect this projected LOS rating.

In Arizona, mine-related traffic would add about 18 peak-hour vehicle trips, 15 of which would be haul truck trips, to the stop-sign-controlled intersection of U.S. Hwy. 89A/Arizona Route 389 in Fredonia. The projected Project-related traffic volumes should not reduce the projected future LOS on the single-lane eastbound approach to this intersection from its projected LOS "C" and LOS "E" during the morning and afternoon peak

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hours, respectively. Addition of Project-related traffic should not reduce the projected afternoon peak operation LOS of "B" on the single-lane westbound approach to the intersection.

Mine-related traffic would add about 18 peak-hour vehicle trips, 15 of which would be haul truck trips, to the signalized intersection of Utah Route 59/Utah Route 9 in Hurricane. Projected future traffic operations would be reduced from the existing LOS "B" during both peak hours to LOS "C" during the morning peak hour and LOS "E" during the afternoon peak hour. The additional increases from Project-related traffic would not be expected to affect the projected LOS ratings for this intersection.

Mine-related traffic would add 15 peak-hour truck trips through the Interstate-15/Utah Route 9 interchange west of Hurricane. These mining-related traffic increases are not expected to affect the projected LOS at this intersection, which would have decreased over time from the current LOS of "A" to LOSs of "B" and "F" on the right turn of the northbound off-ramp in the morning and afternoon hours, respectively.

In Nevada, mine-related traffic could add as much as 21 peak-hour vehicle trips (15 of which would be truck trips) to future traffic levels through the Interstate-15/Hidden Valley Interchange near Moapa. This additional traffic, in combination with projected future increases in general traffic, would not be sufficient to lower the projected LOS of "A" at the two unsignalized intersections at this interchange. At the proposed unsignalized intersection at the proposed Moapa unit-train loadout access road and Hidden Valley Road, mine-related traffic could add up to 29 vehicle trips (15 of which would be truck trips) accessing Hidden Valley Road. This increase in traffic, in combination with projected future increases in general traffic, should not lower the projected LOS of "A" along Hidden Valley Road.

At the unsignalized intersection of Utah Route 9/Utah Route 17 in La Verkin, mine-related traffic could add 15 truck trips to the existing peak-hour traffic. The general increases in traffic levels contained in the future projections excluding project traffic, would lower the westbound left turn operations, currently at LOS "A" and LOS "C" during the morning and afternoon peak hours, to LOS "E" and LOS "F." The eastbound approach to this intersection would also experience a reduction from the current LOS "A" to LOS "C" during the afternoon peak hour. The additional increases associated with mining-related traffic would not be expected to affect these projected levels of service.

Mine-related traffic would add 15 peak hour truck trips through the Interstate-15/Utah Route 17 interchange north of La Verkin. This increase, in combination with the projected future traffic volumes, would not be sufficient to cause a reduction in the projected LOS of "A" at the unsignalized intersections at this interchange.

Mine-related traffic would add 15 peak-hour truck trips to future traffic levels through the two unsignalized intersections which form the Interstate-15/Utah State Route 56 Interchange in Cedar City. At the intersections of the Interstate-15 off-ramps and Utah Route 56, LOS is projected to be "F" during both

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morning and afternoon peak hours. Addition of Project-related truck traffic should not affect this projected LOS rating. Projected LOS for left turns onto Interstate-15 from Utah Route 56 also should not be affected by mining-related traffic.

At the unsignalized intersection of Iron Springs Road/Utah Route 56 west of Cedar City, and at the proposed unsignalized intersection of the Iron Springs loadout access road and Iron Springs Road, mine-related traffic would add up to 29 vehicle trips (15 of which would be truck trips) to the peak-hour traffic. This mining-related traffic, in conjunction with the projected increases in general traffic, should not lower the projected peak-hour LOS "A" of either intersection.

During the final reclamation phase of the proposed Project, when coal production and hauling operations have ended, Project-related traffic would decrease substantially and would be localized to the areas immediate to the mine and loadout facilities. This traffic would be limited to reclamation operations employees and any heavy trucks or equipment used in the reclamation process. This level of traffic should not be sufficient to affect future area traffic operations at intersections.

The Applicants would require coal trucks to stay in radio contact to help maintain adequate spacing between trucks. Coal trucks also would be required to stay on the identified haul roads and to avoid using other intersections (Appendix A, Section A.2.7.6, Truck Haul).

After mine closure, general traffic levels in the area would drop slightly and then would gradually increase because of continuing increases in regional population. No additional effects from mine traffic are anticipated. The Warm Creek/Benchtop Road would be permanently available to the general public. Cumulative effects from other projects (Appendix B), such as the Navajo Generating Station, have been considered in the future baseline LOS ratings and traffic volumes discussed above. All effects on LOS from mining-related traffic are in addition to future cumulative traffic volumes.

The Agencies conclude that impacts to traffic flow at intersections in the Warm Springs Project area with mining-related traffic would be minor to moderate over both the short and long terms. Impacts would have the potential to become significant at the intersections of U.S. Hwy. 89A and Arizona Route 389, Utah Route 59 and Utah Route 9, Utah Route 9 and Interstate-15, Utah Route 9 and Utah Route 17, and Interstate-15 and Utah Route 56.

4.2.7.3 Impacts to Highway Infrastructure in the Warm Springs Project Area with Mining-Related Traffic

Construction, operation, and reclamation of the proposed Warm Springs Project would add mining-related traffic to future projected traffic volumes in the Project area. Owing to the lower mine traffic volumes

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anticipated during construction and reclamation and to the localized nature of the traffic, mine-related traffic during these periods would not be expected to substantially affect highway infrastructure in the Project area.

During mine production, coal trucks travelling between the mine and the loadouts would carry average loads of 123,500 or 129,000 pounds (Appendix A, Section A.2.7.5, Haul Trucks). The maximum axle loadings for the proposed haul trucks (Appendix A, Figure A-14) would be within all State regulations. For comparison purposes, the maximum-weight conventional "18-wheeler" tractor/trailer has an average tandem axle loading of 34,000 pounds. The maximum tandem axle loading of 31,500 pounds for the proposed coal trucks would be well below the Utah and Nevada limit of 34,000 pounds and the Arizona limit of 46,200. The impact of mine-related heavy truck traffic during mine operation would not be any greater than any other truck legally using area roadways. Coal haul trucks would, however, contribute to any acceleration of the normal rate of damage to the pavement and structure of the roadways along the haul route, thus contributing to any increase in road maintenance requirements and costs. As defined by the Utah, Arizona, and Nevada DOTs, bridges and other structures along the haul route are structurally and geometrically adequate to accommodate the proposed haul trucks and are subject to routine inspection and maintenance. The existing maintenance requirements of bridges and other structures and costs would increase gradually as nonmine traffic increases. They would increase as a result of mining-related traffic as well. Mining-related impacts would be constant with very little fluctuation during the 40-year period of active coal mining. General traffic, however, is expected to gradually increase throughout this period because of increases in the regional population. The actual percentage of mine-related truck traffic along the haul routes and intersections would decrease over time as regional traffic increases.

Utah Routes 17, 56, and 59 are currently structurally inadequate to handle heavy truck loadings (Utah DOT 1993a) and would eventually require reconstruction to accommodate any continuous heavy truck traffic. Hidden Valley Road is also currently inadequate to sustain repeated truck loadings, and about one-quarter mile from the Interstate-15 exit to the entrance to the proposed loadout could require reconstruction to handle mining-related truck traffic (Nevada DOT 1994a). Without reconstruction, the road surfaces along these roadways are expected to deteriorate further. Under heavy truck traffic use they could require maintenance much earlier than currently anticipated. The Warm Creek Road would be improved and paved, or the Benchtop Road would be constructed, as part of the proposed action (Appendix A, Section A.2.4, Smoky Mountain Road System), and traffic flow in this area should improve as a result.

The proposed coal truck configuration would meet all applicable requirements for Utah, Arizona, and Nevada DOT permits and, through the permitting process, would be allowed to operate on any roads in those States, including those along the proposed haul route. State DOTs would continue to routinely repair and upgrade area roadways. Trucking fees and permits generated by the Project would generate revenue that would be used by the individual State DOTs to defray any additional maintenance costs along the haul route that would be incurred as a result of coal truck traffic (Section 4.2.9, Socioeconomics). Required truck

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inspections and weighing would also help alleviate road damage caused by incorrect weight distribution or overweight trucks.

Non-Project-related traffic volumes, including heavy truck traffic, are anticipated to increase gradually in the region over time because of regional population increases and the influx of business and construction into the area. (See Appendix B for a discussion of future interrelated projects in the area.) These traffic increases (Table 4-1), added to those anticipated for the proposed Warm Springs Project, would further increase highway infrastructure maintenance requirements. The percentage of mining-related traffic to future baseline traffic would decrease over the life of the Project as regional traffic levels gradually increased over time. Toward the end of the life of the Project, mine traffic would be generating a proportionately smaller amount of wear and tear on area highways compared to overall traffic.

After mine closure, the Warm Springs Project-related truck traffic would cease and slightly reduce the levels of heavy truck traffic on area highways, thereby slowing down the rate of highway maintenance repairs needed for area highways until non-Project volumes expand. Collection of trucking fees paid by the trucking contractor would also cease. Non-Project traffic levels would continue to gradually increase over time with resultant wear and tear on area highways.

The Agencies conclude that the impacts to the highway infrastructure in the Warm Springs Project area with mining-related traffic would be minor to moderate over both the short and long terms, with the potential to become significant along segments of Utah Routes 17, 56, and 59 and on the Hidden Valley Road.

4.2.7.4 Impacts to Public Safety in the Warm Springs Project Area with Mining-Related Traffic

The projected increased traffic levels on the roadway systems in Utah, Arizona, and Nevada will have an impact on public safety along the haul route as the regional population increases. The potential for accidents, likewise, will be further increased along all roadway sections and at all intersections.

Employee-, vendor-, and construction-related truck traffic generated by construction of the mine, the loadouts, the truck maintenance facilities, and the Warm Creek/Benchtop Road would use roadways and intersections immediately adjacent to the construction areas during the 2-year construction phase of the proposed Project. Because the traffic increases at the intersections are expected to be minimal and would be generally localized to the construction areas and their immediate associated roadways, little increase in future accident rates resulting from construction traffic would be anticipated.

During mine production, the size, weight, and configuration of the proposed haul trucks could contribute to traffic safety problems along the haul route. The length of the trucks would increase the difficulty of passing maneuvers and might cause motorists to misjudge available passing distances. The haul trucks

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would require longer stopping distances and more space to make turns than average vehicles. In general, all roadway segments and intersections along the haul route are geometrically adequate to safely accommodate the proposed haul truck configuration. Mining-related impacts would be constant with very little fluctuation during the 40-year period of active coal mining. General traffic, however, is expected to gradually increase throughout this period because of increases in the regional population. The actual percentage of mine-related truck traffic along the haul routes and at intersections would decrease over time as regional traffic increases.

Increased traffic through school zones during mine production would tend to increase potential coal truck conflicts with school buses and pedestrians. All coal haul traffic and some of the Hurricane truck maintenance facility traffic would pass through the school zone and pedestrian crossing on Utah Route 9 in Hurricane. All coal haul traffic destined for the Iron Springs loadout would pass through the school zones on Utah Route 9 in La Verkin and on Utah Route 17 in Toquerville. All the coal haul traffic and some of the Fredonia truck maintenance facility traffic would pass through the school zone on U.S. Hwy. 89A in Fredonia, and all the coal haul traffic and some of the mine employee traffic would pass through the school zone on Utah Route 11 in Kanab. This traffic could increase the potential for conflict with pedestrians and school buses in these areas.

Adverse weather conditions could compound mine-related traffic safety impacts. Ice and snow conditions can exist on Interstate-15 approaching Cedar City and in Arizona through the Virgin River Gorge. Icing can also occur on Utah Route 17 between Hurricane and Toquerville. Such conditions would increase the potential for traffic accidents of all kinds, including mining-related truck accidents.

Traffic accidents in the future should occur at about the existing accident rates along haul route segments and at intersections. Table 4-2 shows the projected number of roadway accidents for the traffic volume increases associated with approval of the proposed Project; also shown are the roadway accident projections associated with disapproval of the proposed Project as a comparison. A comparison of intersection accident projections is shown in Table 4-3. Once full mine production begins, mining-related traffic could be expected to increase accidents along the haul routes by about 5 percent. Most of these accidents would probably involve trucks. About 0.5 to 0.7 additional fatalities (about a 4 percent increase) could occur each year as a result of mining-related traffic, based on the total number of accidents in a year anticipated in the future along the haul route. About 0.1 additional mining-related traffic accidents per year could occur at any given intersection along the haul route. The accident numbers in Table 4-2 are based on the actual accident rates (supplied by the State DOTs) along the various haul route segments for all vehicles and for all trucks. As a point of comparison, Savage Industries, Inc., was contacted regarding their existing coal trucking operation in central Utah. For the period of January 1990 through January 1995, Savage Industries experienced a similar fatal accident rate (3.08 per 100 Mtmt) and a lower overall accident rate (0.25 per Mtmt) when compared to the DOT-supplied rates for the haul routes (Goodman 1995). The majority of the Savage accidents (eight total) were a trailer or tractor rolling over on its side and did not

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Table 4-2 — Future Accident Projections on Selected Area Roads

Roadway	Section	Number of Accidents per Year Without Proposed Project			Number of Accidents per Year With Proposed Project		
		Total	Truck	Fatal	Total	Truck	Fatal
SMOKY HOLLOW MINE TO MOAPA LOADOUT[2]							
Warm Creek Road	A11.	N/A	N/A	N/A	N/A	N/A	N/A
U.S. Hwy. 89	Big Water to Kanab.	83.7	10.3	1.3	97.5	25.4	1.5
Utah Route 11	Kanab to Arizona State line.	4.4	0.0	0.0	4.8	0.0	0.0
U.S. Hwy. 89A	Utah State line to Fredonia.	2.3	0.0	0.0	2.5	0.0	0.0
Arizona Route 389	Fredonia to Colorado City/Utah State line.	42.5	2.2	2.2	44.6	3.2	2.3
Utah Route 59	Hildale/Arizona State line to Hurricane.	26.7	1.5	0.6	29.5	2.8	0.6
Utah Route 9	Hurricane to Interstate-15.	80.9	6.3	0.0	83.2	8.4	0.0
Interstate-15	Utah Route 9 to Arizona State line.	115.3	20.0	2.2	116.9	21.1	2.3
Interstate-15	Utah/Arizona State line to Arizona/Nevada State line.	137.9	21.7	5.8	139.9	23.0	5.9
Interstate-15	Nevada/Arizona State line to Exit 86 in Nevada.	112.0	13.3	7.9	114.6	14.5	8.1
Hidden Valley Road	Interstate-15 to Moapa.	N/A	N/A	N/A	N/A	N/A	N/A
Total Projected Accidents Per Year Along Haul Route		605.7	75.3	20.0	633.5	98.3	20.7
SMOKY HOLLOW MINE TO IRON SPRINGS LOADOUT[3]							
Warm Creek Road	A11.	N/A	N/A	N/A	N/A	N/A	N/A
U.S. Hwy. 89	Big Water to Kanab.	83.7	10.3	1.3	97.5	25.4	1.5
Utah Route 11	Kanab to Arizona State line.	4.4	0.0	0.0	4.8	0.0	0.0
U.S. Hwy. 89A	Utah State line to Fredonia.	2.3	0.0	0.0	2.5	0.0	0.0
Arizona Route 389	Fredonia to Colorado City/Utah State line.	42.5	2.2	2.2	44.6	3.2	2.3
Utah Route 59	Hildale/Arizona State line to Hurricane.	26.7	1.5	0.6	29.5	2.8	0.6
Utah Route 9	Hurricane to La Verkin.	5.6	0.0	0.0	5.7	0.0	0.0

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Table 4-2 — Future Accident Projections on Selected Area Roads (Continued)

Roadway	Section	Number of Accidents per Year Without Proposed Project			Number of Accidents per Year With Proposed Project		
		Total	Truck	Fatal	Total	Truck	Fatal
SMOKY HOLLOW MINE TO IRON SPRINGS LOADOUT (Con.)							
Utah Route 17	La Verkin to Interstate-15.	9.5	0.5	0.5	10.8	1.2	0.5
Interstate-15	Utah Route 17 to Exit 59.	302.2	36.3	6.0	306.9	38.6	6.1
Utah Route 56	Interstate-15 to Iron Springs Road.	3.8	0.5	0.4	4.2	1.2	0.5
Iron Springs-Road	Utah Route 56 to Iron Springs.	N/A	N/A	N/A	N/A	N/A	N/A
Total Projected Accidents Per Year Along Haul Route		480.7	51.3	11.0	506.5	72.4	11.5

Source: Utah Department of Transportation 1994.
Jager 1993.
Arizona Department of Transportation 1993b.
Nevada Department of Transportation 1993.
Berger 1993.
JHK & Associates 1993.

[1]Based on existing accident rates and traffic volume projections.
[2]Accident rates are not available for the road segments from Smoky Hollow to Big Water or Exit 88 to the loadout.
[3]Accident rates are not available for the road segments from Smoky Hollow to Big Water or Iron Springs Road to the loadout.
N/A = Data not available.

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Table 4-3 — Future Accident Projections at Selected Area Intersections

Intersection	Total Number of Accidents Per Year Without Proposed Project	Total Number of Accidents Per Year With Proposed Project
SMOKY HOLLOW MINE TO MOAPA LOADOUT		
U.S. Hwy. 89 at Warm Creek Road	(2)	(2)
U.S. Hwy. 89 at Utah Route 11	2.9	3.0
U.S. Hwy. 89A at Arizona Route 389	(2)	(2)
Utah Route 59 at Utah Route 9	10.1	10.2
Utah Route 9 at Interstate-15	0.9	0.9
Interstate-15 at Hidden Valley Road	(2)	(2)
Total Projected Accidents Per Year Along Haul Route	13.9	14.1
SMOKY HOLLOW MINE TO IRON SPRINGS LOADOUT		
U.S. Hwy. 89 at Warm Creek Road	(2)	(2)
U.S. Hwy. 89 at Utah Route 11	2.9	3.0
U.S. Hwy. 89A at Arizona Route 389	(2)	(2)
Utah Route 59 at Utah Route 9	10.1	10.2
Utah Route 9 at Utah Route 17	9.7	9.8
Utah Route 17 at Interstate 15	1.6	1.7
Interstate-15 at Utah Route 56	1.5	1.5
Utah Route 56 at Iron Springs Road	(2)	(2)
Total Projected Accidents Per Year Along Haul Route	25.8	26.2

Source: Utah Department of Transportation 1994a.
Jager 1993.
Arizona Department of Transportation 1993b.
Nevada Department of Transportation 1993.
Berger 1993.
JHK & Associates 1993.

[1] Based on existing accident rates and traffic volume projection of 15 years for Utah and Nevada and 25 years for Arizona.
[2] Intersections at U.S. Hwy. 89/Warm Creek Road, U.S. Hwy. 89A/Arizona Route 389, Interstate-15/Hidden Valley Road, and Utah Route 56/Iron Springs Road have not recorded accidents in the past. Without previous accident rate, future accident numbers could not be projected.

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involve another vehicle. One fatal accident was alcohol related and occurred when a car ran into the back of a coal truck that was stopped at a stop sign. If the Savage Industries accident rates were applied to the proposed Warm Springs Project truck haul from the proposed mineslte to Moapa, operations would result in about 7.3 truck accidents per year (versus 21.4, using the DOT rates) and about 0.9 fatal accidents per year (versus 0.7, using the DOT rates). Savage Industries trucks in central Utah averaged about 6.5 Mtmt per year over the 5-year reporting period, while Warm Springs Project trucks would average about 29 Mtmt per year. Given the differences in operating conditions between the Project area and central Utah, accident rates for all trucks and for coal trucks only, and the Warm Springs Project truck haul operator and equipment and Savage Industries, Inc., it is felt that the number of accidents based on DOT accident rates and Savage accident rates bracket the actual number of accidents that could result from the Warm Springs Project.

The greatest number of accidents attributable to mining-related traffic would be expected to occur along U.S. Hwy. 89 between Big Water and Kanab, along Utah Route 59 between the Arizona State line and Hurricane, along Utah Route 9 between Hurricane and Interstate-15, and along Interstate-15. Although planned roadway improvements could improve the safety characteristics of sections of Utah Route 9, the existing accident rates were applied to the projected volumes to project future accident frequency. The number of fatalities (about 0.2 per year per segment) should remain fairly constant along these segments of the haul route.

No accidents were recorded during the most recent traffic accident data collection period along the Warm Springs Road, the Iron Springs Road, and the Hidden Valley Road or their related intersections. In addition, no accidents were recorded at the intersection of U.S. Hwy. 89 and Route 11 in Kanab, at the intersection of U.S. Hwy. 89A and Arizona Route 389 in Fredonia, or at other minor intersections in the area. No truck-related or fatal accidents occurred during the reporting period along Utah Route 11 between Kanab and the Arizona State line, along U.S. Hwy. 89A in Arizona near Fredonia, or along Utah Route 9 between Hurricane and La Verkin. The addition of mining-related traffic in these areas could potentially increase the number of accidents occurring in these areas; however, the historic accident rate for the areas has been low and would be expected to continue to be low. Future road improvements along Utah Route 9 between Hurricane and La Verkin should, however, improve the safety characteristics of this section of highway.

During the final reclamation phase of the proposed Project, when coal production and hauling operations have ended, Project-related traffic would decrease substantially and would be localized to the areas immediately adjacent to the mine and loadout facilities. This traffic would be limited to reclamation operations employees and any heavy trucks or equipment used in the reclamation process. This level of traffic should not be sufficient to affect any future area traffic accident levels.

To help reduce the potential for accidents, coal truck drivers would not be allowed to travel in convoys or groups. Using radio contact, coal trucks would maintain a minimum 1-mile spacing to allow safe passing

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and minimize congestion. Haul drivers would be responsible for obeying posted speed limits and other traffic laws (Appendix A, Section A.2.7.6, Truck Haul). Trucks would undergo safety and maintenance on a regular basis. Trucks would use tarps, mechanical closures, or other effective means to minimize coal dust emissions. All truck axles would be equipped with self-adjusting pneumatic brakes and compression (Jake) brakes to increase their safety on the hills.

After mine closure, general traffic levels in the area would drop slightly from the cessation of coal haul truck traffic and then would gradually increase as a result of increases in regional population. No additional effects from mine traffic would be anticipated. Cumulative effects from other projects (Appendix B), such as the Navajo Generating Station, have been considered in the future baseline accident rates discussed above. All effects on accident frequency from mining-related traffic are in addition to future cumulative traffic volumes.

The Agencies conclude that impacts to public safety in the Warm Springs Project area with mining-related traffic would range from moderate to major over both the short and long terms, with the potential to become significant along Interstate-15, Utah Route 9, Utah Route 59, and U.S. Hwy. 89.

4.2.7.5 Impacts to Structural Integrity and Stability of County Roads in the Smoky Mountain Area with Mining-Related Activities

Mining activities could cause subsidence of both the reconstructed Warm Creek/Benchtop Road and the existing Kelly Grade Branch of the Warm Creek Road where they cross the proposed Smoky Hollow life-of-mine area. Subsidence would cause dips in the roadway and/or a weakened roadway structure and could force slower vehicle travel because of uneven roadway surfaces (Section 4.2.1.1). Heavy vehicles travelling on roadways weakened by subsidence could cause further damage to the road. Poor road surface conditions would increase vehicle operating and maintenance costs. Weaker road surfaces and roadbed structure would accelerate roadway maintenance requirements.

If subsidence cracks or fractures appear on the surface, there would be a potential for damage to occur where roads cross into and over the subsidence trough. At the edges of the trough (between the limit of the mined-out coal and the edge of subsidence effects defined by the angle of draw), the road may drop in elevation and be affected by cracks. In other areas in the trough, buckles in the road surface may develop in sections affected by compressional forces. The severity of cracks and buckles would depend on whether brittle bedrock is at or near the surface in a particular location. The presence of soft, easily deformed, unconsolidated materials at the surface would reduce the severity of surface cracks and resultant damage.

About 1.5 miles of the Warm Creek/Benchtop Road in the upper reaches of the Smoky Hollow Canyon, 1.7 miles of the Kelly Grade Branch of the Warm Creek Road on Smoky Mountain, and 1.7 miles of the

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Warm Springs Road on Smoky Mountain would cross over underground mine workings (Appendix A, Figure A-4). The primary north-south main entries to the proposed underground mine workings would lie under the Smoky Hollow drainage. The mining plan calls for barrier pillars to be left in place on either side of these main entries (Appendix A, Figure A-4). Also, in the lower part of Smoky Hollow Canyon, coal directly beneath the base of the canyon drainage would not be mined. Because of the support underneath this area, that part of the proposed Warm Creek/Benchtop Road from the surface facilities complex to the top of Smoky Mountain should experience little effect from subsidence, with the exception of potential sloughing of material from steep canyon slopes caused by the mining of panels adjacent to either side of the main entries. The coal left in barrier pillars would collapse many years after mining has ceased, but the effects are expected to be minimal. The majority of subsidence would be expected to end in this part of the life-of-mine area about 5 to 10 years after mining ceased.

The Kelly Grade Branch and the Warm Creek/Benchtop Road would cross over the easternmost parts of the underground mine workings where thickness of the overburden is 600 feet or greater. The road would be subjected to subsidence effects as described above, but because of the overburden depth and the flat topography at the top of Smoky Mountain, the effects would not be expected to be severe. Monitoring of subsidence (Appendix A) would be conducted to protect the potential users of the road. The mine operator would repair any damage to the Warm Creek/Benchtop Road and the Kelly Grade Branch of the Warm Creek Road resulting from mining-related activities, including damage caused by subsidence, mine vehicle traffic, or other heavy mining equipment traffic. The mine operator would also be responsible for temporary or permanent relocation of any sections of the road which could not be maintained in a satisfactory condition. Monitoring and maintenance of the roads would continue throughout the life of the mine. No long-term effects on the roads from subsidence would be expected.

After mining activity ceases, vehicle use of the county roads in the Smoky Mountain area would continue and is expected to increase in the future because of local and regional population increases. This traffic would continue to cause wear to the surface and structure of the roads in the area. Natural processes would also continue to act upon all roads in the existing county road system, with the structural integrity and stability of the roads subject to the severity of those natural processes.

The Agencies conclude that impacts to the structural integrity and stability of county roads in the Smoky Mountain area with mining-related subsidence would be minor over the short term and negligible over the long term.

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4.2.8 Noise

4.2.8.1 Impacts from Noise Generated Along the Roads in the Warm Springs Project Area with Mining-Related Traffic

Traffic in the Warm Springs Project area will increase over time to projected future background levels (Table 4-1). These increases in traffic volume, unrelated to the proposed Project, will increase noise levels along area roadways. Project-related construction, operation, and reclamation would add traffic to area roadways and would contribute to increased noise levels as well.

Additional traffic during construction activities would range from about 8 to 10 vehicle trips per day on the roadways in the vicinity of the proposed Hurricane/Fredonia truck maintenance facility to about 90 vehicle trips per day on the roadways in the vicinity of the Moapa unit-train loadout (Section 4.2.7, Transportation). These vehicles would largely be personal use vehicles and limited to roadways adjacent to the sites. They are not expected to substantially affect current background noise levels (Chapter 3, Table 3-9).

During the period of full mine production, about 175 mine-related truck round-trips daily would be added to future traffic volumes along the haul route. In addition, mine workers, loadout employees, and truck maintenance facility employees would commute between home and work, and service-related vehicles would travel to the various mine facilities to deliver supplies. Coal haul trucks and other mining-related traffic would increase noise levels along the haul routes as single events and on a cumulative average level, with coal haul trucks initiating the highest noise level changes. Single-event noise level increases along the haul routes are expected to be localized and generally confined to the areas immediately adjacent to the road. Average single-event dBA levels (Maximum Noise Level) for coal haul trucks can range from about 75 dBA at 55 feet from a loaded coal haul truck travelling 55 mph to about 91 dBA at 30 feet from an empty haul truck traveling down a hill with a 5 percent grade (Andalex Resources, Inc. 1993). Time exposure during the maximum single-noise event would be about 10 to 15 seconds. Although the perception of what constitutes noise and what doesn't is extremely subjective, audible noise values higher than 80 dBA have been known to elicit widespread community complaints (EPA 1974). Single coal haul truck noise events during the night could be more noticeable, since overall background noise levels are generally lower at night (45 to 50 dBA). When a coal haul truck passes by a residential area during the night, ambient noise levels of about 45 to 50 dBA could be temporarily increased to about 70 to 90 dBA, depending upon the distance from the road and the terrain being traversed. Distance from the road to a residence, screening (such as trees and walls), and weather would all affect the dBA levels. Acclimation to the noise over time could reduce perceived noise effects. With the intermittent coal haul truck noise increases occurring about every 4 to 5 minutes, some community complaints could be elicited, particularly in the early stages of mine production (Chapter 3, Tables 3-8 and 3-9).

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Haul truck noise could also illicit more reaction in communities than in rural areas because of the larger numbers of people. Some of the sections along the haul route, including roadways through Kanab, Fredonia, Hurricane, La Verkin, and Cedar City, already appear to have a background noise level that may be eliciting some complaints (Chapter 3, Tables 3-8 and 3-9). Over the 40-year operation life of the mine, background traffic levels would continue to increase because of regional population increases, and the area should experience gradual increases in noise levels. Mine-related traffic noise would account for a smaller percentage of the ambient noise levels as these volumes increase. Table 4-4 outlines projected peak hour traffic noise levels along selected segments of the haul route about 15 to 20 years in the future, both with and without the proposed Project. (See Appendix E, Section E.6, Noise Level Calculations.) Rural areas would experience the greatest increase in traffic noise since their background levels are generally lower overall. Decibel increases of 5 to 6 are generally identified as moderate noise level increases; increases of 10 dBA or more are identified as severe increases (EPA 1977). Most parts of the haul route between Big Water and the loadouts should experience relatively low dBA increases of 0.2 to 3.3. The Iron Springs Road leading to the unit-train loadout would experience an increase in noise level of 8.5 dBA. Since land uses along this roadway section are predominantly industrial, few noise sensitive receptors would be affected by these increased noise levels. The Hidden Valley Road outside Moapa would have a decibel level increase of 6 dBA over a short distance; however, no noise sensitive receptors have been identified in this section of the Hidden Valley Road (Table 4-4).

After mine production has ceased and during reclamation, background levels would have increased because of regional population increases; however, mining-related traffic would have decreased substantially and mining-related traffic noise levels would also have decreased. Although some Project-related traffic would be present, no effect on overall projected noise levels beyond background levels is anticipated during reclamation activities.

Coal haul trucks would not use compression (Jake) brakes in communities with local noise ordinances. Trucks would also undergo routine safety and maintenance inspections prior to every shift, and drivers would be instructed to not travel in convoys. Drivers would be required to maintain truck speeds through communities at or below posted limits, which should also help reduce truck noise levels (Appendix A, Section A.2.7, Truck Maintenance Facility and Truck Haul).

After mine closure, traffic levels would drop to projected future background levels and then continue to increase because of continued regional population increase; noise levels would increase accordingly. Cumulative noise effects from other projects (Appendix B) have been considered in the noise estimates discussed above. All effects on noise levels from mining-related traffic are in addition to future cumulative traffic volumes.

The Agencies conclude that impacts from noise generated along the roads in the Warm Springs Project area from mining-related traffic would be minor to moderate over the short term and minor over the long term.

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Table 4-4 — Future Peak-Hour Traffic Noise Projections along Selected Area Roads

Roadway	Section	Traffic Noise w/o Project[1]	Traffic Noise w/ Project	Increase in Traffic Noise[1]
COMMON ROUTE TO HURRICANE				
Warm Creek Road	All.	46.7	71.0	24.3
U.S. Hwy. 89	Big Water to Kanab.	70.0	73.3	3.3
Utah Route 11	Kanab to Arizona State line.	71.1	73.9	2.8
U.S. Hwy. 89A	Utah State line to Fredonia.	74.6	76.1	1.5
Arizona Route 389	Fredonia to Colorado City/Utah State line.	74.9	76.3	1.4
Utah Route 59	Hildale/Arizona State line to Hurricane.	71.9	74.3	2.4
ROUTE TO MOAPA				
Utah Route 9	Hurricane to Interstate-15.	76.7	77.7	1.0
Interstate-15	Utah Route 9 to Arizona State line.	83.8	84.0	0.2
Interstate-15	Utah/Arizona State line to Arizona/Nevada State line.	83.4	83.7	0.3
Interstate-15	Nevada/Arizona State line to exit 88 in Nevada.	81.6	82.0	0.4
Hidden Valley Road	Interstate-15 to Moapa.	65.7	71.7	6.0
ROUTE TO IRON SPRINGS				
Utah Route 9	Hurricane to La Verkin.	74.8	76.2	1.4
Utah Route 17	LaVerkin to Interstate-15.	70.0	73.3	3.3
Interstate-15	Utah Route 17 to exit 59.	83.2	83.4	0.2
Utah Route 56	Interstate-15 to Iron Springs Road.	71.1	73.8	2.7
Iron Springs Road	Utah Route 56 to Iron Springs.	65.8	74.3	8.5

[1] IN dBA.
(See Appendix E for assumptions used in calculating future dBA.)

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4.2.8.2 Impacts from Noise Generated in the Iron Springs and Moapa Areas with Mining-Related Loadout Activities

During loadout construction, the principal source of Project-related noise would be from operation of construction equipment, such as backhoes and dump trucks. Noise levels from equipment at a distance of 50 feet would range from 75 to 95 dBA for front loaders, backhoes, and trucks (Table 4-5). Noise levels for pumps, generators, and compressors would range from 70 to 85 dBA at 50 feet (EPA 1971). Noise levels would decrease with distance from the source. At 1,000 feet from the source, levels would be about 60 dBA, and at 4,500 feet from the source, they would be at a level acceptable for sensitive areas of about 51 Ldn. No noise-sensitive receptors, such as schools or residences, have been identified within a 4,500-foot radius of either of the proposed loadouts.

Noise sources associated with operation of the loadouts would include arrival and departure of trucks and trains, operation of conveyor belts, dumping coal, dozing the coal piles, and loading railroad cars. A dBA of 55 would be anticipated at distances of 700 to 850 feet from the loadout operations, and an Ldn of 55 would be anticipated at distances of about 2,180 to 2,600 feet from the loadout operations. (See Appendix E, Section E.6, Noise (Ldn) Level Calculations.) These levels are all within accepted noise limits identified by EPA for sensitive areas (EPA 1974, 1978).

Both the the Iron Springs and the Moapa unit-train loadout sites would be in essentially open country, adjacent to operating railway lines, and far from any residential or other sensitive land use. At the Iron Springs site, the nearest residential area is over 3 miles away. At Moapa, the nearest residential property is over 2 miles away. At any distance beyond 1 mile, the noise from these operations would be inaudible under conditions of normal sound propagation.

After completion of mine operations and reclamation, noise levels in the vicinity of the unit-train loadouts should return to generally premining operation levels. There may be some increase in ambient noise levels resulting from regional increases in traffic levels in the areas, but, generally, noise levels should be relatively low.

The Agencies conclude that impacts from noise generated in the Iron Springs and Moapa areas with mining-related loadout activities would be negligible over both the short and long terms.

4.2.8.3 Impacts from Noise Generated in the Smoky Mountain Area with Mining-Related Activities

Construction, operation, and reclamation activities in the Smoky Mountain area would increase noise levels in the area. During construction and reclamation, noise would generally be related to vehicle traffic and construction equipment, as discussed in Section 4.2.8.2 (above). Acceptable Ldn levels are expected to be

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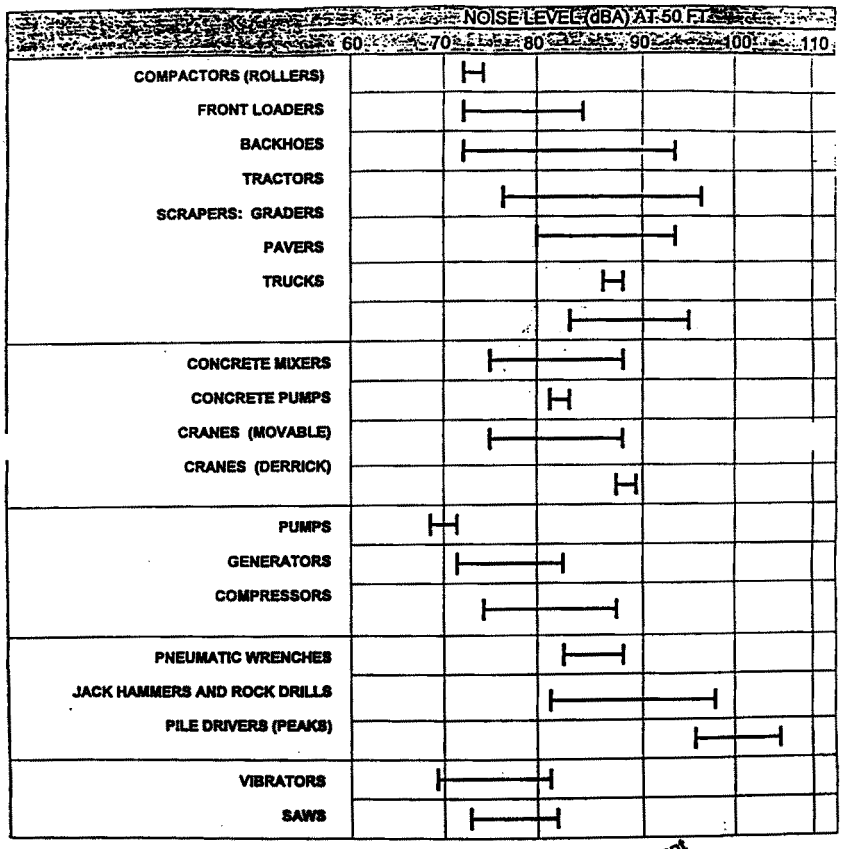
Table 4-5
Construction Equipment Noise Ranges



Source: EPA 1971

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achieved outside a 4,500-foot radius. The Smoky Hollow surface facilities complex would lie in an isolated area, and no sensitive noise receptors, such as residences, have been identified within 1 mile of the minesite. The nearest areas of noise sensitivity appear to be the Burning Hills Wilderness Study Area, at a distance of over 3 miles, and the Glen Canyon NRA, at a distance of more than 6 miles.

During mine operation, principal noise sources at the surface facilities complex would be dominated by the crusher, truck loadout facility, and mine ventilating fan. Along the proposed Warm Creek/Benchtop Road, noise increases would be largely generated by mining-related traffic (Table 4-4). Noise increases related to mining traffic along the Warm Creek/Benchtop Road could increase by as much as 24 dBA above ambient background noise levels. No sensitive noise receptors are located along the Warm Creek/Benchtop Road outside Big Water, although the Benchtop road would pass near the Burning Hills Wilderness Study Area and the Warm Creek Road passes through a corner of Glen Canyon NRA. Coal trucks and other mining-related traffic would increase noise levels as single events. These single-event increases should be localized and generally confined to the areas immediately adjacent to the road. Average dBA levels in Big Water are estimated to range from 35 to 45 at night, and 50 to 60 during the daytime (Chapter 3, Table 3-8 and Figure 3-9). Mining-related traffic could increase noise levels to 71 dBA during both the day and night, a change of about 10 to 30 dBA from ambient conditions. EPA identifies noise increases of 10 or more decibels as being severe. (Section 4.2.8.1, Impacts from Noise Generated Along Roads in the Warm Springs Project Area with Mining-Related Traffic).

A 55 dBA Ldn is normally considered as an upper limit for acceptable residential conditions. With the 10 decibel nighttime weighing applied, an Ldn of 55 would be achieved by a continuous sound level at 48.6 dBA. A dBA of 48.6 (or Ldn of 55) would be expected at 2,089 feet from the proposed Smoky Hollow Mine crusher operation. An Ldn of 55 would be expected at 2,350 feet from the proposed truck loadout structure and at 4,940 feet from the proposed mine ventilating fan (Acoustical Engineers, Inc. 1994). (See Appendix E for a discussion on the noise measurements.) Based on the topography of the area and the proposed orientation of the mine equipment, it appears that any locations removed from the minesite by more than about 2,000 feet would benefit from the noise barrier effect of the surrounding mountains. Beyond this point, it would be expected that the noise levels from the mine operations would be essentially inaudible under any normal conditions of sound propagation. No noise sensitive receptors are located within 5,000 feet of the proposed Smoky Hollow surface facilities complex.

Heavy equipment used at the mine would be well maintained and fitted with adequate mufflers to further minimize noise levels. Also, loud stationary equipment would be partially or completely enclosed. Coal trucks would not use compression (Jake) brakes in communities with local noise ordinances. Trucks would also undergo routine safety and maintenance inspections prior to every shift, and drivers would be instructed to not travel in convoys. Drivers would be required to maintain truck speeds through communities at or below posted limits, which should also help reduce truck noise levels (Appendix A, Section A.2.7, Truck Maintenance Facility and Truck Haul).

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After reclamation, activities would be completed, noise levels in the immediate vicinity of the surface facility complex would be expected to return to near premining levels. Traffic along the Warm Creek/Benchtop Road would be reduced substantially; however, the road would remain in place following mine closure, and projected future traffic along the road would prevent the complete return to premining noise levels.

The Agencies conclude that impacts from noise generated in the Smoky Mountain area with mining-related activities would be minor over both the short and long terms, with the potential to become significant along sections of the Warm Creek/Benchtop Road.

4.2.9 Socioeconomics

4.2.9.1 Impacts to Employment, Population, Personal Income, and Business Activity in the Warm Springs Project Area with Project-Related Activities

Employment created by the construction and operation of the proposed Warm Springs Project would include jobs associated with (1) development of surface and subsurface mine facilities, (2) construction of associated facilities, such as the 138-kV power transmission line, the unit-train rail loadouts, and the truck maintenance facility, (3) improvement/construction of the Warm Springs/Benchtop Road, (4) production and transportation of coal, and (5) postmining reclamation. In addition, secondary employment opportunities would be supported throughout the region by purchases of goods and services by the mining and transportation companies and by the households tied economically to the proposed Project. The secondary jobs supported by the proposed Project would benefit the region's economy and the residents by expanding the economic opportunities available and increasing the volume of business activity.

Peak employment effects during premining development, including secondary jobs, would reach about 580 jobs. The peak would occur in year 2 of the Project, when construction of ancillary facilities, premining development, and initial production would occur simultaneously. The new jobs would be widely dispersed between the unit-train loadout sites, the minesite, the truck maintenance facility, and communities in the region. In Iron County, Utah, and Clark County, Nevada, a maximum of 155 and 64 jobs would be created during construction, respectively. These would be the peak Project-related employment impacts occurring in these locations, as mining operations employment in these two counties would be lower than the temporary, construction employment.

At full production over the life of the Project, the combined direct and secondary employment would create a total of 822 to 832 jobs. Given the locations of the mine and truck maintenance facility and the anticipated residency patterns of direct Project-related employees, most of the added employment would be in Kane, Coconino, and Washington Counties (Table 4-6). The projected employment distribution also reflects a concentration of the secondary jobs supported by higher business and consumer purchases in Kanab, Page, Hurricane, and St. George.

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Table 4-6 — Projected Project-Related Change in Regional Employment

County	Total[1] Employment Change with TMF[2] in		Baseline Employment in Year 2000	Project Employment Change Compared to Baseline-Year 2000	
	Fredonia	Hurricane		Fredonia (%)	Hurricane (%)
Coconino County, AZ	329	48	69,036	<1.0	<1.0
Kane County, UT	355	249	4,070	8.7	6.1
Washington County, UT	69	446	41,046	<1.0	1.1
Iron County, UT	55	55	15,591	<1.0	<1.0
Clark County, NV	24	24	680,026	<1.0	<1.0
Total	832	822	809,769	<1.0	<1.0

Source: U.S. Bureau of Economic Analysis 1994; Utah GOPB 1993.
[1]Total employment includes direct mine employment and secondary employment.
[2]Truck Maintenance Facility.

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The hypothetical location of the truck maintenance facility is a major variable affecting the distribution of employment impacts. Locating the facility in Fredonia would increase employment impacts in Kane and Coconino Counties. Siting the facility in Hurricane would result in higher employment impacts in Washington County. The distribution of Project-induced secondary employment would be influenced by household residency patterns and the size of the local trade centers in the area. Thus, with the truck maintenance facility in Fredonia, many secondary jobs would be created in nearby Kanab, Utah, because of its larger base of stores and services. Similarly, businesses in Hurricane and St. George would be the principal beneficiaries of a truck maintenance facility in Hurricane. (A discussion of the economic and demographic projections methodology is presented in Appendix E, Section E.7, Economic-Demographic Impact Modeling.)

Employment impacts from the proposed Project would occur in addition to baseline economic expansion throughout the region. Both Clark County, Nevada, and Washington County, Utah, are expected to experience strong continued growth in the future. The competing demand for labor generated by such ongoing growth and the specialized skills associated with the direct Project-related employment opportunities would limit the number of positions filled by current residents. Thus, current residents of the region are projected to fill 21 percent of the employment opportunities generated by the proposed Project.

Households migrating to the region to fill available jobs would create population growth. Incremental population in the study area due to the proposed Project would range from 1,669 to 1,685 residents, with the distribution of Project-related employment and population mirroring the location of the proposed Project's primary job sites. Consequently, noticeable differences in the distribution of socioeconomic impacts would occur between the alternative locations of the proposed truck maintenance facility. (Projected Project-related changes in population are presented in Table 4-7.)

A commonly accepted planning assumption suggests that compounded population growth of 2.0 percent or more per year over a 3 to 5 year period will frequently tax a community's existing infrastructure and service provision capabilities. These situations may trigger additional housing construction, hiring of more staff, facility expansions, and infrastructure development. Much of the region is already facing such conditions with population increases in the Project area through the year 2010 projected to range from about 2.0 percent per year in Coconino County, Arizona, to 4.6 percent per year in Washington County, Utah. With the project in place, added growth pressures would result, with average annual growth rates increasing slightly to about 2.2 percent in Coconino County and 4.7 percent in Washington County. The most pronounced impact would occur in Kane County, with the truck maintenance facility in Fredonia, whereby the average annual growth rates would rise from 3.0 percent to 3.5 percent. Compared to the projected baseline populations in the year 2010, the largest impacts would be expected to occur in the communities of Big Water, Kanab, and Fredonia.

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Table 4-7 — Projected Project-Related Change in Regional Population

County/Community	Population Change with TMF[1] in		Baseline Population in Year 2000	Project Change Compared to Baseline-Year 2000	
	Fredonia	Hurricane		Fredonia (%)	Hurricane (%)
COCONINO COUNTY, AZ					
Page	*249	*249	8,957	2.8	2.8
Fredonia	*179	7	1,486	12.0	<1.0
MOHAVE COUNTY, AZ	38	2	116,775	<1.0	<1.0
KANE COUNTY, UT					
Big Water	95	95	426	22.3	22.3
Kanab	690	230	4,448	15.5	5.2
Remainder	155	57	2,026	7.7	2.8
WASHINGTON COUNTY, UT					
Hurricane area[2]	*23	*298	10,406	<1.0	2.9
St. George	*95	*430	48,038	<1.0	<1.0
Remainder	26	198	23,401	<1.0	<1.0
IRON COUNTY, UT					
Cedar City	*97	*97	17,770	<1.0	<1.0
CLARK COUNTY, NV					
Moapa Valley	11	11	5,189	<1.0	<1.0
Remainder[3]	11	11	1,112,001	<1.0	<1.0
Total	1,669	1,685	1,350,923	<1.0	<0.1

Source: Andalex Resources, Inc. 1994
[1] Truck Maintenance Facility
[2] Includes the municipalities of Hurricane, Toquerville, and La Verkin.
[3] Includes Mesquite and the Las Vegas Metropolitan Statistical Area.
* Includes individuals expected to reside in rural areas near the respective communities.

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Wages and salaries to be paid to construction workers would total about $9.2 million over a 2-year period. Of the total, labor earnings of about $4.5 million would be associated with construction of the two unit-train loadouts, with an equivalent amount paid to construction workers developing the mine, associated facilities, and the Warm Springs/Benchtop Road (Andalex Resources, Inc. 1993).

During the premining development period, additional wages and salaries totaling $4.2 million per year would be paid to operating employees of the mine and the trucking contractor. At full production, projected annual wage and salary earnings totaling $15.8 million would be paid to employees directly associated with the proposed Project (Andalex Resources, Inc. 1993). These earnings would be important benefits accruing to the residents and businesses in the region. In 1992, average annual wage and salary earnings ranged from $14,725 in Kane County to almost $20,600 in Coconino County (U.S. Bureau of Economic Analysis, 1994a, b). The predicted average annual earnings of about $35,000 for the direct Project employees would be considerably above prevailing wages in the region.

Higher consumer household expenditures and local purchases of goods and services in the economy supported by the Project would stimulate secondary employment and incomes gains in the multicounty region. Household consumption outlays, not including housing costs, typically are about two-thirds of total personal income. Purchases of locally available goods and services by the mine and trucking firm are estimated at about $7.4 million annually (Andalex Resources, Inc. 1993). At full production, an additional $7.7 million in annual earnings would be realized by workers filling secondary jobs supported by the proposed Project. (See Appendix E for a discussion of how earnings were projected.) At full production, the combined direct and secondary wage and salary earnings associated with the proposed Project are projected at about $23.5 million annually (Table 4-8). This total is equivalent to 0.2 percent of the total wages and salaries paid to workers in the six potentially affected counties in 1992. However, the Project-related wages and salaries represent a substantial potential benefit to residents of the three Utah counties and Coconino County, Arizona, where the projected increase is equivalent to about 1.7 percent of the wages and salaries paid in 1992. Depending on the location of the truck maintenance facility, the proposed Project could generate up to a 50 percent increase in annual wage and salary payments in Kane County compared with those in 1992.

Retail, wholesale, and service establishments in Kanab, Page, Hurricane, St. George, and Fredonia would capture most of these sales. Businesses and institutions in St. George, such as health care providers, would also benefit. In addition, substantial expenditures for trucks, trailers, longwall mining equipment, and other mining supplies not available locally would be made to vendors located in central Utah, the Wasatch Front, and other locations outside the region.

While Iron, Washington, and Clark Counties have been successful in their industrial diversification efforts, the economies of Kane County and northern Coconino County remain heavily reliant on tourism. The proposed Project would benefit the local economies in Kane and Coconino Counties by increasing the

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Table 4-8 — Projected Project-Related Change in Wage and Salary Income

County	Wage and Salary Increase with TMF[1] Operations (million $[2])		Wages and Salaries in Year 1992 (million $)	Project Change Compared to Year 1992 (%)	
	Fredonia	Hurricane		Fredonia	Hurricane
Coconino, AZ	$6.84	$3.92	$860.4	0.8	0.5
Mohave, AZ	0.22	0.22	550.6	0.0	0.0
Kane, UT	12.63	5.81	25.1	50.3	23.1
Washington, UT	0.97	10.77	302.4	0.3	3.6
Iron, UT	1.88	1.88	145.7	1.3	1.3
Clark, NV	0.97	0.97	10,775.7	0.0	0.0
Total	23.51	23.57	12,659.9	0.2	0.2

Source: U.S. Bureau of Economic Analysis 1994b.
[1]Truck Maintenance Facility.
[2]Wages and salaries in millions of constant dollars. Wage and salary are reported on a place of residence basis and include direct, indirect, and induced jobs. No allowances are included for non-earnings income.

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economic diversification of the region, by creating higher wages and year-round employment, and by generating additional support for local businesses.

Increased truck traffic associated with the Project would result in increased traffic on the regional highway network, which could potentially affect future tourism and recreation visits in the region. Concurrently, improved access to Glen Canyon National Recreation Area and other Federal lands afforded by the Warm Creek/Benchtop Road could increase or alter the pattern of visitation. However, little or no net change of tourism-related employment, income, or sales would be expected as a result.

The end of mining and mining-related activity would occur in year 43 or 44. Most of the jobs and corresponding incomes directly associated with the proposed Project would be terminated at the end of full-scale production and initial reclamation. A limited number of jobs would continue through the completion of reclamation. The cutbacks in direct employment would trigger reductions in the number of secondary jobs supported by the Project. (The impacts to socioeconomic conditions at the end of mining and mining-related activity are discussed in Section 4.2.9.11.)

Although a number of projects have been identified as occurring within the Project area concurrent with the proposed Project (Appendix B), all have been considered in the projected economic and demographic baseline. Therefore, no additional cumulative impacts to employment, population, personal income, and business activity are projected. However, the Navajo Generating Station Scrubber Project (Appendix B) could temporarily generate additional economic and population growth in Page during the premining development period of the proposed Project.

The Agencies conclude that impacts to employment, population, personal income, and business activity in the Warm Springs Project area with Project-related activities would be beneficial and would range from moderate to major over both the short and long terms, with the potential to become significant in Big Water and Kanab, Utah, and Fredonia, Arizona.

4.2.9.2 Impacts to Local Government Fiscal Resources in the Warm Springs Project Area with Project-Related Activities

With approval of the proposed Project and the subsequent increases in population and economic activity, local governments would experience added demand for public services. Satisfying these demands may require more staff and operating and capital outlays. Public revenues would also increase, both directly and indirectly. Direct Project revenues include property taxes on improvements, equipment, and the capitalized value of the coal reserves, sales taxes on local purchases of goods and services, and other miscellaneous fees. Indirect revenues, generated by the same mechanisms, would be produced from households supported directly and indirectly by the mine or trucking firm.

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Direct revenues to local governments would accrue primarily in Kane County in the form of property taxes levied on the assessed valuation of the mine. These revenues would fluctuate over time on the basis of the valuation of the coal reserves and as the equipment, such as the longwall mining system, is installed new, depreciates, and is then refurbished or replaced. Over the life of the mine, Kane County's annual property tax proceeds from the mine are projected to average about $334,000 (1994 dollars) based on current tax levies and the projected assessed valuation of the mine (Utah GOPB 1993; Utah Foundation 1992). Kane County would also realize substantial sales tax revenues, receiving credit for some purchases made elsewhere in Utah, as well as other taxes and fees. Once production and the initial reclamation have been completed, these incremental revenues would cease.

Iron County, Utah, and Clark County, Nevada, would receive property tax revenues in conjunction with the proposed unit-train loadouts estimated at about $13,400 and $11,900 annually over the short term (Andalex Resources, Inc. 1993; Utah Foundation 1992; Nevada Department of Transportation 1994). Washington County, Utah, or Coconino County, Arizona, along with the corresponding communities of Hurricane or Fredonia could garner property taxes from assessments on the truck maintenance facility and trucking fleet. There is some uncertainty regarding the applicability of such taxes, however, as the trucks would have apportioned registrations and may be considered interstate carriers and thus exempt from property tax.

Each of the five affected county governments would see some increase in local sales tax receipts. The increases would be limited in amount, as most of these purchases and the associated revenues would accrue primarily to the city governments.

Both county and municipal governments would benefit from indirect revenues associated with the proposed Project. These include property taxes on real and personal property, sales and franchise taxes and other fees, and intergovernmental transfers from the respective States and the Federal Government. Local governments increasingly rely on such revenue-sharing transfers. For example, as a result of statewide property tax reform in Arizona, transfers from the State, funded on a per capita basis, now account for more than 50 percent of the general fund budgets of Page and Fredonia (Kimball 1994a; City of Page 1992).

A fiscal analysis of the proposed Project by the State of Utah concluded that the net fiscal impact on local city and county governments in southwestern Utah (a region encompassing the three Utah counties considered in this study) would be decidedly favorable over the near term (Utah GOBP 1993). Net revenues to local governmental units, after accounting for projected increases in public service expenditures, were estimated at $1.8 million annually. The State's analysis used somewhat different assumptions regarding workforce and residency patterns from those developed for the current analysis, but the differences would not materially alter the conclusion of the State's analysis (Utah GOBP 1993).

The State's analysis did not address possible different effects among the various potentially affected units of local government. However, the direct property tax revenues attributed to the Warm Springs Project,

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most of which would accrue to Kane County and to the Kane County School District to support public education, are the single largest source of local revenue. If these are overlooked, the analysis still indicates a modestly favorable impact on local governments in southwestern Utah over the near term (Utah GOBP 1993). However, most localities would experience limited net fiscal impacts, either positive or negative, from approval of the proposed Project.

The city of Kanab would experience modest increases in both revenues and expenditures in conjunction with the development and operation of the mine and the associated increases in resident population and business activity. Added changes would result with the truck maintenance facility located in nearby Fredonia. Many employees of the trucking firm would be expected to live in Kanab and the surrounding area, thereby increasing demands on services. Concurrently, local business would benefit from higher retail trade. Local property taxes and other revenue streams would also expand. These changes would likely result in a favorable impact on the city's budgets. With the truck maintenance facility in Hurricane, such changes would be more limited, but the net effect would still be positive.

With the truck maintenance facility located in Hurricane, that community's fiscal resources would be affected substantially. Fiscal resources are already under pressure from ongoing growth and development. Property tax revenues generated on residences of Project-related employees, the fleet of trucks and trailers, and added commercial development would increase. Sales tax receipts would also climb, owing to local purchases by the trucking contractor and higher consumer spending. The revenues would be offset by the added costs of serving an expanded population. The net effect would likely be limited. However, the city of Hurricane could experience a modest adverse impact on its fiscal conditions should it be determined that the fleet is exempt from personal property taxes.

To the extent that net adverse impacts might occur, the communities most likely to be so affected include Big Water, La Verkin, and Toquerville the latter two being affected by the location of the proposed truck maintenance facility in Hurricane. These situations would arise as a result of the limited fiscal resources of these communities, the staff needs, and the infrastructure improvements that the communities would face to accommodate baseline and Project growth, as well as the limited additional revenues that would accrue from the proposed Project. With higher populations, increased allocations of State revenue transfers are likely, and impact assistance from the State of Utah could be pursued to address such needs. In Big Water, the added population and Project-related traffic could lead to additional retail trade that would substantially increase locally generated sales taxes.

Limiting the travel by the haul trucks to major State and Federal roads maintained by the respective State transportation agencies effectively shields most local governments from substantial increases in road maintenance burdens. However, a special situation arises in connection with Kane County and its plans to improve/construct the Warm Creek/Benchtop Road between Big Water and the top of Smoky Mountain. According to a resolution by the Kane County Commission the road will "provide safe and convenient

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accommodation of traffic associated with the management and use of public land resources within the county * * * and would also serve the Smoky Hollow Mine" (Kane County 1993). Construction financing has not been finalized. The basic plan under consideration by Kane County envisions the use of a long-term loan from the Permanent Community Impact Fund, or the issuance of a long-term debt to finance construction. The Permanent Community Impact Fund is funded by mineral lease royalties returned to the State by the Federal Government. It provides loans and/or grants to State agencies and political subdivisions of the State (e.g., counties, municipalities, school districts, and special districts) that are or may be socially or economically impacted by mineral resource development on Federal lands. Some mineral lease royalties would also accrue to the Utah DOT Special Service District Fund, which can be made available to address local transportation needs. The revenues however, are dispersed by the State; they do not accrue directly to the local governments.

Loan repayment or debt service is anticipated to be provided by some combination of the following: Kane County's allocations of Class "B" road funds from the Utah Highway Users Fund; grants from the Permanent Community Impact Fund (PCIF) and Utah DOT Special Service District Fund; repayment guarantees provided by the users, tolls, or possibly local revenues. Motor fuels taxes generated by the portion of coal hauling operation occurring in Utah would accrue to the State's Highway Users Fund, from which the class "B" distributions are made. Operation of the proposed Smoky Hollow Mine at full production would generate about $492,000 per year for the PCIF and about $379,000 per year for the Utah DOT Special Service District Fund during the life of the mine.

The fiscal analysis by the State of Utah concludes that the Warm Springs Project would generate sufficient revenues into the various funds to provide adequate debt service (Utah GOBP 1993). However, such funds are not statutorily dedicated for return to the county of origin, and the amounts to be generated are contingent upon full production at or above the assumed price-per-ton values. Lower than anticipated production prices or other unforeseen events, could require funds from other sources or other responses to satisfy repayment requirements. With no assurances regarding future revenues, it cannot be concluded that Kane County or another public entity would not face some residual fiscal risk in conjunction with construction of the Warm Creek/Benchtop Road.

Fiscal impacts to the towns of Moapa and Glendale would, by definition, be limited, owing to the small population impact and specific type of the activity at the Moapa unit-train loadout. Changes in both public sector revenues and expenditures would be limited.

In Arizona, the city of Page would see increased revenues and expenditures resulting from immigration of households employed at the mine and those supported indirectly by consumer and business purchases. The changes would begin during construction and extend through final reclamation after mining is complete. The city levies no property tax, relying instead on sales taxes generated largely from visitors to nearby Lake Powell and on transfers from the State and Coconino County. The transfers are generally on a per capita

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basis; higher revenues can be expected to accompany higher population. Consequently, approval of the proposed Project would not adversely affect Page's overall fiscal condition.

The town of Fredonia has seen its tax base weakened from cutbacks by two major employers. Sales taxes and intergovernmental transfers were adversely affected. Fredonia has no property tax supporting its general fund. With the truck maintenance facility in Fredonia, sales and use tax revenues and intergovernmental transfers would increase substantially. However, the town anticipates that it would only face a limited increase in municipal service costs to maintain/improve the level of services to the expanded population, as it has previously served a comparable population. Therefore, the town anticipates reaping fiscal benefits from the proposed Project (Kimball 1994a). Fredonia would experience little fiscal impact with a facility located in Hurricane, even though some workers would still locate there.

Neither of the Arizona municipalities nor Coconino County would have access to any direct impact assistance funded by mineral royalties from the proposed Project, as those funds are returned to the jurisdiction in which production occurs, which, in this case, is the State of Utah.

At the end of mining and reclamation, direct revenues from the Project would cease, and indirect revenues and expenditures would decline as a result of out-migration. (The impacts to socioeconomic conditions at the end of mining and mining-related activity are discussed in Section 4.2.9.11.)

Although a number of projects have been identified as occurring within the Project area concurrent with the proposed Project (Appendix B), all have been considered within the projected fiscal baseline used in this analysis. Therefore, no cumulative impacts to local government fiscal resources are projected to occur.

The Agencies conclude that impacts to local government fiscal resources in the Warm Springs Project area with Project-related activities would be beneficial and moderate to major over the short term and adverse and moderate over the long term. Fiscal impacts would be beneficially significant in Kanab, Big Water, and Kane County, with the potential to become beneficially significant in Fredonia and adversely significant in Hurricane.

4.2.9.3 Impacts to State and Federal Fiscal Resources with Project-Related Activities

State governments provide a wide range of administrative and support services to residents, businesses, and visitors. Among these are public revenue collection and distribution, provision and maintenance of safe highway systems, judicial systems and corrections, and public education.

Approval of the proposed Project would precipitate increases in general revenues to the State treasuries, as well as contribute to the overall requirements for services. Compared to the existing and future general

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revenues and expenditure requirements, the level of economic activity and population growth associated with the proposed Project would be generally imperceptible.

Impacts to fiscal resources can be separated between those that would be household related and those directly tied to the construction and operation of the Project. With respect to household-related effects, the following impacts on revenues and expenditures can be anticipated.

Nevada has no personal or corporate income tax. Rather, it relies on sales and excise taxes, taxes on gaming proceeds, and other direct taxes on businesses, such as a gross proceeds tax on mineral mining. Consequently, Project-related increases in general fund revenues would be very limited, both as a result of the small employment and income effects associated with the proposed Project and as a result of the State's fiscal structure. The small population impact in Nevada would similarly minimize the effect on the demand for services. Owing to the limited scale of these impacts, no quantification is undertaken.

Arizona imposes both personal and corporate income taxes, as well as sales and excise taxes. Population impacts in Arizona are projected at 258 people with the truck maintenance facility located in Hurricane and 466 residents with the truck maintenance facility located in Fredonia. Population impacts of this scale should not require higher State expenditures for infrastructure or capital. General expenditures by the State of Arizona for public education and highways averaged about $1,022 per capita (Chapter 3, Table 3-14, adjusted to 1994 dollars). Assuming that the Project induces proportional effects on expenditures, the corresponding annual impacts for the State of Arizona would be about $264,000 if the truck maintenance facility were located in Hurricane, or $476,000 if the truck maintenance facility were located in Fredonia. Offsetting these costs would be additional revenues. Incremental income and sales-tax-derived increases in household wage and salary income over the short term would yield $178,000 annually if the truck maintenance facility were located in Hurricane, or $303,600 annually if the truck maintenance facility were located in Fredonia. Revenues would also be derived from other taxes and fees. At the same time, no existing source of revenue would yield a substantial positive surplus to the State. Consequently, any net effect would be limited in absolute terms and in comparison with the overall budget of the State.

Impacts to the State of Utah's general revenues and expenditures would be greater than those to Arizona or Nevada, owing to the location of the proposed mine, one loadout, and the possible location of a truck maintenance facility in Utah. Consequently, economic and population effects would be more heavily concentrated in Utah. A comprehensive fiscal analysis of the proposed Project undertaken by the Utah Governor's Office of Planning and Budget (Utah GOPB) considered the direct and indirect impacts on the State's budgets (Utah GOBP 1993). The State's study concluded that the net fiscal impact of the proposed Project would be positive over the life of the Project, with indirect revenues accruing to the State projected to average about $2.25 million per year, compared to indirect expenditures projected to average about $1.94 million per year (both in 1993 dollars).

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The proposed Project would generate substantial direct revenues beyond those accruing indirectly. These revenues include sales and use taxes, mineral lease royalties, State land payments and other miscellaneous taxes, as well as motor vehicle and fuel taxes and fees. With the truck maintenance facility located in Hurricane, virtually all the revenues, with the exception of some motor vehicle and fuel revenues, would accrue to the State of Utah. Nevada would gain few direct revenues, and the impact on Arizona's revenues would depend on the location of the truck maintenance facility.

In Utah, corporate income taxes would be minimal on the basis of the expected applicability of tax credits for exported coal and the operating margin for the trucking firm. At full production, the State's analysis projects annual general revenues averaging about $3.3 million. Mineral royalties, consisting of both the State's allocation of Federal royalties and the royalties accruing from production of reserves underlying State Trust lands, would account for nearly half the total, about $1.5 million annually. Sales and use taxes would average about $1.06 million, or about one-third, and the other revenues associated with the trucking operations would account for the remainder, $0.95 million (Utah GOBP 1993).

Only limited direct expenditures, with exception of construction and maintenance costs for highways, are foreseen. Almost the entire sum of the direct sales taxes and royalty revenues generated by the Warm Springs Project thus represent net gains to the State. However, the entire sums are not available to fund general expenditures, as statutory distributions have been established for both Utah's royalties from coal production on State leases and the State's share of Federal royalties from production on Federal leases. For Utah's share of Federal royalties, the distribution would include: 32.5 percent to the Community Impact Assistance Fund, 25.0 percent to Utah DOT, 33.5 percent to the Board of Regents, and 9.0 percent to other agencies and discretionary allocations. Royalties derived from State Trust lands are deposited in a permanent Trust fund, with the interest earned there upon allocated to public education. Distributions from these funds provide substantial revenues for impact mitigation precipitated by natural resource development and for the support of both higher and primary public education.

With the truck maintenance facility located in Fredonia, some of the sales taxes associated with the trucking operation would shift to Arizona. Utah would continue to receive the mineral royalty payments and sales taxes generated by direct purchases of the mine in Utah. The potential magnitude of such a shift is uncertain because of such factors as the location where the trucks and trailers are initially acquired and whether taxes are paid at the point of sale on purchases made outside Arizona. Assuming that all such revenues accrued to Arizona, the State would realize nearly $500,000 per year from this source. Arizona would also accrue sales tax revenues on purchases made by the mine in northern Arizona. With little increase in direct expenditures associated with the truck maintenance facility, these revenues would offset any potential shortfall revenues from indirect sources, leaving the State with a net gain.

A specific concern identified during scoping is the potential fiscal impact on the respective State transportation agencies responsible due to the added costs of highway construction and maintenance. The

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volume of heavy truck traffic generated by the Project would contribute to deterioration of highways along the haul routes, raising maintenance costs for rehabilitation and/or accelerating the need for major reconstruction. Utah DOT and Nevada DOT provided information regarding these costs (Utah GOBP 1993; Conti 1993; Law 1994). Data from Utah DOT were used to estimate future costs to Arizona DOT. On an annualized basis, the added highway maintenance and reconstruction costs attributed to the proposed Warm Springs Project are projected at $385,000 per year in Arizona, $175,000 per year in Nevada, and $760,000 per year in Utah (Table 4-9). The costs apply to the existing network, exclusive of future system improvements or modifications, such as new community bypasses, which might be built to address the combined baseline and Project-related traffic. The costs do not provide for any incremental staffing or other ongoing agency operating costs that may be required.

Revenues generated by the trucking operation to address these needs would include motor vehicle registration fees, overweight/overlength permits, and motor fuel taxes. The three States participate in two multistate agreements that provide for prorated distribution of such funds on the basis of the corresponding percentage of the annual mileage accumulated in each State. Thus, the three States would share in these revenues, regardless of where the truck maintenance facility would be located. All three States dedicate these revenues for highway construction and maintenance, rather than commingling them into the general fund. In addition, Utah DOT would receive a share of the State's allocation of Federal mineral royalty receipts.

Over the life of the Project, revenues accruing to Arizona are projected to average about $318,000 per year, which would precipitate a shortfall of about $67,000 per year relative to the added expenditures. Nevada revenues would be about $279,000 per year, yielding a surplus of about $104,000 per year. Nevada's comparatively higher revenues reflect its registration and overweight fee structure. Revenue accrual to Utah DOT would average about $949,000 per year, providing an average surplus of about $189,000 per year. The projected revenues do not include allowances for any additional Federal funds linked to the $1.24 million in motor fuel and heavy motor vehicle use taxes generated annually (Utah GOBP 1993; Utah State Tax Commission 1994a, b; Nevada Department of Transportation 1994; Arizona Department of Transportation 1994).

The proposed Project would produce revenues to the Federal treasury; for instance, general personal and corporate income taxes and excise taxes. There are specific revenues tied to mining that would yield substantial revenues. At full production these revenues would include: $1.75 million annually from the retained share of mineral royalties, $2.15 million in payments into the Federal Black Lung Program, and $375,000 for the Abandoned Mine Land Reclamation (AML) Fund. Federal highway users' revenues would exceed $1.24 million annually at full production (Andalex Resources, Inc. 1993).

Upon completion of production, coal hauling, and reclamation, revenues derived directly from mining and mining-related activity would cease accruing to the Federal and State treasuries. However, some of the

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Table 4-9 — Projected Project-Related Change in State Highway Maintenance Budgets

State	Share of Total Mileage (%)	Expenditures Over 40 Years Mid-Range	Revenues Over 40 Years[2]	Surplus or (Deficit)
Arizona	23.7	$11,550,000	$9,555,000	($1,995,000)
Nevada	9.1	5,250,000	8,372,000	3,122,000
Utah	67.2	22,800,000	28,463,000	5,843,000

Source: Utah GOPB 1993, Contl 1993, Law 1994.
[1]See Appendix E for additional details regarding limitations of expenditure and revenue computations.
[2]Revenues based on assumption that 1.25 million tons of coal is transported to each loadout.

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indirect revenues and expenditures derived from household expenditures could continue to accrue, and funds added to Utah's permanent Trust fund would continue to earn interest to support education. (The impacts to socioeconomic conditions at the end of mining and mining-related activity are discussed in Section 4.2.9.11.)

Although a number of projects have been identified as occurring within the Project area concurrent with the proposed Project (Appendix B), all have been considered within the projected fiscal baseline used in this analysis. Therefore, no cumulative impacts to State and Federal fiscal resources are projected to occur.

The Agencies conclude that the impacts to State and Federal fiscal resources with Project-related activities would range from minor to moderate over the short term and minor over the long term. Impacts would be beneficially significant in Utah.

4.2.9.4 Impacts to Housing Availability in the Warm Springs Project Area with Project-Related Population Growth

With approval of the proposed Warm Springs Project and the subsequent increase in population, there would be increased demand for housing. Housing impacts may occur if an area's housing supply is inadequate to support construction or operations households moving to the area. Housing inadequacy can be caused by a number of factors, such as a lack of affordable housing, low vacancy rates due to high demand, and depressed economic conditions in the area (which lead to little demand to support construction of additional housing), or inadequate utility infrastructure to serve new housing units. Potential impacts related to inadequate housing include longer commutes, trespass camping, higher workforce turnover, and workers residing in motel accommodations, potentially impacting availability of accommodations for tourists.

Although housing availability is generally limited throughout southern Utah and northern Arizona, there appears to be adequate land and interest in developing additional housing for the projected baseline and Project-related population. Recent growth in southern Utah and northern Arizona has created a considerable demand for housing in Page, Kanab, Hurricane, and Toquerville.

Page is about 40 miles from the Project site. Page and the nearby areas would be expected to house many of the construction and mine workers. At full production, the projected population in Page would be 193 people, with an associated peak housing demand of 64 units. There are currently 527 lots approved in Page, and existing housing will likely become available following completion of the Navajo Generating Scrubber Station in 1999. Thus, it is not anticipated that housing availability would be a problem in Page. However, Page is exceeding its Federal daily pumping allocation from Lake Powell for domestic water supply and may not have adequate water for future population growth if this problem is not resolved (Nichols 1994) (Section 4.2.9.7, Impacts to Water and Sewer Systems from Project-Related Population Growth).

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Although the current housing market is tight in Fredonia, it is anticipated that there would be adequate housing available for in-migrating workers choosing to live there. More than 200 lots are currently approved for development of either mobile homes or site-built homes; this is more than adequate, assuming 54 housing units are required for the maximum Project-related population increase of 163 people within Fredonia.

Housing markets are limited in Kane County, Utah, both for rentals and for units listed for sale. However, housing development already is occurring to meet demand associated with the Navajo Generating Station Scrubber Project at nearby Page, Arizona, and to meet demands associated with other non-Project related growth. The Warm Springs Project would create a maximum additional demand for 314 dwelling units in Kane County, based upon the projected population growth of 845 persons. The town of Big Water, the nearest community to the proposed Smoky Hollow Mine, would require 10 percent of the total, or about 32 housing units. The remaining 282 housing units would be required in and near Kanab.

There is adequate land available for development in Big Water. Approved lots in Big Water, as well as those in the Greenehaven development (1,100 units approved), located just south of the Utah-Arizona State line between Big Water and Page, could provide adequate housing for those operations workers who would choose to live relatively close to the mine. No speculative development is occurring now in these areas in anticipation of the proposed Project.

Peak housing demand in and near Kanab would occur in conjunction with full-scale coal production at the Smoky Hollow Mine, during which time direct and indirect employment stimulated by the proposed Project would stabilize. Peak demand for housing in Kanab also would be associated with the location of the truck maintenance facility in Fredonia, Arizona. Impacts on housing in and near Kanab would be lower if the truck maintenance facility were located in Hurricane, Utah. Because of housing development already occurring in the area, Kanab is predicted to be able to meet housing needs created by the Warm Springs Project (Alvey 1994).

If the truck maintenance facility were located in Hurricane, the projected demand for housing in that community during operations of the proposed Project would be 75 housing units. Hurricane has 400 to 500 approved residential lots available for development; this would be more than adequate to meet the projected proposed Project population of 225, assuming no other large-scale projects commence operations in the area prior to the proposed Project. However, Hurricane may also be limited in its ability to allow housing development owing to water availability (Section 4.2.9.7, Impacts to Water and Sewer Systems from Project-Related Population Growth).

Housing growth in Toquerville is currently limited by the fact that the city does not have adequate water supplies to serve new development. The question of whether Toquerville can provide the 10 housing units for the projected population increase of 30 persons related to the Project if the truck maintenance facility

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were to be located in Hurricane would depend on whether water becomes available in the next several years (Wahlquist 1994).

The limited number of employees at the unit-train loadouts (Appendix A) are not expected to have noticeable effects on housing, schools, or utilities in the Iron Springs/Cedar City or Moapa areas.

After the end of mining and mining-related activity, many Project-related employees would emigrate to other locations for job opportunities, making some housing available for other growth that may occur in the communities of the Project area. (The impacts to socioeconomic conditions at the end of mining and mining-related activity are discussed in Section 4.2.9.11.)

Although the Agencies have identified a number of projects that may occur concurrently with the proposed Project (Appendix B), these projects have been considered in the projected baseline used for the analysis. Therefore, there would be no additional impacts to housing owing to reasonably foreseeable cumulative development within the Project area. The construction workforce at the Navajo Generating Station Scrubber Project is scheduled for downsizing about the time that the proposed Project would reach operating levels. The net effect would be generally positive, in that housing demand created from the proposed Project potentially could be met by housing vacated by construction workers leaving the area.

The Agencies conclude that the impacts to housing availability in the Warm Springs Project area with Project-related population growth would be moderate over both the short and long terms. Impacts to housing have the potential to become significant in Page and Toquerville.

4.2.9.5 Impacts to Public Safety Agencies in the Warm Springs Project Area with Project-Related Activities

Public safety agencies, such as fire departments, law enforcement agencies, and ambulance services, respond to the demands related to population levels and traffic volumes. The fewer people and vehicles in an area, the less frequently routine problems occur. Therefore, as the population base increases and traffic volumes increase, the number of problems also increases. Service requirements increase, necessitating additional staff, equipment, and overall expenditures for public safety operations and equipment.

Many of the Project area's emergency responders operate with limited personnel (Nichols 1994; Crosby 1994; Fawcett 1994; Jackson 1994; Wahlquist 1994). Accidents in one location can leave an agency without sufficient personnel to respond to other emergencies. Additional traffic and criminal activity from increased population related to the proposed Project would exacerbate the existing situation. Without additional personnel and equipment in the affected areas, response time could increase, and the overall level of service potentially could decline.

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Project-related population impacts would be greatest in Kanab if the truck maintenance facility were to be located in Fredonia. Fredonia law enforcement is adequate to serve the projected future population (Kimball 1994a), but one more police officer and support equipment would be required in Kanab to accommodate the maximum projected Project-related population growth of 690 persons (Crosby 1994). To maintain a higher level of service, two officers and support equipment would be needed. Additional staff would also be needed for clerical work for the courts, justice and attorney functions, dispatch, and the jail.

An additional sheriff's deputy would be required to provide adequate coverage for the population growth of 940 people projected to occur in Kane County if the truck maintenance facility were to be located in Fredonia (Jackson 1994). Currently, Big Water needs a full-time deputy stationed in the town, to serve the existing population. If this position were not filled prior to development of the proposed Project, two officers would be needed to handle the influx of new population.

Regional population increases over the life of the mine would gradually increase the number of emergency responses required in the area. After the end of mining and coal transport, the number of calls and the emergency response time related to public safety problems would be reduced. (The impacts to socioeconomic conditions at the end of mining and mining-related activity are discussed in Section 4.2.9.11.)

Mine Safety and Health Administration (MSHA) regulations require that all coal mining operations have available 24-hour ambulance service or other emergency transportation for any person injured at the mine. Both the Kane County Hospital (Kanab) and the Page Hospital maintain advance-life-support intermediate-level ambulances, which could respond to emergency calls from the Smoky Hollow Mine. The mine operator would also maintain company-owned vehicles at the minesite for emergency transportation. Adequate first aid stations would also be maintained within the mine at each underground working section and at the working areas of the surface facilities complex, such as the shop/warehouse, the bathhouse, and the main office. Similar first aid stations would be maintained at the loadouts as well.

The Agencies have not identified reasonably foreseeable cumulative projects within the proposed Project area that would add to the impacts on public safety providers, over and above the current economic expansion in the Project area, which has been incorporated in the projected baseline for this analysis.

The Agencies conclude that the impact to public safety agencies in the Warm Springs Project area with Project-related activities would be moderate over both the short and long terms.

4.2.9.6 Impacts to Public Schools in the Warm Springs Project Area with Project-related Population Growth

Projected population effects of the proposed Project indicate public school enrollment increases of 370 to 375 students during premining development. During the extended operations period, total enrollment

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changes are estimated at 559 to 563 students, depending on the location of the truck maintenance facility (See Appendix E for a discussion on student enrollment.)

Based on household residency patterns, the increases would be distributed across seven school districts in six different counties in three States. Enrollment effects in eastern, nonmetropolitan Clark County, Nevada, and Mohave County, Arizona, are limited; therefore, impacts on the districts servicing these areas were not considered. Impacts were assessed for the Iron County, Washington County, and Kane County School Districts in Utah, and the Page Unified District No. 8 (Page) and Fredonia-Moccasin Unified School District No. 6 (Fredonia) in Arizona.

Among these five districts, the peak change in enrollment ranges from 21 students in Iron County, Utah, to 207 students in Kane County, Utah (Table 4-10). The peak changes affecting the Kane County, Fredonia, and Page School Districts would occur during full production at the mine and with the truck maintenance facility located near Fredonia.

Higher enrollments would translate into needs for more instructional, administrative, and support staff, higher payrolls, and other maintenance and operating expenditures. Based on 1992-93 outlays and the projected enrollments, the Project-related impacts range from less than $9,000 per year for the Fredonia district (assuming the truck maintenance facility were to be located in Hurricane) to $824,688 per year for Kane County School District (assuming the truck maintenance facility were to be located in Fredonia) (Table 4-10). In most instances, the predicted impact relative to the current operating budgets is 2 percent or less. The Kane County School District would experience substantially higher operating outlays under either truck maintenance facility location option. Should the truck maintenance facility be located in Hurricane, the effect on Washington County costs would rise to $567,936, compared to $89,088 for the Fredonia location.

Both Arizona and Utah have State-supported public education systems. Consequently, the added enrollments would likely increase the amount of State funding received, relieving the individual districts from bearing the full burden for local public education. As a result of the statewide funding support for public education, school officials in the various districts anticipate little or no adverse impacts on local maintenance, operating, and nonfacility capital budgets from the proposed Project (Sides 1994; Tate 1994; Willardsen 1994).

In addition to immediate effects on maintenance and operations outlays, enrollment growth could also affect facility requirements of the various school districts. The effect would depend on the relationship between the peak Project-related enrollment and available capacity to accommodate further growth (Table 4-11). Peak Project-related enrollments, on a district-specific basis, represent increases ranging from less than 1 percent to 26 percent of current enrollments. Relative to available capacity, the added enrollments would absorb 15 percent or less of the reserves in four of the communities.

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Table 4-10 — Projected Project-Related Changes in School District Operating Budgets

District	1992-1993 Operating Expenditures	Operating Expenses/Pupil	Peak Enrollment Impact[1]	Additional Operating Expenditures	Project Impact (%)
Iron County	$17,232,632	$3,308	21	$69,468	< 1
Kane County	5,379,818	3,984	207;84	824,668; 334,656	15;6
Washington County	38,461,448	2,784	32;204	89,088; 567,936	< 1;2
Fredonia/Moccasin	1,771,980	4,471	39;2	174,375; 8,942	10; < 1
Page	15,018,094	4,451	55	244,812	2

Source: Arizona Department of Education 1994; Utah Department of Education 1993. (See Appendix E for additional information on school budget projections and enrollment.)

[1] Peak enrollment effects reflect long-term stabilized operations. Where two numbers are shown, e.g., 186;53, they indicate effects assuming truck maintenance facility (TMF) in Fredonia; TMF in Hurricane.

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Table 4-11 — Projected Project-Related Change in Assessed Valuation Support For Public Education

District	Assessed	Project Assessed	Peak Enrollment	Incremental
Iron County	$156,500	$8,075,000	21	$384,500
Kane County	157,300	147,050,000	207	710,400
Washington County	117,500	[3]36,474,000	204	178,800
Fredonia /Moccasin	30,300	456,000	39	11,700
Page	36,200	707,000	55	12,900

Source: Various state fiscal reports, UGOPB 1993; and U.S. Bureau of the Census 1990. (See Appendix E for additional information on public education.)

[1]The apparent differences between Utah and Arizona reflect difference in assessment procedures; e.g., residential property is assessed at full value in Utah, but at 10 percent of current market value for owner-occupied residential property in Arizona.

[2]Estimated project assessed valuation includes direct additions (Utah GOPB 1993) plus allowances for indirect increases generated by residential development.

[3]Assumes the truck maintenance facility to be located in Hurricane.

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The effects on Kane County schools in Big Water and Kanab are more dramatic, although in some respects the potential impacts are viewed positively (Willis 1994). In Big Water, Project-induced growth would absorb an estimated 30 percent (21 students) of the available capacity of 70 students. With a proposed truck maintenance facility located in Fredonia, projected growth of 186 new students in Kanab would exceed available capacity by 104 students. This new student population could potentially affect the elementary, middle school, and high school. Existing classrooms could be reconfigured to accommodate more students (up to 30 students per classroom in the elementary school), but it appears that all schools would be operating beyond their capacity with this level of impact until new facilities become available (Bayles 1994).

The Fredonia-Moccasin District has more than adequate capacity in all schools for the anticipated 39 Project-related new students associated with employment should the truck maintenance facility be located in Fredonia.

Consideration of currently available capacity provides a basis for assessing whether the proposed Project's enrollment would contribute in a substantive fashion to the need for additional facilities. Where the student increase is large relative to the available capacity and where the district is already facing growth pressures, the Warm Springs Project would be characterized as contributing to such needs. This would occur in Kane County and Page, given either location of the truck maintenance facility, and in Washington County, assuming that the truck maintenance facility would be located in Hurricane (Tables 4-12 and 4-13). The three primary options available to these districts to expand capacity include (1) adding portable classrooms and/or expanding existing facilities, (2) seeking voter approval to issue additional indebtedness for construction of new schools, or (3) converting to a year-round schedule of classes to increase utilization of the current facilities. Decisions regarding which options to implement may depend on the age distribution of new students in the Project-related population. School districts with facilities constraints requiring expansion or construction of new facilities to accommodate higher enrollments could be adversely affected by delays between the need for greater capacity and the availability of funding for capital construction.

Project-related assessed valuation in Kane County, and to a lesser extent in Washington County, would increase the debt service capacity to retire future issuances of bonded indebtedness. In Kane County, the potential revenues would be greater than the proposed Project's impact on capacity. In Washington County, the added tax base would be insufficient to cover its relative impact. The district could seek impact assistance funds from projected mineral lease payments or from royalties earned from Trust lands involved in the proposed Project. Any additional shortfall would be funded by taxpayers, although this effect would be offset by payments made by the Project-related tax base to retire presently outstanding debt. The overall impact would likely be limited.

After the end of mining and mining-related activity, enrollments would decline, making available some capacity to address other growth that may be occurring in the respective districts. Locally generated

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Table 4-12 — Projected Project-Related Change in Public School Enrollment

District/ Affected Community	1992 Fall Enrollment	Available Capacity	Peak Project-Related Enrollment[1]		
			Number	Compared to Current Total (%)	Share of Available (%)
Iron County					
Cedar City	4,199	321	21	<1	7
Kane County					
Big Water	80	70	21	26	30
Kanab	1,013	82	186;63	18;6	227;77
Washington County					
Hurricane/ Toquerville	2,315	816	5;66	<1;3	<1;8
Fredonia/Moccasin	425	255	39;2	9;<1	15;<1
Page	3,454	430	55	2	13

Source: Arizona Department of Education 1994; Utah Department of Education 1993.
[1] Peak enrollment effects would occur during long-term stabilized operations. Where two numbers are shown, e.g., 186;63, they indicate effects assuming truck maintenance facility (TMF) to be in Fredonia;TMF to be in Hurricane, respectively.

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Table 4-13 — Projected Project-Related Change for Affected School Districts

District	Reliance on State Support[1]	Peak Project Enrollment[2]	Project Triggers Facility Needs[1]	Outstanding Debt (millions $)
Iron County	No Change	21	No	11.8
Kane County	Decrease	207;84	Yes;Yes	3.7
Washington County	No Change;Decrease	32;204	No;Yes	52.0
Fredonia/ Moccasin	Increase;No Change	39;2	No;No	2.2
Page County	No Change	55	Yes	27.0

Source: Alvey 1994; Bayles 1994; Dobb 1994; Peterson 1994; Pogreve 1994; Robins 1994; Sides 1994; Tate 1994; Willardsen 1994. (See Appendix E for additional information on school enrollment.)

[1]When two statements are shown, e.g., No Change;Decrease, they indicate effects assuming truck maintenance facility (TMF) in Fredonia;TMF to be in Hurricane, respectively.

[2]Peak enrollment effects reflect long-term stabilized operations. Where two numbers are shown, e.g., 186;63, they indicate effects assuming TMF to be in Fredonia;TMF to be in Hurricane, respectively.

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revenues would cease, and some loss of State equalization revenues could occur. (The impacts to socioeconomic conditions at the end of mining and mining-related activity are discussed in Section 4.2.9.11.)

The Agencies have not identified reasonably foreseeable cumulative projects within the Project area that would add to the impacts on public schools. Current economic expansion in the Project area is assumed to already be part of the projected population growth for this analysis.

The Agencies conclude that the impacts to public schools in the Warm Springs Project area with Project-related population growth would be major and beneficial over the short term and minor over the long-term. Impacts would be beneficially significant in Kane County.

4.2.9.7 Impacts to Water and Sewer Systems in the Warm Springs Project Area with Project-Related Population Growth

Throughout the Project area, future growth could be constrained by lack of water. Many communities potentially affected by the proposed Project would have to obtain additional water to serve the Project-related population growth. On the other hand, sufficient sewage treatment capacity generally exists in the Project area, either in the form of public systems or individual septic treatment. An exception to this general condition is the Ash Creek Sewer and Sanitation District, which serves Hurricane, La Verkin, and Toquerville.

Additional water would have to be developed in both Page and Kanab to serve Project-related growth. Page relies on a Federal water allocation from Lake Powell and currently exceeds its daily pumping allowance by as much as 40 percent on some days. The city of Page would need to obtain additional water supplies from Lake Powell or from another source to adequately serve the current population, projected growth without the proposed Project, growing tourism demand, and projected Project-related growth of 193 people.

Kanab has adequate water rights but would need to develop 2 new wells, at a cost of $80,000 to $100,000 per well, to accommodate general population increases and a maximum Project-related population growth of 690 persons. The Kanab Public Works Department, which operates the water, sewer, and the electric utility systems, is understaffed, as well. To maintain existing levels of service, assuming a Project-related population growth of 690 persons, the Public Works Department would require two to three more staff persons, plus vehicles (Merrill 1994).

Hurricane has adequate water supplies for its present population plus the Project-related population growth of 225 persons, assuming that the truck maintenance facility would be located in Hurricane. However, the agencies serving the community are nearing capacity for water storage and sewage treatment. The proposed Project would utilize some of the existing excess capacity in Hurricane but would not require immediate expansion or construction of new facilities (Fawcett 1994).

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Toquerville has an adequate water supply for the existing populations but not for additional growth. Although there are more than 450 lots proposed for development within Toquerville's water service area, approval is not being granted because water supplies are not presently available. Toquerville is pursuing additional water rights and hopes to obtain them and complete a new well and storage tank soon. Sufficient supply would be developed to accommodate anticipated growth, including Project-related growth (Wahlquist 1994). However, if the current water supply situation does not change, Toquerville would be constrained from meeting even the demand for 10 additional housing units projected as needed to accommodate Project-related growth.

Fredonia and Big Water have adequate water to serve the potential Project-related population growth. Both municipalities are served by individual septic systems, and the carrying capacity of developable lands is sufficient for additional growth in the future. However, Fredonia has identified a public sewerage system as desirable for the community and is pursuing outside funding for that project.

At the end of mining and mining-related activity, population would decline with a resultant potential decline in water needs. (The impacts to socioeconomic conditions at the end of mining and mining-related activity are discussed in Section 4.2.9.11.)

No development has been identified within the Project area that would add to impacts on water and sewer systems beyond those already described because all reasonably foreseeable cumulative developments (Appendix B) have been accounted for in baseline growth projections used in this analysis. However, development already ongoing or anticipated as part of the projected baseline growth would trigger the need to acquire additional water or sewerage capacity in the Washington County communities, in Page, and in Kanab.

The Agencies conclude that the impacts to water and sewer systems in the Warm Springs Project area with Project-related population growth would be minor to moderate over both the short and long terms, with the potential to become significant in Page and Toquerville.

4.2.9.8 Impacts to the Regional Quality of Life in the Warm Springs Project Area with Project-Related Growth

The growth impacts of the Project to the quality of life in the southern Utah, northern Arizona, and southeastern Nevada area begin with Project-related direct and secondary jobs. These impacts would occur against a projected baseline of anticipated economic expansion throughout the area. However, a large percentage of the jobs attributable to the Project would be created in communities where local economic growth has been weaker than for the area as a whole, including Kanab and Big Water, Utah, and Fredonia, Arizona.

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Local residents are projected to fill about one-fifth of the total employment opportunities generated by the proposed Project. The remaining available jobs would be filled by workers who migrate to the area with their families, bringing new population to communities near Project facilities. The distribution of the total population influx would reflect the location of the proposed Project's job sites. Therefore, the communities of Kanab, Big Water, Fredonia, Page, and the Hurricane area, would experience the most population growth among the communities within the proposed Warm Springs Project area, with the impacts in some communities depending on the location of the truck maintenance facility. The relatively small number of employees (20 over the life-of-mine) at the unit-train loadouts would not be anticipated to have noticeable effects on employment, housing, utilities, or quality of life in the Iron Springs/Cedar City or Moapa areas.

Several communities are projected to experience relatively large growth impacts (Table 4-7): Big Water, Kanab, and Fredonia (with the truck maintenance facility located in Fredonia), Page, and Hurricane (with the truck maintenance facility located in Hurricane). Awareness of the potential employment opportunities and fiscal benefits associated with the proposed Project is especially high in Kanab and Fredonia, where households, businesses, and local governments anticipate new jobs, enhanced business income, and potential tax revenues from the Project. This has created a base of support for the proposed Project wherever there is a lack of other economic opportunities. The impacts would be perceived most strongly in Big Water, where few local jobs exist at present, and in Kanab and Fredonia, where residents see a need to reinforce an economic base, which has suffered recently from the diminished level of logging and mining activity and the current reliance on relatively low paying jobs in retailing and services directed toward tourists and retirement in-migrants.

In the Hurricane, St. George, Cedar City, and Moapa areas, job opportunities and population growth have been relatively strong recently (Appendix B). Therefore, the jobs that would be created by the proposed Project are valued, but not as highly by residents of these communities, in relative terms, as they are in Kanab, Fredonia, and Big Water.

The southern Utah, northern Arizona, and southeastern Nevada area as a whole and the communities within it have sufficient resources to assimilate Project-related growth without experiencing a decline in the perceived quality of life. Several elements contribute to this capacity. First, there exists a base of positive experience, attitudes, and values related to growth and change, to economic development of natural resources in general, and to mining in particular. This predisposes local opinion to view the Project favorably. Further, local social structures are diverse and open enough to allow for the social integration of newcomers in all communities.

Local political structures, although straining to cope with the existing growth pressures, have demonstrated adequate capability in addressing past growth to indicate that Project-related growth would be adequately managed in the future. Finally, Project-related growth probably would not materially change prevalent local

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lifestyles. In most cases, with the possible exception of the very small and isolated community of Big Water, communities would retain their present small-town feeling even as they grow.

Despite the general pattern of support that exists throughout the Project area, differences in attitudes toward growth do occur, suggesting that not all residents perceive Project-related growth as having a positive effect on the quality of life. Groups exist in all communities who prefer the status quo or who oppose natural resource development and would feel themselves adversely affected by additional growth and change resulting from the Project. This effect would occur to some degree in Kanab, Page, and Fredonia, the Hurricane area, and Big Water, where some groups and individuals oppose development of the type represented by the proposed Project because of their beliefs about the Project's potential effect on the environment.

Circumstances potentially giving rise to adverse effects on perceptions of the quality of life differ by community. In Hurricane, there is emerging dissatisfaction with the pace of growth, even without the effects of the proposed Project. As a result, some already see a decline in many aspects of the quality of life (personal and property security, child pedestrian safety, and the level of traffic on city streets) and may wish to prevent further decline through growth management (Van Wagoner 1994). In Toquerville, there is a strong commitment to preserving the uniquely residential character of the community. In Big Water, because of the community's extremely small size, residents who value an isolated lifestyle would perceive themselves to be especially adversely affected. And in Kanab, Fredonia, and Big Water, there are groups who oppose the proposed Project because of a perceived potential for conflict with the economic activity and well-being generated in the area by tourism and recreation.

The end of mining and mining-related activity would lower social and economic well-being for households losing jobs and income. Individuals who opposed development of the Project at the outset probably would continue to view any residual effects of mining and mining-related activity, including the improved Smoky Mountain Road System, as reminders of an unwanted activity that precluded a return of the area to its exact premining condition. (The impacts to socioeconomic conditions at the end of mining and mining-related activity are discussed in Section 4.2.9.11.)

The growth impacts of the Project would occur against a projected baseline of anticipated economic expansion throughout the southern Utah, northern Arizona, and southeastern Nevada area. The Agencies have identified many specific projects that are part of the economic expansion prevailing throughout the area (described in Appendix B) as cumulative development. However, the growth implied by the projects described in Appendix B and by other non-Project-specific growth-inducing economic forces (not included in Appendix B) underlie the projections of employment and population growth used as the baseline for the analysis. Therefore, no further impacts to the quality of life are expected from cumulative development in the Project area, although it is anticipated that impacts to the quality of life in Page could intensify

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temporarily, during the time period in which premining development of the proposed Project and peak employment levels of the Navajo Generating Station Scrubber Project could coincide.

The Agencies conclude that impacts to the regional quality of life in the Warm Springs Project area with Project-related population growth would be beneficial and moderate to major over both the short and long terms. Quality of life impacts would have the potential to become significant in Fredonia, Big Water, and Kanab.

4.2.9.9 Impacts to the Regional Quality of Life in the Warm Springs Project Area with Project-Related Truck Traffic

Public concerns have been expressed about the Project-related coal haul trucks that would travel through communities during the life of the proposed Project. The concerns reflect expectations about the potential effects on traffic flow, public safety, the quality of, and cost to maintain, public highways, the residential character of some communities, and the value of residential property adjacent to the haul routes.

Coal haul truck traffic would contribute to (1) traffic safety problems along the haul route, (2) safety impacts compounded by ice and snow on Utah Route 9 between Hurricane and Toquerville and on Interstate-15 approaching Cedar City, and (3) the potential for accidents in school zone and pedestrian crossings in Hurricane, Fredonia, Kanab, La Verkin, and Toquerville (Section 4.2.7, Transportation).

Hurricane, La Verkin, and Toquerville, and, to some extent, Cedar City, Kanab, and Fredonia are projected to experience the greatest impacts on quality of life from truck traffic. Concerns about truck traffic have been expressed by many people in these communities, and in most cases the concerns have been expressed intensely. These concerns have motivated some residents of Hurricane, La Verkin, Toquerville, and Cedar City to become publicly involved in political or other institutional activity centered on the issue of Project-related truck traffic.

Hurricane residents have expressed particular concern about safety on the segment of Utah Route 59 east of Hurricane, known as Hurricane Hill. Attitudes regarding potential truck traffic from the Project were an important factor in Hurricane's last municipal election, along with the issue of growth management in general. A petition against the truck traffic from the Project gathered about 1,000 signatures in Hurricane, and concerns were voiced by the general public at a meeting in Hurricane held to describe the proposed Project to the public (Van Wagoner 1994). At the same time, another group in Hurricane is concerned that if a bypass were established, local businesses would be adversely affected if tourist traffic were to be diverted along with the heavy trucks.

La Verkin and Toquerville residents also have strong opinions on potential Project-related truck traffic, although the issue has not affected local politics the way it has in Hurricane. Some Toquerville residents

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oppose having the truck haul through town and would like to see a different route or some other way of transporting coal from the proposed Project (Wahlquist 1994).

In Cedar City and parts of Iron County near Cedar City, truck traffic on Utah Route 56 west of Cedar City has been an issue for several years. Residents of neighborhoods along Utah Route 56 have voiced concerns about child safety at school bus stops and congestion at intersections. Iron County has investigated the possibility of an alternative route from Interstate-15 to the unincorporated area west of Cedar City to alleviate existing traffic impacts and to serve existing and future industrial development around the municipal airport and west of the proposed unit-train loadout. In the past few years, a group of Cedar City residents, organized as the Taxpayers for Safe Utah Roads, has publicly campaigned against the proposed Project (Cohen and Geerling 1994). Despite the concerns and activities of these groups, many residents of Cedar City remain uninvolved in the issues at this time.

Many residents of Kanab anticipate increased truck traffic from the proposed Project but believe it can be accommodated without adversely affecting other parts of the economy or the quality of life. At the same time, concerns exist about the potential negative effects of Project-related truck traffic to school crossing safety, child safety in general, traffic flow and convenience of movement, Kanab's appeal as to its lifestyle and to retirement move-ins, and quality of the tourist experience, all of which would negatively affect local perceptions of the quality of life.

In Fredonia, town government has supported the Project but has also officially acknowledged the Project's potential effect on local traffic (Fredonia Planning Commission 1994).

Moapa and Glendale residents have expressed no concerns about existing traffic, which includes agricultural trucks and coal trucks making deliveries to the powerplant. Project-related coal truck traffic would avoid these communities, and current public attitudes would not be expected to change.

Although the proposed Project has received unqualified support from some political leaders in the Project area (Hansen 1994), others have said that the potential impact from transportation of coal upon communities is an issue in need of resolution (Hatch and Bennett 1994). Work has continued through the present on identifying potential rights-of-way for an alternative highway corridor in southern Washington County (Bevan 1994). In a letter to the Governor, State Representative Mel Johnson (1994) said an alternate route through southern Washington County "deserves emergency status to eliminate the very dangerous situations in these communities."

Local government representatives in Washington County have been exploring the concept of such an alternate truck route through southern Washington County. The mayors of cities and towns in eastern Washington County formed a committee to address the bypass concept, and Washington County hired a planning consultant to identify a potential corridor for a bypass (Washington County Commission 1993).

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Then the Washington County Commission established the Southern Corridor Task Force, a committee with city, county, State, Federal, and general public representation. Since its inception, the Task Force has considered a number of highway concepts for southern Washington County, the Hurricane truck bypass among them. These activities have been motivated in part by perceived traffic conditions, including existing truck traffic levels, projected increases in the volume of through traffic, daily truck traffic serving the nearby Wal-Mart Distribution Center (Appendix B), and the potential truck traffic that would result from the proposed Project. Recently the Southern Corridor Task Force collaborated with the Utah DOT to obtain Federal and State funds for a study to identify a feasible route through the southern Washington County corridor (Washington County Commission 1993, 1994; Lewis 1995).

The end of mining and mining-related activity would improve the quality of life for residents, business owners, and motorists to some extent. Although the impacts of the truck haul would be eliminated, other regional traffic would continue to increase. (The impacts to socioeconomic conditions at the end of mining and mining-related activity are discussed in Section 4.2.9.11.)

The impacts to the regional quality of life of Project-related truck traffic would occur against a projected baseline of anticipated expansion of traffic levels, including trucks, throughout the southern Utah, northern Arizona, and southeastern Nevada area. The Agencies have identified many specific projects that are part of the general pattern of expansion, and they have been described in Appendix B as cumulative development. However, the quality-of-life impacts implied by the projects (described in Appendix B), as well as by other non-Project-specific growth-inducing economic forces (not included in Appendix B), have already been incorporated into this analysis. Therefore, no further impacts to the quality of life from truck traffic are expected from cumulative development in the Project area.

The Agencies conclude that impacts to the regional quality of life in the Warm Springs Project area with Project-related traffic growth would be moderate to major over the short term and moderate over the long term. These impacts would be significant in the communities of Hurricane, La Verkin, and Toquerville.

4.2.9.10 Impacts to Residential Property Values in the Warm Springs Project Area with Project-Related Population and Traffic Growth and Truck Traffic

Impacts to residential property values would occur from the effects of general population and traffic growth, as well as from the Warm Springs Project-related growth and truck traffic. The impacts to residential property values would be positive and general, affecting to some degree all communities expecting growth, including that resulting from the proposed Project. The effects of any truck traffic would be negative and limited in geographic scope to residential properties immediately adjacent to the truck routes.

Positive effects on the value of residential property in the southern Utah, northern Arizona, northeastern Nevada area would occur as the Project-related growth contributes to additional housing demand. This

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demand would act to raise residential property values. The magnitude and duration of the effect depends upon the existing housing supply and other factors that contribute to the ability of a community to produce adequate housing in a timely way.

Effects of this type would be expected throughout the area. To date, there has been no speculative increase in the residential property market that is attributable to the proposed Project. However, housing supplies are limited in Kanab and in the Hurricane area, whereas values have been depressed by recent economic decline in Fredonia (Eves 1994; Alvey 1994; Solie 1994). Under these circumstances, the expansion of population and housing demand that potentially would be created by the Project and other growth would tend to increase the value for existing homes, buildable residential lots, and developable residential properties in these communities.

A temporary beneficial effect on residential property values may be experienced in Page as Project-related demand is added to the demand created by the Navajo Generating Station Scrubber Project. This effect would disappear as scrubber project employment declines and is phased out entirely through the year 2000 (Appendix B).

While growth would have positive effects on residential property values in general, negative effects to residential property values would occur in specific locations along the truck routes because of higher levels of noise, emissions, visual effects, and potential safety hazards associated with truck traffic. The magnitude of the effect on property values is uncertain because it depends on factors specific to each residential area.

Two specific locations potentially would be affected by Project-related coal truck traffic: the neighborhood in Hurricane at the base of Hurricane Hill and the residential development adjacent to the truck haul route through Toquerville. In Toquerville, where property values have been in an upward trend, the proposed truck haul route is located in an entirely residential area, with homes situated very close to the shoulder of the highway. Present levels of traffic, including trucks, have had no apparent impact on the value of residential properties in Toquerville to this point in time (Wahlquist 1994).

Residential property values in general potentially could decline in affected communities at the end of mining and mining-related activity as some workers and their households out-migrate, placing a number of homes on the market. However, determining the direction and magnitude of the effect is extremely uncertain because it would depend on the specific housing market conditions that exist several years in the future. (The impacts to socioeconomic conditions at the end of mining and mining-related activity are discussed in Section 4.2.9.11.)

Increases in Project-related coal haul truck traffic would be accompanied by an overall increase in truck traffic as a share of all traffic throughout the southern Utah, northern Arizona, northeastern Nevada area. The

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cumulative effect of these increases may also contribute to a decline in residential property values along and adjacent to the truck haul route in Hurricane and in Toquerville.

The Agencies have identified many specific projects that are part of the this general pattern of expansion, described as cumulative development (Appendix B). The impacts implied by the described projects (Appendix B), as well as by other non-Project-specific growth-inducing economic forces (not enumerated in Appendix B), have already been incorporated into this analysis. Therefore, no further impacts to residential property values from Project-related population and traffic growth are expected from the cumulative development in the Project area.

The Agencies conclude that impacts to residential property values in the Warm Springs Project area with Project-related population and traffic growth would be beneficial and minor to moderate over both the short and long terms, with the potential to become beneficially significant in Page. Impacts have the potential to become adversely significant for some properties along and adjacent to the truck haul route in Hurricane and Toquerville.

4.2.9.11 Impacts to Socioeconomic Conditions at the End of Mining and Mining-Related Activity

The end of mining and mining-related activity as proposed would occur in year 43 or 44 after full recovery of the coal reserves. Direct Project-related jobs and the incomes they provide would end. Indirect jobs would be lost, too, as businesses adjust to the reduction and eventual elimination of spending by the Applicant, the truck haul contractor, and direct and indirect employees. Unemployment would increase, at least temporarily, as jobs are lost by Project employees and employees of indirectly affected employers.

Public sector revenues associated with direct and indirect spending, such as sales taxes, would be affected almost immediately. Public sector revenues derived from property taxes and intergovernmental transfers would be affected more gradually, with the effects spread over a period of time following the end of mining and mining-related activity. Mineral royalties, motor fuel taxes and related fees, and other production-based revenues that accrue to State and Federal Governments also would be lost at the end of mining and mining-related activity.

The end of mining and mining-related activity would have a negative effect on local populations because many households, especially those headed by working-age adults, would move to find new jobs. Not every household losing a job would emigrate. Depending on economic conditions prevailing at the time of closure, some households would remain in the region, inasmuch as some individuals may be able to find a job locally, and some may be in a position to retire. Therefore, the subtractions from local population at the end of mining and mining-related activity probably would be less than the additions to population change predicted to occur because of the Project.

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After taking into account the net migration of households that would occur at the end of mining and mining-related activity, the population of various geographic areas within the region would stabilize at levels slightly above those projected for the future, based upon assumptions made for this analysis about growth in the region without the Project. In other words, population levels sustained in the region after the end of mining and mining-related activity would probably be greater than current population levels, despite the loss of the Project and Project-related jobs.

An indirect consequence of the end of mining and mining-related activity, caused by subtractions from local populations and reductions in public sector revenue, potentially would be losses of public sector jobs, especially in school districts and law enforcement agencies. However, the capabilities and service levels of public agencies may stabilize at higher than current levels after the end of mining and mining-related activity because of the growth predicted to occur without the Project.

Subtractions from employment, income, population, business, and public sector revenues would have repercussions throughout the socioeconomic environment. However, actual economic conditions prevailing within the region at the end of mining and mining-related activity could temper the effects of changes on communities. Baseline population growth and economic growth are predicted to occur throughout the region, even without the Project.

Therefore, the end of mining and mining-related activity could free up facility and service capacity, making capacity available to accommodate baseline growth, at least temporarily. For example, the end of mining and mining-related activity could improve housing availability and affordability. Reductions in public school enrollments could forestall or delay needs for facility expansion or construction in one or more of the affected school districts. Public water, sewer and utility providers could also see lower capacity utilization and an easing of demands on their respective infrastructure systems. Whereas construction and operation of the proposed Project would add growth over and above projected baseline growth, the accumulation of baseline growth would dampen the effects of the negative changes predicted to occur at the end of mining and mining-related activity.

The end of mining and mining-related activity also would affect the regional quality of life and property values. Effects would include lowered social and economic well-being for households losing jobs and income and an improved quality of life for some residents and business owners because the impacts of the truck haul would be eliminated. Owners of residential properties along the corridor adversely affected by the traffic associated with the proposed Project may see increases in property values, although higher traffic projected without the Project probably would temper such effects. Individuals who opposed development of the Project at the outset probably would continue to view any residual effects of mining and mining-related activity, including the improved Smoky Mountain Road System, as reminders of an unwanted activity that precluded a return of the area to its exact premining condition.

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Motorists traveling along the haul route, particularly the frequent traveler, would sense a reduction in traffic volume, particularly of heavy trucks, with some beneficial impacts on the driving experience. Over time, the need for highway rehabilitation and reconstruction would be reduced, but so would the level of funds available for rehabilitation and reconstruction projects.

Although the end of mining and mining-related activity as proposed would occur after full recovery of coal reserves, a change in circumstances could trigger the premature end of, or perhaps a prolonged hiatus in, mining and mining-related activity before the coal reserves are fully recovered. Either occurrence could be caused by unforeseen changes in markets or other conditions that could adversely affect the Applicant and the proposed Project. Either occurrence would cause socioeconomic effects similar to those projected to occur because of the normal end of mining and mining-related activity.

However, the potential exists for particular effects to local governments in the event of the premature end of, or a prolonged hiatus in, mining and mining-related activity. There are local governments within the region that may choose to construct and finance facilities and infrastructure in order to meet needs associated with growth, including the proposed Project. These include the Kane and Washington County School Districts, both of which are considering facilities expansions, and Kane County government, which plans to undertake the improvement to the Smoky Mountain Road System.

The capacity to construct such capital facilities may depend upon revenues derived from mining and mining-related activity expected to materialize over an extended time horizon. Therefore, to the extent that local governments undertake capital facilities construction, and to the extent that local governments anticipate Project-related revenues to help finance the construction, local governments may risk lower than anticipated revenues in the event of the premature end of mining and mining-related activity.

In the absence of Project-related revenues, the burden of financing facilities expansion projects already undertaken would shift to residents, businesses, and taxpayers in the affected jurisdictions. The Kane County School District and Kane County would be most susceptible to impacts of this type, given that the proposed Project potentially would come to constitute a large share of the local tax base. The loss of royalty revenues could also affect Kane County with respect to the financing arrangements used to fund improvements to the Smoky Mountain Road System.

The relative magnitude of fiscal impacts of this type, which involve local governments potentially taking on debt to construct capital facilities, would be sensitive to the exact timing of a premature end of mining and mining-related activity. The longer the period of operations and the larger the aggregate level of production achieved prior to closure, the less the potential for adverse fiscal impacts to occur. As production continues over time, debt may be repaid. Also, revenues from whatever source may accumulate and be available to replace lost Project-related revenue. Utah's Permanent Community Impact Fund, various funding programs for education, and the Utah DOT Special Service District Funds are examples of funds potentially benefitting

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Utah jurisdictions where revenues may accumulate over time, potentially providing resources to cushion adverse fiscal effects in the event of the premature end of mining and mining-related activity.

The town of Fredonia, an Arizona jurisdiction, potentially would face a similar fiscal risk. If the truck maintenance facility were to be located in Fredonia, the town may choose to proceed with major capital improvements, perhaps funded by bonded debt, in turn predicated on the anticipation of additional revenues from mining-related development. In the event of a premature end to mining-related development, the town may lose anticipated mining-related revenues, shifting an additional share of the burden of debt repayment to local residents, businesses, and taxpayers.

The Agencies conclude that impacts to socioeconomic conditions at the end of mining and mining-related activity would be minor to moderate over both the short and long terms, with the potential to become significant in Kane County and Kanab, Utah, and Fredonia, Arizona.

4.2.10 Air Quality

4.2.10.1 Impacts to Air Quality in the Smoky Mountain, Iron Springs, and Moapa Areas with Mining-Related Activities

Air quality in the project area would be affected by both construction and operation of mining facilities and other Project-related activities. Particulate concentrations may exceed the allowable National or State ambient air quality standards (Table 4-14). Construction and reclamation activities associated with the development and the eventual closing of the Smoky Hollow Mine and the coal loadouts would cause an increase in fugitive and gaseous emissions in the local area during these phases.

Air quality effects from construction would result in temporary increases in local fugitive dust levels. Dust generated from these open sources is termed "fugitive" because it is not discharged to the atmosphere in a confined flow stream (e.g., stack, chimney, or vent). The principal sources of fugitive dust would be related to construction and operation activities, including land clearing, earth moving, scraping, hauling, and materials storage and handling; drilling and blasting; truck loading operations; wind erosion from coal, soil, and spoil stockpiles; and coal handling operations. In addition, other fugitive emissions impacts would be caused by mud/dirt carryout onto paved surfaces by trucks and other vehicles. The additional surface loading would cause an increase in fugitive emissions during the lifetime of the construction project.

The air quality impact of a fugitive dust source depends on the quantity and drift potential of the dust particles released into the atmosphere. The larger dust particles settle out near the source, while finer particles are dispersed over much greater distances. Theoretical drift distances, as a function of particulate diameter and mean wind speed, have been computed for fugitive dust emissions. For a typical wind speed of 10 miles per hour (mph), particles larger than 100 micrometers (μm) are likely to settle out within 20 to

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Table 4-14 — Particle Size Distribution, in Percent, for a Typical Coal-Mining Operation

Process/ Particle Size	Diameter (μm)[1]						
	<2.5	2.5-5.0	5.0-10.0	10.0-15.0	15.0-30.0	>30.0	Total
Material Handling	0.13	0.10	0.13	0.12	0.25	0.27	100
Unpaved Roads	.10	.10	.16	.14	.30	.20	100
Composite	.11	.10	.14	.13	.28	.24	100

Source: EPA 1985.
[1]Micrometer.

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30 feet from the source. (For comparison, a human hair has a thickness of about 100 μm.) Particles 30 to 100 μm in size, depending on the extent of atmospheric turbulence, are likely to settle within a few hundred feet of their source. Dust particles smaller than 30 μm are generally recognized as emissions that may remain suspended indefinitely. The fraction of fugitive emissions in the various size categories is derived from the major emission source categories for a typical mining operation and is summarized in Table 4-14 (EPA 1985).

During construction and reclamation, vehicle exhaust emissions would be increased; however, these emissions are small compared to fugitive emissions from earth moving, hauling, and other construction activities and would not affect regional air quality. Particulate impacts from construction and reclamation activities would be variable and would depend on the activity location and the daily weather conditions. While mitigation measures, such as watering, would reduce the amount of emissions from such activities, some level of fugitive dust emissions would be unavoidable, owing to the nature of the work. Although some impacts on air quality would inevitably occur during construction and reclamation, they would be transitory, limited in duration, and would end at the completion of that particular phase of the work. Once reclamation is completed, pollutant concentrations would return to background levels.

Air quality impacts resulting from the operation of the surface facilities complex, the coal haul trucks, and the coal loadouts would continue throughout the life of the Project. Emissions from mining and coal hauling would occur throughout the operational phase of the project. At the surface facilities complex, the primary pollutant would be NO_x, generated by the diesel generator exhaust, vehicles, and other mobile equipment. Although there would be some exhaust emissions from the haul trucks, bulldozers, and front-end loaders at the loadouts, the primary pollutant of concern would be the fugitive dust particulates generated at the sites. The proposed Project would be a minor source of sulfur dioxide (SO_2) and suspended particulates but could still contribute to the formation of some haze in the region. Sulfur dioxide emissions would result from the operation of diesel-powered equipment and vehicles.

Fugitive dust and emissions of SO_2 at the surface facilities complex and at the unit-train loadouts would be reduced through several means (Appendix A, Section A.3.5.4, Air Quality Enhancement). Sulfur dioxide emissions would be less than 10 percent of the present background concentrations for 3-hour, 24-hour, and annual averaging periods for SO_2 at the property boundaries. The SO_2 emissions would contribute to reduced visibility through the formation of aerosols. These aerosols would be evident as haze, which restricts visibility at extended distances from the emission source. Particulate and aerosols are removed naturally by precipitation (rain or snow) which results in improved visibility. At distances beyond the Project boundary, impacts from emissions would be lessened, owing to mixing and dispersion of the pollutant. Fugitive dust emissions could reduce visibility near the source of the emissions, but, as settling and dispersion of these particles would take place away from the source, visibility would improve.

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The Smoky Hollow Mine and the train loadout facilities are classified as minor sources of air pollutants. The mine facilities are expected to produce less than 50 tons per year of NO_x, and even lesser amounts of particulate, CO, and SO_2 emissions. Greatest impacts from these emissions would occur on days that have light winds and poor dispersion conditions (temperature inversion). These conditions normally occur during winter in the early morning hours.

Modeling results at the surface facilities complex, the Moapa unit-train loadout, and the Iron Springs unit-train loadout show that maximum concentrations of PM_{10}, NO_2, CO, and SO_2 would not exceed State or Federal Ambient Air Quality Standards (Table 4-15), and air quality degradation by PM_{10}, NO_2, and SO_2 emissions would be less than the applicable PSD Class II increments. Modeling studies showed that maximum 24-hour PM_{10} concentrations would fall below 1 $\mu g/m^3$ within about 1 mile of the proposed minesite and that annual concentrations of NO_2 would be less than 0.1 $\mu g/m^3$ within 0.6 mile of the mine (Conger 1992b). Process and fugitive dust emissions from the facilities would be below the 250 tons per year threshold requiring a PSD permit. The States of Utah and Nevada have granted air quality permits for the Smoky Hollow Mine, the Iron Springs unit-train loadout, and the Moapa unit-train loadout. The project would comply with all existing air quality standards in Utah, Arizona, and Nevada.

Cumulative air quality impacts in the vicinity of the surface facilities complex would be very slight, as there are no other permitted sources of air pollution nearby. A large construction project involving the installation of air pollution control equipment on the Navajo Generating Station (NGS) (Appendix B) will increase the number of people working in the Page, Arizona, area during the next 5 years. The increase may have a slight influence in the amount of traffic in the overall Project area during the construction period. The air pollution control equipment to be installed at the NGS will improve the region's air quality in the future by reducing SO_2 emissions at the plant, thereby reducing regional haze conditions.

The closest source to the Iron Springs unit-train loadout facility, which was required to obtain an air quality permit from the State of Utah, is Western ElectroChemical Company (WECCO) (Appendix B). Dispersion modeling analysis showed that concentrations of PM_{10} emitted from the proposed Iron Springs unit-train loadout would decrease to about 2 $\mu g/m^3$ or less within 0.6 mile of the boundary of the facility. Since the loadout facility would be more than 1 mile from the WECCO plant, the cumulative impacts would be slight, on the order of 1 $\mu g/m^3$.

Cumulative impacts from the Reid Gardner Powerplant (Appendix B) were assessed in the air permitting process for the proposed Moapa unit-train loadout. The dispersion modeling results showed that the combined effects of the Moapa unit-train loadout and the powerplant would be well within NAAQS and that air quality degradation would be much less than the allowable PSD increments. The CMS Generating Company plans to construct a new cogeneration powerplant (Appendix B) about 2 miles northeast of the Reid Gardner Powerplant. Because the distance to the Moapa unit-train loadout would be about 3 miles, the

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Table 4-15 — Projected Project-Related Concentrations and National Ambient Air Quality Standards (NAAQS)

Pollutant	Averaging Period	Modeled Maximum Concentration ($\mu g/m^3$)[1]	Background Concentration ($\mu g/m^3$)	Total ($\mu g/m^3$)	NAAQS[2] ($\mu g/m^3$)	Percent of NAAQS
SMOKY HOLLOW MINE						
PM_{10}	24-hour	17.7	30	47.7	150	32
	Annual	2.1	8	10.1	50	20
NO_x	Annual	1.3	0	1.3	100	1
CO	1-hour	29.4	0	29.4	40,000	<1
	8-hour	16.1	0	16.1	10,000	<1
SO_2	3-hour	9.8	117	126.8	1300[2]	10
	24-hour	5.3	52	55.3	365	16
	Annual	.2	13	13.2	80	17
MOAPA UNIT-TRAIN LOADOUT						
PM_{10}	24-hour	2.4	26.1	28.5	150	19
	Annual	.8	9.2	10.0	50	20
NO_x	Annual	0	6.0	6.0	100	6
CO	1-hour	8.9	NA	8.9	40,000	<1
	8-hour	1.5	NA	1.5	10,000	<1
SO_2	3-hour	5.5	9.1	14.6	1,300[2]	<1
	24-hour	1.2	6.0	7.2	365	2
	Annual	.3	3.6	3.9	80	5
IRON SPRINGS UNIT-TRAIN LOADOUT						
PM_{10}	24-hour	17.9	30	47.9	150	32
	Annual	3.4	8	11.4	50	23
NO_x	Annual	1.2	30	31	100	31
CO	1-hour	16.7	0	16.7	40,000	<1
	8-hour	6.0	0	6.0	10,000	<1
SO_2	3-hour	6.3	117	123.3	1,300[2]	1
	24-hour	1.5	52	53.5	365	15
	Annual	0.3	13	13.3	80	17

Source: Conger 1992b.
[1]Micrograms per cubic meter.
N/A = Data not available.
[2]Secondary standard for 3-hour concentration of SO_2 (National Ambient Air Quality Standard).

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cumulative impacts of the Moapa unit-train loadout and the new powerplant would be minimal, as any emissions from either facility would be dispersed over this distance.

In the future, after cessation of mining activities and the subsequent reclamation, the air quality in the region would return to premining background levels. Improved roads in the Smoky Mountain area would reduce the level of fugitive emissions, resulting in improved air quality after the Project closes. However, better roads and increased regional population may also encourage more traffic, thereby increasing emissions of other pollutants related to automobile exhaust.

The Agencies conclude that impacts to air quality in the Smoky Mountain, Iron Springs, and Moapa areas with mining-related activities would be minor over the short term and negligible to minor over the long term.

4.2.10.2 Impacts to Air Quality Along the Roads in the Warm Springs Project Area with Mining-Related Activities

Haul trucks carrying coal from the Smoky Hollow Mine to the coal loadouts would cause an incremental increase over the normal traffic volume on these public haul routes (Chapter 3, Section 3.7, and Chapter 4, Section 4.2.7, Transportation). There would be a proportional increase in particulate and exhaust emissions along these routes because of the increased traffic volume.

Particulate and gaseous emissions occur whenever a vehicle travels over a paved surface, such as public and industrial roads and parking lots. During mine operations, direct air emissions would come from coal truck exhaust and particulate matter from wear of bearings and brake linings and abrasion of tires against road surfaces. Particulate emissions, known as reentrainment, may originate from material previously deposited on the travel surface or from resuspension of material from tires and undercarriages. In general, emissions arise primarily from surface material loading, and that loading is replenished by other sources, such as deposition from other vehicles. Reentrained fugitive dust consists primarily of common sand and soil, mostly tracked or deposited onto the roadway by vehicle traffic. Reentrainment rates are higher if the pavement surface has deteriorated.

Emissions from all paved roads increase directly as the amount of silt-size dust particles increase on the road surface (EPA 1985). Emissions also become greater with an increase in traffic on the roads. Because of the importance of the surface loading, available control techniques attempt to prevent material from being deposited on the surface and from removing any material that has been deposited. Some coal dust could escape from trucks during transport; however, all trucks would use tarps, mechanical closures, or other effective means to minimize these emissions.

Impacts of the coal truck traffic on air quality along the haul routes were evaluated using an EPA-approved dispersion model (Conger 1993). Sections of two-lane and four-lane highways were modeled at three

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locations: Interstate-15 by Zion National Park at Kolob Canyon; the highway adjacent to a residential area outside Iron Springs; and the Warm Springs Road outside Big Water. The modeling methodology and results are applicable to all areas adjacent to the haul routes. In all cases, maximum impacts occurred within 60 feet of the edge of the roadway and were small enough that there would not be violations of either the NAAQS or the PSD increments from these sources. Exhaust emissions are controlled for all mobile sources through the Federal- and State-mandated emissions programs for vehicles that use public roads. Paving the proposed Warm Springs/Benchtop Road would decrease dust emission levels along that road.

Cumulative impacts from the haul truck traffic would be confined to the areas immediately adjacent to the edges of the roadways. Emissions from all paved roads increase in direct proportion to traffic volume increases, so there would be a proportional increase in particulate and exhaust emissions along these routes resulting from the increased traffic volume from regional traffic; as well as from the coal trucks. As the local population continues to grow and recreational activities in the region attract more traffic to the area, the proportion of the air quality impacts caused by coal trucks would decrease.

Long-term effects near the haul route after mine closure would likely result in improved local air quality in the Smoky Mountain area, as the improved road would have less fugitive dust emissions than the present road. Improvements to air quality may be somewhat offset over the long term if the better roads were to attract more recreational traffic to the area.

The Agencies conclude that impacts to air quality along the roads in the Warm Springs Project area with mining-related activities would be minor over the short term and negligible to minor over the long term.

4.2.11 Visual Resources/Aesthetics

4.2.11.1 Impacts to Visual Resources/Aesthetics in the Smoky Mountain Area with Mining-Related Activities

Mining-related activities within the Smoky Hollow life-of-mine area and at the microwave communication sites would impact visual resources in the area to varying degrees. Facilities associated with the surface facilities complex, the ventilation shafts, and the microwave communication system would be present throughout the period of active mining. Activities related to exploration borehole drilling, monitoring, operation of the topsoil borrow area, and mining-related subsidence would be of a more temporary nature.

The proposed surface facilities complex would be located in a 400-foot deep, enclosed part of Smoky Hollow Canyon. This part of the canyon is bounded by steep slopes and canyon walls covered by a mixture of low shrubs and very large boulder talus. The canyon bottom is very dry in this area and has no developed riparian community that would be discernable to the casual visitor. Visual evidence of previous mining disturbance is present in a relatively small part of the proposed site. Because of the deep, confined

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nature of this canyon site, the proposed facility complex would not be visible from the WSAs or any other sensitive viewpoints outside Smoky Hollow. The visual influence of the surface facilities complex would therefore be limited to a relatively short segment of the Warm Creek/Benchtop Road within the canyon. Because of the confined nature of the canyon, viewers along this stretch of the improved road would see essentially all the mine surface facilities from very close by. Proposed landform modifications (coalpile, topsoil storage pile, sedimentation pond, and building/parking pads) and structure modifications (substation, loadout, conveyors, mine portals, and various buildings) would appear very prominent at this distance and angle of view. The level of visual contrast would be high, in effect, reducing the current Class II landscape to one consistent with VRM Class IV standards.

The topsoil borrow area, if needed, would not be used until mine closure. It would then be immediately recontoured and reseeded. Located on a flat part of Smoky Mountain with shrub and juniper vegetation, the current disturbance associated with an abandoned landing strip is not visually prominent. Additional disturbance from topsoil removal would not create more than a low to moderate level of visual contrast as seen from the Smoky Mountain Road (the only affected viewpoint). Similar results would be expected at the sites for the exploration boreholes and the ventilation shafts.

Subsidence may affect the surface topography to some degree (Section 4.2, Geology and Topography). The natural process of erosion may be accelerated as a result in areas of cliffs and steep slopes; however, it would not alter the existing visual character of the surface lands above the mine.

The Spring Point microwave reflector facility would be visible from some segments of the Warm Creek Road, and, as such, would be seen primarily in the context of the surface facilities complex. While technically in a line of sight to other viewpoints on the mesa top, its design should make it essentially unnoticeable. The building and ground support facilities of the Mustard Point microwave repeater facility should not be visible from any sensitive viewpoint. However, the tower would be visible to some viewpoints below, including Big Water, U.S. Hwy. 89, and a segment of the reconstructed Warm Creek Road. Actual visibility of the microwave tower and dishes would be low to very low because of their distance, scale, and position in a recessed area of the cliff face as seen from these viewpoints. The Big Water microwave terminal linkage facility would be visible from residences in and near Big Water and from U.S. Hwy. 89. However, it would not be particularly out of character with other structures in and near Big Water.

The visual effects of the surface facility complex have been mitigated to a large degree by its placement in the Smoky Hollow drainage rather than on top of Smoky Mountain, where its visibility would affect a much wider area and impact other sensitive viewpoints including the WSAs. To help reduce the visual effects of the surface facilities complex and microwave sites to viewers, all facilities would be painted a neutral, gray or tan to blend with the earthen colors of the surrounding shales, siltstones, and sandstones. Dust (coal and soil) suppression would be actively maintained. To limit the effects of night lighting, all facility lighting would be shielded and directed downward. This would preclude effects of night glow on the WSAs and

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other sensitive viewpoints to all but infrequent periods of close cloud cover. After cessation of mining, all surface structures, including the microwave communication structures, would be removed, and disturbed areas would be regraded to the approximate original contour and reseeded. The topsoil borrow area, if needed, and the borehole sites would also be contoured and reseeded (Appendix A, Section A.3.4, Reclamation Activities). Over the long-term, visual effects of the surface facilities complex would be reduced to a low level of visual contrast, and the site would be returned to its existing VRM Class II status.

The Agencies conclude that the impacts to visual resources/aesthetics in the Smoky Mountain area with mining-related activities would be minor to moderate over the short term and minor over the long term.

4.2.11.2 Impacts to Visual Resources/Aesthetics in the Smoky Mountain Area with Reconstruction and Operation Activities Along the Warm Creek Road

Between Big Water and Warm Creek Canyon, the land along the existing Warm Creek Road is flat to gently rolling and in many places is nearly devoid of vegetation. It lies below scenic and impressive cliff formations which tower 800 to 1,200 feet above the road. The relatively flat mesa lands over which the road travels slope gently away from the cliffs toward Lake Powell (which cannot be seen from this area). The onsite physical contrasts of landform and vegetation disturbance of the proposed roadway modifications should be minimal because of the sparse vegetation, relatively flat terrain, and the presence of the existing roadway. Onsite structure contrasts, in the form of a chip-and-sealed road surface, would be greater because of its color, which would contrast with the adjacent colors in some areas. Physical contrasts created by cut and fill would continue over the long term; revegetation of the slopes would slightly reduce these contrasts with time.

Parts of the reconstructed road between Big Water and the entrance to Warm Creek Canyon would be visible from various viewpoints, including intermittent segments of U.S. Hwy. 89, residences in and near Big Water, and the community of Greenehaven, Arizona, various four-wheel-drive and recreation access roads, a Glen Canyon NRA overlook south of the Wahweap marina, and about 3 square miles in the southwest corner of the Burning Hills WSA. Most of these viewpoints afford only views across isolated segments of the upgraded road from nearly the same elevation as the roadway. As a result, only a very narrow and discontinuous band of change would be visible in most places. Exceptions include the Big Water area, parts of the four-wheel-drive roads southwest of Big Water, distant segments of the Smoky Mountain Road, and one ridge within the Burning Hills WSA, where elevated views of extended segments of the new paved road surface would be visible.

The level of visibility from the Big Water area would be high, owing to the combination of proximity, duration, and angle of view. Visibility levels from all other viewpoints would be lower because of the modifying influences of long distance, indirect orientation, and angle of view, as well as the brief duration coupled with the indirect and intermittent pattern of the roadway visible in the landscape. As a result, the visual contrast

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would be moderate from Big Water (high visibility of a moderate structures contrast) and low from all other viewpoints (moderate onsite contrasts and moderate to low visibility). None of the proposed Warm Creek Road improvements in either Warm Creek Canyon or Smoky Hollow would be visible from outside viewpoints.

From most potentially affected viewpoints, vehicle lights on U.S. Hwy. 89, within communities, and on nearby access roads are already a common sight. Nevertheless, those viewpoints currently affected by night lighting would see an increase in night vehicular use from the direction of the Warm Creek Road. From the remainder of the potentially affected viewpoints (principally the ridge in the southwest corner of the Burning Hills WSA, the Kelly Grade Branch of the Warm Creek Road, and the road on Romano Bench), night lighting in the vicinity of the Warm Creek Road is presently an infrequent occurrence and would increase substantially over current conditions. Note, however, that nighttime use of these areas is infrequent; hence, the number of potentially affected users is low. After mine closure, truck traffic would be discontinued, and night lighting in the area would be reduced to near premine levels.

To reduce visual impacts, the road has been designed with a gray chip-and-seal surface, which would curtail dust while creating less color contrast than would an asphalt surface.

The Agencies conclude that impacts to the visual resource/aesthetics in the Smoky Mountain area with reconstruction and operation activities along the Warm Creek Road would be minor and permanent. Changes in views caused by physical contrasts would constitute an irretrievable commitment of the visual resource.

4.2.11.3 Impacts to the Visual Resources/Aesthetics in the Smoky Mountain Area with Construction and Operation Activities Along the Route of the Benchtop Road

The lands along the route of the proposed Benchtop Road consist of a wide variety of landscape conditions. Minor escarpments occur below Haycock Point; major escarpments occur at Tibbett Canyon and at John Henry Canyon. In these areas, the form, line, color, and texture contrasts of cut-and-fill slopes would be high. Vegetation contrasts would be relatively low in these areas because of the sparse vegetation present. The segments of the proposed road along Nipple Creek and in Smoky Hollow would create moderate to high landform contrasts, owing to the sloping and broken topography. Landform contrasts elsewhere would be low because of the flat to gently rolling terrain. Both the structure contrasts from the new 28-foot-wide chip-and-seal surfaced road and the vegetation contrasts would occur along the entire route, except for the part immediately north of Big Water, where similar patterns now exist.

One or both of the minor escarpment crossings below Haycock Point would be visible from a number of viewpoints, including U.S. Hwy. 89, Nipple Creek Road, homes in and near Big Water, and various recreation

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and residential viewpoints farther to the south. Because of the close distance, the orientation, and the angle of view, visibility levels would be high from parts of U.S. Hwy. 89, Nipple Creek Road, Warm Creek Road, and Big Water. Visibility of the entire roadway within the Nipple Creek drainage would be high, as viewed from the Nipple Creek Road, which the drainage closely parallels, and from a part of the Wahweap WSA just to the west. Segments of the proposed road on Nipple and Tibbett Benches would also be highly visible from nearby parts of the Wahweap WSA. The crossing of Tibbett Canyon would be highly visible from the Tibbett Canyon Road. The high degree of visibility combined with the high degree of physical contrast in these areas would result in high levels of visual contrast.

The cut-and-fill slopes in the upper reaches of John Henry Canyon would be visible from Pilot Knoll and from some isolated segments of the Smoky Mountain Road near Pilot Knoll. The visibility of the high physical contrasts anticipated here would result in noticeable levels of visual contrast. The high degree of physical contrast caused by cut and fill would remain visible over the area over the long term, although revegetation of the slopes may reduce contrast levels over time.

Night lighting from vehicles is currently a common condition for viewers at viewpoints near Big Water and along U.S. Hwy. 89. Truck traffic night lighting would be a new experience for viewers in backcountry use areas. The viewpoints which would be most affected in this regard include the Nipple Butte Road, the Smoky Mountain Road near Pilot Knoll, Tibbett Canyon Road, and numerous scattered ridges within the Wahweap WSA.

To reduce visual impacts, the road surface of the proposed Benchtop Road would be a gray chip-and-seal surface, rather than a more contrasting asphalt surface.

The Agencies conclude that impacts to visual resources/aesthetics in the Smoky Mountain area with construction and operation activities along the route of the Benchtop Road would be moderate and permanent. Changes to visual resources from physical contrasts produced by cut and fill would constitute an irretrievable commitment of the visual resource.

4.2.11.4 Impacts to the Visual Resources/Aesthetics in the Smoky Mountain Area with Construction and Operation Activities Along the Route of the 138-kV Power Transmission Line

The southernmost 6 miles of the proposed 138-kVpower transmission line would parallel Utah Power and Light Company's existing Sigurd 230-kV power transmission line (Appendix B). The lands along this part of the line can be characterized as somewhat elevated, rolling sage and juniper land. The physical contrasts to the landform, vegetation, and structures caused by construction of the new line in this area would be low due to the presence of similar modifications. From just south of the U.S. Hwy. 89 crossing, the proposed power transmission line would be on a new alignment. Crossing U.S. Hwy. 89 in gently sloping sage lands,

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the line would continue north, cross Wahweap Creek about 1.5 miles northwest of Big Water, then ascend the escarpment on the west side of Haycock Point. From here, the line would cross the flat, sage-covered lands on Nipple and Tibbett Benches, and span Tibbett Canyon, which divides these two benches. The line would then descend into Smoky Hollow Canyon and parallel the Warm Creek/Benchtop Road for the last 2 miles to the proposed surface facilities complex. The physical contrast of structural modifications would be high for the part of the line on the new alignment, except for a segment near Big Water, which would be moderate. Equipment travel down the right-of-way for construction purposes would create a low to moderate degree of disturbance to vegetation and a low degree of landform disturbance; no disturbance would be anticipated to escarpment faces, as they would not be traversed for construction or maintenance purposes.

Visibility of the power transmission line would be limited to viewpoints within about a half mile of it. Beyond this distance, visibility would drop quickly. Viewpoints within one-half mile would include: four-wheel-drive roads (along that part which parallels the Sigurd Line), U.S. Hwy. 89, the Nipple Butte Road at the Wahweap Creek crossing, the Tibbett Canyon Road, and the Warm Creek/Benchtop Road. The community of Big Water, parts of the Nipple Creek Road, and a few limited areas of the Wahweap WSA would have moderate visibility of the proposed power transmission line.

Visual contrast of the proposed line would be highest at the Nipple Butte Road/Wahweap Creek crossing, at the Tibbett Canyon crossing, and along the paralleled segment of the Warm Creek/Benchtop Road in Smoky Hollow. Visual contrast would be moderate at the U.S. Hwy. 89 crossing (owing to the proximity of the Sigurd Line crossing), and from some limited areas near the Wahweap WSA. Visual contrast would be high at any canyon crossing because of the visibility of the orange aircraft warning balls that would be used on the lines in these locations.

Visual impacts from the power transmission line would be reduced by not clearing the entire right-of-way, by immediately revegetating disturbance areas, by spanning canyons where feasible, and by constructing the line from below and above escarpments, thereby avoiding disturbance to escarpment faces. Weathering of the power conductors would reduce visual impacts from reflections. Insulators would be light gray to blend in with the surrounding topography. After mine closure, the power transmission line structures would be removed, and disturbed areas would be revegetated.

The Agencies conclude that impacts to visual resources/aesthetics in the Smoky Mountain area with construction and operation activities along the route of the 138-kV power transmission line would be minor to moderate over the short term and negligible over the long term.

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4.2.11.5 Impacts to the Visual Resources/Aesthetics in the Iron Springs, Moapa, and Hurricane/Fredonia Areas with Mining-Related Activities

The proposed Iron Springs unit-train loadout site is at the west end of a large area that has undergone widespread disturbance from previous mining-related activities. Although most structures have been removed, large-scale landform modifications are readily evident. This area has little scenic value and has been designated as VRM Class IV. Construction of the loadout would not be expected to create visual effects beyond existing levels and those acceptable for this classification. The Moapa unit-train loadout site is under the visual influence of the Reid Gardner Powerplant, a buried gas pipeline, and three high-voltage power transmission lines. The site has low to moderately low visibility from Interstate-15 and has been designated as VRM Class IV. The hypothetical location chosen for the proposed Fredonia truck maintenance facility is generally compatible with the character of the existing nearby land uses. Visual contrast would be generally low. The hypothetical location chosen for the proposed Hurricane truck maintenance facility would also be generally compatible with the character of existing surrounding land uses and, as a result, would not create a very high level of visual contrast. Facilities in the Moapa and Iron Springs areas would be removed and the disturbance reclaimed when the mine closes. They should return to premine visual contrast levels. Facilities in the Hurricane/Fredonia area would be privately owned and may not be removed upon closure of the mine.

Night lighting at all of the facilities would be shielded and directed downward to reduce visual impacts. In addition, all structures would be painted a neutral, gray or tan color to blend with the surrounding environment.

The Agencies conclude that impacts to the visual resources/aesthetics in the Iron Springs, Moapa and Hurricane/Fredonia areas with mining-related activities would be negligible over both the short and long terms.

4.2.12 Recreation

4.2.12.1 Impacts to Dispersed Recreational Opportunities in the Smoky Mountain Area with Mining-Related Construction and Operation Activities

Construction and operation of the proposed Smoky Hollow Mine and associated roads create a perception that the quality of the backcountry experience and wild character of this area would be diminished. These activities could degrade the recreational experience of this area for some people. Better, improved access resulting from reconstruction/construction of the proposed Warm Creek/Benchtop Road would increase the opportunities for dispersed nonmotorized and motorized recreation in the area by providing recreational

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access to people who previously did not or could not visit the area because of its relative inaccessibility. This would be particularly true of the proposed Benchtop Road. Improved access would make it easier for all recreation users to get into this area. ORV use in the area would likely increase with construction of the Benchtop Road and could cause users to venture farther out from the new road and into areas that were previously nonmotorized in setting. Improving the Warm Creek Road would increase public accessibility into the Smoky Mountain area and could increase traffic on the Lake Powell access at Crosby Canyon as well.

The Smoky Mountain Road System is currently used by dispersed recreationists and would continue to be an integral part of the Kane County road network upon completion of the Warm Creek/Benchtop Road. Distinct and uninterrupted public access would be maintained on all Kane County roads throughout and after the life of the proposed mine, including that part that runs next to and beyond the Smoky Hollow Mine surface facilities complex. The public part of the road would be separated from the operational areas of the surface facilities complex by embankments, fences, gates, barricades, or other effective means. Mine operations would not hinder public use of the road. Unrestricted use of the roads would return after closure of the mine.

Dispersed recreational activities would not be directly impacted by mining-related activities, although hunting could be temporarily disrupted as a result of noise, dust, and human activities associated with construction. Temporary displacement of some large game animals would be expected to occur, particularly near the surface facilities complex. Some displaced big game animals could relocate to adjacent lands and actually increase hunting opportunities in some instances. In general, however, the impact to hunting would increase with proximity to active construction and operation areas.

Increased illegal hunting pressure could occur and would be associated with adverse impacts to big and small game species (Section 4.2.6, Wildlife). As a result of improved access into the area, traffic and human use in the area would increase and could result in increased legal and illegal harvesting of big game and small game animals. An increase in hunting pressure and in human presence could reduce the primitive hunting experience in the area.

According to Utah DWR, there is a direct correlation between increased traffic and increased poaching activity. Additionally, areas of easy accessibility tend to have a higher poaching rate. The more remote an area, the greater the chance for poaching opportunities. The remoteness makes detection difficult; however, remoteness may also provide some deterrent because of the amount of time required to travel out of the area, thereby increasing the chances of being apprehended. Construction of the Benchtop Road through the area would shorten the time between the illegal hunting and travel out of the area. Conversely, a road providing increased traffic may act as a deterrent to poaching within sight of the road. It may not, however, have any effect in areas away from the road. Generally speaking, increased hunting pressure could result in increased violations and an increase in enforcement effort.

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The Warm Creek/Benchtop Road would remain permanently in place following closure of the mine. Recreational use of the area by the public would continue and could increase, owing to gradual increases in regional population over time.

The Applicants would provide assistance to Utah DWR in its studies of the Paunsaugunt Mule Deer Herd, as well as providing other wildlife enhancement measures that would support game animals and deter unauthorized hunting (Appendix A, Section A.3.5.6.3, Enhancement Activities, Wildlife).

The Agencies conclude that impacts to dispersed recreational opportunities in the Smoky Mountain area from mining-related construction and operation activities would be minor to moderate over the short and long terms.

4.2.12.2 Impacts to Recreation Use and Management of the Glen Canyon NRA with Reconstruction and Use of the Warm Creek Road

Improvement and the increased use of the Warm Creek Road through a corner of the Glen Canyon NRA, particularly by coal haul trucks, would increase noise, night lighting, and dust levels in the area. This would have a negative impact on recreation users in this specific area, particularly on those recreationists who currently use the road or go to this benchtop area to seek solitude. Improvement of the road would, however, increase accessibility into the area, and recreators who may not have been able to visit the area in the past may now be able to do so. Increased use may also increase management problems for NPS in the area.

Impacts to recreational use in the Glen Canyon NRA would continue after mine closure, as the Warm Creek Road would remain permanently in place. Impacts could increase slightly over time because of gradual increases in population in the region. NPS management should eventually be able to accommodate the changes to recreational opportunities resulting from improved access and increasing population.

The Agencies conclude that impacts to recreation use and management of the Glen Canyon NRA with reconstruction and use of the Warm Creek Road would be moderate over the short term and minor over the long term.

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4.2.13 Wilderness

4.2.13.1 Impacts to the Potential Wilderness Designation of the Wahweap and Burning Hills Wilderness Study Areas with Mining-Related Construction and Operation Activities

Construction and operation of the proposed Project would have no direct, physical impact on any of the wilderness study areas (WSAs) or the potential designation of wilderness areas in the Smoky Mountain area. The proposed project may have indirect noise, visual, and subsidence effects in the vicinity of the WSAs and may have negative impacts on the WSAs' solitude because of the improved access, increased numbers of people in the area, and structures associated with the proposed Smoky Hollow Mine, the proposed 138-kV power transmission line, and the proposed Warm Creek/Benchtop Road. Solitude is defined as the "state of being alone or remote from habitations; isolation in a lonely, unfrequented, or secluded place."

The proposed Smoky Hollow surface facilities complex would be about 3 miles and 4.5 miles away from the Burning Hills WSA and Wahweap WSA, respectively. Any locations removed from the surface facilities complex by more than 2,000 feet would benefit from the noise barrier effect of the surrounding mountains; consequently, there would be no noise impacts to the outstanding opportunities for the solitude criterion of the Burning Hills and Wahweap WSAs (Section 4.2.8.3, Impacts from Noise Generated in the Smoky Mountain Area with Mining-Related Activities). The visual influence of the surface facilities complex at the Smoky Hollow Mine would be limited to a relatively short segment of the Warm Creek Road within the canyon; therefore, there would be no visual impacts to outstanding opportunities for the solitude criterion in the Wahweap and Burning Hills WSAs (Section 4.2.11.1, Impacts to Visual Resources/Aesthetics in the Smoky Mountain Area with Mining-Related Activities). Exploratory drilling and ventilation shaft development would occur in the life-of-mine area and could be visible temporarily from the WSAs, but no drilling or shaft development would be conducted within the boundaries of the WSAs. Underground mining activity and the potential for surface effects of the resulting subsidence would extend about 1 mile beyond the southwestern edge of the Burning Hills WSA and about 1.5 miles beyond the southeastern edge of the Wahweap WSA. Although very unlikely because of the extensive overburden in these areas, limited subsidence-related cracking or sloughing of the surface could occur and may be temporarily visible to some observers. Most of the cracks and other surface subsidence effects are expected to weather and close during the first few months following subsidence (Section 4.2.1.1, Impacts to Topography in and Around the Smoky Mountain Area with Mining-Related Subsidence). The possibility of mining-related subsidence should not influence the potential designation of these areas as wilderness.

The Benchtop Road and 138-kV power transmission line would lie less than 0.25 mile and about 0.5 mile, respectively, from the Wahweap WSA at their closest points. Intermittent segments of the Benchtop Road and power transmission line may be visible from the WSA, and an occasional coal truck or other traffic could be seen and/or heard. However, the 10 percent of the Wahweap WSA that meets the "outstanding

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opportunities for solitude" criterion for areas under wilderness review does not include the Fourmile Bench, Jack Riggs Bench, or Horse Flat, areas from which the Benchtop Road and power transmission line would be most exposed (BLM 1991). The WSA is not compact in configuration, and the numerous cherry-stemmed intrusions that penetrate the unit tend to lessen the opportunities for solitude (BLM 1991). The construction and use of the Benchtop Road and the power transmission line should not alter the necessary characteristics for wilderness designation of the Wahweap WSA.

The proposed Benchtop Road and 138-kV power transmission line would lie more than 5 miles away from the Burning Hills WSA and would have no impact on the "outstanding opportunities for solitude" criterion for this WSA. The existing Warm Creek Road, however, is about 2 miles from the Burning Hills WSA at its closest point. Intermittent segments of the Warm Creek Road, as well as the proposed improvements, would be visible from locations within the southwest corner of the WSA. The 45 percent of the Burning Hills WSA that meets the "outstanding opportunities for solitude" criterion for areas under wilderness review are not affected (BLM 1991). The proposed improvements for the existing Warm Creek Road should not alter the necessary characteristics for wilderness designation of the Burning Hills WSA.

Improved access provided by the Warm Creek/Benchtop Road may increase the numbers of recreators visiting the WSAs. This would continue after mining in the area had ceased, as the road would remain in place after mine closure.

The Agencies conclude that impacts to the potential wilderness designation of the Wahweap and Burning Hills Wilderness Study Areas with mining-related construction and operation activities would be negligible to minor over both short and long terms.

4.2.13.2 Impacts to Wilderness Characteristics in the Smoky Mountain Area with Mining-Related Construction and Operation Activities

Mining-related construction and operation activities would improve public access into the Smoky Mountain area and may increase noise and the numbers of recreators in the vicinity. Although the Smoky Hollow Mine would be located within a few of the units included in the most recent version of HR Bill 1500 (Table 4-16), previous coal exploratory drilling and engineering investigations have substantially impaired the naturalness of the area. Previous disturbance also includes the inactive Missing Canyon Coal Mine, an abandoned airstrip on Smoky Mountain, and existing access roads, including a segment of the existing Warm Creek Road. Many of these roads are currently used for dispersed recreational opportunities and mineral exploration activities and generally detract from the opportunity to experience naturalness and solitude. Construction and operation of the Smoky Hollow Mine would disturb additional area and would increase noise levels, further decreasing the opportunities for naturalness and solitude in the areas.

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The Benchtop Road and 138-kV power transmission line would cross units included in various versions of HR Bill 1500 (Table 4-16). The naturalness of the areas where these components would be located has been impaired by mineral exploration activities, access roads, and ORV use. Construction and operation of the Benchtop Road and the power transmission line would disturb additional acreage and further impair the naturalness of the area (Chapter 1, Table 1-1). In addition, use of the Benchtop Road would increase noise levels and adversely impact the opportunities for solitude in the area.

Reconstruction of the existing Warm Creek Road would disturb additional acreage along a previously disturbed road corridor and further impair the naturalness of that area. In addition, increased use of the Warm Creek Road would increase noise levels and adversely impact the opportunities for solitude in the area.

Underground mining and associated subsidence activity could result in surface cracks, slope instability and failure, rock toppling, and alteration of topography and drainage patterns within parts of the Wahweap and Burning Hills WSAs, as well as in a few of the units included in various versions of HR Bill 1500. Surface expressions of the underground activity have the greatest potential to occur in the southern parts of the life-of-mine area where thinner overburden, steep slopes, weathered materials, and unstable structural conditions exist (Section 4.2.1.1, Impacts of Topography In and Around the Smoky Mountain Area with Mining-Related Subsidence). These surface expressions may be temporarily visible to some observers but would generally be associated with naturally occurring erosion events rather than underground mining activity. Most of the cracks and other surface subsidence effects are expected to weather and close during the first few months following subsidence. They should have little effect on the naturalness of a particular area or on a visitor's opportunity for solitude in that area.

The Smoky Hollow Mine and 138-kV power transmission line would be closed/removed, and all surface disturbance would be reclaimed at the end of active mining. Impacts to naturalness and solitude in these areas would reduce accordingly. The Warm Creek/Benchtop Road would remain permanently in place following cessation of mining and would continue to provide improved access into the area.

The Agencies conclude that impacts to wilderness characteristics in the Smoky Mountain area with mining-related construction and operation activities would be minor to moderate over both the short and long terms.

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Table 4-16 — Utah Wilderness Recommendations in the Smoky Mountain Area

Project Component	BLM's Initial Roadless Areas Inventory	BLM's Final Initial Wilderness Inventory Areas	BLM's WSAs	HR Bill 1500 (Congressman Owens)	HR Bill 1500 (Congressman Hinchey)
Recommendations[1]	Wahweap Burning Hills Nipple Bench Head of the Creeks Warm Creek	Wahweap Burning Hills	Wahweap Burning Hills	Wahweap Burning Hills Warm Creek Smoky Hollow	Wahweap Burning Hills Nipple Bench Warm Creek Squaw Canyon
Smoky Hollow Surface Facilities Complex	Warm Creek Head of the Creeks	—	—	—	Squaw Canyon Warm Creek
Benchtop Road Alignment	Nipple Bench Head of the Creeks	—	—	Warm Creek	Nipple Bench Warm Creek
Warm Creek Road Improvements	Nipple Bench Warm Creek Head of the Creeks	—	—	Warm Creek Smoky Hollow	Nipple Bench Squaw Canyon Warm Creek
138-kV Power Transmission Line Alignment	Nipple Bench Head of the Creeks	—	—	Warm Creek	Nipple Bench Warm Creek

[1] Recommendations consist of the various wilderness study areas identified under each BLM inventory or HR Bill 1500.
WSA = Wilderness Study Area.
BLM = Bureau of Land Management

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4.2.14 Cultural Resources

4.2.14.1 Impacts to Prehistoric and Historic Resources in the Warm Springs Project Area with Mining-Related Activities

Potential adverse effects to prehistoric and historic resources include direct land disturbance by mining and associated operations (powerline construction and maintenance, road construction and maintenance, construction of ancillary facilities for truck maintenance and unit-train loadout, exploration drilling, etc.), subsidence, unauthorized artifact collecting, and vandalism. Damage or destruction may occur at sites exposed to any of the activities named above; the loss of physical integrity diminishes research potential that contributes to the importance of sites (i.e., their eligibility for enrollment on the National Register of Historic Places [NRHP]). Visual intrusions to the setting or environmental context of sites may also create potential adverse effects. Subsidence may adversely affect sites, such as lithic scatters, by inducing mixing of subsurface deposits located at the margins of the subsidence areas.

Thirty-three NRHP-eligible sites in the proposed Smoky Hollow life-of-mine area could be adversely affected by mining-related activities, specifically subsidence, exploratory drilling, and the construction of ventilation shafts and access roads. These sites consist of lithic scatters (13); ground-stone scatter (1), lithic and ceramic scatter (1); lithic scatter with historic component including petroglyph (1); lithic scatters with one or more hearths and/or ash or fire-cracked rock (6); lithic and ground-stone scatters with one or more hearths or ash (3); lithic and ceramic scatter with hearth (1); lithic, ground-stone, and ceramic scatters with hearths (2); prehistoric rock shelter complexes (2); prehistoric rock shelter complex with historic component (1); masonry granary; and historic brush fence. (See Appendix E, Table E-10 for a listing of important sites identified by project component.)

Eleven NRHP-eligible sites along the existing Warm Creek Road could be adversely affected by road reconstruction and maintenance or related activities including excavation in fill/borrow areas and establishment of staging areas. These sites include four lithic scatters with hearths and/or fire-cracked rock, one lithic and ground-stone scatter with hearths and fire-cracked rock, two rock shelter sites with lithic, ground-stone, and ceramic artifacts and hearths and/or fire-cracked rock; and one rock shelter with lithic and ground-stone artifacts and fire-cracked rock; one rock shelter with lithic and ceramic artifacts and fire-cracked rock; one ground stone concentration with fire-cracked rock; and one roasting pit.

Five NRHP-eligible sites along the proposed alignment for the Benchtop Road could be adversely affected by road construction and maintenance or related activities including establishment of staging areas and side casting areas, and construction of culverts and bridges. These sites consist of three lithic and ground stone scatters with hearths and/or fire-cracked rock, one lithic scatter with hearths and fire-cracked rock, and one game drive.

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No NRHP-eligible sites have been identified in the proposed locations for the three microwave communication system facilities.

Thirteen NRHP-eligible sites along the proposed alignment for the 138-kV power transmission line could be adversely affected by powerline or access road construction or maintenance. These sites consist of three lithic and ground-stone scatters with fire-cracked rock or ash; two lithic scatters with hearths and/or fire-cracked rock; one lithic, ground-stone, and ceramic scatter with hearths and fire-cracked rock; one lithic and ground-stone scatter; one ground-stone scatter with structure; one lithic scatter with slab feature, hearths, and fire-cracked rock; one rock shelter with lithic scatter, hearth, and rock alignment; two sites with rock shelters and associated lithic, ground-stone, and ceramic scatter and hearths or fire-cracked rock; and one rock shelter with lithic scatter. One other site that could be adversely affected, a lithic scatter, has not been assessed.

Two NRHP-eligible sites could be adversely affected by proposed construction and maintenance of the Moapa unit-train loadout or associated powerlines and access roads. These sites consist of one abandoned railroad grade with associated features and artifacts and one lithic scatter with associated dried corn cobs.

No recorded NRHP-eligible sites would be adversely affected by proposed construction and maintenance of the Iron Springs unit-train loadout.

No recorded NRHP-eligible sites would be adversely affected by proposed construction and maintenance at the hypothetical Fredonia truck maintenance facility. Direct impacts to cultural resources cannot be evaluated in the absence of intensive field inventory data and because of the hypothetical nature of the facility location.

One recorded NRHP-eligible site could be adversely affected by proposed construction of the hypothetical Hurricane truck maintenance facility. This site consists of a historic trash dump. Overall impacts of the facility cannot be evaluated in the absence of intensive field inventory data and because of the hypothetical nature of the facility location.

Adverse effects to NRHP-eligible prehistoric and historic sites from mining-related activities would be appropriately mitigated by avoidance or by approved data recovery techniques (Chapter 2, Section 2.1.1, Alternative 1: Approval of the Applicants' Proposals, with Conditions (the Preferred Alternative), and Appendix A, Sections A.3.5.4, Air Quality Enhancement, and A.3.5.5, Archaeological and Paleontological Enhancement). Several potentially eligible sites in direct impact areas associated with the Warm Creek Road, Benchtop Road, and 138-kV power transmission line rights-of-way and access roads have already been avoided by rerouting the alignment of these activities. Data recovery on remaining sites could include surface collection, partial or complete excavation, surface mapping, artifact and feature analysis, architectural documentation, archival research, or some combination thereof, depending on final evaluation by the

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Agencies. Construction monitoring may also be required in some cases. Beneficial impacts may occur from data recovery procedures implemented to mitigate adverse effects to NRHP-eligible sites, as important information would be contributed to existing prehistoric and historic regional data bases. Data recovery would also prevent loss of the information through unauthorized collecting or vandalism.

The Agencies conclude that impacts to prehistoric and historic resources in the Warm Springs Project area with mining-related activities would be minor and permanent. Loss of NRHP-eligible prehistoric and historic sites would be irretrievable.

4.2.14.2 Impacts to Undiscovered Prehistoric and Historic Resources in the Warm Springs Project Area with Mining-Related Activities

Mining and associated activities could adversely affect undiscovered prehistoric and historic sites. Cultural resource inventories may not locate all important sites. Buried sites, in particular, may be missed in the course of field inventories. The Smoky Hollow life-of-mine area, the Fredonia truck maintenance facility, and the Hurricane truck maintenance facility have not been surveyed in their entirety; thus, unrecorded sites may exist at these localities, even on the surface.

The probability of unrecorded sites occurring in the Project area is greatest in localities where permanent or ephemeral water sources exist, and in the vicinity of known site concentrations. Such localities are known to be present along the Warm Creek Road, Benchtop Road, and 138-kV power transmission line rights-of-way, at the Moapa unit-train loadout, and near the area selected for the hypothetical Fredonia truck maintenance facility. They could also be present in some areas of the Smoky Hollow life-of-mine area and in the vicinity of the Big Water terminal linkage facility.

The chance of encountering unrecorded sites in the course of mining and related operations would be minimized by intensive surveying of any previously uninventoried project facilities in advance (Chapter 2, Section 2.1.1, Alternative 1: Approval of the Applicants' Proposals, with Conditions (the Preferred Alternative)). In the event that a previously unidentified site is located during mining activities, work would be temporarily stopped around the site, and the appropriate Federal or State agency would be contacted to evaluate the site. In all cases, avoidance is regarded as the preferable form of mitigation.

The Agencies conclude that impacts to undiscovered prehistoric and historic resources in the Warm Springs Project area with mining-related activities would be minor and permanent, with the potential to become significant if important undiscovered sites are destroyed. Loss of prehistoric and historic sites would be irretrievable.

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4.2.14.3 Impacts to Native American Cultural and Religious Concerns in the Warm Springs Project Area with Mining-Related Activities

Ethnohistoric and ethnographic information on Native American groups using the various Warm Springs Project areas is very modest. No data on specific Native American traditional or ritual use areas for Warm Springs Project areas were found in the printed literature; this is to be expected, given the highly personal, private, and sacred nature of traditional and ritual use areas. A range of Native American sacred cultural resources, including religious and burial sites, may be present in the Alton-Kaiparowits region of southern Utah and northern Arizona. There is only very general information about the sacred resources and even less information as to their locations (Stoffle 1980). Information on site-specific Native American traditional and ritual use areas, however, was not supplied in response to letters of inquiry sent to representatives of 21 Native American groups in the region. The absence of specific information does not necessarily imply an absence of Native American traditional or ritual use areas in Warm Springs Project areas. Such areas, if present, may be disturbed or destroyed by mining-related activities.

The chance of encountering unrecorded NRHP-eligible or burial sites in the course of mining and related operations would be minimized by intensive surveying of any previously uninventoried Project facilities in advance (Chapter 2., Section 2.1.1, Alternative 1: Approval of the Applicants' Proposal (the Preferred Alternative)). In the event that previously unrecorded sites are encountered during such activities as construction, work would be temporarily discontinued around the site, and the appropriate Federal or State agency any potentially interested Native American Group would be contacted to evaluate the site and, if necessary, proceed with the appropriate mitigation for the site (Section 4.2.14.1, Impacts to Prehistoric and Historic Resources in the Warm Springs Project Area with Mining - Related Activities). In all cases, avoidance is regarded as the preferable form of mitigation.

The Agencies conclude that the impacts to Native American cultural and religious concerns in the Warm Springs Project area with mining-related activities would be minor and permanent, with the potential to become significant if previously unidentified Native American religious sites are destroyed. Loss of Native American cultural and religious sites would be irretrievable.

4.2.14.4 Indirect (Secondary) Impacts to Prehistoric and Historic Resources in the Warm Springs Project Area with Increased Levels of Activity

Indirect impacts to prehistoric and historic resources are those which would result from increased human access to, and generally increased levels of activity in, the Project area. Indirect impacts might occur in the form of looting (surface collecting, pot hunting), vandalism (e.g., graffiti on rock art), or erosion caused by increased foot or vehicle traffic. A number of sites were discovered during surveys associated with this Project but would not be mitigated because they lie outside of areas of direct impact. Previously unrecorded sites could be located and disturbed as well, owing to the overall increased access into the area.

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Six NRHP-eligible sites within a 1-mile-wide buffer straddling the existing Warm Creek Road direct impact zone (one-half mile to either side of the centerline) could sustain indirect impacts. These sites include four lithic scatters, one lithic scatter with fire-cracked rock, and one historic mine. Four other sites within this zone, all lithic scatters, have not been fully evaluated. They could also be adversely affected.

Eleven NRHP-eligible sites within a 1-mile-wide buffer straddling the proposed alignment for the Benchtop Road direct impact zone could sustain indirect impacts. These sites consist of six lithic scatters, one lithic scatter with fire-cracked rock, three lithic and ground-stone scatters with fire-cracked rock, and one ground-stone scatter with fire-cracked rock. Two other sites within this zone, both lithic scatters, have not been fully evaluated. They could also be adversely affected.

Two NRHP-eligible sites occur within one-half mile of the proposed location for the Big Water terminal linkage facility and could sustain indirect impacts. These sites consist of one lithic scatter and one lithic scatter with fire-cracked rock. Two additional sites in this same area, both lithic scatters, have not been evaluated for significance. They could also be adversely affected.

Two NRHP-eligible sites within a 1-mile-wide buffer straddling the proposed alignment for the 138-kV power transmission line right-of-way could sustain indirect impacts. These sites consist of one lithic and ceramic scatter and one rock overhang with ground-stone and ceramic scatter plus charcoal and fire-cracked rock. Nine other sites within this zone have not been fully evaluated and could also be adversely affected. They include six lithic scatters, two prehistoric rock shelters, and one historic inscription.

One NRHP-eligible site within a half-mile-wide buffer surrounding the proposed location for the Moapa unit-train loadout could sustain indirect impacts. This site consists of a trash concentration with features and is probably railroad related. Another 16 sites within this zone have not been fully evaluated. They include five rock shelters with various combinations of artifacts (lithics, ground stone, ceramics, arrow shaft) and, in one case, possible features; one lithic and ground-stone scatter; one lithic scatter with depressions; one lithic and ceramic scatter with depressions; one lithic and ceramic scatter with pit house; two historic trash scatters, possibly railroad related; one historic trash dump; and four sites lacking descriptive data. These sites could be adversely affected.

One NRHP-eligible site within a half-mile-wide buffer surrounding the proposed location for the Iron Springs unit-train loadout could sustain indirect impacts. It consists of historic tent foundations with associated depressions and trash.

No sites are known to exist within one-half mile of the area selected for the hypothetical Fredonia truck maintenance facility.

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One NRHP-eligible site within a half-mile-wide buffer surrounding the area selected for the hypothetical Hurricane truck maintenance facility could sustain indirect impacts. It consists of a multicomponent Pueblo/Paiute site with surface architecture and artifacts.

Two NRHP-listed properties along the proposed truck haul route could be adversely affected. The historic Naegle House (Naegle Winery) is situated beside Utah Route 17 in Toquerville; structures associated with early Mormon pioneers are located at Pipe Spring National Monument along U.S. Hwy. 89 in Arizona. Either could be harmed by vibration associated with increased regional truck traffic. This type of impact, which poses a much greater threat to the Naegle House because of that site's immediate proximity to the highway, would continue to occur regardless of whether the Warm Springs Project is approved.

The full potential of the Project to bring about indirect impacts to cultural resources is unknown because most lands within the half-mile-wide buffer zones identified for analysis purposes have not been inventoried. Most sites known to exist in these areas were recorded in the course of surveys for previous undertakings unrelated to the Warm Springs Project. These sites have not been marked, and their actual locations are known only to the Agencies and archaeologists working in the area. They cannot necessarily be taken as representative in terms of site attributes, distribution, or importance.

All construction and operational personnel would be informed about the appropriate cultural and historic laws and cautioned not to disturb any sites they might discover. The employees would receive annual training to develop an awareness of and sensitivity to cultural/historic issues and concerns specific to the area (Appendix A, Section A.3.5.5, Archaeological and Paleontological Conservation). In consideration of various laws, such as NHPA, ARPA, and SMCRA, specific information on the nature and location of important cultural resources are kept confidential.

The Agencies conclude that indirect (secondary) impacts to prehistoric and historic resources in the Warm Springs Project area with increased levels of activity would be minor and permanent, with the potential to become significant if important prehistoric or historic sites are disturbed. The loss of prehistoric or historic resources would be irretrievable.

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4.3 IMPACTS OF DISAPPROVAL UNDER ALTERNATIVE 2

4.3.1 Geology and Topography

4.3.1.1 Impacts to Topography in and Around the Smoky Mountain Area Associated With Disapproval of the Proposed Project

Natural erosion and weathering will continue to occur with slope failure and rock toppling, resulting in alterations to topography and drainage patterns. Subsidence would not occur in the life-of-mine area.

The Agencies conclude that impacts to topography in and around the Smoky Mountain area associated with disapproval of the proposed Project would be negligible and irreversible.

4.3.1.2 Impacts to Mineral Resources in and Around the Smoky Mountain Area Associated with Disapproval of the Proposed Project

The coal resources in the life-of-mine area would not be recovered at this time but would be available for future development and use. A source of low-sulfur coal would not be immediately available to help meet regulatory demands for cleaner- burning electrical generation.

Leasing for oil and gas exploration would proceed subject to existing and possible future stipulations governing the resolution of conflicts between coal leases and oil and gas leases. Also, oil and gas leasing would continue to be subject to restrictions based on areas designated or under study as wilderness. The demand on local gravel resources would be subject to future construction needs of the Smoky Mountain area.

The Agencies conclude that impacts to mineral resources in and around the Smoky Mountain area associated with the disapproval of the proposed Project would be negligible to minor.

4.3.1.3 Impacts to Topography Along the Warm Creek/Benchtop Road Associated with Disapproval of the Proposed Project

Natural processes, current management, and ORV traffic would continue to impose topographic changes along the proposed route of the Benchtop Road and along the existing Warm Creek Road. Kane County's

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desire to provide public access to Smoky Mountain would necessitate the need for an improved roadway in the area at some time in the future.

The Agencies conclude that impacts to topography along the Warm Creek/Benchtop Road associated with disapproval of the proposed Project would be negligible to minor.

4.3.2 Paleontology

4.3.2.1 Impacts to Paleontological Resources in the Smoky Mountain Area Associated with Disapproval of the Proposed Project

Current management of the area would continue to determine the impacts to paleontologic resources. Gradual human population increases in the area could contribute to increase in fossil collecting in the area and in new fossil deposit discoveries. Fossil resource discoveries and scientific data that could potentially be gained from mining-related survey and mitigation activities would not occur. Deposits in the area would remain accessible to study. ORV traffic, amateur collecting, vandalism, and natural processes would continue to affect paleontological resources.

The Agencies conclude that impacts to paleontological resources in the Smoky Mountain area associated with disapproval of the proposed Project would be negligible, with the potential to become significant if important fossil discoveries are damaged or destroyed. Any loss of scientifically important paleontological information would be irretrievable.

4.3.2.2 Impacts to Paleontological Resources in the Iron Springs and Moapa Areas Associated with Disapproval of the Proposed Project

Current management of the areas would continue to determine the impacts to paleontologic resources. Gradual human population increases would contribute to a general increase in fossil collecting and in new fossil deposit discoveries. Fossil resource discoveries and scientific data that could potentially be gained from mining-related activities would not occur. ORV use, vandalism, and natural processes would continue to impact paleontological resources in the Iron Springs area.

The Agencies conclude that impacts to paleontological resources in the Iron Springs and Moapa areas associated with disapproval of the proposed Project would be negligible, with the potential to become significant if important fossil discoveries are damaged or destroyed. Any loss of scientifically important paleontological information would be irretrievable.

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4.3.3 Hydrology

4.3.3.1 Impacts to Water Quality and Quantity in the Smoky Mountain Area Associated with Disapproval of the Proposed Project

Water quality and quantity would continue to be determined by climate, recharge, natural chemical processes, erosion, and natural structural changes in the area. The continued use of the Warm Creek Road in its present condition would allow the continued erosive effects of vehicle traffic to cause sediment transport into Warm Creek, Wahweap Creek and others. The 180 acre-feet of Wahweap Creek water that could have been used each year for 1 to 2 years during road construction would be available for other uses.

The Agencies conclude that impacts to water quality and quantity in the Smoky Mountain area associated with disapproval of the proposed Project would be negligible.

4.3.3.2 Impacts to Water Quality and Quantity in and Around the Warm Creek Drainage System Associated with Disapproval of the Proposed Project

Water quality and quantity would continue to be determined by climate, recharge, natural chemical processes, and erosion in the area.

The Agencies conclude that impacts to water quality and quantity in and around the Warm Creek Drainage System associated with disapproval of the proposed Project would be negligible.

4.3.3.3 Impacts to the Navajo Aquifer in the Smoky Mountain Area Associated with Disapproval of the Proposed Project

The 400-acre-feet of Navajo Aquifer water that would have been used each year during the life of the mine would be available for other uses. The demand for fresh water sources is expected to continue whether or not the proposed Project is approved because of increasing regional population and local development, although demand is not expected to be very high in this area.

The Agencies conclude that impacts to the Navajo Aquifer in the Smoky Mountain area associated with disapproval of the proposed Project would be negligible.

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4.3.3.4 Impacts to Water Quality and Quantity in and Around the Iron Springs and Moapa Areas Associated with Disapproval of the Proposed Project

Water quality and quantity would continue to be determined by climate, recharge, and ongoing chemical and erosional processes at the sites.

The Agencies conclude that impacts to water quality and supplies in the Iron Springs and Moapa areas associated with disapproval of the proposed Project would be negligible.

4.3.4 Soils

4.3.4.1 Impacts to Soil Productivity in the Warm Springs Project Area Associated with Disapproval of the Proposed Project

Natural processes, including erosion, and current management, including grazing, would continue to determine changes in soil productivity throughout the area. Previously unreclaimed disturbed lands would not be reclaimed. Increased ORV use resulting from population increases would continue to have impacts on soil productivity.

The Agencies conclude that impacts to soil productivity in the Warm Springs Project area associated with disapproval of the proposed Project would be negligible. Any loss of soil productivity would be irretrievable.

4.3.4.2 Impacts to Soils in the Smoky Mountain Area Associated with Disapproval of the Proposed Project

Natural processes, grazing, and current management would continue to determine changes in the area. Increased ORV use of the area resulting from future population increases may gradually increase disturbance to soils over time.

The Agencies conclude that impacts to soils in the Smoky Mountain area associated with disapproval of the proposed Project would be negligible.

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4.3.4.3 Impacts to Cryptogamic Soils in the Smoky Mountain Area Associated with Disapproval of the Proposed Project

Natural processes, grazing, and current management would continue to determine changes in the area. Growth of cryptogamic soils would continue. Increased ORV use of the area resulting from population increases may gradually increase disturbance to cryptogamic soils over time. Cryptogamic soils would continue to develop and fix nitrogen and aid in controlling erosion.

The Agencies conclude that impacts to cryptogamic soils in the Smoky Mountain area associated with disapproval of the proposed Project would be negligible.

4.3.5. Vegetation

4.3.5.1 Impacts to Vegetative Productivity and Community Stability in the Warm Springs Project Area Associated with Disapproval of the Proposed Project

Grazing by domestic and wild animals would continue to occur throughout the area. Existing disturbance would not be reclaimed. Recreational use of the area would gradually increase in response to population increases in the area and may result in an increase in impacts from ORV use and plant collecting. Climatic events, such as drought, would continue to affect vegetation in the area.

The Agencies conclude that impacts to vegetative productivity and community stability in the Warm Springs Project area associated with disapproval of the Project would be negligible. Any loss of vegetation productivity would be irretrievable.

4.3.5.2 Impacts to Wetland and Riparian Communities in the Smoky Mountain Area Associated with Disapproval of the Proposed Project

Riparian habitat would continue to exist under current environmental conditions in the area. Tamarisk invasion and dominance would continue to degrade habitat quality. Infrequent flash-flooding may continue to periodically disrupt riparian communities and periods of drought may reduce seep and spring flows. Recreational use of the area would gradually increase in response to population increases in the area and may result in an increase in impacts from ORV use and plant collecting.

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The Agencies conclude the impacts to wetland and riparian communities in the Smoky Mountain area associated with the disapproval of the proposed Project would be negligible. Loss of riparian productivity would be irretrievable.

4.3.5.3 Impacts to the Smoky Mountain Evening Primrose and Higgins Biscuitroot Associated with Disapproval of the Proposed Project

Populations of the Smoky Mountain evening primrose and the Higgins biscuitroot would continue to be subjected to infrequent grazing by domestic livestock and wildlife species, trampling by ORVs, collecting by the public, and accidental disturbance by maintenance activities along the existing Warm Creek Road. No information surveys on the primrose or the biscuitroot would be obtained from proposed surveys in the Project area.

The Agencies conclude that impacts to populations of Smoky Mountain evening primrose and Higgins biscuitroot associated with disapproval of the Project would be negligible.

4.3.6 Wildlife

4.3.6.1 Impacts to Mule Deer Movement During Migrational Periods Along Interstate-15 and Highway 89 Associated with Disapproval of the Proposed Project

Traffic would continue to gradually increase along U.S. Hwy. 89 between Kanab and Big Water because of regional population and recreational traffic increases. These increased traffic levels would directly affect the Paunsaugunt Mule Deer Herd during seasonal movements between winter and summer habitats as they cross U.S. Hwy. 89. Traffic levels would also continue to increase along Interstate-15 from Utah Route 17 to exit 59.

The Applicants would not participate in the Utah DWR study of the Paunsaugunt deer migration patterns, habitat use, and vehicle-related mortalities along U.S. Hwy. 89 and would not be assisting the Utah DWR in developing mitigation measures to minimize deer mortalities along U.S. Hwy. 89.

The Agencies conclude that impacts to mule deer movement during migrational periods along Interstate-15 and U.S. Hwy. 89 associated with disapproval of the proposed Project would be negligible to minor. Deer mortality would be an irretrievable commitment of the resource.

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4.3.6.2 Impacts to Wildlife Habitat and Productivity in the Smoky Mountain Area Associated with Disapproval of the Proposed Project

Recreational use of the Smoky Mountain area would gradually increase, with resultant gradual increases in ORV use, hunting, collecting, and harassment of wildlife. Erosional changes would continue to affect topography; however, no changes (either adverse or beneficial) would occur to the specific microclimate and microhabitats associated with the topography. Access into the area would continue to be limited. No baseline surveys to determine important habitat for resident wildlife species would be conducted and no monitoring of existing seeps and springs would occur.

The Agencies conclude that impacts to wildlife habitat and productivity in the Smoky Mountain area associated with disapproval of the proposed Project would be negligible. Habitat loss would constitute an irretrievable commitment of the resource.

4.3.6.3 Impacts to Wildlife in the Smoky Mountain Area from Increased Human Presence Associated with Disapproval of the Proposed Project

Recreational use of the Smoky Mountain area and associated human disturbances would continue to increase. Hunting, ORV use, collecting and harassment would continue to occur in the area. No environmental education opportunities would be available, relative to wildlife resources. Access into the area would continue to be limited.

The Agencies conclude that impacts to wildlife in the Smoky Mountain area from increased human presence associated with disapproval of the Project would be negligible to minor. Wildlife mortality would constitute an irretrievable commitment of the resource.

4.3.6.4 Impacts to the Ferruginous Hawk, Golden Eagle, Peregrine Falcon, and Other Raptors in the Warm Springs Project Area Associated with Disapproval of the Proposed Project

The projected increase in human use of Project areas would continue at the current level with a resultant gradual increase in harassment and illegal hunting. No baseline surveys would be conducted to determine occupied raptor nests in the area.

Traffic and related eagle mortality would continue to increase along Highway 56 between Cedar City and Iron Springs at its current rate. Future traffic levels are projected to increase along this segment of highway without the Project (Section 4.3.7, Transportation).

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The Agencies conclude that impacts to the ferruginous hawk, golden eagle, peregrine falcon, and other raptors in the Warm Springs Project area associated with disapproval of the proposed Project would be negligible. Any raptor mortalities would be an irretrievable commitment of the resources.

4.3.6.5 Impacts to the Mexican Spotted Owl in the Smoky Mountain Area Associated with Disapproval of the Proposed Project

Habitat and population trends for the Mexican spotted owl in the Smoky Mountain area would be based on existing conditions, if owls are present. Projected human use of the Smoky Mountain area would continue to increase, relative to existing access and regional population increases, with resultant gradual increases in poaching, hunting, ORV use, and harassment. No Mexican spotted owl inventories would be conducted within the John Henry or Wesses Canyon systems to determine the potential presence/absence of individual birds.

The Agencies conclude that impacts to the Mexican spotted owl in the Smoky Mountain area associated with disapproval of the proposed Project would be none to negligible.

4.3.6.6 Impacts to the Desert Tortoise in the Moapa and Hurricane Areas Associated with Disapproval of the Proposed Project

The Moapa and Hurricane areas would continue to experience recreational pressure (e.g., ORV use) and other activities commonly occurring on public and private land. Land near the town of Hurricane would continue to experience current land use and development, with a resultant loss of tortoise habitat. A certain level of tortoise habitat degradation would continue to occur as a result of ongoing regional activities.

The Agencies conclude that impacts to the desert tortoise in the Moapa and Hurricane areas associated with disapproval of the proposed Project would be negligible to minor. Any tortoise mortality would be an irretrievable commitment of the resource.

4.3.7 Transportation

4.3.7.1 Impacts to Open Road Traffic Flow in the Warm Springs Project Area Associated with Disapproval of the Proposed Project

Area-wide traffic volumes would continue to increase gradually with projected increases in population and employment. Truck and other heavy vehicle traffic would show a corresponding increase at about the

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existing percentages of total traffic. Table 4-2 provides the future traffic volumes projected for roadways in the proposed Project area, corresponding to a planning horizon of about 20 years.

Warm Creek Road is not expected to undergo reconstruction and traffic flow would not be improved. Traffic volumes along the existing road are not projected to increase appreciably over the existing 20 vpd. The current LOS "A" during all periods would be maintained under this minimal volume of traffic.

Increased traffic along U.S. Hwy. 89 between Big Water and Kanab could result in a projected future ADT of 2,980 vpd. This condition would maintain the existing LOS "A" during the morning peak hour and LOS "B" during the afternoon peak hour.

On Utah Route 11 between Kanab and the Arizona State line, a future ADT of 3,990 vpd is projected. This volume of traffic would not be sufficient to decrease the existing morning and afternoon peak hour LOS "A" and LOS "B," respectively.

On U.S. Hwy. 89A in Arizona, the future ADT is projected to be 6,600 vpd, resulting in a decrease from the existing morning and afternoon peak hour levels of service of LOS "A" and LOS "B" to LOS "B" and LOS "C," respectively.

On Arizona Route 389 between Fredonia and the Utah State line, a future ADT volume of 7,000 vpd is projected. This volume of traffic would result in a decrease from the LOS "A" currently experienced during the morning peak hour and the LOS "B" during the afternoon peak hour to LOS "B" and LOS "C," respectively.

On Utah Route 59 between the Arizona State line and Hurricane, a future ADT of 3,420 vpd is projected. This volume of traffic would not be sufficient to decrease the existing morning and afternoon peak hour LOS "B" and LOS "C," respectively.

The section of Utah Route 9 between Hurricane and Interstate-15 would experience a projected future traffic volume of 20,180 vpd. Widening this roadway to four lanes (scheduled to be completed in 1996) would allow acceptable levels of service (LOS "A" for peak periods) to be maintained throughout the 20-year planning horizon.

The section of Interstate-15 between Utah Route 9 and the Arizona State line is projected to experience a future ADT of about 25,990 vpd, maintaining the existing peak hour levels of service of LOS "A."

The section of Interstate-15 which traverses Arizona is projected to experience an ADT of about 23,800 vpd within a 20 year horizon, maintaining the morning peak hour level of service at LOS "A," but resulting in a decrease from the existing afternoon peak hour level of service of LOS "A" to LOS "B."

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In Nevada, traffic volumes on Interstate-15 are projected to increase to 15,500 vpd in the future. These volumes would cause a decrease from the existing afternoon peak hour LOS "A" to LOS "B". No decrease in morning peak hour operations is projected.

In Nevada, the Hidden Valley Road would experience a projected future ADT of 400 vpd. The current LOS "A" during all periods would be maintained under this minimal volume of traffic.

The section of Utah Route 9 between Hurricane and La Verkin could experience a projected 21,475 vpd in the future. This volume of traffic would decrease the existing two-lane morning and afternoon peak hour LOS "C" and LOS "D" to LOS "E" during both peak hours. Future plans to widen this section of roadway to four lanes should eventually improve the LOS level to LOS "A" during all periods.

On Utah Route 17 between La Verkin and Interstate-15, an ADT of 2,640 vpd is projected for the future. This volume of traffic would not be sufficient to cause a decrease from the LOS "B" and LOS "C" currently experienced during the morning and afternoon peak hours, respectively.

The section of Interstate-15 between Utah Route 17 and exit 59 in Cedar City is projected to experience a future ADT of about 22,300 vpd. This volume of traffic would maintain all morning peak hour level of service at LOS "A," but, it would cause a decrease from the existing afternoon peak hour level of service of LOS "A" to LOS "B."

A future traffic volume of 3,800 vpd is projected on Utah Route 56 between Interstate-15 and the Iron Springs Road. This volume of traffic would cause a decrease from the existing afternoon peak hour LOS "A" to LOS "B". No decrease in morning peak hour operations is projected.

Iron Springs Road would experience an increase in ADT to 1,615 vpd by the future planning horizon, resulting in a reduction from LOS "A" to LOS "B" during both peak hours.

The Agencies conclude that impacts to open road traffic flow in the Warm Springs Project area associated with disapproval of the proposed Project would range from negligible to moderate with the potential to become significant along Interstate-15 from Cedar City to the Nevada State line and along Utah Route 9 between Hurricane and La Verkin.

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4.3.7.2 Impacts to Traffic Flow at Intersections in the Warm Springs Project Area Associated with Disapproval of the Proposed Project

Areawide traffic volumes would continue to increase gradually with projected increases in area population and employment. Truck and other heavy vehicle traffic would show a corresponding increase at about the existing percentages of total traffic. These increases could affect LOS at intersections throughout the region.

The unsignalized intersection of U.S. Hwy. 89 and Warm Creek Road in Big Water, currently at LOS "A" during both peak hours, would experience a reduction in traffic operational conditions to LOS "B" during the afternoon peak hour on the Warm Creek Road approach, resulting from the projected future traffic volumes.

At the intersection of U.S. Hwy. 89 and Utah Route 11 in Kanab, the projected traffic increases would lower the existing signalized intersection operations from LOS "B" during both peak hours to LOS "C" during the afternoon peak hour.

In Arizona, the projected traffic volumes at the stop-sign-controlled intersection of U.S. Hwy. 89A and Arizona Route 389 in Fredonia would reduce the traffic operational levels, which are currently at LOS "A" for all movements during both peak hours. On the single-lane eastbound approach to this intersection, operations are projected to be LOS "C" and LOS "E" during the morning and afternoon peak hours, respectively. On the single-lane westbound approach, the afternoon peak-hour operations would be reduced to LOS "B."

At the signalized intersection of Utah Route 59 and Utah Route 9 in Hurricane, the projected increases in traffic would lower the existing LOS "B" during both peak hours to LOS "C" during the morning peak hour and LOS "E" during the afternoon peak hour.

The projected future traffic volumes at the Interstate-15/Utah Route 9 interchange west of Hurricane would reduce intersection operations, which are currently at LOS "A" for all movements. The right-turn operations on the northbound Interstate-15 off-ramp would reduce to LOS "B" and LOS "F" in the morning and afternoon peak hours, respectively, and left-turn operations would reduce to LOS "D" during both peak hours. Traffic operations on the southbound off-ramp would be lowered to LOS "B" during both peak hours.

In Nevada, the projected future traffic increases would not be sufficient to lower the existing LOS "A" at the two unsignalized intersections that constitute the Hidden Valley interchange near Moapa.

At the unsignalized intersection of Utah Route 9 and Utah Route 17 in La Verkin, the general increases in traffic levels contained in the future projections would lower the westbound left-turn operations, currently at LOS "A" and LOS "C" during the morning and afternoon peak hours to LOS "E" and LOS "F." The eastbound

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approach to this intersection would also experience a reduction from the current LOS "A" to LOS "C" during the afternoon peak hour.

At the Interstate-15/Utah Route 17 interchange north of La Verkin, the projected future traffic volumes would not cause a reduction in the existing LOS "A" for all affected movements.

The projected future traffic levels at the Interstate-15/Utah Route 56 interchange in Cedar City would represent an increase of sufficient magnitude to reduce the existing traffic operational conditions. At the intersections of the Interstate-15 off-ramps and Utah Route 56, traffic operations, which currently range from LOS "C" to LOS "E," would be reduced to LOS "F" during both peak hours. Left turns onto Interstate-15 from Utah Route 56, which currently operate at LOS "A," would also operate at reduced levels. The eastbound left turn would operate at LOS "B" and LOS "D" in the morning and afternoon peak hours, respectively, and the westbound left turns would operate at LOS "D" and LOS "E" during the morning and afternoon peak hours.

At the intersection of Utah Route 56 and the Iron Springs Road west of Cedar City, the projected traffic volumes would not be sufficient to lower traffic operations from the current LOS "A" experienced during both peak hours.

The Agencies conclude that impacts to traffic flow at intersections in the Warm Springs Project area associated with disapproval of the proposed Project would be minor to moderate. Impacts would have the potential to become significant at the intersections of U.S. Hwy. 89A and Arizona Route 389, Utah Route 59 and Utah Route 9, Utah Route 9 and Interstate-15, Utah Route 9 and Utah Route 17, and Interstate-15 and Utah Route 56.

4.3.7.3 Impacts to the Highway Infrastructure in the Warm Springs Project Area Associated with Disapproval of the Proposed Project

Traffic volumes are expected to increase gradually in the region as a result of increasing regional population (Table 4-2). These increases would include proportionate increases in heavy vehicle traffic. General traffic growth would increase the rate of wear to pavement and the structure of the roadways in the area and increase maintenance requirements, frequency of maintenance, and costs. Several roadway segments along the haul routes (Utah Routes 59, 17, and 56 and the Hidden Valley Road) are currently inadequate to sustain heavy truck traffic. These segments would require increased maintenance or possible reconstruction in order to handle expected increases in truck traffic over the 20-year planning period. The Warm Creek Road would not be improved, and the Benchtop Road would not be constructed. Also, coal truck fee revenues would not be available for defraying road maintenance costs.

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The Agencies conclude that impacts to the highway infrastructure in the Warm Springs Project area associated with disapproval of the proposed Project would be minor to moderate, with the potential to become significant along segments of Utah Routes 17, 56, and 59, and the Hidden Valley Road.

4.3.7.4 Impacts to Public Safety Along Highways in the Warm Springs Project Area Associated with Disapproval of the Proposed Project

Traffic volumes in the area are expected to increase in the future as a result of general population and employment increases. These increases could also potentially increase the occurrence of accidents on area roadway facilities. Adverse weather conditions would compound the safety impacts of increasing traffic volumes. General increases in traffic through school zones would also tend to increase the potential for school bus and pedestrian accidents. It is projected that increases in traffic accidents would correspond to increased traffic volumes at about the existing accident rates. Tables 4-3 shows the projected future number of roadway accidents for the traffic volume increases expected over the 20-year planning horizon. Table 4-4 shows the predicted numbers of future intersection accidents projected under these conditions.

Total traffic accidents along U.S. Hwy. 89 would increase from the existing average of 43 per year to about 84 per year, and accidents involving heavy trucks would increase from 5 per year to 10 per year. Traffic fatalities, which currently occur on an average of two every 3 years, would increase in frequency to about one per year.

Under projected traffic volumes for Utah Route 11 between Kanab and the Arizona State line, only a minimal increase over the existing 4 total accidents per year is anticipated.

At existing accident rates and projected future traffic volumes, total traffic accidents on U.S. Hwy. 89A between the Utah State line and Fredonia would increase from the existing average of about one per year to about two per year. No traffic fatalities or accidents involving trucks were reported on this section of roadway during the 3 years of available data. The potential for increased frequency in fatal accidents in the future along this section could increase because of increases in future traffic volumes, although these increases are expected to be minimal.

Under the projected volumes for Arizona Route 389, between Fredonia and the Utah State line, total traffic accidents on this section of highway would increase from the existing average of 13 per year to about 43 per year. Accidents involving heavy trucks on Arizona Route 389 would increase from 1 per year to 2 per year, and traffic fatalities would also increase from an average of 1 per year to about 2 per year.

Under future traffic volumes, total traffic accidents on Utah Route 59 between the Utah State line and Hurricane would increase from the existing average of 16 per year to approximately 27 per year, and

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accidents involving heavy trucks would increase from 1 per year to 3 every 2 years. Traffic fatalities, which currently occur at a rate of one every 3 years, would increase in frequency to about one every 2 years.

Although planned roadway improvements along Utah Route 9 between Hurricane and Interstate-15 could improve the safety characteristics of this highway, the existing accident rates were applied to the projected volumes to project future accident frequency. Total traffic accidents on this section of Utah Route 9 would increase from the existing average of 26 per year to about 81 per year, and heavy truck accidents would increase from 2 per year to 6 per year. No traffic fatalities were reported on this section of roadway during the 3 years of available data. The potential for increased frequency in fatal accidents in the future along this segment could increase because of increases in future traffic volumes.

Under projected increase in traffic volumes, total traffic accidents on the section of Interstate-15 between Utah Route 9 and the Arizona State line would increase from the existing average of 51 per year to about 115 per year. Accidents involving heavy trucks would increase from 9 per year to 20 per year, and traffic fatalities would increase from an average of 1 per year to about 2 per year.

Total traffic accidents on the section of Interstate-15 in Arizona would increase from the existing average of 64 per year to about 138 per year. Heavy truck accidents would increase from 10 per year to 22 per year, and traffic fatalities would increase from an average of 3 to about 6 per year. Total traffic accidents on the segment of Interstate-15 in Nevada would increase from the existing average of 80 per year to about 112 per year. Accidents involving heavy trucks would increase from 12 per year to 13 per year, and traffic fatalities would increase from 3 to 8 per year.

Total traffic accidents on Utah Route 9 between Hurricane and La Verkin would increase from the existing average of 2 per year to about 6 per year in 2010. No traffic fatalities or accidents involving trucks were reported on this section of roadway during the three years of available data. The potential for increased frequency in fatal accidents in the future along this section could increase because of increases in future traffic volumes, although these increases are expected to be minimal. Future roadway improvements would, however, improve the safety characteristics of this section of highway.

Under future projected traffic volumes, total traffic accidents on Utah Route 17 between La Verkin and Interstate 15 would increase from the existing average of 7 per year to about 10 per year. Both heavy truck accidents and traffic fatalities would increase in frequency from the existing average of one each every 3 years to one each every 2 years.

Total traffic accidents on the section of Interstate-15 between Utah Route 17 and exit 59 in Cedar City would increase from the existing average of 135 per year to about 302 per year. Accidents involving heavy trucks along this intersection would increase from 16 per year to 36 per year, and traffic fatalities would increase from 3 to 6 per year.

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Under the future projected traffic volumes for Utah 56 between Interstate-15 and the Iron Springs Road, total traffic accidents on this section Utah Route 56 would increase from the existing average of three per year to about four per year. Heavy truck accidents would increase in frequency from the existing average of one every 3 years to about one per year. Traffic fatalities would increase from the existing average of one every 3 years to one every 2 years.

No traffic fatalities or accidents involving trucks were reported on the Warm Creek Road near Big Water, the Hidden Valley Road near Moapa, or the Iron Springs Road near Cedar City during the three years of available data. Also, no accidents were reported for the following intersection: At the U.S. Hwy. 89 and Warm Creek Road intersection in Big Water, the U.S. Hwy. 89 and Utah Route 11 intersection in Kanab, the Arizona Route 389 and U.S. Hwy. 89A intersection in Fredonia, the Hidden Valley intersection with Interstate-15, or the Utah Route 56 and Iron Springs Road intersection. The potential for increased frequency in fatal accidents in the future along these sections of roadway and intersections could increase as a result of increases in future traffic volumes, although these increases are expected to be minimal.

The frequency of traffic accidents at the Utah Route 59 and Utah Route 9 intersection in Hurricane, currently averaging 4 per year, would increase to about 10 per year. At the Interstate-15/Utah Route 9 interchange west of Hurricane, traffic accidents, which currently occur at an average rate of one accident every 3 years, would increase to about one accident per year under the future traffic volume conditions. The frequency of traffic accidents at the intersection of Utah Route 9 and Utah Route 17 in La Verkin, currently occur at an average rate of 2 every 3 years, would increase in frequency to 10 per year. Under the projected volumes, total traffic accidents at the Interstate-15/Route 56 interchange in Cedar City would increase from the existing average of one per year to about two per year.

The Agencies conclude that impacts to public safety along highways in the Warm Springs Project area associated with disapproval of the proposed Project would range from moderate to major. Impacts have the potential to become significant along Interstate-15, Utah Route 9, Utah Route 59, and U.S. Hwy. 89.

4.3.7.5 Impacts to the Structural Integrity and Stability of County Roads in the Smoky Mountain Area Associated with Disapproval of the Proposed Project

Vehicle use of the county roads in the Smoky Mountain area would continue and is expected to increase in the future because of local and regional population increases. This traffic would continue to cause wear to the surface and structure of the roads in the area. The Warm Creek Road is not expected to be reconstructed or improved, but maintenance and repair would continue, including occasional regrading of the existing unimproved roadways.

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Natural processes would also continue to act upon all roads in the existing county road system with structural integrity and stability of the roads subject to the severity of those natural processes. Use levels on the roads would gradually increase as the local populations increase. Subsidence effects on area roads would not occur, and regular maintenance activities would continue to take place.

The Agencies conclude that impacts to the integrity and stability of county roads in the Smoky Mountain area associated with disapproval of the proposed Project would be negligible.

4.3.8 Noise

4.3.8.1 Impacts from Noise Generated along the Roads in the Warm Springs Project Area Associatd with Disapproval of the Proposed Project

Noise levels along the proposed haul routes would continue to increase gradually with increasing regional traffic volumes. By about the year 2010, decibel levels in the area are expected to have increased by a range of 0.8 dBA along Utah Route 59 to 4.5 dBA along Utah Route 9 (Tables 3-9 and 4-5). Most road segments in the area will have dBA levels of 70 or higher, which may elicit complaints from residents near the roadway (Chapter 3, Section 3.8, Noise).

The Agencies conclude that impacts from noise generated along the roads in the Warm Springs Project area associated with disapproval of the proposed Project would be minor.

4.3.8.2 Impacts from Noise Generated in the Iron Springs and Moapa Areas Associated with Disapproval of the Proposed Project

Noise levels in the Moapa and Iron Springs areas would remain near current levels. Although highway and ORV traffic would continue to occur, Ldn levels would continue to range from about 35 to 45 dBA, consistent with open, outdoor settings.

The Agencies conclude that impacts from noise generated in the Iron Springs and Moapa areas associated with disapproval of the proposed Project would be negligible.

4.3.8.3 Impacts from Noise Generated in the Smoky Mountain Area Associated with Disapproval of the Proposed Project

Noise levels in the Smoky Mountain area would generally remain near existing levels. Although road and ORV traffic would continue to occur, Ldn levels would continue to range from about 35 to 50 dBA, consistent with open, outdoor settings. By about the year 2010, decibel levels along the existing Warm Creek Road

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would have increased slightly from existing levels of 47 dBA to about 48 or 49 dBA because of gradually increasing regional traffic. Noise levels would continue to gradually increase over time.

The Agencies conclude that impacts from noise generated in the Smoky Mountain area associated with disapproval of the proposed Project would be negligible.

4.3.9 Socioeconomics

4.3.9.1 Impacts to Employment, Population, Personal Income, and Business Activity in the Warm Springs Project Area Associated with Disapproval of the Proposed Project

Disapproval of the proposed Warm Springs Project would leave unaffected the underlying economic and demographic trends in southern Utah, northern Arizona, and southeastern Nevada. These trends would impart to the area a future that differs from existing conditions. The socioeconomic environment is subject to a variety of influences, but only some of these influences are known or are reasonably foreseeable at any point in time.

For the assessment of the impacts with disapproval of the proposed Project, the baseline future reflects recent trends, including the major events identified in Appendix B, all of which imply increases in employment, personal income, and population, as described in Chapter 3. Population of the Las Vegas metropolitan area and of St. George, Utah, and its environs would be expected to more than double between 1990 and 2010, with attendant substantial increases in employment and other measures of economic activity. Strong growth is also projected for Cedar City and Iron County, Utah.

Kane County, Utah, and the northern part of Coconino County, Arizona, also are expected to grow, but the magnitude of growth in this area would be more modest. Clark County, Nevada, and Washington and Iron Counties, Utah, would experience growth in industrial employment, in the trade and service sectors, and in the public sector. In Kane and northern Coconino Counties, economic development would be more limited because of greater reliance on tourism and recreation.

Residents, businesses and local governments in southern Utah, northern Arizona, and southeastern Nevada would not realize the benefits associated with Project-related jobs, earnings, business spending. Residents and businesses in Kane and Coconino Counties would experience adverse effects associated with the loss of potential job opportunities and incomes foregone. In Kane and Coconino Counties, the benefits foregone, including diversification of the local economic base, would be greater in magnitude than the benefits to be gained from baseline growth without the proposed Project.

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Disapproval of the proposed Project could affect the recovery of the coal reserves associated with the proposed Project, thereby altering the socioeconomic future of southern Utah and northern Arizona until development occurs.

The Agencies conclude that impacts to employment, population, personal income, and business activity in the Warm Springs Project area associated with disapproval of the proposed Project would be moderate to major.

4.3.9.2 Impacts to Local Government Fiscal Resources in the Warm Springs Project Area Associated with Disapproval of the Proposed Project

Public sector fiscal conditions with disapproval of the Project would continue to respond to changes associated with baseline growth. Local government officials would continue to balance available revenues against competing demands and to establish funding priorities, while striving to maintain a solid fiscal foundation. Local government in Clark, Washington and Iron Counties, would see continued growth and diversification of their respective tax bases. Page and Coconino County would continue to see growth in sales taxes.

Project-related revenues would be foregone, and future expenditures to serve Project-related growth would be avoided. The Kane County government, and to a lesser extent the Kanab and Big Water governments, would not receive substantial direct revenues and tax base expansion and diversification associated with development and operation of the Project. All of the potentially affected local governments in Utah would forego the potential to obtain funding from the Permanent Community Impact Fund, some of which may have addressed general growth needs as well as Project-related growth needs. Depending on the location of the truck maintenance facility, either Fredonia or Hurricane would forego substantial future revenues.

To the extent that disapproval affects the development of the coal reserves in this area, the benefits local governments potentially could have achieved by applying fiscal resources generated by the proposed Project would be foregone until development occurs.

The Agencies conclude that the impacts to local government fiscal resources in the Warm Springs Project area associated with disapproval of the proposed Project would be moderate, with the potential to become significant in Kane County, Kanab, Big Water, and Fredonia or Hurricane.

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4.3.9.3 Impacts to State and Federal Fiscal Resources Associated with Disapproval of the Proposed Project

State government budgets would continue to reflect growth in revenues and expenditures, assuming that the baseline growth projected for southern Utah, northern Arizona, and southeastern Nevada continues without the proposed Project. As with local governments, budgets would have to be balanced by State legislatures and executive branches.

With disapproval of the proposed Project, State governments would not benefit from increased tax revenues nor would incremental expenditures be required to serve a larger population. The net effects on Nevada and Arizona budgets would be limited. Utah would forego deposits to the permanent trust fund to support public education, as well as to general fund revenue levels, which are projected to be greater than the associated expenditures. Therefore, the State of Utah would forego the benefits of a positive net fiscal impact.

The Federal treasury and the Black Lung and Abandoned Mined Land Reclamation funds would not receive revenues from the proposed Project. The total revenues foregone would exceed $125 million.

If disapproval affects development of the coal reserves, benefits that State and Federal Government potentially would have achieved by applying fiscal resources generated by the proposed Project would be foregone until development occurs.

The Agencies conclude that impacts to State and Federal fiscal resources associated with disapproval of the proposed Project would be negligible to minor, with a potential to become adversely significant in Utah.

4.3.9.4 Impacts to Housing Availability in the Warm Springs Project Area Associated with Disapproval of the Proposed Project

With disapproval of the proposed Project, fewer homes would be built or rented in southern Utah, northern Arizona, and southeastern Nevada. Continued growth in the area from tourist activity and other development is likely to continue. The existing tight housing market is likely to improve as developers decide to build housing in the area because of the existing high demand for housing and the projected baseline growth in population.

The Agencies conclude that the impacts to housing availability in the Warm Springs Project area associated with disapproval of the proposed Project would be minor to moderate.

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capacities for either water and/or sewer systems in order to supply adequate service to the baseline growth. Toquerville and Page are currently trying to obtain additional water rights. Without the influx of the population related to the proposed Project, the pressure to supply additional water and sewer services would be reduced somewhat.

The Agencies conclude that impacts to water and sewer systems in the Warm Springs Project area associated with disapproval of the proposed Project would be minor, with the potential to become significant in Toquerville and Page.

4.3.9.8 Impacts to the Regional Quality of Life from Population Growth in the Warm Springs Project Area Associated with Disapproval of the Proposed Project

Additional Project-related economic growth would not occur with disapproval of the proposed project, so no improvement to the quality of life would be because of increased economic well-being. A sense of foregone potential would be felt with particular acuteness in Kanab, Utah, and Fredonia, Arizona, because the proposed Project has been regarded as potentially offsetting perceived weakness in the local economic base. However, employment and population would continue to increase and residents of the Project area would experience growth-related quality of life impacts similar to those described under Alternative 1 (Section 4.2.9.8), even with disapproval of the proposed Project, although at a more gradual rate.

The Agencies conclude that impacts to the quality of life from population growth in the Warm Springs Project area associated with disapproval of the proposed Project would be beneficial and moderate.

4.3.9.9 Impacts to the Regional Quality of Life from Traffic Growth in the Warm Springs Project Area Associated with Disapproval of the Proposed Project

Traffic levels, including truck traffic, would continue to increase because of regional growth, and residents of the area would experience quality of life impacts because of truck traffic similar to those described under Alternative 1, even with disapproval of the proposed Project, at a more gradual rate. Project-related truck traffic would not contribute additional traffic over and above baseline traffic growth, so the additional quality of life impacts anticipated in many communities within the Project area would be avoided.

The Agencies conclude that impacts to the regional quality of life from traffic growth in the Warm Springs Project area associated with disapproval of the proposed Project would be minor to moderate, with the potential to become significant in Hurricane, La Verkin, and Toquerville.

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Additions to economic well-being due to Project-related growth would be foregone with disapproval of the proposed Project, and the impact of additional Project-related truck traffic would be avoided. However, baseline economic and traffic growth would still occur, even with disapproval of the proposed Project, bringing both beneficial and adverse impacts to the quality of life over time, although at a more gradual rate. Residential property values would continue to be affected by projected baseline growth in demand for housing, although additional upward pressure on property values would be foregone with disapproval of the proposed Project.

The agencies conclude that impacts to socioeconomic conditions associated with disapproval of the proposed Project would be negligible to minor.

4.3.10 Air Quality

4.3.10.1 Impacts to Air Quality in the Smoky Mountain, Iron Springs, and Moapa Areas Associated with Disapproval of the Proposed Project

Owing to the expected general population increase in the area to the year 2020, increased recreation activities utilizing existing unpaved roads would cause an increase in fugitive and gaseous emissions in the local area. The existing Warm Creek Road would remain unpaved if the proposed mine is not developed, and this road as well as other roads would continue to be used for access to the area for recreational purposes. Fugitive dust generated from an unpaved road is 5 to 10 times more than that generated from a paved road, given the same volume of traffic. Impacts to the air quality could also occur as a result of increased on- and off-road vehicle use in the area.

The Agencies conclude that impacts to air quality in the Smoky Mountain, Iron Springs, and Moapa areas associated with disapproval of the proposed Project would be negligible to minor.

4.3.10.2 Impacts to Air Quality Along the Roads in the Warm Springs Project Area Associated with Disapproval of the Proposed Project

Air quality along the proposed haul truck routes would continue to degrade as the regional population grows. Emissions from all paved roads would increase directly as traffic volume increases. There would be a proportional increase in particulate and exhaust emissions along these routes from the increased traffic volume as the local population continues to grow and the recreational activities in the region increase.

The Agencies conclude that impacts to air quality along the roads in the Warm Springs Project area associated with disapproval of the proposed Project would be negligible to minor.

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4.3.11.4 Impacts to Visual Resources/Aesthetics in the Smoky Mountain Area along the Route of the 138-kV Power Transmission Line Associated with Disapproval of the Proposed Project

Impacts to the visual resource could occur as a result of possible future parallel construction along the existing UP&L 230-kV Sigurd line, which may be implemented to meet other future power needs. Additional impacts beyond this existing line could include disturbance from gradually increasing unauthorized off-road vehicle use.

The Agencies conclude that impacts to visual resources/aesthetics in the Smoky Mountain area along the route of the 138-kV power transmission line associated with disapproval of the proposed Project would be negligible.

4.3.11.5 Impacts to the Visual Resources/Aesthetics in the Iron Springs, Moapa, and Hurricane/Fredonia Areas Associated with Disapproval of the Proposed Project

Visual classifications are not expected to change in the Moapa, Iron Springs or Hurricane/Fredonia areas. Future development may still occur in the areas and would affect visual resources accordingly. Existing visual disturbances in the areas are expected to remain.

The Agencies conclude that impacts to the visual resources/aesthetics in the Iron Springs, Moapa, and Hurricane/Fredonia areas associated with disapproval of the proposed Project would be negligible.

4.3.12 Recreation

4.3.12.1 Impacts to Dispersed Recreational Opportunities in the Smoky Mountain Area Associated with Disapproval of the Proposed Project

Public access to the Smoky Mountain area would remain as it currently exists; the Benchtop Road would not be constructed, and the existing Warm Creek Road would not be upgraded and improved at this time. The level of recreational use, particularly hunting and ORV use, would continue and would remain at or near current levels, with a gradual increase occurring over time at this time regional population increases. Existing roads in the area would continue to remain available for use.

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4.3.9.10 Impacts to Residential Property Values from Population and Traffic Growth in the Warm Springs Project Area Associated with Disapproval of the Proposed Project

Continued growth of employment, population, and truck traffic would continue to occur. As a result, residential property values would continue to be supported by increasing demand for housing. At the same time, residential neighborhoods in Hurricane, La Verkin, and Toquerville adjacent to existing truck routes would experience localized negative effects of rising levels of heavy truck traffic even with disapproval of the Project.

With disapproval of the proposed Project, growth pressure on residential property values in general would be held to levels consistent with baseline expansion alone, foregoing additional potential increases. Localized impacts on residential property values in the traffic-sensitive neighborhoods of Hurricane and Toquerville would still occur, but additional impacts from Project-related truck traffic would be avoided.

The Agencies conclude that the impacts to residential property values from population and traffic growth in the Warm Springs Project area associated with disapproval of the proposed Project would be beneficial and minor, with the potential to become adversely significant in traffic-sensitive neighborhoods within Hurricane and Toquerville.

4.3.9.11 Impacts to Socioeconomic Conditions Associated with Disapproval of the Proposed Project

Disapproval of the proposed Warm Springs Project would leave unaffected the underlying economic and demographic trends in southern Utah, northern Arizona, and southeastern Nevada. Public sector fiscal conditions with disapproval of the Project would continue to respond to changes associated with baseline growth, although the benefits local governments potentially could have achieved by applying fiscal resources generated by the proposed Project would be foregone for the foreseeable future. State government budgets would continue to reflect growth in revenues and expenditures consistent with the baseline growth projected for southern Utah, northern Arizona, and southeastern Nevada.

With disapproval of the proposed Project, fewer homes would be built or rented in the region and the existing tight housing market would likely remain the same unless development is stimulated by the existing high demand for housing and the projected baseline growth in demand.

All school districts in southern Utah and northern Arizona would continue to operate at capacity for the foreseeable future. Water and sewer systems throughout the region would still face a need to upgrade and expand, although disapproval of the proposed Project probably would effectively prolong the useful life of existing systems.

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4.3.9.5 Impacts to Public Safety Agencies in the Warm Springs Project Area Associated with Disapproval of the Proposed Project

Regional population would increase, and demands on public safety agencies associated with increased traffic and criminal activities, owing to population growth, would increase but at a lower rate than that expected with the mine in place. Many providers would continue to experience staffing shortages, however, the ratio of staff to population would be greater with Project disapproval.

The Agencies conclude that impacts to public safety agencies in the Warm Springs Project area associated with disapproval of the proposed Project would be minor to moderate.

4.3.9.6 Impacts to Public Schools in the Warm Springs Project Area Associated with Disapproval of the Proposed Project

All school districts in southern Utah and northern Arizona, except the Fredonia/Moccasin District, are currently at or nearing capacity in one or more grade levels. These conditions would not change with disapproval of the Project. The region is experiencing growth because of increased tourism and retirement interest in the area. Several capital expansion projects and bond elections to approve financing of new facilities are slated for the next several years (1995-1998) to alleviate crowding. The expected property tax from the proposed Project, which would have helped support new facilities, would not be collected. State impacts funds to support public education would not receive an infusion of revenues that would have been generated by mineral royalties from production at the mine.

School district fiscal conditions with disapproval of the proposed Project would continue to respond to baseline growth pressures. Additional capital and staffing would be needed. State equalization would ensure equitable funding. Expansion of local assessed valuation to support locally generated revenues and funds for capital expansion would be foregone. Districts would face comparatively lower operating expenses.

The Agencies conclude that impacts to public schools in the Warm Springs Project area associated with disapproval of the proposed Project would be minor to moderate, with the potential to become significant in Kane County.

4.3.9.7 Impacts to Water and Sewer Systems in the Warm Springs Project Area Associated with Disapproval of the Proposed Project

Many water and sewer systems throughout southern Utah and northern Arizona are considering currently undertaking expansion and upgrading to accommodate the additional growth occurring throughout the area. Disapproval of the Project would probably increase the number of months or years before the current capacities would need to be expanded. Most jurisdictions are currently in the process of increasing

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4.3.11 Visual Resources/Aesthetics

4.3.11.1 Impacts to Visual Resources/Aesthetics in the Smoky Mountain Area Associated with Disapproval of the Proposed Project

Impacts to visual resources in the Smoky Mountain area could result from the increased recreational use in the area, which would occur over time. Existing visual modifications created by previous mining and exploration activities would continue to adversely affect the visual resource. VRM ratings in the area would not be expected to change.

The Agencies conclude that impacts to the visual resources/aesthetics in the Smoky Mountain area associated with disapproval of the proposed Project would be minor.

4.3.11.2 Impacts to Visual Resources/Aesthetics in the Smoky Mountain Area Along the Warm Creek Road Associated with Disapproval of the Proposed Project

Impacts to visual resources in the Smoky Mountain area could occur as a result of continued vehicle use and unauthorized off-road vehicle use; natural events, such as storms that may erode the existing roadbed; or from future road improvement projects that may be initiated by Kane County or the National Park Service. VRM ratings are not expected to change in the area.

The Agencies conclude that impacts to visual resources/aesthetics in the Smoky Mountain area along the Warm Creek Road associated with disapproval of the proposed Project would be minor.

4.3.11.3 Impacts to Visual Resources/Aesthetics in the Smoky Mountain Area Along the Route of the Benchtop Road Associated with Disapproval of the Proposed Project

Impacts to the visual resource could occur as a result of continued and increasing vehicle use of existing roads and unauthorized off-road vehicle use. Visual impacts from the plume generated by the Navajo Generating Station are expected to be reduced once the Navajo Generating Station Scrubber project is completed. VRM ratings in the area are not expected to change.

The Agencies conclude that impacts to visual resources/aesthetics in the Smoky Mountain area along the route of the Benchtop Road would be negligible.

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The Agencies conclude that impacts to dispersed recreational opportunities in the Smoky Mountain area associated with disapproval of the proposed Project would be minor.

4.3.12.2 Impacts to Recreation Use and Management of the Glen Canyon NRA from Use of the Warm Creek Road Associated with Disapproval of the Proposed Project

Public recreational access within the Glen Canyon NRA via the existing Warm Creek Road would remain at or near current availability. NPS has no current plans for any development along the Warm Creek Road or along the north shore of Lake Powell. According to the General Management Plan for the Glen Canyon NRA, the Warm Creek Road is to remain open for public access. NPS and Kane County are discussing plans to improve or upgrade the section of road through the NRA. Traffic levels along this road would most likely gradually increase with the increased regional population growth.

The Agencies conclude that impacts to recreation use and management of the Glen Canyon NRA from use of the Warm Creek Road associated with disapproval ofthe proposed Project would be negligible to minor.

4.3.13 Wilderness

4.3.13.1 Impacts to the Potential Wilderness Designation of the Wahweap and Burning Hills Wilderness Study Areas Associated with Disapproval of the Proposed Project

The wilderness characteristics present in the Wahweap and Burning Hills Wilderness Study Areas (WSAs) would remain intact, at or near current levels. ORV and other existing recreational activities would increase in relation to general population increases of the region. The majority of the acreage contained within these WSAs lacks the necessary characteristics to be considered for wilderness designation (BLM 1991). Disapproval of the proposed Project would have no effect on these determinations. Until a final determination is made concerning these areas, they would continue to be managed in a manner that would not impair their suitability for preservation of wilderness.

The Agencies conclude that impacts to the potential wilderness designation of the Wahweap and Burning Hills WSAs associated with disapproval of the proposed Project would be negligible.

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4.3.13.2 Impacts to Wilderness Characteristics in the Smoky Mountain Area Associated with Disapproval of the Proposed Project

Wilderness characteristics in the Smoky Mountain area would remain at or near the current conditions. Increases in regional population over time would gradually increase the number of recreators in the Smoky Mountain area and may affect the noise and solitude characteristics of the area. Previous disturbances associated with past exploration and other development would continue to be present, impacting the naturalness of the area. Existing roads would remain intact and ORV use would continue.

The Agencies conclude that impacts to wilderness characteristics in the Smoky Mountain area associated with disapproval of the proposed Project would be minor.

4.3.14 Cultural Resources

4.3.14.1 Impacts to Prehistoric and Historic Resources in the Warm Springs Project Area Associated with Disapproval of the Proposed Project

Prehistoric and historic resources are currently affected by natural processes, such as erosion and fires; greater effects occur where human activities accelerate the natural processes. Deforestation and road construction are examples of activities contributing to resource disturbance. Vandalism, surface artifact collecting, and possibly pot hunting would continue to affect the resource base in potentially increasing levels relating to regional population increases. Some loss of information to the scientific community would result from the fact that no Project-related mitigation (data retrieval) of important sites would take place.

The Agencies conclude that impacts to prehistoric and historic resources in the Warm Springs Project area associated with disapproval of the proposed Project would be negligible and permanent, with the potential to become significant if any part of an important NRHP-eligible site is damaged or destroyed. The loss of any part of a prehistoric or historic site would be irretrievable.

4.3.14.2 Impacts to Undiscovered Prehistoric and Historic Resources in the Warm Springs Project Area Associated with Disapproval of the Proposed Project

Prehistoric and historic resources are currently affected by natural processes, such as erosion and fires; greater effects occur where human activities accelerate the natural processes. Vandalism, surface artifact collecting, and possibly pot hunting would continue to affect the resource base in potentially increasing levels relating to regional population increases. Some loss of information to the scientific community would

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result from the fact that no Project-related mitigation of important sites would take place, and no new identification of previously unknown sites could occur during construction.

The Agencies conclude that impacts to undiscovered prehistoric and historic resources in the Warm Springs Project area associated with disapproval of the proposed Project would be negligible and permanent, with the potential to become significant if any part of an important NRHP-eligible site is damaged or destroyed. The loss of any prehistoric or historic site would be irretrievable.

4.3.14.3 Impacts to Native American Cultural and Religious Concerns in the Warm Springs Project Area Associated with Disapproval of the Proposed Project

Native American resources are currently affected by natural processes, such as erosion and fires; greater effects occur where human activities accelerate the natural processes. Vandalism, such as defacing of rock art sites, would continue to affect the resource base and may increase gradually as the regional population increases. Some loss of information to the scientific community would result from the fact that no Project-related mitigation of important sites would take place.

The Agencies conclude that impacts to Native American cultural and religious concerns in the Warm Springs Project area associated with disapproval of the proposed Project would be negligible and permanent with the potential to become significant if any part of a Native American religious or cultural site is damaged destroyed. The loss of any Native American religious or cultural site would be irretrievable.

4.3.14.4 Indirect (Secondary) Impacts to Prehistoric and Historic Resources in the Warm Springs Project Area Due to Increased Levels of Activity Associated with Disapproval of the Proposed Project

Prehistoric and historic resources are currently affected by natural processes such as erosion and fires; greater effects occur where human activities accelerate the natural processes. Vandalism, surface artifact collecting, and possibly pot hunting would continue to affect the resource base in potentially increasing levels regional population increases. Potential structural impacts to the Naegle House would continue to occur as a result of continued traffic on Utah Route 17.

The Agencies conclude that indirect (secondary) impacts to prehistoric and historic resources in the Warm Springs Project area due to increased levels of activity associated with disapproval of the proposed Project would be negligible and permanent with the potential to become significant if any part of an important NRHP-eligible site is damaged or destroyed. The loss of any prehistoric or historic site would be irretrievable.

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4.4 COMPARISON OF ALTERNATIVES

Table 4-17 compares the Agencies conclusions regarding the magnitude and importance of the proposed Project's site-specific and cumulative impacts (Alternative 1) with those of the disapproval alternative (Alternative 2).

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Table 4-17 — Summary of Impacts by Alternative for the Warm Springs Project

Impact Topic	Alternative 1	Alternative 2
GEOLOGY AND TOPOGRAPHY		
Impacts to topography in and around the Smoky Mountain area.	Minor to moderate over the short term, negligible to minor over the long term. Impacts on topography would be irreversible.	Negligible. Irreversible.
Impacts to mineral resources in and around the Smoky Mountain area.	Minor over the short term, negligible to minor over the long term. Coal removal would be an irretrievable commitment of the resource.	Negligible to minor.
Impacts to topography along the Warm Creek/Benchtop Road.	Minor to moderate over both the short and long terms.	Negligible to minor.
PALEONTOLOGY		
Impacts to paleontological resources in the Smoky Mountain area.	Minor over the short term, negligible over the long term. Potential to become significant. Loss of paleontological resources would be irretrievable.	Negligible. Potential to become significant. Loss of paleontological resources would be irretrievable.
Impacts to paleontological resources in the Iron Springs and Moapa areas.	Negligible over the short and long terms. Potential to become significant. Loss of paleontological resources would be irretrievable.	Negligible. Potential to become significant. Loss of paleontological resources would be irretrievable.
HYDROLOGY		
Impacts to water quality and quantity in the Smoky Mountain area.	Minor over both the short and long terms.	Negligible.
Impacts to water quality and quantity in and around the Warm Creek Drainage System.	Minor over both the short and long terms.	Negligible.
Impacts to the Navajo Aquifer in the Smoky Mountain area.	Minor over both the short and long terms.	Negligible.
Impacts to water quality and quantity in and around the Iron Springs and Moapa areas.	Negligible to minor over both the short and long terms.	Negligible.
SOILS		
Impacts to soil productivity in the Warm Springs Project area.	Minor to moderate over the short term, minor over the long term. Losses of soil productivity and development would be irretrievable.	Negligible. Losses of soil productivity and development would be irretrievable.

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Table 4-17 — Summary of Impacts by Alternative for the Warm Springs Project — (Continued)

Impact Topic	Alternative 1	Alternative 2
SOILS (Con.)		
Impacts to soils in the Smoky Mountain area.	Negligible to minor over the short term, negligible over the long term.	Negligible.
Impacts to cryptogamic soils in the Smoky Mountain area.	Minor over both the short and long terms.	Negligible.
VEGETATION		
Impacts to vegetative productivity and community stability in the Warm Springs Project area.	Minor over the short term, negligible to minor over the long term. Loss of vegetative productivity would be irretrievable.	Negligible. Loss of vegetative productivity would be irretrievable.
Impacts to wetland and riparian communities in the Smoky Mountain area.	Negligible to minor over the short term, negligible over the long term. Temporary loss of riparian productivity would be irretrievable.	Negligible. Loss of riparian productivity would be irretrievable.
Impacts to the Smoky Mountain evening primrose and Higgins biscuitroot.	Negligible to minor over both the short and long terms.	Negligible.
WILDLIFE		
Impacts to mule deer movement during migrational periods along Interstate-15 and U.S. Hwy. 89.	Negligible to minor over both the short and long terms. Highway deer mortalities would be irretrievable.	Negligible to minor. Deer mortality would be irretrievable.
Impacts to wildlife habitat and productivity in the Smoky Mountain area.	Minor over the short term, negligible over the long term. Temporary habitat and productivity losses would be irretrievable.	Negligible. Habitat loss would be irretrievable.
Impacts to wildlife in the Smoky Mountain area from increased human presence.	Minor to moderate over the short term, minor over the long term. Mortality and reduced productivity would be irretrievable.	Negligible to minor. Wildlife mortality would be irretrievable.
Impacts to the ferruginous hawk, golden eagle, peregrine falcon, and other raptors in the Warm Springs Project area.	Minor over both the short and long terms. Mortalities would be irretrievable.	Negligible. Mortalities would be irretrievable.
Impacts to the Mexican spotted owl in the Smoky Mountain area.	None to minor over both the short and long terms.	None to negligible.

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Table 4-17 — Summary of Impacts by Alternative for the Warm Springs Project — (Continued)

Impact Topic	Alternative 1	Alternative 2
WILDLIFE (Con.)		
Impacts to the desert tortoise in the Moapa and Hurricane areas.	Minor over the short term, negligible to minor over the long term. Tortoise mortality would be irretrievable.	Negligible to minor. Tortoise mortality would be irretrievable.
TRANSPORTATION		
Impacts to open road traffic flow in the Warm Springs Project area.	Minor to moderate over both the short and long terms. Potentially significant along U.S. Hwy. 89, Utah Route 59, Utah Route 17, I-15.	Negligible to moderate. Potentially significant along I-15 and Utah Route 9.
Impacts to traffic flow at intersections in the Warm Springs Project area.	Minor to moderate over both the short and long terms. Potentially significant at intersections of U.S. Hwy. 89A and Arizona Route 389; Utah Route 59 and Utah Route 9; Utah Route 9 and I-15; Utah Route 9 and Utah Route 17; and I-15 and Utah Route 56.	Minor to moderate. Potentially significant at intersections of U.S. Hwy. 89A and Arizona Route 389; Utah Route 59 and Utah Route 9; Utah Route 9 and I-15; Utah Route 9 and Utah Route 17; and I-15 and Utah Route 56.
Impacts to highway infrastructure in the Warm Springs Project area.	Minor to moderate over both the short and long terms. Potentially significant along Utah Routes 17, 56, 59, and Hidden Valley Road.	Minor to moderate. Potentially significant along Utah Routes 17, 56, 59, and Hidden Valley Road.
Impacts to public safety along highways in the Warm Springs Project area.	Moderate to major over both the short and long terms. Potentially significant along I-15, Utah Route 9, Utah Route 59, and U.S. Hwy. 89.	Moderate to major. Potentially significant along I-15, Utah Route 9, Utah Route 59 and U.S. Hwy. 89.
Impacts to structural integrity and stability of county roads in the Smoky Mountain area.	Minor over the short term, negligible over the long term.	Negligible.
NOISE		
Impacts from noise generated along the roads in the Warm Springs Project area.	Minor to moderate over both the short term, minor over the long term.	Minor.
Impacts from noise generated in the Iron Springs and Moapa areas.	Negligible over both the short and long terms.	Negligible.
Impacts from noise generated in the Smoky Mountain area.	Minor over both the short and long terms. Potentially significant along the Warm Creek/Benchtop Road.	Negligible.

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Table 4-17 — Summary of Impacts by Alternative for the Warm Springs Project — (Continued)

Impact Topic	Alternative 1	Alternative 2
SOCIOECONOMICS		
Impacts to employment, population, personal income, and business activity in the Warm Springs Project area.	Moderate to major over both the short and long terms. Potentially significant in Big Water and Kanab, Utah; and Fredonia, Arizona.	Moderate to major.
Impacts to local government fiscal resources in the Warm Springs Project area.	Moderate to major over the short term, moderate over the long term. Significant in Kanab, Big Water, and Kane County. Potentially significant in Fredonia, La Verkin, Toquerville, and Hurricane.	Moderate. Potentially significant in Kane County, Kanab, Big Water, and Fredonia or Hurricane.
Impacts to State and Federal fiscal resources.	Minor to moderate over the short term, minor over the long term. Significant in Utah.	Negligible to minor. Potentially significant in Utah.
Impacts to housing availability in the Warm Springs Project area.	Moderate over both the short and long terms. Potentially significant in Page and Toquerville.	Minor to moderate.
Impacts to public safety agencies in the Warm Springs Project area.	Moderate over both the short and long terms.	Minor to moderate.
Impacts to public schools in the Warm Springs Project area.	Major over the short term, minor over the long term. Significant in Kane County. Potentially significant in Washington County.	Minor to moderate. Potentially significant in Kane County and in Utah.
Impacts to water and sewer systems in the Warm Springs Project area.	Minor to moderate over both the short and long terms. Potentially significant in Page and Toquerville.	Minor. Potentially significant in Page and Toquerville.
Impacts to regional quality of life from population growth in the Warm Springs Project area.	Moderate to major over both the short and long terms. Potentially significant in Fredonia, Big Water, and Kanab.	Moderate.
Impacts to regional quality of life from traffic growth in the Warm Springs Project area.	Moderate to major over the short term, moderate over the long term. Significant in Hurricane, La Verkin, and Toquerville.	Minor to moderate. Potentially significant in Hurricane, La Verkin, and Toquerville.
Impacts to residential property values from population and traffic growth in the Warm Springs Project area.	Minor to moderate over both the short and long terms. Potentially significant in Page, Hurricane, and Toquerville.	Minor. Potentially significant in Hurricane and Toquerville.

Document provided pursuant to Congressional subpoena

Table 4-17 — Summary of Impacts by Alternative for the Warm Springs Project — (Continued)

Impact Topic	Alternative 1	Alternative 2
SOCIOECONOMICS (Con.)		
Impacts to socioeconomic conditions.	Minor to moderate over both the short and long terms. Potentially significant in Kane County and Kanab, Utah, and Fredonia, Arizona.	Negligible to minor.
AIR QUALITY		
Impacts to air quality in the Smoky Mountain, Iron Springs, and Moapa areas.	Minor over the short term, negligible to minor over the long term.	Negligible to minor.
Impacts to air quality along the roads in the Warm Springs Project area.	Minor over the short term, negligible to minor over the long term.	Negligible to minor.
VISUAL RESOURCES/AESTHETICS		
Impacts to visual resources/aesthetics in the Smoky Mountain area.	Minor to moderate over the short term, minor over the long term.	Minor.
Impacts to visual resources/aesthetics in the Smoky Mountain area along the Warm Creek Road.	Minor and permanent. Irretrievable commitment of visual resource.	Minor.
Impacts to visual resources/aesthetics in the Smoky Mountain area along the route of the Benchtop Road.	Moderate and permanent. Irretrievable commitment of visual resource.	Negligible.
Impacts to visual resources/aesthetics in the Smoky Mountain area along the route of the 138-kV power transmission line.	Minor to moderate over the short term, negligible over the long term.	Negligible.
Impacts to visual resources/aesthetics in the Iron Springs, Moapa, and Hurricane/Fredonia areas.	Negligible over both the short and long terms.	Negligible.

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Table 4-17 — Summary of Impacts by Alternative for the Warm Springs Project — (Continued)

Impact Topic	Alternative 1	Alternative 2
RECREATION		
Impacts to dispersed recreational opportunities in the Smoky Mountain area.	Minor to moderate over both the short and long terms.	Minor.
Impacts to recreational use and management of the Glen Canyon NRA from use of the Warm Creek Road.	Moderate over the short term, minor over the long term.	Negligible to minor.
WILDERNESS		
Impacts to the potential wilderness designation of the Wahweap and Burning Hills Wilderness Study Areas.	Negligible to minor both over the short and long terms.	Negligible.
Impacts to wilderness characteristics in the Smoky Mountain area.	Minor to moderate over both the short and long terms.	Minor.
CULTURAL RESOURCES		
Impacts to prehistoric and historic resources in the Warm Springs Project area.	Minor and permanent. Loss of NRHP-eligible prehistoric or historic sites would be irretrievable.	Negligible and permanent. Potentially significant if an NRHP-eligible site is damaged/destroyed. Loss of a prehistoric/historic site would be irretrievable.
Impacts to undiscovered prehistoric and historic resources in the Warm Springs Project area.	Minor and permanent. Potentially significant if undiscovered sites are destroyed. Loss is irretrievable.	Negligible and permanent. Potentially significant if an NRHP-eligible site is damaged/destroyed. Loss of a prehistoric/historic site would be irretrievable.
Impacts to Native American cultural and religious concerns in the Warm Springs Project area.	Minor and permanent. Potentially significant if unidentified Native American cultural/religious sites are destroyed. Loss of Native American cultural/religious site would be irretrievable.	Negligible and permanent. Potentially significant if a Native American cultural/religious site is damaged/destroyed. Loss of a Native American religious/cultural site would be irretrievable.
Indirect (secondary) impacts to prehistoric and historic resources in the Warm Springs Project area due to increased levels of activity.	Minor and permanent. Potentially significant if NRHP-eligible sites are disturbed. Loss of a prehistoric/historic site would be irretrievable.	Negligible and permanent. Potentially significant if an NRHP-eligible site is damaged/destroyed. Loss of a prehistoric/historic site would be irretrievable.

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5.2.3 Formal Scoping - Round 2

The Agencies announced their intent to reopen formal scoping activities concerning the Warm Springs Project EIS in the July 10, 1995, issue of the *Federal Register* (60 FR 35561). In an effort to resolve issues that developed as a result of the previous scoping activities, Andalex revised the permit application packages (PAPs) for the Smoky Hollow Mine involving the proposed size and life of the mine. An updated description of the Project and specific information on the new limits of the proposed mine were provided to encourage interested parties to provide oral and/or written comments pertaining to any additional environmental concerns that may have needed to be addressed in the EIS.

An information and status summary was released by the Agencies prior to publication of the July 10, 1995, *Federal Register* notice. This summary provided additional information on the status of the EIS analysis, explained the continuing delays in the preparation of the draft EIS, and provided a copy of the text that would appear in the *Federal Register* notice. A total of 1,087 copies was mailed to interested parties on July 6, 1995.

Seven open-house/public scoping meetings were held throughout the southern Utah, northern Arizona, and southeastern Nevada area to allow the interested public an opportunity to learn more about the changing scope of the EIS analysis and to provide oral statements. About 320 people attended these meetings, held in Cedar City, Utah (August 8); Hurricane, Utah (August 9); Salt Lake City, Utah (August 10); Moapa, Nevada (August 14); Kanab, Utah (August 15); Page, Arizona (August 16); and Flagstaff, Arizona (August 17). Written comments from the public were formally accepted between July 10 and September 5, 1995. Over 120 letters were received from the public during the 60-day comment period. The received statements/comments assisted the Agencies in further defining the scope of issues and concerns that needed to be evaluated in the EIS.

5.2.4 Public Involvement Promoted by Andalex

A variety of Federal, State, and local agencies, interest groups, and private individuals have been contacted by Andalex since the permitting process for the Smoky Hollow Mine began. Between 1988 and 1996, company representatives contacted over 2,500 people and held more than 500 meetings to provide their explanation of the proposed Project and resolve as many issues and concerns as early in the process as possible. Although these contacts were not made by the Agencies as part of the formal scoping process for the EIS, they did afford the interested public additional opportunities to become familiar with the various components that would eventually make up the Warm Springs Project. As a result of these initial contacts by Andalex, many of these groups and individuals were more active in their participation during the formal EIS scoping activities conducted by the Agencies.

Document provided pursuant to Congressional subpoena

ATTACHMENT 3

E-mail Message from Tom Jensen
to Linda Lance et al.
March 27, 1996

RECORD TYPE: FEDERAL (ALL-IN-1 MAIL)

CREATOR:Thomas C. Jensen (JENSEN_T) 'CEQ)

CREATION DATE/TIME:27-MAR-1996 13:29:44.93

SUBJECT:POTUS letter re-do

TO:Linda L. Lance
READ:NOT READ

TO:T J Glauthier
READ:27-MAR-1996 14:16:12.50

TO:James Craig Crutchfield
READ:27-MAR-1996 13:44:04.49

TO:Bruce D. Beard
READ:27-MAR-1996 16:56:11.99

TO:Dinah Bear
READ:27-MAR-1996 14:34:53.38

CC:Kathleen A. McGinty
READ:27-MAR-1996 17:13:07.59

TEXT:
Linda,
Attached is my re-do of the draft potus letter to Babbitt. I've added the reference to Glen Canyon NRA for two reasons: first, because some the lands we're reviewing next to Canyonlands are more proximate to GCNRA. Second, because KM and others may want to rope in the Kaiparowits and Escalante Canyons regions (which are adjacent to GCNRA) if this package ultimately doesn't seem adequate to the President's overall purpose.
Call if you've got any questions.
You're doing a great job.
Tom
========== ATTACHMENT 1 ==========
ATT CREATION TIME/DATE:27-MAR-1996 13:25:00.00

ATT BODYPART TYPE:p

ATT CREATOR:Thomas C. Jensen

TEXT:
PRINTER FONT:12_POINT_ROMAN
3/27/96 draft
Dear Secretary Babbitt,

It has come to my attention that there may be public lands adjacent to Glen Canyon National Recreation Area, Canyonlands National Park and Arches National Park in Utah that contain significant historic or scientific areas that may be appropriate for protection through National Monument status under the Antiquities Act of 1906. Therefore, I am requesting any information available to your Department on lands owned or controlled by the United States adjacent to Glen Canyon National Recreation Area, Canyonlands National Park or Arches National Park that contain historic landmarks, historic or prehistoric structures, or other objects of historic or scientific interest.

Please respond as soon as possible. If there are land areas that you have already reviewed and that may be appropriate for immediate consideration, please provide that information separately and as soon as possible.

Thank you for your assistance.

WJC

========== END ATTACHMENT 1 ==========

ATTACHMENT 4

Memorandum from Dave Alberswerth
to Andrew Strasvogel
April 9, 1996

April 9, 1996

Memorandum

To: Andrew Strasvogel, BLM

From: Dave Alberswerth, ASLM

Subject: Andalex PDEIS comments

Document provided pursuant to Congressional subpoena

I apologize for the tardiness of my comments on the PDEIS. I have serious concerns about the document and the position it places the Assistant Secretary in with respect to the issues discussed below. I have discussed these concerns with Mat Millenbach, and he suggested I forward them through you to the EIS team.

First, the DEIS should not contain a "preferred alternative." The alternatives (if only two are posed) should simply be cast as "approval with conditions" and "disapproval." ASLM has not determined whether approval of the proposed mine is the "preferred alternative." All references to the "preferred alternative" should be omitted.

Secondly, it strains credulity to base a "go" or "no go" decision on an analysis of two alternatives which appear to indicate no significant difference in environmental impacts for the area of either permitting or not permitting the proposed Smokey Hollow Project (see Table 2-1). Moreover, it is disturbing that there is no meaningful discussion of the potential cumulative impacts of developing this mine in a "frontier area." It is obvious that permitting this mine will create an infrastructure that will make additional future developments of various kinds attractive and potentially economically feasible. In the minds of many, the potential future development activities that could utilize or improve upon the infrastructure created by this project is the most significant issue with the proposal. We simply cannot ignore the issue of potential future cumulative impacts by punting to a project-specific piecemeal decision-making process (see p. 5-15).

Given the high public interest in this mine proposal, the nature of the national debate regarding the future management of public lands in southern Utah, and the likelihood that the installation of various infrastructural improvements will encourage a variety of other future development proposals, the DEIS must analyze some credible scenario of future consequences for the Kaiparowits Plateau and vicinity if the mine is permitted beyond those immediate impacts of the proposed mine itself. I realize this may take some additional time, but the decision document the Assistant Secretary needs will have to more fully explore the potential cumulative impacts that could result from approval of the Warm Springs Project.

ATTACHMENT 5

E-mail Message from Willie Taylor
to Terry Martin & Vijai Rai
April 3, 1996

Document provided pursuant
to Congressional subpoena

Author: Willie Taylor at -IOSPEP
Date: 4/3/96 4:59 PM
Priority: Normal
TO: Terry Martin
TO: Vijai Rai
Subject: Andelix(?) Mining Co. EIS

Document provided pursuant
to Congressional subpoena

---------- Message Contents ----------

Terry/Vijai,

I talked to Brooks this afternoon and he was interested in the status of an EIS for coal mining on the Kaparowitz ((?) I know the place, but I am not sure how to spell it!) Plateau. We know that it is at the PDEIS stage, but need to know how far along they are. I believe that this is a delegated EIS (between BLM & OSM, but in AS/LM). Without "raising any alarms," please check on the status (delegated vs. non-delegated and time frame for the DEIS) of this EIS and then let's get together to discuss tomorrow (Brooks needs the information tomorrow).

Thanks,

Willie

ATTACHMENT 6

E-mail Message from Willie Taylor
to Brooks Yeager
April 4, 1996

Subject: Review of Andalex Resources' Warm Springs Project PDEIS
Author: Willie Taylor at ~IOSPEP
Date: 4/4/96 2:03 PM

Brooks,

Below is a forwarded message with the information you requsted. Vijai drafted the document. While it is longer than the paragraph you requested, I suggest that if you wish to rewrite it you maintain the essential element for this Office: (1) potential for controversy (a logical reason for our participation) and (2) that some mechanism be kept to get any comments made by this Office fully addressed (since the EIS will continue to be delegated).

As we discussed, any review by this Office at this point is likely to be resented by the bureaus and has the potential to significantly increase the time required for completion of the PDEIS. As such, if AS/LM sends out a memo like the one we have discussed, he needs to make it clear to his people (in staff meetings, not just through the memo) that we have been invited into this process.

Forward Header

Subject: Review of Andalex Resources' Warm Springs Project PDEIS
Author: Vijai Rai (RaiV) at ~IOSPEP
Date: 4/4/96 12:09 PM

Willie:

Please let me know if the paragraphs below capture what Brooks wants. If not, we can revise it. Thanks.

Currently, the Bureau of Land Management (BLM), the Office of Surface Mining Reclamation and Enforcement (OSM), the National Park Service (NPS), and the State of Utah are reviewing a preliminary draft environmental impact statement (PDEIS) with respect to a proposed coal mine in the Smoky Mountains of southern Utah. The BLM and OSM are joint lead and NPS and the State of Utah are cooperators on the EIS.

As you may know, from the environmental view point, the area where the proposed mine would be located is highly sensitive and critical. The proposed mine would be in close proximity to national park lands and national recreation areas. An earlier proposal to mine coal and build power plants in this area was extremely contentious and generated widespread controversy. Because of the controversy the earlier proposal was eventually withdrawn.

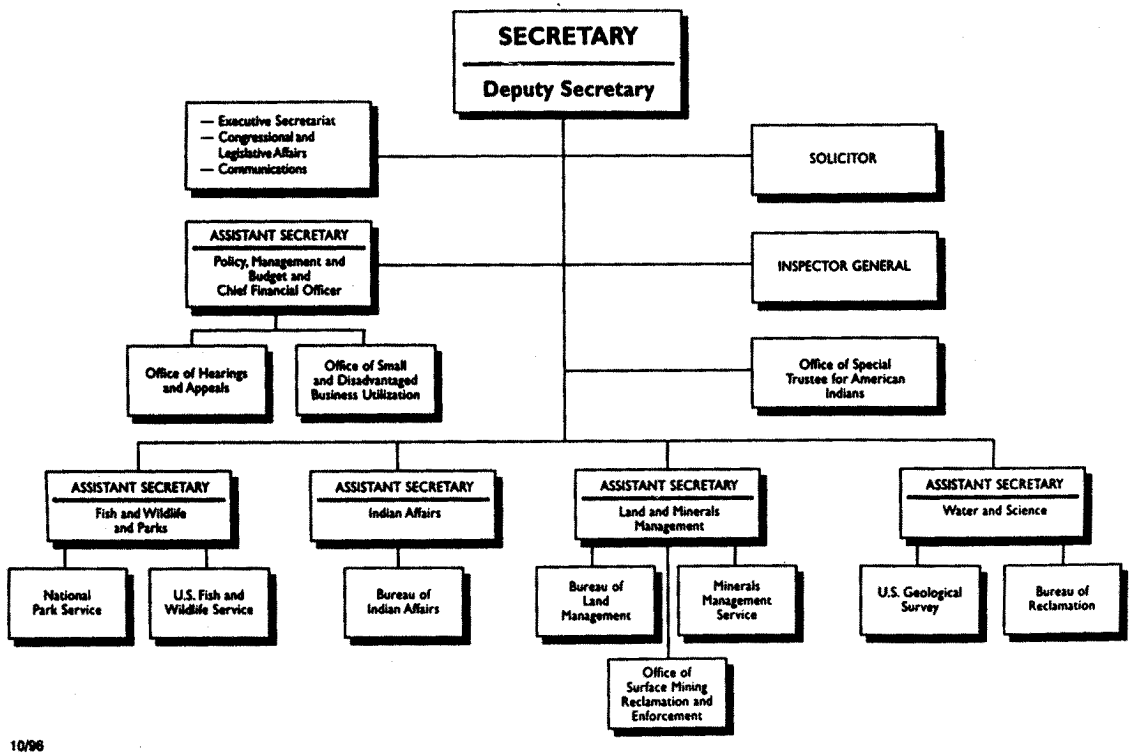
Since the proposed coal mining is highly controversial, we believe that the Department should review the PDEIS to ensure that all environmental concerns are addressed fully and the range of alternatives has been analyzed thoroughly in the PDEIS.

Therefore, I request that you ask the Department's Office of Environmental Policy and Compliance (OEPC) to review the PDEIS to ensure its adequacy. If necessary, we would revise the PDEIS based on OEPC's review and recommendations.

ATTACHMENT 7

Department of Interior
Organizational Chart

GENERAL ORGANIZATION—U.S. DEPARTMENT OF THE INTERIOR



10/96

ATTACHMENT 8

E-mail Message from Vijai Rai
to Willie Taylor
June 21, 1996

Author: Vijai Rai (RaiV) at "IOSPEP
Date: 6/21/96 8:28 AM
Priority: Normal
TO: Willie Taylor
TO: Terry Martin (MartinT)
Subject: Warm Springs PDEIS

Document provided pursuant to Congressional subpoena

---------- Message Contents ----------

Willie,

I had extensive conversations with OSM, and BLM's HQ and Utah State Office staff regarding OEPC's June 6 memorandum on the subject PDEIS.

As expected, the field personnel are very unhappy. They feel that I was not given all the information that should have been reviewed by me as part of the review process. They feel that had I looked at all the information, some of my recommendations may have been different.

As an example, they indicated that the file already contains information that Andalex plans to relinquish the additional 10,000 acres of coal leases after Warm Springs Mine plan is approved. BLM HQ staff told me that it is not true because there is no legally binding document in the State Office. Similarly, the field staff thought that I did not look at all the latest information regarding estimated recoverable coal reserves that are part of the proposed mine plan.

The field staff are extremely concerned that we sent them a memorandum rather than working with them informally as OEPC had done in the past. In their view, our memo will create all kinds of problems because the issue is extremely controversial and is likely to be in the newspapers again because of what we have recommended.

I am comfortable with the overall recommendations that we have made. However, as I pointed out to you in my CC:Mail of 4-22-96 (before I started my review), my confidence level would be higher if I were to review all the information in person in Denver and/or Salt Lake city. Since you deferred the decision on my plan to look at all the data in person, I made the recommendations based on what I was provided and my telephone conversations.

It seems that there are internal disagreements among BLM HQ and field staff on this issue that would have been apparent had I visited the field staff in person.

Also, on June 19 SUWA's Ken Rait and Heidi McIntosh were in Washington, DC. They met with John Leshy, Bob Uram, Dave Albersworth and others on this matter. They also visited me because someone had apparently told them that I was reviewing the PDEIS. They were interested in finding out what we had recommended. I advised them that it would not be appropriate for me to discuss our recommendations at this time.

If you have any questions or wish to discuss this further, please let me know.

Vijai

ATTACHMENT 9

Note from "Vijai" to "Geoff"
September 16, 1996

Author: Willie Taylor at ~IOSPEP
Date: 9/16/96 9:33 AM
Priority: Normal
TO: Vijai Rai
CC: Terry Martin
Subject: Warm Springs EIS Review

Document provided pursuant to Congressional subpoena

---------- Message Contents ----------

Vijai,

I just spoke to Dave Albersworth about the subject review. He wanted me to know that he thought that you had done exactly what was asked and that you had done a good job.

I explained to him that I had spoken to Brooks and that Brooks supported OEPC's analysis. He mentioned that he had spoken to Brooks this morning on the same subject.

Dave thought that most of your participation in this area would decrease, but he would like you to be available for consultations and further elaboration on the points you raised.

Thanks for a good job.

Willie

9-16-1996

GEOFF:

I talked to Andrew and an individual at the USGS this morning regarding the USGS draft open file report on coal resources in southern Utah which is likely to be released this week. The open file report identifies more than 60 billion tons of in place coal resources in this region. The report, however, does not identify minable or recoverable coal reserves in the region or those in the Andalex's leases. The USGS periodically publishes these reports on mineral resources in cooperation with states.

On a related subject, it seems that my involvement in the Warm Springs PDEIS would be somewhat limited in the future (Please see the e-mail that I received this morning).

I do wish to reiterate to you once again that the PDEIS should evaluate in depth the environmental and economic issues related to higher annual coal production. If the detailed analysis were to conclude that higher annual coal production is not feasible within the life-of-mine (40 years), Andalex's claims, if any, under taking will be based on a relatively small coal mine. In my view, if the ~~permit~~ mine plan and/or the permit were not approved, Andalex is likely to sue the Govt. because the value of all the coal under its leases. I believe that the public and the Government will come out better if we were to do the full analysis up front.

Please let me know, if I could be of any assistance in the future.

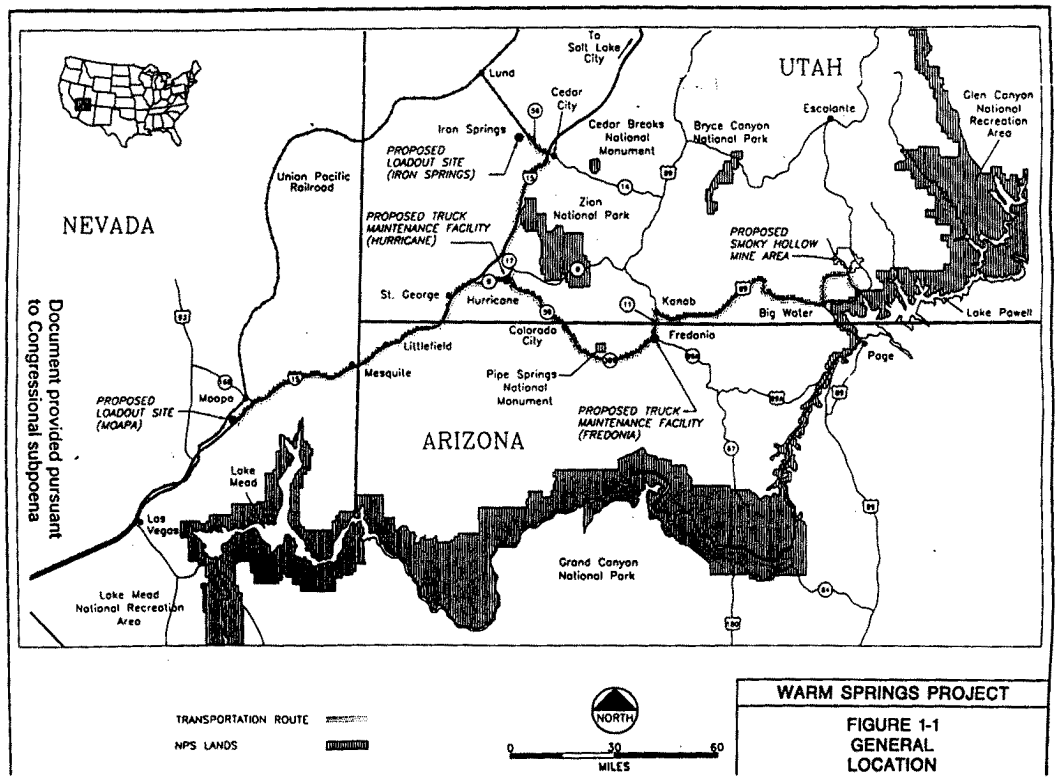
Thanks!

Vijai

TEL: [illegible]

ATTACHMENT 10

Maps



TRANSPORTATION ROUTE

NPS LANDS

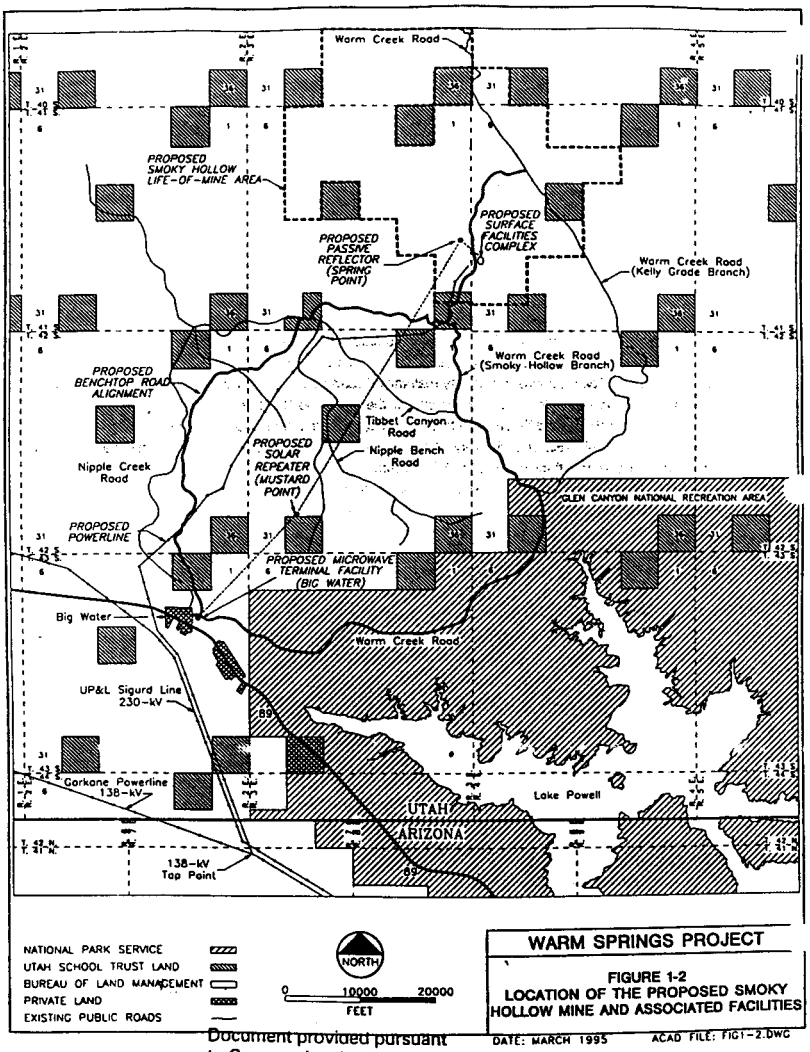
NORTH

0 30 60
MILES

WARM SPRINGS PROJECT

FIGURE 1-1
GENERAL LOCATION

Document provided pursuant to Congressional subpoena



Document provided pursuant to Congressional subpoena

DISSENTING VIEWS
Staff Report on Grand Staircase-Escalante NM
October 9, 1998

This report is a waste of time and money and demonstrates once again the unfair procedures and practices imposed by the Majority on the Democratic Members in the operations of the Resources Committee.

Nearly two years after the creation of the Grand Staircase-Escalante National Monument, we are once again rehashing the debate over this designation. If this monument is so legally and environmentally deficient, as the staff report claims, why has no one in the Utah delegation, including the chairman of the Subcommittee on Parks, initiated an effort to deauthorize the Monument?

In reality, the *opposite* is true.

We have, on a bipartisan basis and with the support of the Utah delegation, sought appropriations for the Monument's planning and management needs. We passed in this Committee and the House this summer a non-controversial Utah land exchange bill (HR 3830) to consolidate Federal ownership and management of the lands that are the primary focus of this report. In addition, the Parks and Public Lands Subcommittee has reported legislation (HR 4287) to make a number of minor boundary adjustments to the Monument.

These are not the actions of a Committee or a Congress ready to overturn the designation.

As for the alleged "facts" in this majority staff report, it appears that the majority does not know the difference between a Preliminary Draft Environmental Impact Statement and a real Environmental Impact Statement. Unlike an EIS, a Preliminary Draft EIS has not even completed internal review, yet alone been subject to public review and comment. To draw conclusions based on a Preliminary Draft EIS, as this staff report does, is to base assertions on preliminary and incomplete information.

Let's be clear that once again, the Minority has been completely and utterly excluded from the process of preparing this report. We have no idea how it was developed, whether it is the product of balanced and thorough research. We were not aware that this report was being written until it appeared.

Now, the Majority is following the House rules and bringing this report for the Members to vote to release. That contrasts with the process followed with the November 1997 staff report on the Utah Monument which included documents obtained by Committee subpoena which was released without a vote of the Committee.

But complying with the bare minimum requirements of due process and notice under the rules does not make up for what we view as serious abuses of power by the Majority. Once again, the Majority has obtained documents on behalf of the committee and is prepared to vote to release them to the public in the midst of litigation by the Rocky Mountain Legal Foundation challenging the Utah Monument declaration. The discovery process is underway. How convenient that the Majority report's legal conclusion mirrors theories raised in that case.

There are numerous flaws and erroneous assumptions throughout this report. The Majority asserts there was no "threat" from mining up to 120 million tons of coal over a 45-year period based on their reading of a *preliminary draft* of an Environmental Impact Statement. The draft ("PDEIS") was predecisional and never endorsed by the Department of the Interior or intended to be made public. The Majority report ignores evidence from DOI that points out deficiencies and inadequacies in the PDEIS.

The Majority report complains that there was "no effort" by the President to comply with NEPA. But they offer not a single case or legal authority supporting a conclusion that the President's actions under the Antiquities Act are subject to NEPA.

They selectively and misleadingly quote from documents obtained by subpoena from the Administration. They have never conducted an interview with anyone to put the documents in context. Instead, they quote -- as conclusive "proof" that Administration "knew" the monument lands were not threatened -- a March 25, 1996 email from CEQ Chair Katie McGinty saying "these lands are not really endangered" But as CEQ explained in response to the first Majority report on the Utah Monument, McGinty was referring to existing units of the National Park system that were already protected, and not to lands included in the Monument.

In another egregious example, the report states that "The PDEIS shows conclusively that the proposed mine was <u>not the ecological threat that President Clinton alleged when he designated the Utah Monument</u>. This conclusion was reached not only by Resources Committee staff, but also by Dave Alberswerth, a Clinton Administration political appointee in the Department of the Interior, who noted in a April 9, 1996, memorandum that the two alternatives 'appear to indicate no significant difference in environmental impacts for the area of either permitting or not permitting the proposed Smoky Hollow Project.'"

But a full reading of Alberswerth's April 9 memo indicates that he was being critical of the lack of comprehensive analysis in the PDEIS, not endorsing its conclusions. Contrary to the Majority's selective reading, Alberswerth was pointing out that the PDEIS failed to include the cumulative effects analysis required by NEPA. "Moreover, it is disturbing that there is no meaningful discussion of the potential cumulative impacts of developing this mine in a 'frontier area.' It is obvious that permitting this mine will create an infrastructure that will make additional future development of various kinds attractive and potentially economically feasible. In the minds of many, the potential infrastructure created by this project is the most significant issue with the proposal. We simply cannot ignore the issue of potential future cumulative impacts by

punting to a project-specific piecemeal decision-making process."

We should all be concerned that once again, the Majority is releasing subpoenaed documents in the middle of pending litigation, trying to reinforce legal theories raised in the litigation brought by the Mountain States Legal Foundation. The Utah Association of Counties and other plaintiffs have sued President Clinton in a consolidated case pending in federal court, seeking to overturn the Monument declaration. The Majority report objects to the Administration withholding documents until subpoenaed; but the Administration's concern, based on experience with the Majority, has been that the Committee would release documents to the litigants that may not otherwise be subject to discovery in court. The Administration does not, contrary to the Majority, question the power of Congress to obtain these documents, but they do take issue with the Committee abusing its oversight authority, bypassing the judicial discovery process and making publicly available portions of documents that can be used in litigation.

Let's be clear that this investigation, like the others launched by the Majority, has been conducted on a strictly unilateral, partisan basis. The Democratic Members of the Committee do not directly receive correspondence related to subpoenas and document demands made on behalf of the Committee, including letters threatening contempt proceedings. We are not allowed to participate in interviews or meetings conducted on behalf of the committee in these matters, including a recent session with White House counsel and CEQ regarding the Warner Creek subpoena. (See attached September 24, 1998,letter to Chairman Young.)

The pattern and the conduct of the Majority's investigations during this Congress has been vigorously partisan and secretive. No effort has been made to include the Democratic Members, who constitute nearly one half the membership of the Committee. Repeated requests to establish criteria for the handling of sensitive documents and subpoenas have been ignored. And now the net cast by Committee investigators grows wider and wider, including even a request that the Forest Service disclose whether its employees are members of, or have contact with, environmental organizations.

This report on the creation of the Grand Staircase-Escalante National Monument is unnecessary and unproductive. The Monument is not only created but is being supported by the very actions of those most critical of its creation. Surely the staff and members of this Committee have more productive things to do with the taxpayers' money and our own time than continue to engage in these endless inquiries that never seem to come up with any irregularities.

GEORGE MILLER

MAURICE HINCHEY

ONE HUNDRED FIFTH CONGRESS
DON YOUNG, ALASKA, CHAIRMAN
W.J. (BILLY) TAUZIN, LOUISIANA
JAMES V. HANSEN, UTAH
JIM SAXTON, NEW JERSEY
ELTON GALLEGLY, CALIFORNIA
JOHN J. DUNCAN, JR., TENNESSEE
JOEL HEFLEY, COLORADO
JOHN T. DOOLITTLE, CALIFORNIA
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RICHARD W. POMBO, CALIFORNIA
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JOHN E. ENSIGN, NEVADA
ROBERT F. SMITH, OREGON
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JOHN PETERSON, PENNSYLVANIA
RICK HILL, MONTANA
BOB SCHAFFER, COLORADO
JIM GIBBONS, NEVADA
MICHAEL D. CRAPO, IDAHO

U.S. House of Representatives
Committee on Resources
Washington, DC 20515

September 24, 1998

GEORGE MILLER, CALIFORNIA
RANKING DEMOCRATIC MEMBER
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NICK J. RAHALL II, WEST VIRGINIA
BRUCE F. VENTO, MINNESOTA
DALE E. KILDEE, MICHIGAN
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NEIL ABERCROMBIE, HAWAII
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LLOYD A. JONES
CHIEF OF STAFF

ELIZABETH MEGGINSON
CHIEF COUNSEL

JOHN LAWRENCE
DEMOCRATIC STAFF DIRECTOR

The Honorable Don Young
Chairman
Committee on Resources
Washington, D.C. 20515

Dear Chairman Young:

Consistent with Committee Rule 7(a), which provides for consultation between the Chair and the Ranking Minority Member concerning appointment of Task Forces to carry out duties and functions of the Committee, I want to express my very strong concerns about your decision to create a Task Force to further investigate the Warner Creek salvage timber sale.

For well over a year, the Majority has spent considerable time and financial resources investigating the Warner Creek matter. The Majority has requested and received documents from the Department of Agriculture, the Forest Service, Council on Environmental Quality (CEQ), and the Department of Justice, among others. On two separate occasions, the Chair has unilaterally subpoenaed, using recess powers, records and documents from CEQ, the Department of Justice and two phone companies.

None of this investigative activity has been authorized by vote of the Committee. No parameters or goals for an investigation were shared with the 23 Democratic members of the Committee. Indeed, as a practical matter, the Minority has been excluded from the investigation being conducted on behalf of the committee pursuant to powers delegated to the Committee by the House.

Instead, the Majority staff has conducted interviews without notice and without providing an opportunity for the Minority to participate. The Majority has obtained documents without assuring that duplicate copies – or even reasonable access to originals – have been provided to the Minority. The Majority has corresponded repeatedly concerning document requests and subpoenas issued on behalf of the Committee without providing the Minority with copies of the letters, even when such letters threaten contempt proceedings by the Committee. The Majority has met with White House counsel and CEQ counsel concerning subpoenaed documents, refusing direct requests to allow the Minority staff to participate or even observe these meetings.

The Majority has raised the specter, in a memo distributed to Members, of wrongdoing by Administration officials, including violations of unspecified criminal laws. Yet no evidence has been disclosed either to the Minority or to the public to support these and other serious allegations. The one-sided, partisan investigation that has been undertaken to this point fails to meet even minimum standards of objectivity and fair play. Rather, your inquiry appears a partisan effort to harass and intimidate federal agencies undertaken largely in secret by the Majority.

Accordingly, it is not possible for me as the Senior Democratic Member to conclude that creation of a Task Force to further investigate this matter – with all the additional time and money such an inquiry necessitates – is warranted at this time.

An appropriate first step, prior to the creation of a Warner Creek Task Force, would be for you to share with me -- on a confidential basis if need be -- the evidence which justifies additional commitment of public funds. If, upon consideration of that evidence, further investigation appears to be warranted, I would be pleased to discuss with you the organizational and procedural steps necessary to ensure that our 23 Democratic Members have a meaningful opportunity to participate in activities conducted by the Committee and the Task Force. As you are well aware, you have repeatedly refused to establish such procedural ground rules for Committee investigations that would ensure fairness, objectivity, and appropriate notice to the Democratic members in whose name the Committee is also supposed to function.

I look forward to the opportunity to review any substantial and credible evidence that further investigation of the Warner Creek matter is justified, and, if so, to discuss with you what steps will be taken to assure fair participation by Democratic Members.

Sincerely,

GEORGE MILLER
Senior Democratic Member

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