

Lake Powell Pipeline

Modified Draft Study Report 16 Visual Resources

January 2012

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Visual Resources Executive Summary

ES-1 Introduction

This study report describes the results and findings of a preliminary analysis to evaluate visual resources along the proposed alternative alignments of the Lake Powell Pipeline (LPP) Project, No Lake Powell Water Alternative, and No Action Alternative. The purpose of the analysis, as defined in the 2008 Visual Resources Study Plan prepared for the Federal Energy Regulatory Commission (Commission), included the following: describe the visual character of the surrounding landscape and the proposed Project components; identify visually sensitive areas within the proposed Project area and adjacent lands; identify and map key observation points and other locations that have visually sensitive areas and/or the potential to provide enhanced viewing opportunities of the proposed Project area by the public; assess visible Project features and on-going Project operations for consistency with the scenic landscape and visual resource goals and policies of land management agencies; identify potential adverse effects of proposed Project features and operations on visually sensitive areas; and describe the general feasibility of potential options and enhancement opportunities to mitigate potential adverse effects of the proposed Project, where appropriate.

ES-2 Methodology

Impacts on scenic or visual resources refer to the change in aesthetic values resulting from modifications to the landscape. Impacts were assessed in terms of visual character, visual elements and visual patterns—with respect to the anticipated magnitude of change in landscape character. Visual character is the overall impression created by individual elements and overall patterns. The visual character impacts were analyzed using visual dominance, scale, continuity, and contrast to determine the degree the LPP project and associated surface facilities would attract attention and to assess the relative change in landscape character compared with the existing character. Visual elements, such as form, line, color and texture, are the attributes of the visible landscape and the proposed LPP project. Impacts on visual elements were evaluated using the Visual Resource Management (VRM) system, which includes a Visual Resource Contrast Rating System performed from key observation points and accounts for different distance zones. Visual patterns result from the presence or absence and the arrangement of individual elements within a landscape. The landscape character of the project area varies because of changes in landscape components and their patterns. The anticipated magnitude of change in landscape character and the visibility of the proposed alternatives were evaluated, taking into account the varying levels of visual sensitivity within the project area.

ES-3 Affected Environment

The visual setting is influenced by the major landforms, geology and vegetation communities found along the project alignment. The project would be primarily located within the Colorado Plateau physiographic province, which is characterized by gently rolling plains covered with hills, dunes and flat-topped mesas. The remainder of the project area would be within the Transition physiographic province. This area is characterized by a mixture of features from both the Colorado Plateau and the Basin and Range physiographic provinces. The Basin and Range features appearing in the Transition province consist of fault-tilted mountain ranges separated by broad sediment-filled basins. The biotic communities along the proposed alignments appear in patterns based on elevation, orientation and precipitation. They include the Great Basin Desert scrub community, the Great Basin Conifer Woodland community, the Great Basin Shrub-Grassland community, and Mohave Desertscrub community.

Executive Summary

The visual resources assessment was performed for the foreground distance zone (up to 0.5 mile from the alternative alignments) and the middleground distance zone (0.5 mile to 5.0 miles from the alternative alignments). The existing visual character is described for 28 Visual Assessment Units extending from the Intake at Lake Powell to the Water Treatment Facility in Cedar Valley. Many of these Visual Assessment Units are located within Bureau of Land Management (BLM) administered lands with established visual resource management goals. The visual resources assessment reviews scenic roads and byways, historic trails, areas of critical environmental concern, wilderness areas, and wilderness study areas that could be affected by the LPP project.

ES-4 Environmental Consequences

The environmental consequences of the alternatives on visual resources are documented in Chapter 4 and in the appendices to this study report. The pipeline alternatives would have direct visual impacts ranging from very low to moderate in the foreground distance zone within the Visual Assessment Units. The pump stations, regulating tanks, hydro stations, and water treatment facilities would have direct visual impacts ranging from low to high in the foreground distance zone within the Visual Assessment Units. The LPP project pipelines and facilities would have direct visual impacts ranging from very low to moderate in the middle-ground distance zone within the Visual Assessment Units. The transmission line alternatives would have very low to low direct visual impacts where they parallel existing transmission lines, and very low to moderate direct visual impacts where they would not parallel existing transmission lines, except for high direct visual impacts caused by the 345 kV transmission line from the Hurricane Cliffs Pumped Storage Hydro Plant to the planned Hurricane West Substation.

Impacts on visual elements caused by the LPP project alternatives would be consistent with BLM VRM classes in the foreground distance zone within 21 of the 28 Visual Assessment Units. The seven Visual Assessment Units where impacts on visual elements would not be consistent with BLM VRM classes in the foreground distance zone involve Class II areas, mostly with the Grand-Staircase-Escalante National Monument and at the Hurricane Cliffs. Impacts on visual elements caused by the LPP project alternatives would be consistent with BLM VRM classes in the middle-ground distance zone in all Visual Assessment Units except for the Hurricane Cliffs. The visual impacts of the Booster Pump Station-3 and Water Conveyance Hydro-1 at the east side of the Cockscomb geological feature would not meet the VRM Class II criteria without implementing extraordinary mitigation measures. The visual impacts of Booster Pump Station-4 on the west side of the Cockscomb geological feature would not meet the VRM Class II or III criteria without implementing extraordinary mitigation measures.

Under the Natural Gas Supply Line and Generators Alternative, a natural gas supply line would closely parallel the LPP alignment and result in no additional impacts since it would occur within the ground disturbance of the LPP pipeline alignment. Above-ground facilities such as valves, pig launchers/receivers, and fences would introduce vertical lines and rectangular forms at specific sites that would contrast with the lines and forms of the natural settings in foreground views. The natural gas generators at the IPS and booster pump stations would increase the building sizes and decrease the size of the electrical pads. Each of these buildings would include multiple vent stacks that would extend approximately 75 to 100 feet above existing grades at the sites, resulting in a higher degree of site visibility. Conversely, the decreased electrical pads would be associated with the elimination of tall overhead transmission lines to these sites, reducing the general visibility of the project in foreground views. At foreground and middle ground viewing platforms, changes associated with the natural gas supply line and generators would be generally similar in magnitude to those from project if it did not include the natural gas supply line and generators.

Visual resource impacts on the Glen Canyon National Recreation Area (GCNRA), administered by the National Park Service (NPS), would range from very low to moderate. The visual impacts would be generally consistent with the existing landscape character and would be consistent with the GCNRA's mission to preserve and protect the scenic features in the area.

The LPP project alternatives would have minor direct and indirect visual impacts on scenic roads and byways and historic trails. The alternatives would have minor indirect visual impacts on wilderness areas and wilderness study areas. The South Alternative would have direct visual impacts on the Kanab Creek Area of Critical Environmental Concern (ACEC) with moderate contrast in line and form through vegetated areas, and moderate to strong contrast in line, color and texture where the alignment would cut through existing rock formations and boulder covered slopes.

ES-5 Mitigation and Monitoring

Chapter 5 summarizes standard mitigation measures that could be used to avoid or minimize the visual impacts caused by the LPP project alternatives in most of the Visual Assessment Units. Additional mitigation measures are summarized that could be used to mitigate site-specific visual impacts and those resulting from transmission lines and towers or vent stacks from natural gas generators at the pump stations. The mitigation measures summarized in Chapter 5 could be used to mitigate nearly all of the visual impacts documented in Chapter 4.

ES-6 Cumulative Impacts

Cumulative impacts on visual resources could occur if construction of the Proposed Project would combine with those of other interrelated projects, including past, present and reasonably foreseeable future projects that also affect the visual landscape. The cumulative impacts from LPP along with identified interrelated projects would not result in a noticeable change in the overall visual setting of the area. These interrelated projects are primarily located within or near developed areas of the local communities where the landscape has been modified. The visual impacts of the LPP project would be similar to the interrelated projects and be generally consistent with the form, line, color and texture of the existing modified landscape.

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Chapter 1 Introduction

1.1 Introduction

This chapter presents a summary description of the alternatives studied for the Lake Powell Pipeline (LPP) project, located in north central Arizona and southwest Utah (Figure 1-1) and identifies the issues and impact topics for the Draft Visual Resources Study Report. The alternatives studied and analyzed include different alignments for pipelines, penstocks, natural gas supply line and transmission lines, a no Lake Powell water alternative, and the No Action alternative. The pipelines would convey water under pressure and connect to the penstocks, which would convey the water to a series of hydroelectric power generating facilities. The action alternatives would each deliver 86,249 acre-feet of water annually for municipal and industrial (M&I) use in the three southwest Utah water conservancy district service areas. Washington County Water Conservancy District (WCWCD) would receive 69,000 acre-feet, Kane County Water Conservancy District (KCWCD) would receive 4,000 acre-feet and Central Iron County Water Conservancy District (CICWCD) could receive up to 13,249 acre-feet each year.

1.2 Summary Description of Alignment Alternatives

Three primary pipeline and penstock alignment alternatives are described in this section along with the electrical power transmission line alternatives. The pipeline and penstock alignment alternatives share common segments between the intake at Lake Powell and delivery at Sand Hollow Reservoir, and they are spatially different in the area through and around the Kaibab-Paiute Indian Reservation. The South Alternative extends south around the Kaibab-Paiute Indian Reservation. The Existing Highway Alternative follows an Arizona state highway through the Kaibab-Paiute Indian Reservation. The Southeast Corner Alternative follows the Navajo-McCullough Transmission Line corridor through the southeast corner of the Kaibab-Paiute Indian Reservation. The transmission line alignment alternatives are common to all the pipeline and penstock alignment alternatives. The natural gas supply line alignment alternative is common to all pipeline and penstock alignment alternatives. Figure 1-1 shows the overall proposed project and alternative features from Lake Powell near Page, Arizona to Sand Hollow and Cedar Valley, Utah.

1.2.1 South Alternative

The South Alternative consists of five systems: Intake, Water Conveyance, Hydro, Kane County Pipeline, and Cedar Valley Pipeline.

The **Intake System** would pump Lake Powell water via submerged horizontal tunnels and vertical shafts into the LPP. The intake pump station would be constructed and operated adjacent to the west side of Lake Powell approximately 2,000 feet northwest of Glen Canyon Dam in Coconino County, Arizona (Figure 1-2). The pump station enclosure would house vertical turbine pumps with electric motors, electrical controls, and other equipment at a ground level elevation of 3,745 feet mean sea level (MSL).

The **Water Conveyance System** would convey the Lake Powell water from the Intake System for about 51 miles through a buried 69-inch diameter pipeline parallel with U.S. 89 in Coconino County, Arizona and Kane County, Utah to a buried regulating tank (High Point Regulating Tank-2) on the south side of U.S. 89 at ground level elevation 5,695 feet MSL, which is the LPP project topographic high point (Figure 1-2).

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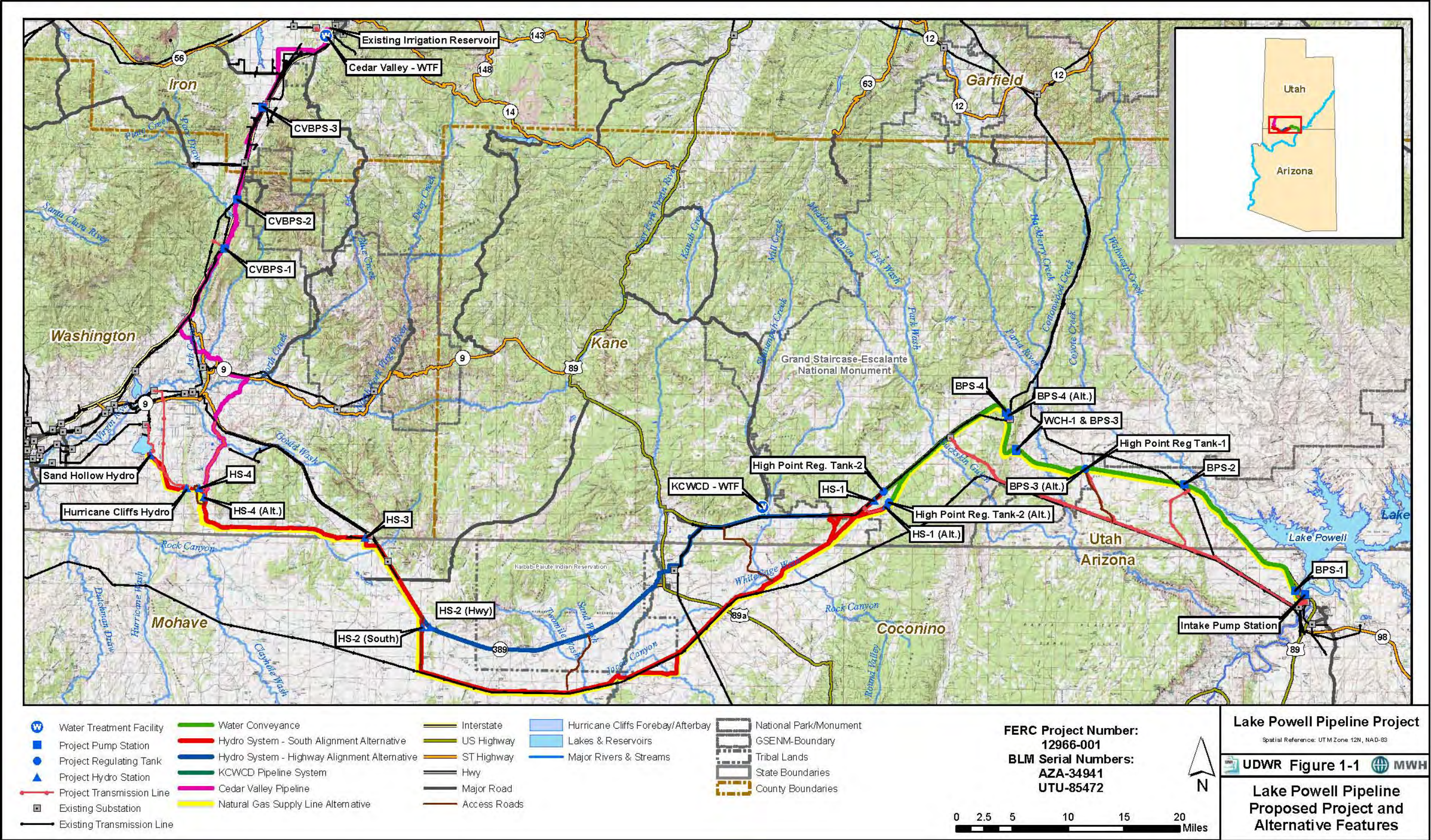


Figure 1-1
Proposed Project and Alternative Features

1-3 Lake Powell Pipeline
Modified Draft Visual Resources Study Report

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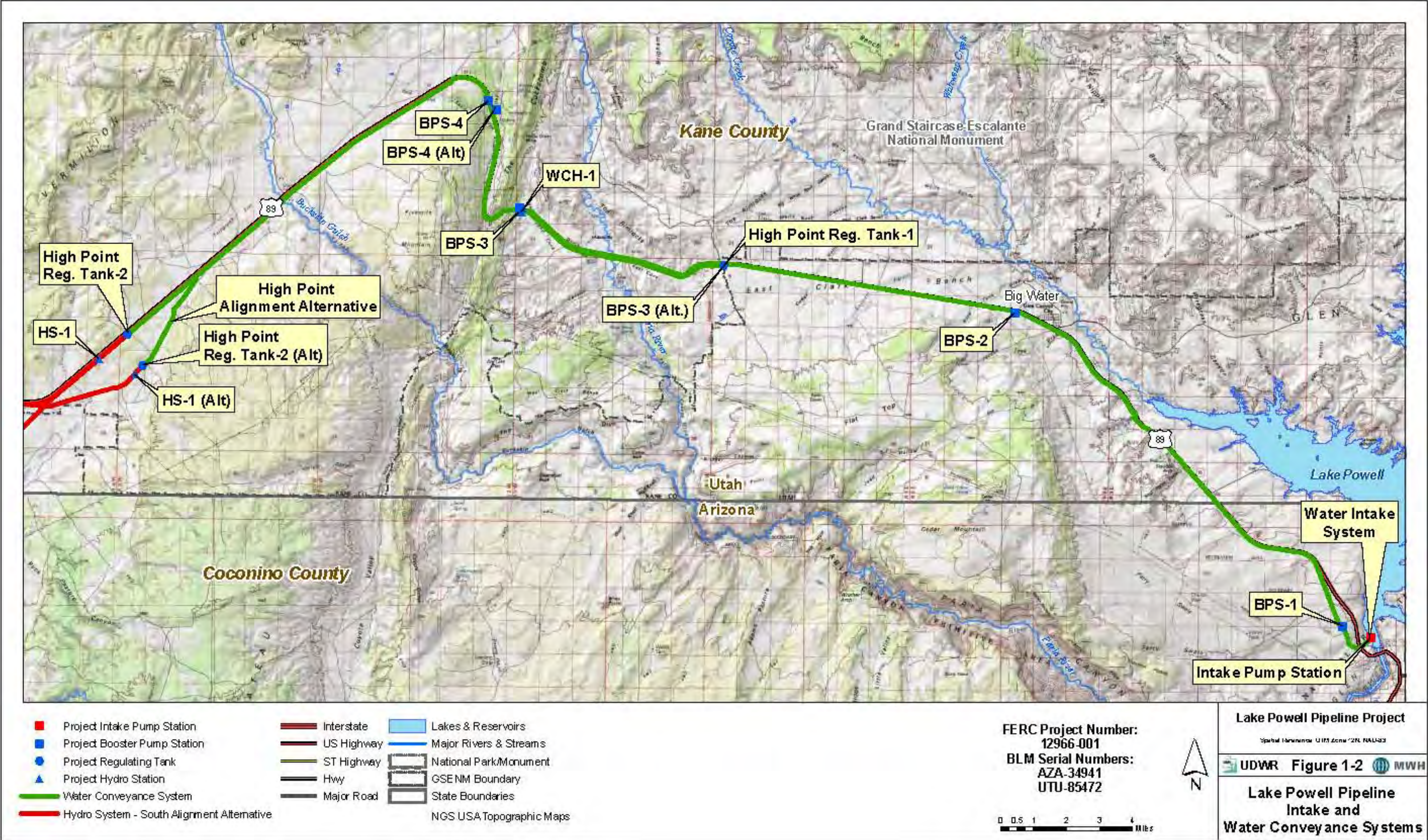


Figure 1-2
Intake and Water Conveyance Systems

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The pipeline would be sited within a utility corridor established by Congress in 1998 which extends 500 feet south and 240 feet north of the U.S. 89 centerline on public land administered by the Bureau of Land Management (BLM) (U.S. Congress 1998). Four booster pump stations (BPS) located along the pipeline would pump the water under pressure to the high point regulating tank. Each BPS would house vertical turbine pumps with electric motors, electrical controls, and other equipment. Additionally, each BPS site would have a buried forebay tank, buried surge tanks and a surface emergency overflow detention basin. BPS-1 would be sited within the Glen Canyon National Recreation Area adjacent to an existing Arizona Department of Transportation maintenance facility located west of U.S. 89. BPS-2 would be sited on land administered by the Utah School and Institutional Trust Lands Administration (SITLA) near the town of Big Water, Utah on the south side of U.S. 89. BPS -3 (Alt.) is the proposed third booster pump station and would be sited on land administered by the BLM Kanab Field Office near the east boundary of the Grand Staircase-Escalante National Monument (GSENM) on the south side of U.S. 89 within the Congressionally-designated utility corridor. BPS -4 (Alt.) would be sited on private land east of U.S. 89 and west of the Cockscomb geologic feature (Figure 1-2). The proposed pipeline alignment would diverge south from U.S. 89 parallel to the K4020 road and continue outside of the Congressionally-designated utility corridor to a buried regulating tank, High Point Regulating Tank-2 (Alt.) at ground level elevation 5,630 feet MSL, which would be the topographic high point of the LPP project along this alignment alternative (Figure 1-2).

An alternative pipeline alignment parallel to U.S. 89 and up to the high point of the GSENM would require BPS-3 and an in-line hydro station (WCH-1) to be sited at the east side of the Cockscomb geologic feature in the GSENM within the Congressionally-designated utility corridor. BPS-4 would be sited on the west side of U.S. 89 and within the Congressionally-designated utility corridor in the GSENM on the west side of the Cockscomb geologic feature. The BPS-4 site would be on land administered by the BLM in the GSENM. This High Point Highway alignment alternative would end at High Point Regulating Tank-2 at elevation 5,695 feet MSL (Figure 1-2).

A rock formation avoidance alignment option would be included immediately north of Blue Pool Wash along U.S. 89 in Utah. Under this alignment option, the pipeline would cross to the north side of U.S. 89 for about 400 feet and then return to the south side of U.S. 89. This alignment option would avoid tunneling under the rock formation or excavating the toe of the rock formation on the south side of U.S. 89 near Blue Pool Wash.

A North Pipeline Alignment option is located parallel to the north side of U.S. 89 for about 6 miles from the east boundary of the GSENM to the east side of the Cockscomb geological feature.

The **Hydro System** would convey the Lake Powell water from High Point Regulating Tank-2 (Alt.) at a high point at ground level elevation 5,630 feet MSL for about 87.5 miles through a buried 69-inch diameter penstock in Kane and Washington counties, Utah and Coconino and Mohave counties, Arizona to Sand Hollow Reservoir near St. George, Utah (Figure 1-3). The High Point Highway Alignment Alternative would convey the Lake Powell water from High Point Regulating Tank-2 at the high point at ground level elevation 5,695 feet MSL for about 87 miles through a buried 69-inch diameter penstock in Kane and Washington counties, Utah and Coconino and Mohave counties, Arizona to Sand Hollow Reservoir near St. George, Utah (Figure 1-3). Four in-line hydro generating stations (HS-1 (Alt.), HS-2 HS-3 and HS-4) with substations located along the penstock would generate electricity and help control water pressure in the penstock. The proposed High Point Alignment Alternative would include HS-1 (Alt.) along the K4020 road within the GSENM and continue along a portion of the K3290 road. Under the High Point Highway alignment alternative, HS-1 would be sited on the south side of U.S. 89 within the Congressionally-designated utility corridor through the GSENM.

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Figure 1-3
Hydro System South Alternative

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The proposed penstock alignment and two penstock alignment options are being considered to convey the water from the west GSENM boundary south through White Sage Wash. The proposed penstock alignment would parallel the K3250 road south from U.S. 89 and follow the Pioneer Gap Road alignment around the Shinarump Cliffs. One penstock alignment option would parallel the K3285 road southwest from U.S. 89 and continue to join the Pioneer Gap Road around the Shinarump Cliffs. The other penstock alignment option would extend southwest through currently undeveloped BLM land from the K3290 road into White Sage Wash.

The penstock alignment would continue through White Sage Wash and then parallel to the Navajo-McCullough Transmission Line, crossing U.S. 89 Alt. and Forest Highway 22 toward the southeast corner of the Kaibab Indian Reservation. The penstock alignment would run parallel to and south of the south boundary of the Kaibab Indian Reservation, crossing Kanab Creek and Bitter Seeps Wash, across Moonshine Ridge and Cedar Ridge, and north along Yellowstone Road to Arizona State Route 389 west of the Kaibab Indian Reservation. HS-2 would be sited west of the Kaibab Indian Reservation. The penstock alignment would continue northwest along the south side of Arizona State Route 389 past Colorado City to Hildale City, Utah and HS-3.

The penstock alignment would follow Uzona Road west through Canaan Gap and south of Little Creek Mountain and turn north to HS-4 (Alt.) above the proposed Hurricane Cliffs forebay reservoir. The forebay reservoir would be contained in a valley between a south dam and a north dam and maintain active storage of 11,255 acre-feet of water. A low pressure tunnel would convey the water to a high pressure vertical shaft in the bedrock forming the Hurricane Cliffs, connected to a high pressure tunnel near the bottom of the Hurricane Cliffs. The high pressure tunnel would connect to a penstock conveying the water to a pumped storage hydro generating station. The pumped storage hydro generating station would connect to an afterbay reservoir contained by a single dam in the valley below the Hurricane Cliffs. A low pressure tunnel would convey the water northwest to a penstock continuing on to the Sand Hollow Hydro Station. The water would discharge into the existing Sand Hollow Reservoir.

The peaking hydro generating station option would involve a smaller, 200 acre-foot forebay reservoir with HS-4 discharging into the forebay reservoir, with the peaking hydro generating station discharging to a small afterbay connected to a penstock running north along the existing BLM road and west to the Sand Hollow Hydro Station. A low pressure tunnel would convey the water to a high pressure vertical shaft in the bedrock forming the Hurricane Cliffs, connected to a high pressure tunnel near the bottom of the Hurricane Cliffs. The high pressure tunnel would connect to a penstock conveying the water to a peaking hydro generating station, which would discharge into a 200 acre-foot afterbay reservoir. A penstock would extend north from the afterbay reservoir along the existing BLM road and then west to the Sand Hollow Hydro Station. The water would discharge into the existing Sand Hollow Reservoir.

The **Kane County Pipeline System** would convey the Lake Powell water from the Lake Powell Pipeline at the west GSENM boundary for about 8 miles through a buried 24-inch diameter pipe in Kane County, Utah to a conventional water treatment facility located near the mouth of Johnson Canyon. The pipeline would parallel the south side of U.S. 89 across Johnson Wash and then run north to the new water treatment facility site (Figure 1-3).

The **Cedar Valley Pipeline System** would convey the Lake Powell water from the Lake Powell Pipeline just upstream of HS-4 or HS-4 (Alt.) for about 58 miles through a buried 36-inch diameter pipeline in Washington and Iron counties, Utah to a conventional water treatment facility in Cedar City, Utah (Figure 1-4). Three booster pump stations (CVBPS) located along the pipeline would pump the water under pressure to the new water treatment facility. The pipeline would follow an existing BLM road north from HS-4, cross Utah State Route 59 and continue north to Utah State Route 9, with an aerial crossing of the Virgin River at the Sheep Bridge.

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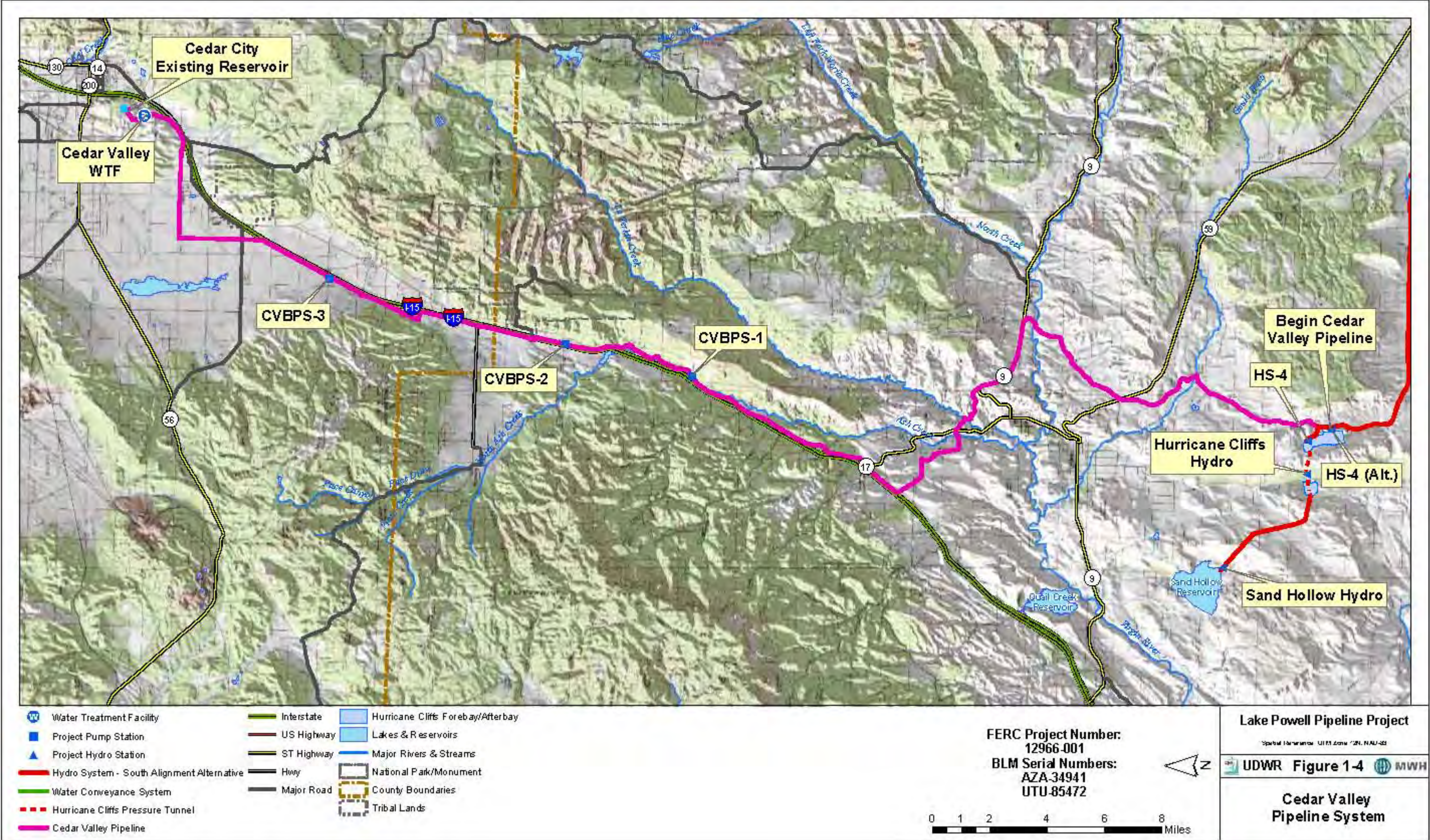


Figure 1-4
Cedar Valley Pipeline System

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The pipeline would run west along the north side of Utah State Route 9 and parallel an existing pipeline through the Hurricane Cliffs at Nephi's Twist. The pipeline would continue across LaVerkin Creek, cross Utah State Route 17, and make an aerial crossing of Ash Creek. The pipeline would continue northwest to the Interstate 15 corridor and then northeast parallel to the east side of Interstate 15 highway right-of-way. CVBPS-1 would be sited adjacent to an existing gravel pit east of Interstate 15. CVBPS-2 would be sited on private property on the east side of Interstate 15 and south of the Kolob entrance to Zion National Park. CVBPS-3 would be sited on the west side of Interstate 15 in Iron County. The new water treatment facility would be sited near existing water reservoirs on a hill above Cedar City west of Interstate 15.

1.2.2 Existing Highway Alternative

The Existing Highway Alternative consists of five systems: Intake, Water Conveyance, Hydro, Kane County Pipeline, and Cedar Valley Pipeline. The Intake, Water Conveyance and Cedar Valley Pipeline systems would be the same as described for the South Alternative.

The **Hydro System** would convey the Lake Powell water from the regulating tank at the high point at ground elevation 5,630 feet MSL for about 80.5 miles through a buried 69-inch diameter penstock in Kane and Washington counties, Utah and Coconino and Mohave counties, Arizona to Sand Hollow Reservoir near St. George, Utah (Figure 1-5). The High Point Highway Alignment Alternative would convey the Lake Powell water from High Point Regulating Tank-2 at the high point at ground level elevation 5,695 feet MSL for about 80 miles through a buried 69-inch diameter penstock in Kane and Washington counties, Utah and Coconino and Mohave counties, Arizona to Sand Hollow Reservoir near St. George, Utah (Figure 1-3). The proposed alignment would rejoin U.S. 89 about 2.5 miles east of the west boundary of the GSENM. Four in-line hydro generating stations (HS-1 (Alt.), HS-2, HS-3 and HS-4 (Alt.)) located along the penstock would generate electricity and help control water pressure in the penstock. The proposed HS-1 (Alt.) would be sited along the K4020 road within the GSENM and continue along a portion of the K3290 road to its junction with the pipeline alignment along U.S. 89. The High Point Highway alignment alternative would include HS-1 sited on the south side of U.S. 89 within the Congressionally-designated utility corridor through the GSENM.

The penstock would parallel the south side of U.S. 89 west of the GSENM past Johnson Wash and follow Lost Spring Gap southwest, crossing U.S. 89 Alt. and Kanab Creek in the north end of Fredonia, Arizona. The penstock would run south paralleling Kanab Creek to Arizona State Route 389 and run west adjacent to the north side of this state highway through the Kaibab-Paiute Indian Reservation past Pipe Spring National Monument. The penstock would continue along the north side of Arizona State Route 389 through the west half of the Kaibab-Paiute Indian Reservation to 1.8 miles west of Cedar Ridge (intersection of Yellowstone Road with U.S. 89), from where it would follow the same alignment as the South Alternative to Sand Hollow Reservoir. HS-2 would be sited 0.5 mile west of Cedar Ridge along the north side of Arizona State Route 389.

The **Kane County Pipeline System** would convey the Lake Powell water from the Lake Powell Pipeline crossing Johnson Wash along U.S. 89 for about 1 mile north through a buried 24-inch diameter pipe in Kane County, Utah to a conventional water treatment facility located near the mouth of Johnson Canyon (Figure 1-5).

1.2.3 Southeast Corner Alternative

The Southeast Corner Alternative consists of five systems: Intake, Water Conveyance, Hydro, Kane County Pipeline, and Cedar Valley Pipeline. The Intake, Water Conveyance, Kane County Pipeline and Cedar Valley Pipeline systems would be the same as described for the South Alternative.

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Figure 1-5
Hydro System Existing Highway Alternative

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The **Hydro System** would be the same as described for the South Alternative between High Point Regulating Tank-2 (Alt.) and the east boundary of the Kaibab-Paiute Indian Reservation. The penstock alignment would parallel the north side of the Navajo-McCullough Transmission Line corridor in Coconino County, Arizona through the southeast corner of the Kaibab Indian Reservation for about 3.8 miles and then follow the South Alternative alignment south of the south boundary of the Kaibab-Paiute Indian Reservation, continuing to Sand Hollow Reservoir (Figure 1-6).

1.2.4 Transmission Line Alternatives

Transmission line alternatives include the Intake (3 alignments), BPS-1, Glen Canyon to Buckskin, Buckskin Substation upgrade, Paria Substation upgrade, BPS-2, BPS-2 Alternative, BPS-3 North, BPS-3 South, BPS-3 Underground, BPS-3 Alternative North, BPS-3 Alternative South, BPS-4, BPS-4 Alternative, HS-1 Alternative, HS-2 South, HS-3 Underground, HS-4, HS-4 Alternative, Hurricane Cliffs Afterbay to Sand Hollow, Hurricane Cliffs Afterbay to Hurricane West, Sand Hollow to Dixie Springs, Cedar Valley Pipeline booster pump stations, and Cedar Valley Water Treatment Facility.

The proposed new **Intake Transmission Line** would begin at Glen Canyon Substation and run parallel to U.S. 89 for about 2,500 feet to a new switch station, cross U.S. 89 at the Intake access road intersection and continue northeast to a new electrical substation on the Intake Pump Station site. The 69 kV transmission line would be about 0.9 mile long in Coconino County, Arizona (Figure 1-7). One alternative alignment would run parallel to an existing 138 kV transmission line to the west, turn north to the new switch station, cross U.S. 89 at the Intake access road intersection and continue northeast to the Intake substation. This 69 kV transmission line alternative would be about 1.2 miles long in Coconino County, Arizona (Figure 1-7). Another alternative alignment would bifurcate from an existing transmission line and run west, then northeast to the new switch station, cross U.S. 89 at the Intake access road intersection and continue northeast to the Intake substation. This 69 kV transmission line alternative would be about 1.3 miles long in Coconino County, Arizona (Figure 1-7).

The proposed new **BPS-1 Transmission Line** would begin at the new switch station located on the south side of U.S. 89 and parallel the LPP Water Conveyance System alignment to a new electrical substation on the BPS-1 site west of U.S. 89. The 69 kV transmission line would be about 1 mile long in Coconino County, Arizona (Figure 1-7).

The proposed new **Glen Canyon to Buckskin Transmission Line** would consist of a 230 kV transmission line from the Glen Canyon Substation to the Buckskin Substation, running parallel to the existing 138 kV transmission line. This transmission line upgrade would be about 36 miles long through Coconino County, Arizona and Kane County, Utah (Figure 1-7).

The existing **Buckskin Substation** would be upgraded as part of the proposed project to accommodate the additional power loads from the new 230 kV Glen Canyon to Buckskin transmission line. The substation upgrade would require an additional 5 acres of land within the GSENM adjacent to the existing substation in Kane County, Utah (Figure 1-7).

The existing **Paria Substation** would be upgraded as part of the proposed project to accommodate the additional power loads to BPS-4 Alternative. The substation upgrade would require an additional 2 acres of privately-owned land adjacent to the existing substation in Kane County, Utah (Figure 1-7).

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The proposed new **BPS-2 Transmission Line** alternative would consist of a new 3-ring switch station along the existing 138 kV Glen Canyon to Buckskin Transmission Line and a new transmission line from the switch station to a new substation west of Big Water and a connection to BPS-2 substation in Kane County, Utah.

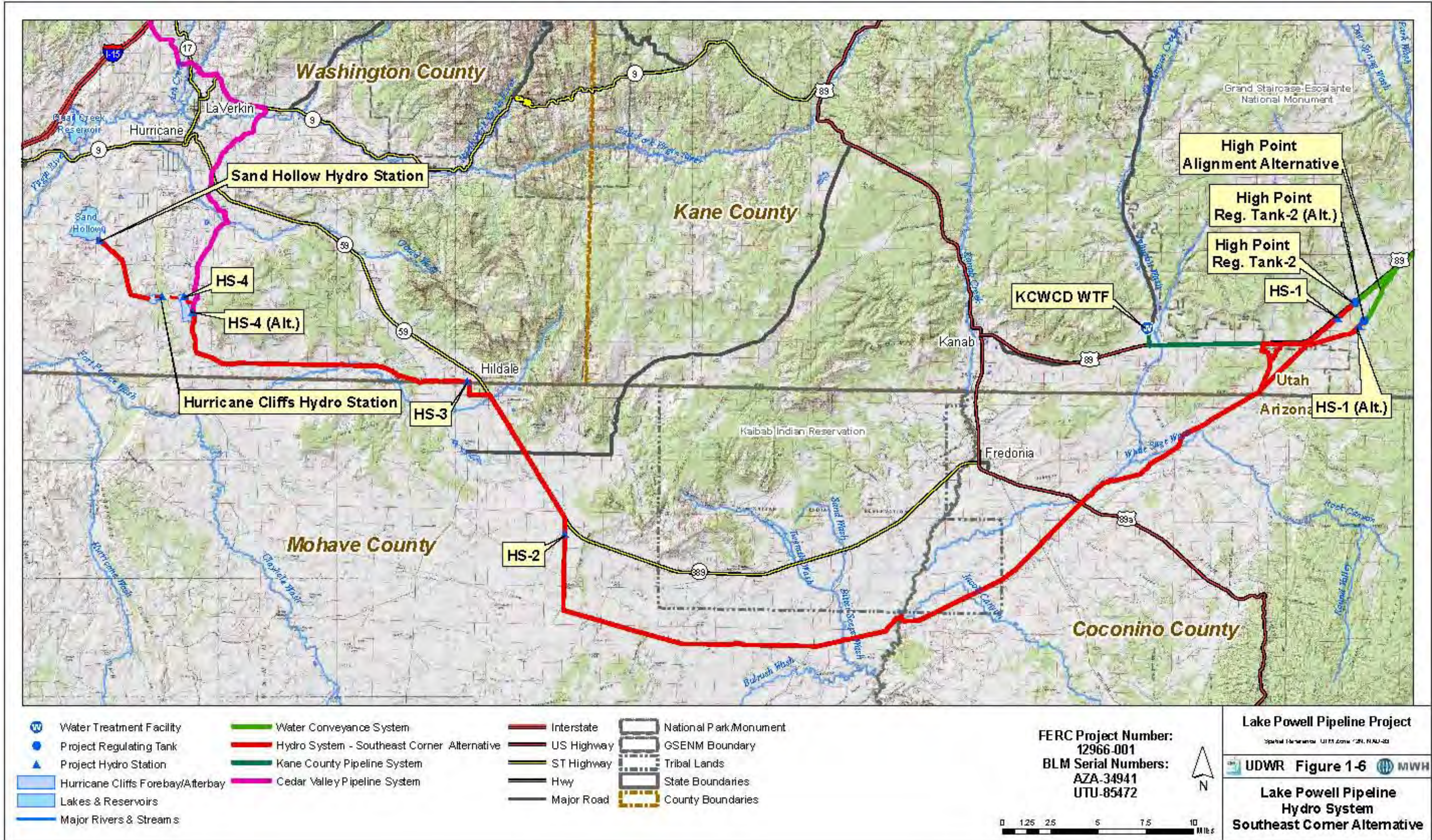


Figure 1-6
Hydro System Southeast Corner Alternative

1-21 Lake Powell Pipeline
Modified Draft Visual Resources Study Report

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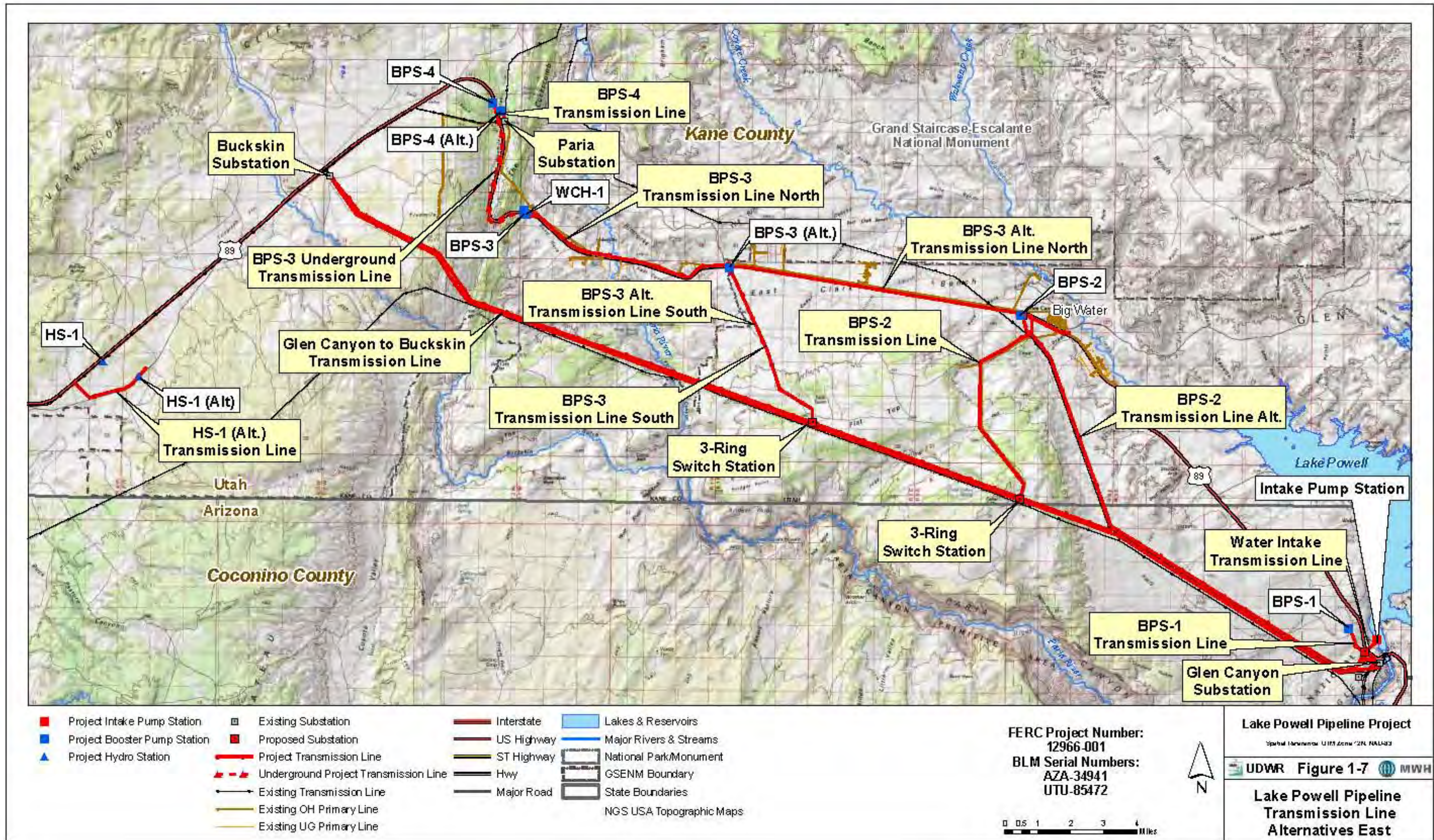


Figure 1-7
Transmission Line Alternatives East

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The new transmission line would parallel an existing distribution line that runs northwest, north and then northeast to Big Water. This new 138 kV transmission line alternative would be about 7 miles long across Utah SITLA-administered land, with a 138 kV connection to a new electrical substation on the BPS-2 site (Figure 1-7).

The new **BPS-2 Alternative Transmission Line** would consist of a new 138 kV transmission line from Glen Canyon Substation parallel to the existing Rocky Mountain Power 230 kV transmission line, connecting to a new electrical substation on the BPS-2 site west of Big Water. This new 138 kV transmission line alternative would be about 16.5 miles long in Coconino County, Arizona and Kane County, Utah crossing National Park Service-administered land, BLM-administered land and Utah SITLA-administered land (Figure 1-7).

The new **BPS-3 Transmission Line North** alternative would consist of a new 138 kV transmission line from BPS-2 paralleling the south side of U.S. 89 within the Congressionally designated utility corridor west to a new electrical substation on the BPS-3 site at the east side of the Cockscomb geological feature. This new 138 kV transmission line alternative would be about 15.7 miles long in Kane County, Utah (Figure 1-7).

The new **BPS-3 Transmission Line South** alternative would consist of a new 3-ring switch station along the existing 138 kV Glen Canyon to Buckskin Transmission Line and a new transmission line from the switch station north along an existing BLM road to U.S. 89 and then west along the south side of U.S. 89 within the Congressionally designated utility corridor to a new electrical substation on the BPS-3 site at the east side of the Cockscomb. This new 138 kV transmission line alternative would be about 12.3 miles long in Kane County, Utah (Figure 1-7).

The new **BPS-3 Underground Transmission Line** alternative would consist of a new buried 24.9 kV transmission line (2 circuits) from the upgraded Paria Substation to a new electrical substation at the BPS-3 site on the east side of the Cockscomb geological feature. This new underground transmission line would be parallel to the east and south side of U.S. 89 and would be about 4.1 miles long in Kane County, Utah (Figure 1-7).

The new **BPS-3 Alternative Transmission Line North** alternative would consist of a new 138 kV transmission line from BPS-2 paralleling the south side of U.S. 89 west to a new electrical substation on the BPS-3 Alternative site near the GSENM east boundary within the Congressionally-designated utility corridor. This new 138 kV transmission line alternative would be about 9.3 miles long in Kane County, Utah (Figure 1-7).

The proposed new **BPS-3 Alternative Transmission Line South** alternative would consist of a new 3-ring switch station along the existing 138 kV Glen Canyon to Buckskin Transmission Line and a new transmission line from the switch station north along an existing BLM road to a new electrical substation on the BPS-3 Alternative site near the GSENM east boundary and within the Congressionally-designated utility corridor. This new 138 kV transmission line alternative would be about 5.9 miles long in Kane County, Utah (Figure 1-7).

The new **BPS-4 Transmission Line** alternative would begin at the upgraded Paria Substation and run parallel to the west side of U.S. 89 north to a new electrical substation on the BPS-4 site within the Congressionally designated utility corridor. This new 138 kV transmission line would be about 0.8 mile long in Kane County, Utah (Figure 1-7).

The proposed new **BPS-4 Alternative Transmission Line** would begin at the upgraded Paria Substation and run north to a new electrical substation on the BPS-4 Alternative site. This 69 kV transmission line would be about 0.4 mile long in Kane County, Utah (Figure 1-7).

The proposed new **HS-1 Alternative Transmission Line** would begin at the new HS-1 Alternative and run southwest parallel to the K4020 road and then northwest parallel to the K4000 road to the U.S. 89 corridor where

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it would tie into the existing 69 kV transmission line from the Buckskin Substation to the Johnson Substation. This 69 kV transmission line would be about 3 miles long in Kane County, Utah (Figure 1-7).

The proposed new **HS-2 South Transmission Line** alternative would connect the HS-2 hydroelectric station and substation along the South Alternative to an existing 138 kV transmission line paralleling Arizona State Route 389. This new 34.5 kV transmission line would be about 0.9 mile long in Mohave County, Arizona (Figure 1-8).

The proposed new **HS-3 Underground Transmission Line** would connect the HS-3 hydroelectric station and substation to the existing Twin Cities Substation in Hildale City, Utah. The new 12.47 kV underground circuit would be about 0.6 mile long in Washington County, Utah (Figure 1-8).

The proposed new **HS-4 Transmission Line** would consist of a new transmission line from the HS-4 hydroelectric station and substation north along an existing BLM road to an existing transmission line parallel to Utah State Route 59. The new 69 kV transmission line would be about 8.2 miles long in Washington County, Utah (Figure 1-8).

The new **HS-4 Alternative Transmission Line** alternative would connect the HS-4 Alternative hydroelectric station and substation to an existing transmission line parallel to Utah State Route 59. The new 69 kV transmission line would be about 7.5 miles long in Washington County, Utah (Figure 1-8).

The proposed new **Hurricane Cliffs Afterbay to Sand Hollow Transmission Line** would consist of a new 69 kV transmission line from the Hurricane Cliffs peaking power plant and substation, and run northwest to the Sand Hollow Hydro Station substation. This new 69 kV transmission line would be about 4.9 miles long in Washington County, Utah (Figure 1-8).

The proposed new **Hurricane Cliffs Afterbay to Hurricane West Transmission Line** would consist of a new 345 kV transmission line from the Hurricane Cliffs pumped storage power plant and run northwest and then north to the planned Hurricane West 345 kV substation. This new 345 kV transmission line would be about 10.9 miles long in Washington County, Utah (Figure 1-8).

The proposed new **Sand Hollow to Dixie Springs Transmission Line** would consist of a new 69 kV transmission line from the Sand Hollow Hydro Station substation around the east side of Sand Hollow Reservoir and north to the existing Dixie Springs Substation. This new 69 kV transmission line would be about 3.4 miles long in Washington County, Utah (Figure 1-8).

The three **Cedar Valley Pipeline** booster pump stations would require new transmission lines from existing transmission lines paralleling the Interstate 15 corridor. The new **CVBPS-1 transmission line** would extend southeast over I-15 from the existing transmission line to the booster pump station substation for about 1.3 miles in Washington County, Utah (Figure 1-9). The new **CVBPS-2 transmission line** would extend east over I-15 from the existing transmission line to the booster pump station substation for about 0.2 mile in Washington County, Utah (Figure 1-9). The new **CVBPS-3 transmission line** would extend west over I-15 from the existing transmission line and southwest along the west side of Interstate 15 to the booster pump station substation for about 0.6 mile in Iron County, Utah (Figure 1-9).

The **Cedar Valley Water Treatment Facility Transmission Line** would begin at an existing substation in Cedar City and run about 1 mile to the water treatment facility site in Iron County, Utah (Figure 1-9).



Figure 1-8
Transmission Line Alternatives West

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Figure 1-9
Cedar Valley Transmission Line Alternatives

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1.2.5 Natural Gas Supply Line and Generators Alternative

An alternative to powering the Lake Powell Pipeline (LPP) pump stations by electricity from transmission lines is installing natural gas engine driven generation systems to power electric pumps. Recent discussions with Questar Gas (a local natural gas supplier) have indicated that capacity is available in the Kern River natural gas pipeline, which is located west of St. George, Utah, to supply the gas for this alternative. Questar Gas has indicated they have plans to extend a high pressure gas pipeline from the Kern River line to Hurricane, Utah. The Questar Gas pipeline would be oversized if it is determined that a single-purpose, dedicated high pressure gas line would be extended to service the LPP pump stations. Based on the preliminary pump selection and fuel requirements, it has been determined that the natural gas supply line would be 12-inches in diameter to provide natural gas supply for the pump stations. The pipeline would be successively reduced in size as it delivers gas to each of the pump stations.

1.2.5.1 Natural Gas Transmission Line Connection

The natural gas supply line alternative would connect to the proposed Questar Gas Transmission Line from the existing Kern River line to Hurricane City. The natural gas supply line would connect to the high pressure gas transmission line at a proposed gate station southeast of Sand Hollow Reservoir at approximate station 270+00 on the LPP alignment. The proposed gate station would be located adjacent to the alignment of the future extension of the Southern Corridor highway, which would be constructed along the existing alignment of the Sand Hollow Road east of Sand Hollow Reservoir (Figure 1-10).

1.2.5.2 Natural Gas Supply Line

The proposed natural gas line would be an intermediate high pressure line and would operate between approximately 250 to 300 psi pressure at the gate station connection. With pressure losses in the pipeline it is anticipated the pressure at each of the LPP pump stations would vary between 50 and 100 psi which would meet the requirements of the natural gas generators.

The pipeline would be constructed of strong carbon steel and have a dielectric coating such as a fusion bonded epoxy or extruded polyethylene. It would be installed with a minimum 4 feet of cover and be provided with cathodic protection (a technique that involves inducing an electric current through the pipe to ward off corrosion and rusting). The pipeline would be designed, constructed, tested, and operated at a minimum in accordance with all applicable requirements included in the U.S. DOT regulations in 49 CFR Part 192, "Transportation of Natural Gas and other Gas by Pipeline: Minimum Federal Safety Standards," and other applicable federal and state regulations.

The natural gas supply line would follow the proposed LPP ROW from the Sand Hollow Gate Station to the intake pump station near Page, Arizona. The line would be about 138.5 miles long, installed a minimum of 10 feet from the edge of the proposed water pipeline in a separately excavated trench within the LPP ROW. Figure 1-10 shows the west alignment of the natural gas supply line as proposed and an alternative alignment along Arizona State Route 389 and through Fredonia, Arizona parallel to the Existing Highway Alternative alignment, both to the west GSENM boundary. Figure 1-11 shows the east alignment of the natural gas supply line as proposed from the west GSENM boundary to the intake pump station.

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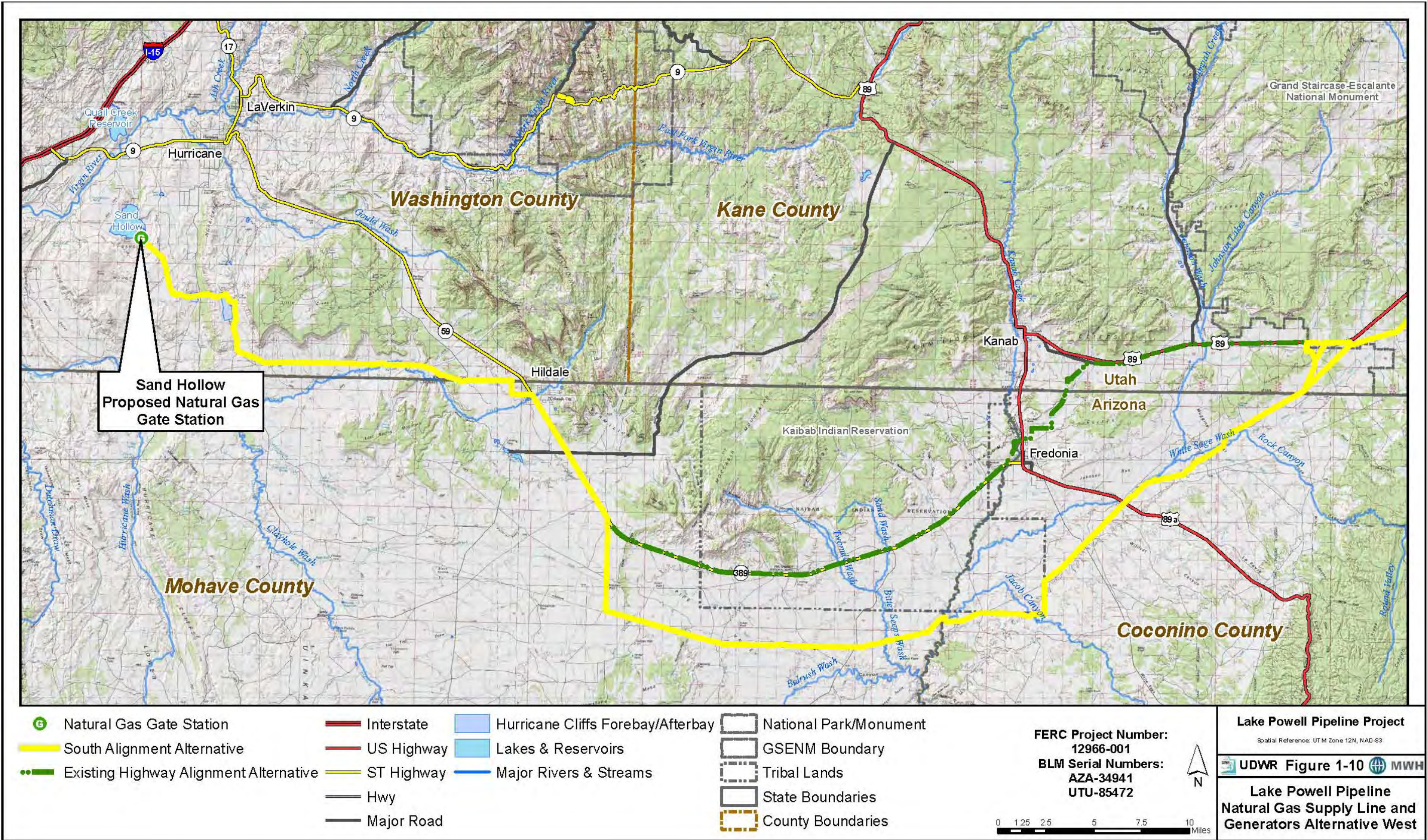


Figure 1-10
Natural Gas Supply Pipeline and Generators Alternative West

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Figure 1-11
Natural Gas Supply Pipeline and Generators Alternative East

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Sectionalizing valves would be required along the natural gas supply line alignment. These valves are safety devices used for emergency shut down or maintenance. The natural gas supply line sectionalizing valves would be required at approximately 20-mile intervals because of the gas line remoteness. The main line valve sites would cover a 40-foot by 40-foot area surrounded by a chain link fence within the confines of the permanent LPP pipeline ROW. The valves would be above-ground, connected to the buried natural gas supply line. Additionally, pig launching or receiving equipment would be installed within the sectionalizing valve fenced areas. Pigs are devices that are placed into a natural gas supply line to clean the inside walls or to monitor its internal and external condition. Launchers and receivers are facilities connected to the natural gas supply line that enable pigs to be inserted into or removed from the pipeline.

1.2.5.3 Natural Gas Generators

Natural gas generators would be used to supply power to operate the pumps at the LPP pump stations. The configuration of the electric pumps is approximately 18 feet center to center. The overall pump station building size would be increased 14 feet in width and 18 feet in length compared to pump stations powered by electricity from transmission lines.

The natural gas generators would be approximately 35 feet long by 8 feet wide by 9 feet high. The intake pump station building size for the natural gas generators would be approximately 65 feet wide by 170 feet long by 50 feet high, adjacent to the pump station electrical room within the 5-acre site designated for each pump station. The booster pump station building size for the natural gas generators would be 65 feet wide and 39 feet high, with lengths ranging from 114 feet to 162 feet long. Each natural gas generator would require a 24-inch diameter stack, with guide wires, extending above the building roof to disperse the exhaust gases. The five stacks (four operating natural gas generators plus one standby natural gas generator) at the intake pump station would extend 25 feet above the top of the building to a total height of 75 feet above the ground surface. The stacks at BPS-1, BPS-2, BPS-3 (Alt.) and BPS-4 (Alt.) would extend 61 feet above the top of the buildings to a total height of 100 feet above the ground surface. The natural gas generators at the intake pump station and BPS-4 (Alt.) would require emission control systems to meet air quality standards.

An alternative configuration of the booster pump stations and pipeline alignment involving BPS-3 and BPS-4 combined with the intake pump station, BPS-1 and BPS-2 would be similar to the proposed project, except the LPP water would be pumped to the High Point Regulating Tank 2 at elevation 5,695 feet MSL within the Congressionally-designated utility corridor along U.S. 89 (Figure 1-12). Additional pumping requirements at BPS-3 also would require one additional natural gas generator and emission control systems to meet air quality standards. BPS-4 would require emission control systems. The stacks at BPS-3 and BPS-4 would extend 61 feet above the top of the buildings to a total height of 100 feet above the ground surface.

The proposed natural gas generators at the LPP pump stations would require an annual natural gas supply of 2,855,400 million British thermal units (MMBtu). Table 1-1 shows the annual natural gas consumption at the proposed project intake pump station and booster pump stations 1 through 4. Table 1-2 shows the annual natural gas consumption (2,976,900 MMBtu) at the intake pump station and alternative booster pump station configuration.

The CVP booster pump stations would not be powered by natural gas generators.

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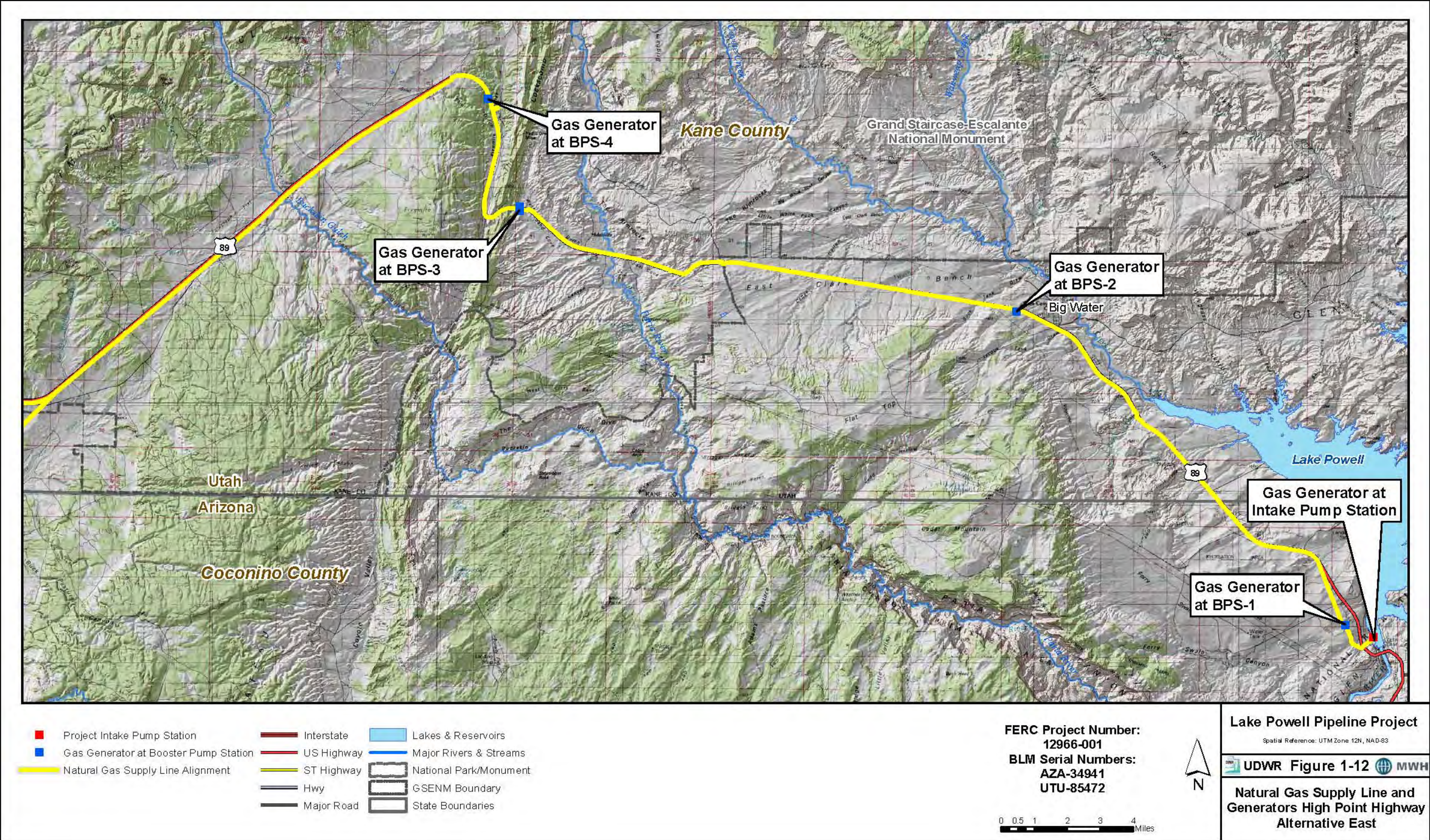


Figure 1-12
Natural Gas Supply Line and Generators High Point Highway Alternative East

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Table 1-1 Water Conveyance System Natural Gas Generator Annual Fuel Consumption									
Pump Station	Site Elevation Feet MSL	Number of Pumps	Motor (HP)	Total Motor (kW)	Natural Gas Generator GE Model	# of Units¹	Emission Control Required	Generator Total kW²	Annual Fuel Consumption (MMbtu)³
IPS	3,750	5	3000	11,190	JGS 620 F09	4+1	Yes	12,120	729,000
BPS-1	4,111	5	1500	5,595	JGS 620 F09	2+1	No	5,992	364,500
BPS-2	4,311	5	1750	6,530	JGS 620 F09	3+1	No	8,895	425,400
BPS-3 Alt.	4,657	5	2500	9,325	JGS 620 F09	4+1	No	11,652	607,500
BPS-4 Alt.	5,001	5	3000	11,190	JGS 620 F09	5+1	Yes	14,430	729,000
Total		20		43,830		18+5		53,069	2,855,400
Notes: ¹ Number of operating units plus standby generator ² Total generator capacity without standby generator ³ The annual fuel consumption is based on all pumps operating at rated motor hp, 8400 hrs/year operation with generators loaded at 87 percent on the average.									

Table 1-2 Water Conveyance System Alternative Natural Gas Generator Annual Fuel Consumption									
Pump Station	Site Elevation Feet MSL	Number of Pumps	Motor (HP)	Total Motor (kW)	Natural Gas Generator GE Model	# of Units¹	Emission Control Required	Generator Total kW²	Annual Fuel Consumption (MMbtu)³
IPS	3,750	5	3000	11,190	JGS 620 F09	4+1	Yes	12,120	729,000
BPS-1	4,111	5	1500	5,595	JGS 620 F09	2+1	No	5,992	364,500
BPS-2	4,311	5	1750	6,530	JGS 620 F09	3+1	No	8,895	425,400
BPS-3	4,522	5	3000	11,190	JGS 620 F09	5+1	Yes	14,565	729,000
BPS-4	5,140	5	3000	11,190	JGS 620 F09	5+1	Yes	14,430	729,000
Total		20		45,695		19+5		55,982	2,976,900
Notes: ¹ Number of operating units plus standby generator ² Total generator capacity without standby generator ³ The annual fuel consumption is based on all pumps operating at rated motor hp, 8400 hrs/year operation with generators loaded at 87 percent on the average.									

1.3 Summary Description of No Lake Powell Water Alternative

The No Lake Powell Water Alternative would involve a combination of developing remaining available surface water and groundwater supplies, developing reverse osmosis treatment of existing low quality water supplies, and reducing residential outdoor water use in the WCWCD and CICWCD service areas. This alternative could provide a total of 86,249 acre-feet of water annually to WCWCD, CICWCD and KCWCD for M&I use without diverting Utah's water from Lake Powell.

1.3.1 WCWCD No Lake Powell Water Alternative

The WCWCD would implement other future water development projects currently planned by the District, develop additional water reuse/reclamation, and convert additional agricultural water use to M&I use as a result of urban development in agricultural areas through 2020. Remaining planned and future water supply projects through 2020 include the Ash Creek Pipeline (5,000 acre-feet per year), Crystal Creek Pipeline (2,000 acre-feet per year), and Quail Creek Reservoir Agricultural Transfer (4,000 acre-feet per year). Beginning in 2020, WCWCD would convert agricultural water to secondary use and work with St. George City to maximize existing wastewater reuse, bringing the total to 96,258 acre-feet of water supply per year versus demand of 98,427 acre-feet per year, incorporating currently mandated conservation goals. The WCWCD water supply shortage in 2037 would be 70,000 acre-feet per year, 1,000 acre-feet more than the WCWCD maximum share of the LPP water. Therefore, the WCWCD No Lake Powell Water Alternative needs to develop 69,000 acre-feet of water per year to meet comparable supply and demand requirements as the other action alternatives.

The WCWCD would develop a reverse osmosis (RO) advanced water treatment facility near the Washington Fields Diversion in Washington County, Utah to treat up to 40,000 acre-feet per year of Virgin River water with high total dissolved solids (TDS) concentration and other contaminants. The RO advanced water treatment facility would produce up to 36,279 acre-feet per year of water suitable for M&I use. The WCWCD would develop the planned Warner Valley Reservoir to store the diverted Virgin River water, which would be delivered to the RO advanced water treatment facility. The remaining 3,721 acre-feet per year of brine by-product from the RO treatment process would require evaporation and disposal meeting State of Utah water quality regulations.

The remaining needed water supply of 32,721 acre-feet per year to meet WCWCD 2037 demands would be obtained by reducing and restricting outdoor residential water use in the WCWCD service area. The Utah Division of Water Resources (UDWR) estimated 2005 culinary water use for residential outdoor watering in the communities served by WCWCD was 102 gallons per capita per day (gpcd) (UDWR 2008a). This culinary water use rate is reduced by 30.5 gpcd to account for water conservation attained from 2005 through 2020, yielding 71.5 gpcd residential outdoor water use available for conversion to other M&I uses. The equivalent water use rate reduction to generate 32,721 acre-feet per year of conservation is 56.6 gpcd for the 2037 population within the WCWCD service area. Therefore, beginning in 2020, the existing rate of residential outdoor water use would be gradually reduced and restricted to 14.9 gpcd, or an 85.4 percent reduction in residential outdoor water use.

The combined 36,279 acre-feet per year of RO product water and 32,721 acre-feet per year of reduced residential outdoor water use would equal 69,000 acre-feet per year of M&I water to help meet WCWCD demands through 2037.

1.3.2 CICWCD No Lake Powell Water Alternative

The CICWCD would implement other future groundwater development projects currently planned by the District, purchase agricultural water from willing sellers for conversion to M&I uses, and convert additional agricultural water use to M&I use as a result of urban development in agricultural areas through 2020. Remaining planned and future water supply projects through 2020 include additional groundwater development projects (3,488 acre-feet per year), agricultural conversion resulting from M&I development (3,834 acre-feet per year), and purchase agricultural water from willing sellers (295 acre-feet per year). Beginning in 2020, CICWCD would have a total 19,772 acre-feet of water supply per year versus demand of 19,477 acre-feet per year, incorporating required progressive conservation goals. The CICWCD water supply shortage in 2060 would be 11,470 acre-feet per year. Therefore, the CICWCD No Lake Powell Water Alternative needs to develop 11,470 acre-feet of water per year to meet comparable supply and demand limits as the other action alternatives.

The remaining needed water supply of 11,470 acre-feet per year to meet CICWCD 2060 demands would be obtained by reducing and restricting outdoor residential water use in the CICWCD service area. The UDWR estimated 2005 culinary water use for residential outdoor watering in the communities served by CICWCD was 84.5 gpcd (UDWR 2007). A portion of this residential outdoor water would be converted to other M&I uses. The equivalent water use rate to obtain 11,470 acre-feet per year is 67.8 gpcd for the 2060 population within the CICWCD service area. Therefore, the existing rate of residential outdoor water use would be gradually reduced and restricted to 16.7 gpcd beginning in 2023, an 80 percent reduction in the residential outdoor water use rate between 2023 and 2060. The 11,470 acre-feet per year of reduced residential outdoor water use would be used to help meet the CICWCD demands through 2060.

1.3.3 KCWCD No Lake Powell Water Alternative

The KCWCD would use existing water supplies and implement future water development projects including new groundwater production, converting agricultural water rights to M&I water rights as a result of urban development in agricultural areas, and developing water reuse/reclamation. Existing water supplies (4,039 acre-feet per year) and 1,994 acre-feet per year of new ground water under the No Lake Powell Water Alternative would meet projected M&I water demand of 6,033 acre-feet per year within the KCWCD service area through 2060. The total potential water supply for KCWCD is about 12,140 acre-feet per year (4,039 acre-feet per year existing culinary plus secondary supply, and 8,101 acre-feet per year potential for additional ground water development up to the assumed sustainable ground water yield) without agricultural conversion to M&I supply. Short-term ground water overdrafts and new storage projects (e.g., Jackson Flat Reservoir) would provide reserve water supply to meet demands during drought periods and other water emergencies.

1.4 Summary Description of the No Action Alternative

No new intake, water conveyance or hydroelectric features would be constructed or operated under the No Action Alternative. The Utah Board of Water Resources' Colorado River water rights consisting of 86,249 acre-feet per year would not be diverted from Lake Powell and would continue to flow into the Lake until the water is used for another State of Utah purpose or released according to the operating guidelines. Future population growth as projected by the Utah Governor's Office of Planning and Budget (GOPB) would continue to occur in southwest Utah until water and other potential limiting resources such as developable land, electric power, and fuel begin to curtail economic activity and population in-migration.

1.4.1 WCWCD No Action Alternative

The WCWCD would implement other future water development projects currently planned by the District, develop additional water reuse/reclamation, convert additional agricultural water use to M&I use as a result of urban development in agricultural areas, and implement advanced treatment of Virgin River water. The WCWCD could also limit water demand by mandating water conservation measures such as outdoor watering restrictions. Existing and future water supplies under the No Action Alternative would meet projected M&I water demand within the WCWCD service area through approximately 2020. The 2020 total water supply of about 96,528 acre-feet per year would include existing supplies, planned WCWCD water supply projects, wastewater reuse, transfer of Quail Creek Reservoir supplies, and future agricultural water conversion resulting from urban development of currently irrigated lands. Each future supply source would be phased in as needed to meet the M&I demand associated with the forecasted population. The No Action Alternative would not provide WCWCD with any reserve water supply (e.g., water to meet annual shortages because of drought, emergencies, and other losses).

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Maximum reuse of treated wastewater effluent for secondary supplies would be required to meet the projected M&I water demand starting in 2020. The No Action Alternative would not provide adequate water supply to meet projected water demands from 2020 through 2060. There would be a potential water shortage of approximately 139,875 acre-feet per year in 2060 under the No Action Alternative (UDWR 2008b).

1.4.2 CICWCD No Action Alternative

The CICWCD would implement future water development projects including converting agricultural water rights to M&I water rights as a result of urban development in agricultural areas, purchasing “buy and dry” agricultural water rights to meet M&I demands, and developing water reuse/reclamation. The Utah State Engineer would act to limit existing and future ground water pumping from the Cedar Valley aquifer in an amount not exceeding the assumed sustainable yield of 37,600 ac-ft per year. Existing and future water supplies under the No Action Alternative meet projected M&I water demand within the CICWCD service area during the planning period through agricultural conversion of water rights to M&I use, wastewater reuse, and implementing “buy and dry” practices on irrigated agricultural land. Each future water supply source would be phased in as needed to meet the M&I demand associated with the forecasted population. The CICWCD No Action Alternative includes buying and drying of agricultural water rights covering approximately 8,000 acres between 2005 and 2060 and/or potential future development of West Desert water because no other potential water supplies have been identified to meet unmet demand. The No Action Alternative would not provide CICWCD with any reserve water supply (e.g., water to meet annual shortages because of drought, emergencies, and other losses) after 2010 (i.e., after existing supplies would be maximized).

1.4.3 KCWCD No Action Alternative

The KCWCD would use existing water supplies and implement future water development projects including new ground water production, converting agricultural water rights to M&I water rights as a result of urban development in agricultural areas, and developing water reuse/reclamation. Existing water supplies (4,039 acre-feet per year) and 1,994 acre-feet per year of new ground water under the No Action Alternative would meet projected M&I water demand of 6,033 acre-feet per year within the KCWCD service area through 2060. The total potential water supply for KCWCD is about 12,140 acre-feet per year (4,039 acre-feet per year existing culinary plus secondary supply, and 8,101 acre-feet per year potential for additional ground water development up to the assumed sustainable ground water yield) without agricultural conversion to M&I supply. Short-term ground water overdrafts and new storage projects (e.g., Jackson Flat Reservoir) would provide reserve water supply to meet demands during drought periods and other water emergencies.

Chapter 2 Methodology

2.1 Data Used

Data for the visual resources assessment were acquired from identified and existing sources, including federal and state agencies. Acquired mapping data were coordinated with the project standard geographic information system (GIS) data system. The existing landscape character was identified during extensive field surveys and was used to assess modifications and identify key viewing points and other sensitive visual settings. The following is a list of data used for this assessment:

- Bureau of Land Management Visual Resource Management classes
- Relevant federal, state and local management plans
- Scenic byways and roads application reports and related corridor management plans
- Existing and planned recreation areas (e.g., campgrounds, trails) in proposed project areas
- Wilderness and Wilderness Study Areas
- Landownership—public (federal, state local) versus private—and land jurisdiction information
- Existing and planned roads
- Digital elevation model for project area

2.2 Assumptions

This report represents an assessment of the visual landscape on a general basis. Changes in the visual setting because of time of day and seasonal lighting changes, variable atmospheric conditions or other factors are not evaluated. It is also assumed that the communities within the project area would continue to develop in a manner similar to the existing land use patterns. However, the growth rate and ultimate land use patterns cannot be known, and future land use changes were not specifically considered in the evaluation of potential project impacts on the visual setting.

2.3 Impact Analysis Methodology

Impacts on scenic or visual resources refer to the change in aesthetic values resulting from modifications to the landscape. Impacts were assessed in terms of visual character, visual elements and visual patterns—with respect to the anticipated magnitude of change in landscape character. Visual character is the overall impression created by individual elements and overall patterns. Visual elements, such as form, line, color and texture, are the attributes of the visible landscape and proposed project. Visual patterns result from the presence or absence and the arrangement of individual elements within a landscape. The landscape character of the project area varies because of changes in landscape components and their patterns. The anticipated magnitude of change in landscape character and the visibility of the proposed alternatives were evaluated, taking into account the varying levels of visual sensitivity within the project area.

2.3.1 Visual Resource Methodology

The primary methodology for evaluating visual impacts in this assessment was based on the Visual Resource Management (VRM) system, as identified in the Bureau of Land Management (BLM) *VRM Manual 8400*. The VRM system begins with an inventory of scenic values and establishment of management objectives for those values. Proposed activities are then evaluated according to their conformance with the management objectives. The VRM system was developed to minimize the visual impacts of surface-disturbing activities and to maintain scenic values.

The VRM system includes a Visual Resource Contrast Rating System (BLM Handbook 8431-1). The degree to which a management activity affects the visual quality of a landscape mostly depends on visual contrast; the rating system was used to evaluate visual contrast between the proposed project and the existing landscape. The contrast can be measured by comparing project features or components with major landscape features. The basic visual elements of form, line, color and texture were used to make this comparison and to describe the magnitude of visual contrast created by the proposed project. Contrast rating evaluations were conducted from key observation points (KOPs) within the project area. The KOPs include both “point” KOPs and “linear” KOPs. Point KOPs are stationary viewing points; linear KOPs are linear platforms, such as adjacent road segments from which the project area would be visible. The KOPs were coordinated with the BLM field offices and the National Park Service (NPS). A total of 42 KOPs were identified as visually sensitive locations within the project area. Visually sensitive areas are those in which the maintenance of scenic quality is of considerable public concern.

Simulations of the project and associated components were also used to evaluate impacts on and visibility from areas with high visual sensitivity. Computer-generated simulations were prepared for the most critical KOPs, as coordinated with the BLM and the NPS. The most critical KOPs were considered to be those of greatest visual sensitivity. A set of three images was developed for each viewing point to depict existing and potential visual conditions as closely as possible: the first image depicts the existing condition; the second depicts proposed changes immediately after construction; and the third depicts visual conditions approximately 5 to 10 years after construction. The visual simulations, along with corresponding contrast rating forms, are included in Appendix C.

Distance zones were used in this assessment to differentiate the degree of detail that can be seen over varying distances. Distance zones are based on the distance between the project location and adjacent viewpoints. The distance zones were classified as foreground (0 feet to 0.5 mile) and middleground (0.5 to 5.0 miles). No background-zone visibility analysis, except for general qualitative assessment, was done. The distance zones were applied to the visibility analysis to determine each alternative’s general level of visibility within each distance zone. Typically, people view foreground changes more critically than middleground changes because people can perceive greater detail the closer they are to landscape features.

In addition, methodology concepts from the U.S. Forest Service’s *National Forest Management–Roads* manual were used to evaluate landscape modification throughout the project and to identify areas of modification based on slope heights, visibility, and angle and duration of view. Principles from the manual were also used in development of mitigation measures to reduce potential visual impacts.

The assessment of impacts on scenic roads and byways is based on the Federal Highway Administration’s National Scenic Byway Program and by the Arizona Department of Transportation and the Utah Office of Tourism. A determination of the change in scenic quality from existing conditions to post-project conditions was made for each location where the alternatives would be visible within foreground and middleground distance zones. Visual quality of the landscape was evaluated based on vividness, intactness and unity—and on whether these characteristics would be maintained for each scenic route. Determinations regarding consistency with scenic

route designations were based on whether or not a high level of visual quality and other intrinsic qualities required for designation would be maintained after the proposed project construction.

The assessment of impacts on scenic roads and byways is described as the qualitative change in scenic quality from existing conditions to post-project conditions. A determination of the change in scenic quality was made for each location where the alternatives would be visible within foreground and middleground distance zones. Visual quality of the landscape was evaluated on whether the existing landscape setting would be noticeably altered and whether the existing visual characteristics would be maintained for each scenic route. Determinations regarding consistency with scenic route designations were based on whether or not the impacts from the project would lower the scenic quality of the routes below the threshold for their designation.

2.3.2 Magnitude of Change in Landscape Character

Construction and maintenance impacts of the project on visual character are described in terms of the magnitude of change to existing visual elements and patterns from existing visual conditions. An analysis of visual dominance, scale, continuity, and contrast was used to determine the degree to which the project and associated surface facilities would attract attention and to assess the relative change in landscape character compared with the existing character. The basic design elements of form, line, color and texture were used to make this comparison and to describe the visual contrast created by the project. Consideration of the amount of visual contrast created was directly related to the amount of attention drawn to a landscape element.

Visual assessment units (VAUs) were determined based on changes in the existing terrain, vegetation and land use elements along the pipeline alignment. For this assessment, change in visual character was based on comparing post-project conditions with existing visual elements and patterns within the VAUs. The evaluation of the change in visual character was based on the magnitude of change, as described in Table 2-1.

Table 2-1	
Magnitude of Change in Landscape Character	
Rating	Definition
Very Low	Landscape character remains intact with no apparent change to existing visual elements (line, form, color and texture) or pattern character (dominance, scale, diversity and continuity) in the landscape.
Low	Magnitude of change to existing landscape character is subtle, and changes in visual pattern elements or pattern character do not attract attention.
Moderate	Magnitude of change to existing landscape character is noticeable, and changes in visual pattern elements or pattern character attract attention.
High	Magnitude of change to existing landscape character is substantial, and changes in visual pattern elements or pattern character begin to dominate the landscape
Source: Logan Simpson Design Inc.	

Each VAU was described in terms of its existing visual characteristics and the potential impacts from project construction. Each VAU was also evaluated by viewer position and distance zone. Viewer position affects the perception of the degree to which elements and patterns dominate a landscape. Within the foreground distance zone, three viewer positions of the project were identified relative to the landscape: parallel or tangential views,

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head-on views, and intersecting views. Head-on views can be from either a superior (above) or an inferior (below) viewer position. Intersecting views refer to the perpendicular crossing of the project. The angle of view also influences a person's level of scrutiny of the landscape: the more direct the angle of view (head-on), the sharper and clearer the details.

2.3.3 Visibility of Project

Changes to the landscape from existing conditions to post-project conditions within the analysis area were considered based on their potential visibility. The slope of the surrounding terrain where the pipeline would be located is important to the visibility of the alternatives. Slope refers to the steepness of the ground surface. Slopes that rise above the elevation of the viewer are generally more visible. The steeper the ascending slope, the more visible the landscape is to the viewer and the more sensitive the land is to alterations. Slopes that descend below the height of the viewer are generally less visible. As these slopes steepen, the landscape becomes obstructed by the slope and is therefore less sensitive to alteration. Slopes also influence the effectiveness of vegetative screening, because the elevational changes associated with the slopes directly affect the height of the land and, in turn, the apparent height of the vegetation. Ascending slopes decrease the effectiveness of vegetative screening, and descending slopes increase the effectiveness. No distinctions were made regarding the orientation or aspect of the slopes where the alternatives would be constructed. In the scenic resources impact analysis, potential impacts on north-facing slopes were considered to be identical to those on south-facing slopes. However, the existing landscape would likely experience different revegetation successes depending on slope orientation. Existing vegetation may also be taller and denser on north-facing slopes. In addition, the orientation of the viewer to the slope faces was not considered. In general, slope faces obliquely oriented to the viewer have varying degrees of decreasing visibility, depending on the relative deviation from a straight-on view.

Visibility analyses were performed using ArcView Spatial Analyst. The analyses included a pipeline alignment alternatives analysis (Appendix D), a proposed building analysis (Appendix E), and a linear KOP analysis (Appendix F). The analyses identified all areas visible within the foreground and middleground distance zones. A gradational representation was included for the pipeline alignment alternatives analysis and proposed building analysis, representing the relative degree to which each area could be seen. The maps for the IPS, BPS-1, BPS-2, BPS-3, and BPS-4 in Appendix E also include a color variation to indicate the increased visibility of the buildings in the Natural Gas Supply Line and Generators Alternative. The increased visibility is based on an additional height of 20 feet above the buildings, representing the approximate amount of the exhaust stacks considered to be distinguishable.

The analyses for the linear KOPs graphically represent the segments of the project that would be visible from the linear KOPs. Linear KOPs that closely parallel the project were not analyzed since they would be almost constantly visible. Several linear features, such as historic trails, were not analyzed because the trail locations are only approximate representations of the trails that were historically used.

The visibility analyses identified where the pipeline would be visible if no vegetation or structures were to screen the pipeline. These analyses, based on a "bald" landscape, reflect the worst-case scenario in determining the potential scenic impacts. Existing vegetation would help considerably to minimize impacts on the scenic resources by screening views to and from the built alternatives.

Impacts from the built alternatives were also evaluated in terms of impacts over time. For this assessment, short-term impacts are effects that would be visible immediately after construction. Long-term impacts are impacts that would persist for the life of the project. The visual simulations approximately depict the visibility of long-term impacts after 5 to 10 years.

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3.1 Impact Area

3.1.1 Regional Setting

The project area is located in southern Utah and northern Arizona, within an elevation range of approximately 2,900 to 7,400 feet above mean sea level. The project would begin near Glen Canyon Dam on the north side of Lake Powell in Page, Arizona, and generally follow U.S. 89 to near Kanab, Utah (Figure 3-1). The project would extend southwest through Arizona and then back into Utah to the termination of the Lake Powell Pipeline portion near Hurricane, Utah. A secondary pipeline would extend through several small communities and generally follow I-15 to Cedar City, Utah.

The visual setting is influenced by the major landforms, geology and vegetation communities found along the project alignment. The project would be primarily located within the Colorado Plateau physiographic province, a generally high, flat region carved into soaring mesas, deeply incised plateaus, abrupt vertical escarpments, layered terraces, unique valleys, badlands, buttes, hills, dunes, rugged canyons, and isolated mountain range uplifts. The remainder of the project area would be within the Transition physiographic province. This area is characterized by a mixture of features from both the Colorado Plateau and the Basin and Range physiographic provinces. The Basin and Range features appearing in the Transition province consist of fault-tilted mountain ranges separated by broad sediment-filled basins (2009).

The project area would begin approximately 0.35 mile north of the Glen Canyon Dam, at the west edge of Lake Powell near Page, Arizona. The project would immediately split into two separate alignments: the pipeline would be located in the northern alignment, and the transmission lines would be located in the southern alignment. The alignments would proceed northwest over a wide bench eroded in soft Jurassic rocks that overlie the Navajo sandstone cliffs west of Lake Powell (Chronic 1983). The southern alignment would be located in the same land formations approximately 3 to 4 miles south of the northern alignment, along the existing Navajo-McCullough transmission lines. The alignments would pass by layered sandstone cliff faces and talus slopes, sand dunes, candy-striped Chinle badlands and the Paria River—eventually reaching the East Kaibab monocline, as evidenced by the steeply tilted Triassic and Jurassic strata of the Cockscomb. Approximately 5 miles west of the Cockscomb, the southern alignment would join the northern alignment to form a single alignment. Continuing westward, the alignment would traverse Paunsaugunt Fault, at which point the alignment would be located closer to Vermilion Cliffs. The alignment would split again into north and south alignments in the Telegraph Flat area; the southern alignment would be the proposed alignment, and the northern alignment would be the High Point Highway Alternative. The alignments would rejoin, only to split again to the east of Kanab, Utah. The Existing Highway Alternative would be located in the northern alignment and the South Alternative would be located in the southern alignment; the Southeast Alternative would follow a third alignment near the southeast corner of the Kaibab Indian Reservation. The alignments would rejoin to form a single alignment west of the reservation and would then extend to The Divide landform before passing through Hurricane Cliffs, which delineate Hurricane Fault and the edge of the Colorado Plateau (Chronic 1990). From this point, the alignments would extend westward to the existing Sand Hollow Reservoir.

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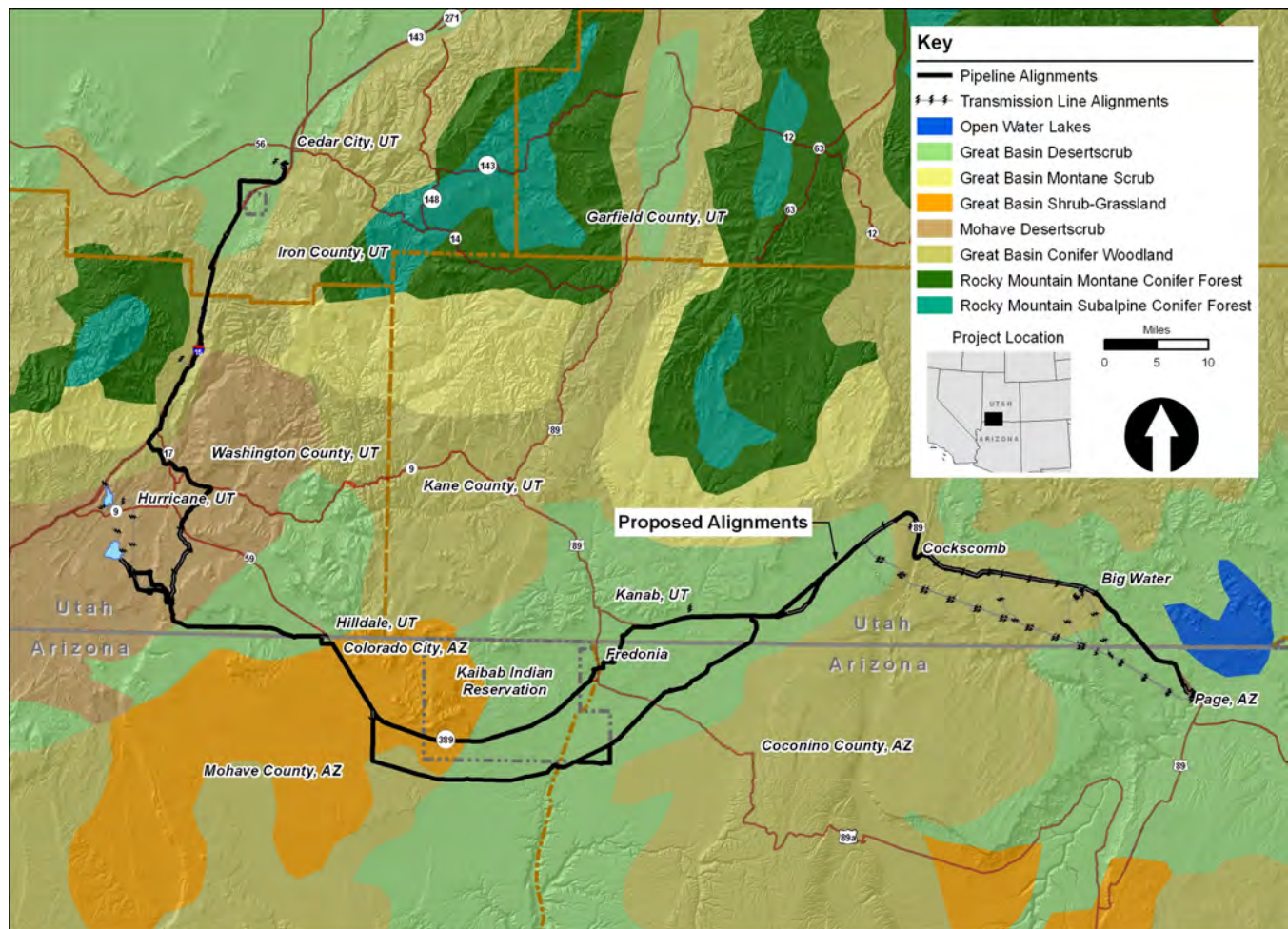


Figure 3-1
Biotic Communities Map

The project alignment would continue from The Divide landform northward; the Cedar Valley Pipeline System would be located in this alignment. The alignment would extend through Frog Hollow, slowly descending the Kaibab limestone and basalt flows that make up Hurricane Cliffs. Continuing northward, the alignment would follow Ash Creek, with the Pine Valley Mountains—formed by the Pine Valley laccolith—rising high to the west of the alignment. The alignment would then continue northward through Cedar Valley and terminate within the southern limits of Cedar City, Utah.

The project would traverse several biotic communities (Figure 3-1), which are described below from east to west. The biotic communities along the proposed alignments appear in patterns based on elevation, orientation and precipitation. The eastern end of the project would begin in the Great Basin Desertscrub community. This community is associated with sagebrush, saltbush, winterfat, rabbitbrush, blackbrush, greasewood, Mormon tea, hopsage, horsebrush, yucca and a few cacti such as cholla, prickly pear, and hedgehog. The dominant species in this portion of the project are sagebrush and blackbrush, which begin in a low and stippled-to-sparse pattern. Moving westward, the vegetation quickly transitions to a more evenly stippled pattern, and the general height of vegetation increases. The Great Basin Conifer Woodland community begins near Milepost (MP) 5 on U.S. 89 in Utah. This community is characterized by juniper and pinyon, along with an understory of Great Basin Desertscrub species such as sagebrush, rabbitbrush, winterfat, shadscale and blackbrush. The juniper and pinyon

begin sparsely, becoming more dense and even near the Cockscomb. Near MP 32 on U.S. 89 in Utah, the Great Basin Desertscrub community reappears and extends to approximately MP 18 on State Route (SR) 389. The dominant species in this area is sagebrush, which begins at a moderate height with a dense, even cover and transitions to a more sparse cover of shorter stature. The next community crossed by the project is the Great Basin Shrub-Grassland, which is typified by grasses such as blue grama, buffalo grass, Indian ricegrass, prairie junegrass, plains lovegrass, and alkali sacaton and by shrub and cactus species such as sagebrush, saltbush, winterfat, cholla, rabbitbrush, and snakeweed. The grasses become dominant in this area, with scattered sagebrush, pinyon, and juniper. The Great Basin Desertscrub community appears for the third time near MP 1 on SR 389 and generally consists of dense sagebrush stands with scattered to clumped pinyon and juniper. This community extends from Colorado City, through the Canaan Gap and down Short Creek to the southwest corner of Little Creek Mountain. At this point, the biotic community transitions to Mohave desertscrub, which is associated with creosotebush, all-scale, brittlebush, desert holly, white burrobrush, shadscale and blackbrush (1994a). Species dominance in this area begins as blackbrush and snakeweed high atop Hurricane Cliffs and transitions to creosotebush below the cliffs. Near MP 20 on I-15, the Great Basin Conifer Woodland reappears and extends northward to approximately MP 45. Pinyon and juniper are dominant species, ranging from dense stands to sparse or clumped stands with sagebrush-dominated understory. The final transition is back to the Great Basin Desertscrub community, which takes place in the Cedar Valley. This area is dominated by thick stands of sagebrush, though only in small tracts since agricultural fields dominate the valley.

3.1.2 Cultural Context

The project would traverse five counties: Kane, Washington and Iron counties in Utah and Coconino and Mohave counties in Arizona. Approximately half of the land that the project alignments pass through is federally-owned and federally-managed, and the remaining land is under state, county, tribal, or private ownership. Of the federally-owned land, the majority is managed by the Bureau of Land Management (BLM). The project would be located within five BLM field offices: Grand Staircase-Escalante National Monument, Kanab, Arizona Strip, St. George and Cedar City. The NPS manages most of the remaining federal land, which is located within the Glen Canyon National Recreation Area. The Bureau of Reclamation manages a small parcel within the Glen Canyon National Recreation Area, which is the proposed location for the intake pump station. State land within the project area includes Sand Hollow State Park, a major recreational draw in the Hurricane, Utah, area. The Existing Highway Alternative alignment would cross the Kaibab Indian Reservation; tribal land would account for less than 10 percent of the project area.

Four visitor centers and two welcome centers/rest areas are within the project area. The Carl Hayden Visitor Center, and the GSENM Big Water Visitor Center are located along U.S. 89 on the east end of the project. The various transmission line alignments lie north, west and south of the Carl Hayden Visitor Center, which is located directly west of Glen Canyon Dam in the Glen Canyon National Recreation Area. The pipeline alignment along U.S. 89 in Utah would directly pass the GSENM Big Water Visitor Center, near MP 7.4, and the Paria Contact Station, near MP 20.7. The route of the South Alternative alignment would be located adjacent to the Fredonia Welcome Center/Rest Area, near MP 610.4 on U.S. 89A in Arizona. The Cedar Valley Pipeline System alignment would traverse the landscape near the Kolob Canyons Visitor Center in Zion National Park and near a rest area near MP 44.5 on I-15 in Utah.

The project would also pass three designated trailheads. The Toadstools Trailhead, is located along U.S. 89 in the Grand Staircase-Escalante National Monument. Toadstools Trailhead is located in the Rimrocks area near MP 19.3, and Catstair Canyon Trailhead is visible at the base of the Cockscomb, near MP 24.4. There are also Great Western Trailheads along U.S. 89, near MP 43.2. One is on the north side of the highway and the other is

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on the south side, within GSENM.. The last trailhead is Nephi's Twist Trailhead, which is located alongside La Verkin Creek, on the east side of Toquerville, Utah. The Cedar Valley Pipeline System alignment would follow Nephi's Twist trail between SR 9 and Toquerville.

Several interpretive sites, monuments and stopping areas are near the project. Beginning on the east end of the project, the GSENM passage zone wayside stop is at the Cottonwood Road junction near MP 17.7. There is an interpretive site on House Rock Valley Road visible from U.S. 89, near MP 25.5, and then the project would pass by the Old Paria Historic Marker at the intersection of the Road to Paria and U.S. 89, near MP 30.6. The project would subsequently traverse past the Vermilion Cliffs Highway Interpretive Site, along SR389 near MP 8.7. Further west, the Cedar Valley Pipeline alignment would pass Fort Harmony near MP 42.0 on I-15. The alignment would then pass the Escalante Interpretive Site, approximately 0.6 mile east of the Cedar Valley Pipeline alignment, near MP 44.9 on I-15.

There is one designated scenic overlook in the project area. The Wahweap Scenic Overlook is approximately 0.6 mile northeast of the project, where the project would parallel U.S. 89 near MP 552.3. The overlook offers visitors panoramic views of Lake Powell and its surrounding landscape and rock formations. Many undesignated scenic overlooks also exist throughout the project alignments, including those from Shinarump Cliffs and from Little Creek Mountain. The undesignated overlooks are generally accessible from a variety of unpaved roads and trails.

A variety of other important features are also located near the project alignments, including three designated wilderness areas: Paria Canyon–Vermilion Cliffs (directly south of the transmission line alignments); Cottonwood Point (north and east of the project alignment, near Colorado City, Arizona); and Pine Valley Mountain (east of the project alignment paralleling I-15). Six wilderness study areas are located near the project: Wahweap (north of the project, near East Clark Bench); Cockscomb (north of the project, just east of the Cockscomb landform); Paria-Hackberry (north of the project, near the Old Paria Historic Marker); Canaan Mountain (north of the project, near Colorado City, Arizona); Cottonwood (northwest of the project, near Sand Hollow State Park); and Spring Creek Canyon (east of the project, south of Cedar City, Utah). Other notable features adjacent to the project include Pipe Spring National Monument, Dixie National Forest and Zion National Park.

While the majority of land along the project is undeveloped, communities of highly variable architectural character are found throughout the project area, ranging from sparse rural ranching areas to higher-density urban areas. The largest city is Cedar City, with a population of approximately 20,500, followed by Hurricane and Page, with populations of approximately 13,300 and 7,000 respectively. Colorado City and Kanab have populations of around 4,000 while the smaller communities along the alignments including Big Water, Fredonia, Hildale, La Verkin, Leeds, Toquerville, Kanarraville and New Harmony—are all have less than 2,000 residents. The majority of the populated areas are located in the western third of the project area because the remaining portion of the project area is dominated by federal and tribal land.

Aside from the general cultural modifications associated with the urban and rural developments, an assortment of human-made features and modifications associated with roads, utilities and resources are also visible throughout the project area. Road-related features include bridges, road cuts and fills, traffic interchanges, Jersey barriers, streetlights, directional and informational signage, fences and guardrails. Features associated with utilities and resources include dams; reservoirs; sewage ponds; water tanks and towers; quarries; a power plant; cell and radio towers; electrical substations; a water capture area; and a variety of power lines, poles and towers.

The project would follow several key transportation corridors for both commercial and recreational travel. U.S. 89 extends from Flagstaff through Page and Kanab before continuing past Glacier National Park to the Canadian

border. The project would parallel U.S. 89 for more than 60 miles, crossing the roadway twice in the Cockscomb (approximately MP 24.4 and MP 25.4) and once near the proposed water treatment facility in Kanab (approximately MP 54.6). A portion of the Existing Highway Alternative would follow SR 389 for over 30 miles, with one crossing near MP 0.9. The Cedar Valley Pipeline System alignment would parallel two key transportation corridors: SR 9 (Zion Park Scenic Byway) and I-15. The Cedar Valley Pipeline alignment would follow SR 9 for approximately 3 miles, with one crossing near MP 17.4. This alignment would generally parallel I-15 for more than 30 miles, intermittently diverging slightly from the roadway alignment to avoid large landforms or agricultural areas. The project alignments would also cross several other transportation corridors, including SR 17, SR 59 and U.S. 89A. The South Alternative alignment would cross U.S. 89A within a portion of the roadway designated as the Fredonia–Vermilion Cliffs Scenic Road. The Existing Highway Alternative, conversely, would cross U.S. 89A in Fredonia where the road is not designated as a scenic road. Many recreational and tourist attractions in Arizona and Utah are accessible from these transportation corridors, including Glen Canyon National Recreation Area, Grand Staircase-Escalante National Monument, Bryce Canyon National Park, Zion National Park, Grand Canyon-Parashant National Monument, Dixie National Forest, Pine Valley Wilderness, Paria Canyon–Vermilion Cliffs Wilderness, Vermilion Cliffs National Monument, Kaibab National Forest, Sand Hollow State Park, Quail Creek State Park, and Coral Pink Sand Dunes State Park.

3.2 Overview

3.2.1 Existing Visual Resources

The landscape components of landform, water features, vegetation types and cultural modifications provide the basis for the definition of visual resources. The character of the existing visual resources in the project area varies because of the changes in landscape elements and their patterns. Changes in pattern elements are associated with the visual attributes of objects—form, line, color and texture. The ability to discern these elements primarily depends on distance. For this assessment, the foreground distance zone is defined as the area up to 0.5 mile from the project, and the middleground distance zone is the area from 0.5 mile to 5.0 miles.

3.2.2 Existing Visual Character

In evaluating the project area, notable changes in the dominant terrain, vegetation and land use resulted in the identification of 28 distinct VAUs within the project area (Appendix A). The visual character of the project area is described by these units from east to west, with MPs noted where relevant (Table 3-2).

3.3 Visual Management Objectives

The potential effect on visual resources, as well as other resources, from any activities occurring on federally-managed land within the project area must be considered. Agencies such as the BLM have programs for evaluating the existing visual landscape and determining the ability of an activity or project to meet the goals of that program. The BLM's program, along with specific objectives for the project area, is described below.

3.3.1 Bureau of Land Management Visual Resource Management

The BLM's responsibility for managing scenic resources on public land under its jurisdiction is emphasized by the agency's mission statement: "It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations." The

Chapter 3. Affected Environment

BLM's ongoing policy is to provide basic stewardship responsibility to identify and protect visual resources on all BLM land and is described in the *BLM Manual Section 8400—Visual Resources Management*. The BLM's VRM System addresses the issue that different levels of scenic value require different levels of management and that assessing scenic values and determining visual impacts is a subjective process. The VRM System also provides a framework for the following:

- Identifying and evaluating scenic values to determine the appropriate level of management
- Analyzing potential visual impacts and the application of visual design techniques to ensure that surface disturbances blend effectively into their surroundings

In the VRM process, the resource management plans assign VRM classes to land within each field office's jurisdiction. Each management class has an objective statement that determines the approach for assessing the impacts of activities on visual resources. The objectives, as described in the BLM VRM manual, are listed below. VRM classes for the project area are shown in Figure 3-2 and Table 3-1 shows the approximate percentage of each VRM class that would be crossed by the project.

Class I

The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes but does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

Class II

The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color and texture found in the predominant natural features of the characteristic landscape.

Class III

The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the casual observer's view. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Class IV

The objective of this class is to provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention.

Table 3-1		
VRM Classes Crossed by Project Pipeline Alignments		
VRM Class	Approximate distance in miles	Approximate percentage of total
South Alternative		
II	18.9	9%
III	61.0	30%
IV	64.2	32%
Existing Highway Alternative		
II	16.4	8%
III	73.9	38%
IV	32.7	17%
Southeast Corner Alternative		
II	19.0	10%
III	58.7	30%
IV	63.2	32%

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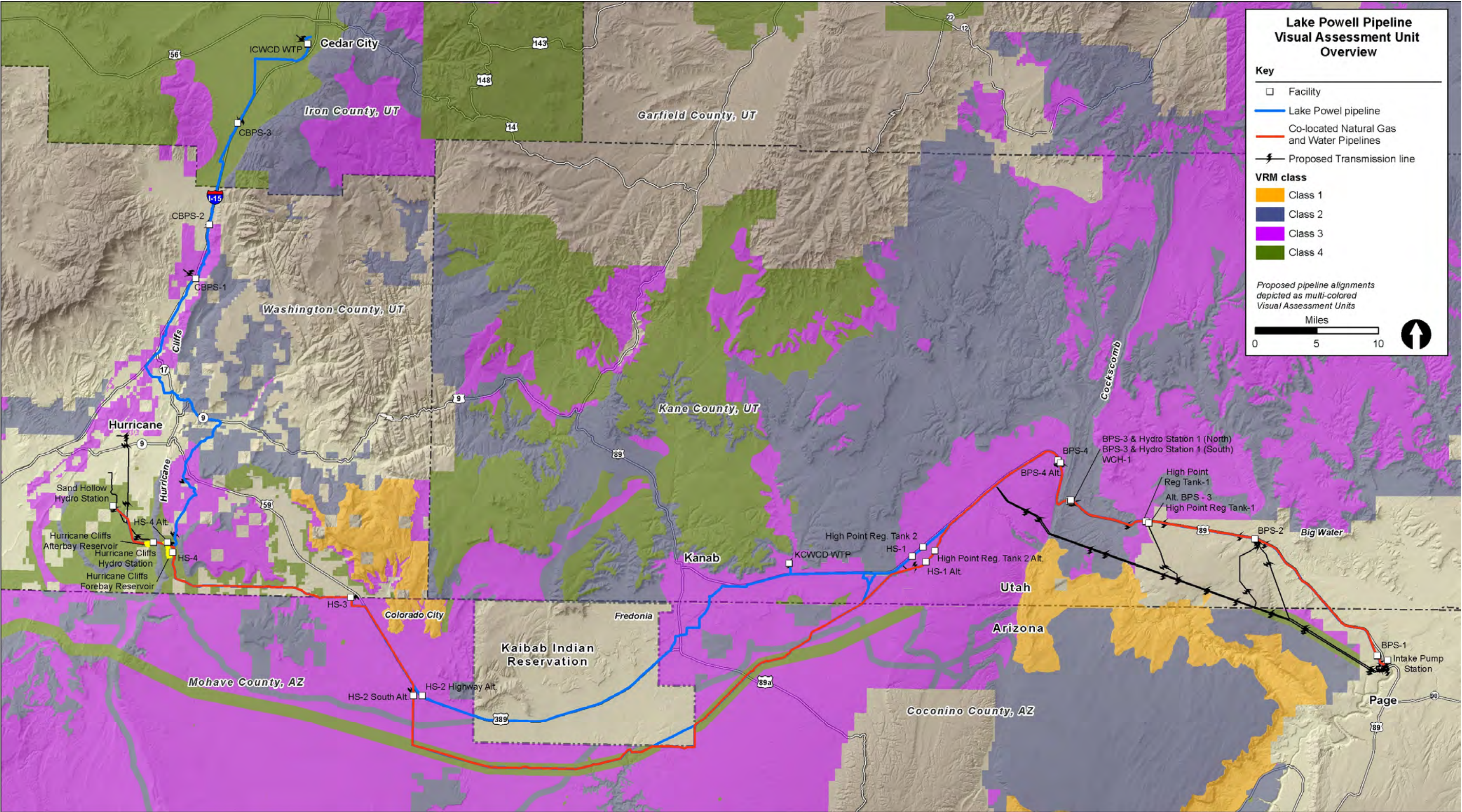










Figure 3-2
Visual Assessment Unit Overview

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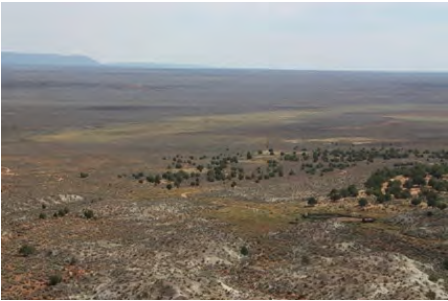


Table 3-2 Visual Assessment Units			
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Visual Assessment Unit	Landform/Topography/Water	Vegetation	Other Features
1. Lake Powell/Glen Canyon 	<ul style="list-style-type: none">• Form: Rolling, undulating terrain; steep, abrupt cliff faces• Line: Undulating, horizontal, angled, rounded, vertical• Color: Brown, reddish orange and grayish white; deep blue-green water of lake and river surface• Texture: Fine sandy soils; coarse, striated, blocky rock formations• Distinct Natural Features Visible: Glen Canyon, Colorado River, Tower Butte, Navajo Mountain and Antelope Point/Island	<ul style="list-style-type: none">• Representative Species: Sage, snakeweed, blackbrush, prickly pear, Mormon tea and grasses• Height: Low (approx. 0 to 5 feet high)• Texture/Pattern: Medium in foreground; medium to fine in middleground; sparse to stippled• Colors: Greens and blue-grays; seasonal colors	<ul style="list-style-type: none">• Enclosure: Weak to none• Views: Primarily vast and panoramic• Land Use: Highly variable; primarily recreational but also residential to commercial and light industrial• Ownership: Mostly federal (National Park Service [NPS], Glen Canyon National Recreation Area [GCNRA]); also Bureau of Reclamation (Reclamation), state and private• Distinct Cultural Modifications: Glen Canyon Dam and Bridge; Lake Powell; Carl Hayden Visitor Center; Glen Canyon Substation; transmission lines/towers; Page, Arizona, roads and parking facilities; signage; Arizona Department of Transportation maintenance facility; small residential developments• Adjacent Scenery: Greatly enhances overall visual quality• Scarcity: Distinctive within the region
2. Wahweap 	<ul style="list-style-type: none">• Form: Flat to rolling terrain; high, steep cliff faces and buttes; narrow washes• Line: Horizontal, undulating; angled, vertical in cliffs• Color: Beige, reddish orange and grayish white• Texture: Fine, sandy soils; coarse, blocky cliffs and buttes• Distinct Natural Features Visible: Wahweap Bay, Stud Horse Point and Lone Rock	<ul style="list-style-type: none">• Representative Species: Sage, snakeweed, blackbrush, prickly pear, Mormon tea and grasses• Height: Low• Texture/Pattern: Medium in foreground; medium to fine in middleground; stippled, sometimes dense• Colors: Greens and blue-grays; seasonal colors	<ul style="list-style-type: none">• Enclosure: Weak to moderate• Views: Mostly panoramic• Land Use: Primarily open and undisturbed; minor rural development• Ownership: Mostly federal (NPS, GCNRA; some Reclamation); also state and private• Distinct Cultural Modifications: Small, rural development, signage, billboards, fences and transmission lines and towers• Adjacent Scenery: Greatly enhances overall visual quality• Scarcity: Interesting, but fairly common in the region
3. Big Water 	<ul style="list-style-type: none">• Form: Rolling terrain; high cliffs to north, within 1.5 miles of alignment; medium-sized rock formations and cliffs to south in foreground and middleground; narrow washes• Line: Horizontal, flowing; vertical, angled, undulating in cliff and rock forms• Color: Beige, reddish orange and grayish white• Texture: Fine, sandy soils; coarse, striated, blocky cliffs and buttes; vertical cliff fissures; angled talus slopes• Distinct Natural Features Visible: Straight Cliffs, Jacobs Tank Draw, Haycock and Mustard Points, and Three Pigs	<ul style="list-style-type: none">• Representative Species: Sage, blackbrush, saltbush, Mormon tea, yucca, snakeweed and grasses; scattered pinyon and juniper• Height: Low (approx. 0 to 5 feet high) to medium (approx. 5 to 20 feet high)• Texture/Pattern: Medium to coarse; relatively even, stippled• Colors: Greens and blue-grays; seasonal colors	<ul style="list-style-type: none">• Enclosure: Moderate to weak• Views: Panoramic views; expansive to east toward Lake Powell• Land Use: Primarily undeveloped; some rural development• Ownership: Primarily state; also private and federal (Reclamation)• Distinct Cultural Modifications: Businesses and residential development (Big Water, Utah), information/direction signs, billboards, fences, utility poles and water tank• Adjacent Scenery: Greatly enhances overall visual quality• Scarcity: Interesting, but fairly common in the region
4. East Clark Bench 	<ul style="list-style-type: none">• Form: Flat to slightly rolling terrain; high cliffs to north in background; flat to rolling terrain to south• Line: Horizontal, flowing; vertical in distant cliffs• Color: Brown/beige, reddish orange and grayish white• Texture: Fine, sandy soils; striated, blocky coarse cliffs• Distinct Natural Features Visible: East Clark Bench, Buck Tank Draw and Cedar Hollow	<ul style="list-style-type: none">• Representative Species: Sage, blackbrush, saltbush, Mormon tea, yucca, snakeweed and high occurrence of grasses; scattered pinyon and juniper• Height: Low• Texture/Pattern: Medium in foreground; fine in background; relatively dense and even• Colors: Greens and blue-grays; seasonal colors such as buff-colored grasses	<ul style="list-style-type: none">• Enclosure: Weak• Views: Open, panoramic views; views to west terminated by Cockscomb Formation and Buckskin Mountain• Land Use: Mostly undeveloped; small, isolated rural growth• Ownership: Primarily state; also private and federal (Bureau of Land Management [BLM])• Distinct Cultural Modifications: Two rural residential developments, information/direction signs, utility poles, fences and guardrails• Adjacent Scenery: Enhances overall visual quality• Scarcity: Common in the region

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Table 3–2 Visual Assessment Units			
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Visual Assessment Unit	Landform/Topography/Water	Vegetation	Other Features
<div>5. Rimrocks/Paria River Valley</div> <div></div>	<ul style="list-style-type: none">• Form: Paria River Valley consisting of gently rolling terrain; candy-striped badland rock formations; and blocky, striated cliffs and buttes• Line: Horizontal, flowing; angled, undulating, rounded in badlands, with horizontal striations• Color: Brown/beige, orange, red, and grayish white• Texture: Fine to medium sandy soils; coarse rock formations• Distinct Natural Features Visible: Paria River, Rimrocks, Cockscomb Formation (in foreground, to the west), Long Canyon and West and East Coves	<ul style="list-style-type: none">• Representative Species: Sage, saltbush, Mormon tea, yucca, snakeweed and grasses; scattered pinyon and juniper; poplar and tamarisk along river• Height: Low to medium• Texture/Pattern: Medium to fine in foreground and in dominant stands of sage and grass; coarse in areas of dark-green pinyon and juniper; irregular to stippled• Colors: Greens and blue-grays; seasonal colors	<ul style="list-style-type: none">• Enclosure: Moderate• Views: Primarily limited to foreground and middleground• Land Use: Mostly undeveloped• Ownership: Primarily federal (BLM, Grand Staircase-Escalante National Monument [GSENM]); also private• Distinct Cultural Modifications: Paria Contact Station, gravel pit, residential dwellings, agricultural fields, information/direction signs, billboards, and highway utility poles, fences and guardrails• Adjacent Scenery: Greatly enhances overall visual quality• Scarcity: Distinctive, though somewhat similar to other areas in region
<div>6. Cockscomb</div> <div></div>	<ul style="list-style-type: none">• Form: High, steeply tilted rock formations and roadway cut-slopes• Line: Vertical, angular, undulating, jagged• Color: Brown/beige, orange, red and grayish white• Texture: Coarse texture; jagged boulders and steeply uplifted sedimentary rock layers• Distinct Natural Features Visible: Cockscomb Formation	<ul style="list-style-type: none">• Representative Species: Sage, snakeweed, blackbrush, Mormon tea and grasses; pinyon and juniper• Height: Low to medium• Texture/Pattern: Coarse in foreground; coarse to medium in background; mottled to stippled and scattered• Colors: Greens and blue-grays; seasonal colors	<ul style="list-style-type: none">• Enclosure: High to moderately high• Views: Primarily limited to foreground• Land Use: Mostly undeveloped• Ownership: Federal (BLM, GSENM)• Distinct Cultural Modifications: Roadway and associated rock cut-faces• Adjacent Scenery: Greatly enhances overall visual quality• Scarcity: Distinctive in the region
<div>7. Fivemile Valley</div> <div></div>	<ul style="list-style-type: none">• Form: Large, rounded mountain to west; jagged, uplifted Cockscomb Formation to east; stair-stepped cliffs of Grand Staircase-Escalante National Monument in distance to north• Line: Horizontal, flowing in valley; rounded, vertical, angled, jagged in mountain/Cockscomb forms• Color: Brown/beige, yellow, orange, and deep vermilion red• Texture: Medium to coarse• Distinct Natural Features Visible: Cockscomb Formation (in foreground, to the east), Fivemile Valley, Fivemile Mountain and Sand Gulch	<ul style="list-style-type: none">• Representative Species: Sage, Mormon tea, snakeweed, saltbush and grasses; pinyon and juniper• Height: Low to medium• Texture/Pattern: Generally medium to fine in foreground and in dominant stands of sage and grass; coarse in areas of dark-green pinyon and juniper; random, stippled• Colors: Greens and blue-grays; seasonal colors	<ul style="list-style-type: none">• Enclosure: Moderately high• Views: Primarily limited to foreground to east and west; open up to background• Land Use: Relatively undeveloped; Paria Substation• Ownership: Mixture of private and federal (BLM, GSENM)• Distinct Cultural Modifications: Utility poles, towers, lines and fences; guardrails; information/direction signs; interpretive site on House Rock Valley Road• Adjacent Scenery: Greatly enhances overall visual quality• Scarcity: Interesting, but fairly common in the region
<div>8. Telegraph Flat</div> <div></div>	<ul style="list-style-type: none">• Form: Gently rolling plains; Vermilion Cliffs in middleground, 3 to 4 miles from alignment• Line: Horizontal, flowing; vertical and angled in cliffs• Color: Brown/beige, grayish white, orange, and deep vermilion red• Texture: Primarily fine; medium to coarse cliff faces to north• Distinct Natural Features Visible: Vermilion Cliffs, Fivemile Mountain, Kitchen Corral Wash, Petrified Hollow Wash, Telegraph Flat and Telegraph Wash	<ul style="list-style-type: none">• Representative Species: Sage, saltbush, snakeweed, rabbitbrush, wild buckwheat and grasses; pinyon and juniper• Height: Low to medium• Texture/Pattern: Medium to fine in foreground and in dominant stands of sage and grass; coarse in areas of dark-green pinyon and juniper; dense, even to patchy shrub/grass cover; scattered to stippled pinyon and juniper, which become denser near highlands• Colors: Greens and blue-grays; seasonal colors	<ul style="list-style-type: none">• Enclosure: Weak• Views: Open, panoramic in all directions• Land Use: Mostly undeveloped• Ownership: Nearly all federal (BLM, GSENM); small portion of private• Distinct Cultural Modifications: Buckskin Substation; utility poles, towers, lines and fences; information/direction signs• Adjacent Scenery: Greatly enhances overall visual quality• Scarcity: Interesting, but fairly common in the region


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Table 3–2
Visual Assessment Units





Visual Assessment Unit	Landform/Topography/Water	Vegetation	Other Features
<div>9. Kanab/Vermilion Cliffs</div> <div></div>	<ul style="list-style-type: none">• Form: Flat to rolling; Vermilion Cliffs immediately to north; Whitesage Wash and tops of the Shinarump Cliffs visible south• Line: Horizontal, flowing; vertical and angled in cliffs with horizontal striations• Color: Brown/beige, grayish white, orange, and deep vermilion red• Texture: Fine soils, coarsely textured and striated cliff faces• Distinct Natural Features Visible: Vermilion Cliffs, Shinarump Cliffs, Whitesage Wash, Crescent Butte, Thompson Point, Hells Bellows Wash and Seaman Wash	<ul style="list-style-type: none">• Representative Species: Sage, snakeweed, saltbush and grasses; pinyon and juniper; tamarisk in washes; urban plantings• Height: Low to medium• Texture/Pattern: Medium to fine in foreground and in dominant stands of sage and grass; coarse in areas of dark-green pinyon and juniper; dense, even to patchy shrub/grass cover; scattered to stippled pinyon and juniper, which become denser near highlands• Colors: Greens and blue-grays; seasonal colors	<ul style="list-style-type: none">• Enclosure: Moderate, as Vermilion Cliffs shift within 0.5 to 1.0 mile of alignment• Views: Limited to middleground to north; panoramic views to the south• Land Use: Rural fringe of Kanab• Ownership: Primarily private; also federal (BLM, GSENM)• Distinct Cultural Modifications: Rural homes and businesses; ranches and farmland; water tanks, substation, and utility poles and lines; information/direction signs• Adjacent Scenery: Greatly enhances overall visual quality• Scarcity: Interesting, but fairly common in the region
<div>10. Whitesage Wash</div> <div></div>	<ul style="list-style-type: none">• Form: Wide valley bottom; flat to slightly rolling terrain; steep cliff faces to north; Buckskin Mountain to south in background• Line: Horizontal, flowing; vertical and angled in surrounding landforms• Color: Brown/beige, yellow, grayish white, orange and red• Texture: Mostly fine; coarse, blocky cliff faces to north• Distinct Natural Features Visible: Whitesage Wash, Johnson Wash, Shinarump Cliffs, Buckskin Mountain and Muggins Flat	<ul style="list-style-type: none">• Representative Species: Sage, saltbush, snakeweed, Russian thistle and high occurrence of grasses; pinyon and juniper• Height: Low to medium• Texture/Pattern: Medium to fine in foreground and in dominant stands of sage and grass; coarse in areas of dark-green pinyon and juniper; dense, even to patchy shrub/grass cover; scattered to stippled pinyon and juniper, which become denser near highlands• Colors: Greens and blue-grays; seasonal colors such as buff-colored grasses	<ul style="list-style-type: none">• Enclosure: Weak to moderate• Views: Panoramic; cliffs to north and mountain to south• Land Use: Primarily undeveloped grazing land with transmission line corridor• Ownership: Primarily federal (BLM); also private and state• Distinct Cultural Modifications: Transmission lines and towers, off-highway vehicle (OHV) roads, fences, tanks and other grazing-related features• Adjacent Scenery: Enhances overall visual quality• Scarcity: Common in the region
<div>11. Kanab/Fredonia/Lost Springs Wash</div> <div></div>	<ul style="list-style-type: none">• Form: Flat prairie setting on east end; drops between Shinarump Cliffs through sloped valley before entering wide valley bottom• Line: Horizontal, flowing; vertical and undulating in cliffs• Color: Brown/beige, yellow, grayish white, orange and red• Texture: Mostly fine; coarse, blocky cliff faces• Distinct Natural Features Visible: Shinarump Cliffs, Lost Spring Wash and Kanab Creek	<ul style="list-style-type: none">• Representative Species: Sage, snakeweed, saltbush, grasses; pinyon and juniper• Height: Low to medium• Texture/Pattern: Medium to fine in foreground and in dominant stands of sage and grass; coarse in areas of dark-green pinyon and juniper; dense, even to patchy shrub/grass cover; scattered to stippled pinyon and juniper, which become denser near highlands• Colors: Greens and blue-grays; seasonal colors	<ul style="list-style-type: none">• Enclosure: Weak to strong; weak to none in flat plains; moderately high between Shinarump Cliffs; weak to moderate in valley bottom• Views: Panoramic in open areas; limited in valleys• Land Use: Rural fringe of Kanab and rural/urban fringe of Fredonia; residential; ranching, business, industrial/support facilities; farming• Ownership: Primarily private and state; small amount of federal (BLM)• Distinct Cultural Modifications: Water tanks, radio/cell towers, utility poles, streetlights, fences, substation, and information/direction signs• Adjacent Scenery: Enhances overall visual quality• Scarcity: Interesting, but fairly common in the region
<div>12. Jacob Canyon/Kanab Creek/Pipe Valley</div> <div></div>	<ul style="list-style-type: none">• Form: Flat to gently rolling prairies; occasional deeply cut washes• Line: Horizontal, flowing; vertical and angled in washes• Color: Brown/beige, grayish white, orange and red• Texture: Fine flat prairie areas; coarse and rugged washes• Distinct Natural Features Visible: Jacob Canyon, Pipe Valley, Pipe Valley Wash, Moonshine Ridge and Big Sand Wash	<ul style="list-style-type: none">• Representative Species: Sage, snakeweed, Mormon tea and high occurrence of grasses; juniper and pinyon; tamarisk and poplar in washes• Height: Low to medium• Texture/Pattern: Medium in foreground; fine in middleground; coarse in areas of dark-green pinyon and juniper; even and moderately dense, with some areas of scattered to clumped juniper and pinyon• Colors: Greens and blue-grays; seasonal colors such as buff-colored grasses	<ul style="list-style-type: none">• Enclosure: Weak to none in prairies, high in washes• Views: Panoramic and expansive in prairies; limited mostly to foreground in wash areas• Land Use: Generally undeveloped; grazing; occasional recreation• Ownership: Primarily federal (BLM); also private, tribal and state• Distinct Cultural Modifications: OHV roads, utility towers and lines and occasional grazing-related features• Adjacent Scenery: Enhances overall visual quality• Scarcity: Interesting, but fairly common in the region

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Table 3–2
Visual Assessment Units

Visual Assessment Unit	Landform/Topography/Water	Vegetation	Other Features
<div>13. Shinarump Cliffs</div> <div></div>	<ul style="list-style-type: none">• Form: Flat to rolling terrain; steep cliff faces to north• Line: Horizontal, flowing, vertical, angled; striated in cliffs• Color: Brown/beige, grayish white, orange, and vermillion red• Texture: Fine to medium; coarse, striated cliff faces• Distinct Natural Features Visible: Shinarump Cliffs, Riggs Flat, Sandy Canyon Wash, Sand Wash and Twomile Wash	<ul style="list-style-type: none">• Representative Species: Sage, Mormon tea, saltbush, greasewood and grasses; pinyon and juniper• Height: Low to medium• Texture/Pattern: Medium to fine in foreground and in dominant stands of sage and grass; coarse in areas of dark-green pinyon and juniper; dense, patchy to stippled shrub/grass cover; scattered pinyon and juniper become denser near highlands• Colors: Greens and blue-grays; seasonal colors	<ul style="list-style-type: none">• Enclosure: Moderately high, steep cliffs to north approximately 1.0 to 1.5 miles from the road, creating moderate degree of enclosure• Views: Generally limited to foreground and middleground by adjacent cliffs to north; expansive and panoramic views in other directions• Land Use: Mostly undeveloped• Ownership: State and private• Distinct Cultural Modifications: Utility poles, signs, fences and distant electrical towers/pylons• Adjacent Scenery: Greatly enhances overall visual quality• Scarcity: Interesting, but fairly common in the region
<div>14. Potter Canyon</div> <div></div>	<ul style="list-style-type: none">• Form: Flat to rolling terrain; steep cliff faces to north• Line: Horizontal, flowing; vertical and angled in cliffs• Color: Brown/beige, grayish white, orange, and deep vermillion red• Texture: Fine to medium; coarse, striated cliff faces• Distinct Natural Features Visible: Vermilion Cliffs, Potter Canyon, Pipe Valley and Cedar Ridge	<ul style="list-style-type: none">• Representative Species: Sage, Mormon tea, saltbush, greasewood and grasses; pinyon and juniper• Height: Low to medium• Texture/Pattern: Medium to fine in foreground and in dominant stands of sage and grass; coarse in areas of dark-green pinyon and juniper; dense, patchy to stippled shrub/grass cover; scattered pinyon and juniper become denser near highlands• Colors: Greens and blue-grays; seasonal colors	<ul style="list-style-type: none">• Enclosure: High, steep cliffs to north approximately 0.5 to 1.0 mile from the road, creating moderate degree of enclosure• Views: Generally limited to foreground and middleground by adjacent cliffs to north; expansive and panoramic views in other directions• Land Use: Mostly undeveloped• Ownership: State and private• Distinct Cultural Modifications: Utility poles, signs, fences and distant electrical towers/pylons• Adjacent Scenery: Greatly enhances overall visual quality• Scarcity: Interesting, but fairly common in the region
<div>15. Cottonwood Wash</div> <div></div>	<ul style="list-style-type: none">• Form: Climbs up Cedar Ridge onto flat, gently rolling plains; large cliff faces to north and east• Line: Horizontal; vertical and angled in cliffs• Color: Brown/beige, grayish white, orange, and deep vermillion red• Texture: Generally fine; coarse, blocky, striated cliff faces• Distinct Natural Features Visible: Vermilion Cliffs, Cottonwood Wash and Cedar Ridge	<ul style="list-style-type: none">• Representative Species: Sage, snakeweed, saltbush, rabbitbrush and high occurrence of grasses; pinyon and juniper• Height: Low to medium• Texture/Pattern: Medium to fine in foreground and in dominant stands of sage and grass; coarse in areas of dark-green pinyon and juniper; dense, patchy to stippled shrub/grass cover; scattered pinyon and juniper become denser near highlands• Colors: Greens and blue-grays; seasonal colors such as buff-colored grasses	<ul style="list-style-type: none">• Enclosure: Moderate to weak; Vermilion Cliffs 2 to 5 miles from alignment• Views: Limited to middleground by cliffs to north and east; open and panoramic in other directions• Land Use: Mostly undeveloped and rural; some agricultural• Ownership: Private, state and federal (BLM)• Distinct Cultural Modifications: Rural homes and businesses, utility poles, fences, signs and water tank• Adjacent Scenery: Greatly enhances overall visual quality• Scarcity: Interesting, but fairly common in the region
<div>16. Colorado City/Hildale</div> <div></div>	<ul style="list-style-type: none">• Form: Flat to rolling terrain; high cliff faces to east• Line: Horizontal, flowing; vertical and angled/undulating in cliffs• Color: Brown/beige, grayish white, orange, and deep vermillion red• Texture: Generally fine; coarse, blocky, striated cliff faces• Distinct Natural Features Visible: Vermilion Cliffs, Cottonwood Point and Short Creek	<ul style="list-style-type: none">• Representative Species: Sage, snakeweed and grasses; pinyon and juniper; tamarisk and poplar in washes; urban plantings• Height: Low to medium• Texture/Pattern: Medium to fine in foreground and in dominant stands of sage and grass; coarse in areas of dark-green pinyon and juniper; dense, patchy to stippled shrub/grass cover; scattered pinyon and juniper become denser near surrounding highlands• Colors: Greens and blue-grays; seasonal colors	<ul style="list-style-type: none">• Enclosure: Moderate; Vermilion Cliffs within 1.0 mile of the alignment• Views: Limited to middleground by cliffs to north and east; open and panoramic in other directions• Land Use: Residential; commercial; light industrial• Ownership: Mostly private, within Colorado City, Arizona, city limits• Distinct Cultural Modifications: Buildings, substation, water tanks, utility poles and lines, septic lagoons, streetlights and parking-lot lights, signs, billboards, fences and guardrails• Adjacent Scenery: Greatly enhances overall visual quality• Scarcity: Interesting, but fairly common in the region

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Table 3–2 Visual Assessment Units			
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Visual Assessment Unit	Landform/Topography/Water	Vegetation	Other Features
<div>17. Uzona-Canaan Wash</div> 	<ul style="list-style-type: none">• Form: Small wash through varying hills, rock outcroppings, and mesas with blocky cliff faces• Line: Horizontal, angular wash; undulating and broken rock forms.• Color: Brown/beige, grayish white and orange• Texture: Coarse; rock outcroppings and cliff faces• Distinct Natural Features Visible: Uzona-Canaan Wash, which opens up to Short Creek and Caanan Gap to the west	<ul style="list-style-type: none">• Representative Species: Pinyon and juniper, with sage, snakeweed, saltbush and grasses; pinyon and juniper dominant on east end; sage and grasses dominant on west end• Height: Low to medium• Texture/Pattern: Medium to coarse; irregular, stippled shrub/grass cover with scattered to clumped pinyon and juniper• Colors: Greens and blue-grays; seasonal colors	<ul style="list-style-type: none">• Enclosure: High; surrounding cliff faces and hills• Views: Limited to foreground by vegetation and terrain; open up to west on west end of the unit• Land Use: Mostly undeveloped; recreational• Ownership: Federal (BLM), private and state• Distinct Cultural Modifications: Hiking and OHV trails; other ground disturbance• Adjacent Scenery: Greatly enhances overall visual quality• Scarcity: Common in the region
<div>18. Short Creek</div> 	<ul style="list-style-type: none">• Form: Wide, flat valley; high, steep cliff faces to north and south• Line: Horizontal valley bottom and cliff striations, angled talus slopes.• Color: Brown/beige, grayish white, orange and red• Texture: Generally fine; coarse, blocky, striated cliff faces• Distinct Natural Features Visible: Little Creek Mountain, Lost Spring Mountain, Canaan Gap, Short Creek, Hurricane Cliffs and The Divide (landform)	<ul style="list-style-type: none">• Representative Species: Sage, rabbitbrush, saltbush, Russian thistle and grasses; pinyon and juniper• Height: Low to medium• Texture/Pattern: Medium to fine in foreground and in dominant stands of sage and grass; coarse in areas of dark-green pinyon and juniper; dense, patchy to stippled shrub/grass cover; scattered pinyon and juniper become denser near highlands• Colors: Greens and blue-grays; seasonal colors	<ul style="list-style-type: none">• Enclosure: High on east end and moderate to low on west; surrounding cliffs of Little Creek Mountain and Lost Spring Mountain• Views: Limited to foreground and middleground on east end; expansive and panoramic on west end• Land Use: Farming; ranching• Ownership: Federal (BLM), state and private• Distinct Cultural Modifications: Scattered ranches and associated facilities; assortment of unpaved roads striping the valley• Adjacent Scenery: Greatly enhances overall visual quality• Scarcity: Interesting, but fairly common in the region
<div>19. Frog Hollow</div> 	<ul style="list-style-type: none">• Form: Various landforms, including volcanic cones, basalt flows, washes and small cliff faces; large mountains and mesas/cliffs to north and west• Line: Horizontal, vertical, angled, undulating• Color: Brown/beige, grayish white, orange, red and black• Texture: Medium to coarse• Distinct Natural Features Visible: Little Creek Mountain, Hurricane Cliffs, Mollies Nipple, Gould Wash, Gooseberry Mesa and Pinetop Mountains	<ul style="list-style-type: none">• Representative Species: Sage, rabbitbrush, saltbush, Mormon tea, barberry, snakeweed, blackbrush and grasses; pinyon and juniper• Height: Low to medium• Texture/Pattern: Medium to fine in foreground and in dominant stands of sage and grass; coarse in areas of dark-green pinyon and juniper; dense, even shrub/grass cover; scattered pinyon and juniper• Colors: Greens and blue-grays; seasonal colors	<ul style="list-style-type: none">• Enclosure: Varies; high to moderately low• Views: Varies; limited to expansive and panoramic• Land Use: Mostly undeveloped and recreational• Ownership: Private, state and federal (BLM)• Distinct Cultural Modifications: Ranch/educational facility (Diamond Ranch Academy); water catchment facility; several OHV roads• Adjacent Scenery: Greatly enhances overall visual quality• Scarcity: Distinctive, though somewhat similar to other areas in region
<div>20. Hurricane Cliffs Road</div> 	<ul style="list-style-type: none">• Form: Sloped valley with high cliffs to east and a large rolling hill to west• Line: Horizontal, concave, angled, vertical, undulating; horizontal striations in cliffs• Color: Brown/beige, gray, orange, black• Texture: Generally fine; coarse, striated, blocky, rugged cliffs• Distinct Natural Features Visible: Hurricane Cliffs	<ul style="list-style-type: none">• Representative Species: Creosotebush, Mormon tea, snakeweed, yucca, rabbitbrush and grasses• Height: Low• Texture/Pattern: Medium in foreground and fine in background; even to stippled and gradated; sparse• Colors: Green; seasonal colors	<ul style="list-style-type: none">• Enclosure: Moderate to high• Views: Limited to foreground by landforms to east and west; open and expansive to north and south• Land Use: Undeveloped; recreational• Ownership: Federal (BLM)• Distinct Cultural Modifications: OHV roads• Adjacent Scenery: Greatly enhances overall visual quality• Scarcity: Distinctive, though somewhat similar to other areas in region





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Table 3–2
Visual Assessment Units

Visual Assessment Unit	Landform/Topography/Water	Vegetation	Other Features
<div>21. Sand Hollow</div> 	<ul style="list-style-type: none">• Form: Large reservoir surrounded by rolling terrain, mesas, rock formations and sand dunes• Line: Horizontal, sloped; meandering in water’s edge• Color: Brownish-orange, coral pink and black• Texture: Very fine, sandy soils; areas of medium- to coarse-textured rock formations• Distinct Natural Features Visible: Sand Mountain, Hurricane Cliffs and Pine Valley Mountains	<ul style="list-style-type: none">• Representative Species: Sage, rabbitbrush and snakeweed; scattered to clustered creosotebush• Height: Low• Texture/Pattern: Medium in foreground; fine in background; even and stippled• Colors: Greens and grays; seasonal colors	<ul style="list-style-type: none">• Enclosure: Weak to moderate• Views: Open; panoramic• Land Use: Residential; recreational• Ownership: Private, federal (BLM) and state (Sand Hollow State Park)• Distinct Cultural Modifications: Residential homes; park headquarter building; picnic shelters; restroom facilities; utility houses; boat launch; dams; Sand Hollow Reservoir; water tanks; parking lots and lighting; paved and OHV roads; fences; information/direction signs• Adjacent Scenery: Greatly enhances overall visual quality• Scarcity: Distinctive in the region
<div>22. Sheeps Bridge Road</div> 	<ul style="list-style-type: none">• Form: Rolling terrain; tall cliffs/mesas in middleground to north and west; large mountains in background to northeast; Virgin River lies in narrow, deeply cut canyon• Line: horizontal, undulating, angled, broken• Color: Brown/beige, grayish white, orange and red• Texture: Generally fine; coarse and striated cliff faces• Distinct Natural Features Visible: Gooseberry Mesa, Hurricane Mesa, Chinatown Wash and Virgin River	<ul style="list-style-type: none">• Representative Species: Sage, snakeweed, rabbitbrush and grasses; tamarisk and poplar in washes• Height: Low• Texture/Pattern: Medium in foreground; fine in background; fairly dense and even; stippled• Colors: Greens and grays; seasonal colors	<ul style="list-style-type: none">• Enclosure: Moderate to weak• Views: Limited to middleground by tall cliff faces; other views open and panoramic• Land Use: Rock quarry; residential housing; biking trails• Ownership: Private, state and federal (BLM)• Distinct Cultural Modifications: Houses, Virgin River bridge, rock-quarry disturbance, bike trails and OHV roads• Adjacent Scenery: Greatly enhances overall visual quality• Scarcity: Interesting, but fairly common in the region
<div>23. State Route 9/Zion Park Scenic Byway</div> 	<ul style="list-style-type: none">• Form: Flat to rolling; tall cliff faces/mesas to north and large mountains to northwest• Line: Horizontal, flowing; vertical and angled in cliffs, with horizontal striations• Color: Brown/beige, grayish white, orange and red• Texture: Generally fine; coarse and striated cliff faces and mesa formations• Distinct Natural Features Visible: Hurricane Mesa, Pine Valley Mountains	<ul style="list-style-type: none">• Representative Species: Sage, saltbush, snakeweed, Russian thistle and high occurrence of grasses• Height: Low• Texture/Pattern: Medium in foreground; fine in background; moderately dense and even; stippled• Colors: Greens and grays; seasonal colors such as buff-colored grasses	<ul style="list-style-type: none">• Enclosure: Moderate; high cliffs within 0.75 to 1.0 mile• Views: Limited to middleground by cliffs to the north; open and panoramic in other directions• Land Use: Mostly undeveloped; some rural and suburban housing• Ownership: Private, state and federal (BLM)• Distinct Cultural Modifications: Paved roadway, utility lines and poles, guardrails, fences and information/direction signs• Adjacent Scenery: Greatly enhances overall visual quality• Scarcity: Interesting, but fairly common in the region (State Route 9 traverses distinctive areas in other locations but not where the project parallels the route)
<div>24. Nephi’s Twist</div> 	<ul style="list-style-type: none">• Form: Rolling terrain on east end; drops into small, narrow wash/valley winding through highly variable terrain that includes steeply mounded landforms, layered rock faces and uplifted striations• Line: Undulating, broken, horizontal, vertical; horizontal and agled striations in rock forms• Color: Browns, grays, whites, oranges, reds and black• Texture: Highly variable and coarse• Distinct Natural Features Visible: Nephi’s Twist and La Verkin Creek	<ul style="list-style-type: none">• Representative Species: Sage, creosotebush, rabbitbrush, snakeweed, yucca, blackbrush, saltbush; tamarisk in wash• Height: Low• Texture/Pattern: Coarse to medium; irregular and patchy• Colors: Greens and grays; seasonal colors	<ul style="list-style-type: none">• Enclosure: High in valley setting; moderate to weak in rolling terrain• Views: Generally limited to foreground in valley setting; open, panoramic views in rolling terrain• Land Use: Mostly undeveloped; recreational• Ownership: Private and federal (BLM)• Distinct Cultural Modifications: Existing OHV/hiking trail; sewer covers; residential homes intermittently visible to northwest, in Toquerville, Utah• Adjacent Scenery: Greatly enhances overall visual quality• Scarcity: Interesting, but fairly common in the region

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Table 3–2
Visual Assessment Units

Visual Assessment Unit	Landform/Topography/Water	Vegetation	Other Features
25. Toquerville 	<ul style="list-style-type: none">• Form: Flat to slanted terrain bisected by deeply cut creek; edged by smaller creek• Line: Horizontal, slightly angled; vertical in creek valley walls• Color: Brown/beige, orange and black• Texture: Mostly fine; coarse rock along creeks• Distinct Natural Features Visible: La Verkin Creek and Ash Creek	<ul style="list-style-type: none">• Representative Species: Sage, saltbush, rabbitbrush, blackbrush, prickly pear and grasses; scattered juniper and pinyon in natural areas; cottonwood lining creeks; suburban and rural landscape and agricultural plantings• Height: Low shrubs and grasses to high trees• Texture/Pattern: Medium to coarse; highly variable natural and geometric patterns• Colors: Greens and grays; seasonal colors	<ul style="list-style-type: none">• Enclosure: Mostly weak enclosure; some medium to high near tall trees• Views: Generally open and panoramic• Land Use: Suburban and rural housing• Ownership: Private• Distinct Cultural Modifications: Houses, water tanks, paved roads, utility poles and lines, fences and signage• Adjacent Scenery: Enhances overall visual quality• Scarcity: Common in the region
26. Ash Creek 	<ul style="list-style-type: none">• Form: Rolling valley climbing northward; high cliff faces to east and large mountains to west• Line: Undulating, angled, rounded• Color: Beige/brown, orange and black• Texture: Generally fine; medium to coarse and striated cliff faces and rock formations• Distinct Natural Features Visible: Ash Creek, Hurricane Cliffs, Black Ridge, Dixie National Forest and Pine Valley Mountains	<ul style="list-style-type: none">• Representative Species: Sage, rabbitbrush, yucca, snakeweed, pinyon and juniper in natural areas; grasses and crops in parts of valley floor• Height: Low to medium• Texture/Pattern: Medium to coarse; pinyon and juniper cover varies from irregular, to stippled and gradated, to dense and evenly varied; slightly irregular to stippled and gradated• Colors: Greens and grays; seasonal colors	<ul style="list-style-type: none">• Enclosure: Medium at south end; higher as valley tightens to north• Views: Generally limited to foreground and middleground to north, east and west; generally expansive to south• Land Use: Mostly undeveloped; some private, including rural housing; agricultural• Ownership: Private, state and federal (BLM and NPS)• Distinct Cultural Modifications: Rural homes/development, a gravel/sand pit, paved roads, overpasses, guardrails, fences, signage, utility poles/lines• Adjacent Scenery: Greatly enhances overall visual quality• Scarcity: Interesting, but fairly common in the region
27. Kanarra Creek/Cedar Valley 	<ul style="list-style-type: none">• Form: Flat, wide valley; tall cliffs to east; high mountains to west• Line: Horizontal valley bottom; angled, undulating and rounded in mountains• Color: Beige/brown, orange and black• Texture: Generally fine; medium to coarse and striated cliff faces and rock formations• Distinct Natural Features Visible: Hurricane Cliffs, Harmony Mountains and Pine Valley Mountains	<ul style="list-style-type: none">• Representative Species: Sage, pinyon and juniper in natural areas; high occurrence of grasses and crops in many parts of valley floor• Height: Low to medium• Texture/Pattern: Fine in agricultural areas; medium to coarse in natural areas; varied, generally irregular to stippled and gradated• Colors: Greens and grays; seasonal colors and buff-colored grasses	<ul style="list-style-type: none">• Enclosure: Moderate to high, depending on width of valley floor• Views: Generally limited to foreground and middleground to east and west; open and panoramic to north and south• Land Use: Rural residential housing; agriculture; ranching• Ownership: Private, state, tribal (Kaibab Paiute Tribe) and federal (BLM); also Zion National Park, NPS• Distinct Cultural Modifications: Kanarraville, Ash Creek Reservoir, substation, paved and OHV roads, overpasses, highway rest areas, utility poles and lines, signage, billboards and fences• Adjacent Scenery: Greatly enhances overall visual quality• Scarcity: Common in the region
28. Cedar City 	<ul style="list-style-type: none">• Form: Flat, narrow valley at south end; wide valley to north near Cedar City• Line: Horizontal valley bottom; angled, undulating and rounded in mountains• Color: Beige/brown, orange, red, black• Texture: Fine to medium• Distinct Natural Features Visible: Hollow Hills, Cedar Mountain and Hurricane Cliffs	<ul style="list-style-type: none">• Representative Species: Sage, high occurrence of grasses; pinyon and juniper• Height: Low to medium• Texture/Pattern: Medium to coarse; varied, generally irregular to stippled and gradated• Colors: Greens and grays; seasonal colors and buff-colored grasses	<ul style="list-style-type: none">• Enclosure: Moderately high; hills in foreground to east and west; large mountains and cliffs in middleground to east• Views: Limited to foreground and middleground to east and west; open to north and south• Land Use: Rural on south end; dense suburban development and shopping centers to north• Ownership: Private, state and federal (BLM)• Distinct Cultural Modifications: Radio tower, water tanks, motorbike track, hotels, residential and commercial development, paved roads, overpass, signage, billboards, fences and utility poles and lines• Adjacent Scenery: Greatly enhances overall visual quality• Scarcity: Common in the region

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In addition to VRM class objectives, resource management plans also identify goals related to visual resources for management of all activities. Table 3-3 summarizes the goals of each BLM field office's current management plan.

Table 3-3 BLM Field Office Visual Resource Management Goals	
Field Office	Goals
Grand Staircase National Monument Field Office	<ul style="list-style-type: none"> • Preserve the spectacular scenic assets in “this high, rugged, remote region where bold plateaus and multi-hued cliffs run for distances that defy human perspective” (Proclamation 6920, 1996)
Kanab Field Office	<ul style="list-style-type: none"> • Manage public land for multiple uses of public resources within the framework of applicable laws, regulations and agency policies • Use adaptive management to meet resource objectives • Implement ecosystem management in an open, cooperative and responsive atmosphere to involve agencies, groups and individuals in monitoring and addressing resource issues on public land—issues that often span administrative and ownership boundaries • Maintain, improve and restore (where needed) healthy ecosystems and habitat to support viable populations of fish, plant and wildlife species while reducing habitat loss and fragmentation • Protect and enhance cultural and natural resources and values using the diversity of tools available to the BLM • Provide a variety of recreational, educational and interpretive opportunities for people to experience public land resources and values • Recognize the unique cultural, historical and social values of the decision area in developing a plan that manages the land and protects the heritage it engenders • Plan, modify and implement resource management activities in a manner that would minimize impacts on visual resources • Manage the diversity of landscapes in the decision area for a desired level of change consistent with and giving consideration to other resource values and uses
Arizona Strip Field Office	<ul style="list-style-type: none"> • Manage public land in a manner that protects the quality of the scenic (visual) values of these lands. • Ensure aesthetically pleasing surroundings for all Americans • Maintain this region's scenic beauty, open-space landscapes and other high-quality visual resources • Generally maintain existing “footprint” of cultural landscapes (facilities, projects and improvements) • Maintain dark night-sky conditions that are affected primarily by natural light sources
St. George Field Office	<ul style="list-style-type: none"> • Manage public land in such a way as to preserve scenic vistas that are deemed most important according to the following criteria: <ul style="list-style-type: none"> • Impact on quality of life for residents and communities in the area • Contribution to the quality of recreational visitor experiences • Support for regional tourism industry and segments of the local economy dependent on public land resources • Complement rural, agricultural, historic, and urban landscapes on adjoining private, state and tribal land by maintaining the integrity of background vistas on public land
Source: BLM field office resource management plans Note: BLM = Bureau of Land Management	

Chapter 3. Affected Environment

3.3.2 National Park Service

The mission of the NPS at the Glen Canyon National Recreation Area and the Rainbow Bridge National Monument is as follows:

To provide for public outdoor recreation use and enjoyment of Glen Canyon National Recreation Area and Rainbow Bridge National Monument and preserve and protect the scenic, scientific, and historic features therein while providing a significant understanding to visitors of the scientific and cultural importance of objects, sites, populations, beliefs, and habitats of the past and future.

The NPS does not have a specific management program for Glen Canyon National Recreation Area visual resources. For consistency in assessing potential impacts on the visual landscape, VRM methodology was also used to assess impacts on NPS land.

3.4 Scenic Roads and Byways

3.4.1 Fredonia–Vermilion Cliffs Scenic Road/U.S. 89A

This route is a designated Arizona Scenic Road; it begins in Bitter Springs and extends west and north to the town of Fredonia. From the base of Echo Cliffs near Bitter Springs, the roadway descends to Marble Canyon, passing Lee's Ferry and crossing the Navajo Bridge. The route then traverses the base of Vermilion Cliffs, climbing to the Kaibab Plateau and into Kaibab National Forest. The roadway passes through the community of Jacob Lake and continues over Kanab Plateau, extending into Fredonia. Views along the route range from wide open and panoramic in the plateau segments to highly enclosed within the national forest. A portion of the project alignments crosses this scenic road south of Fredonia, near MP 603.3, where the Navajo-McCullough transmission line corridor currently crosses the roadway. The South Alternative would cross the scenic road near the bottom of a wide, open valley. Landforms are gently sloped, with rolling hills to the south and west. Views are open and panoramic in all directions, with Shinarump Cliffs visible in the distance to the north. Low, dense desert scrub vegetation covers the valley with a medium to fine texture of green and blue-gray foliage. The tall towers and transmission lines of the Navajo-McCullough utility corridor bisect the landscape, running in an east-west direction.

3.4.2 Zion Park Scenic Byway/State Route 9

This byway is a designated Utah State Scenic Byway offering both panoramic views over flat terrain and enclosed views surrounded by steep valley walls. The route begins at I-15 and extends eastward through the cities of Hurricane and La Verkin, before ascending Hurricane Fault. The roadway then runs south of Hurricane Mesa through the city of Virgin; past the ghost town of Grafton; and through the communities of Rockville and Springdale. Immediately northwest of Springdale, the route enters Zion National Park, passing through two tunnels and offering scenic views of various prominent landforms. The roadway terminates at the Mount Carmel junction at U.S. 89. To the west of Virgin, near MP 17.3, the Cedar Valley Pipeline Cedar Valley Pipeline System alignment would cross the byway. The alignment would then run parallel to the byway for several miles before splitting from the roadway near MP 14.2. The project would then cross this byway near the intersection of SR 9 and Sheeps Bridge Road. The project would then parallel the north edge of the byway over softly rolling terrain. Views to the west and south are open and panoramic, while Hurricane Mesa holds views to the north within the middleground. Green and gray vegetation is moderately dense and low in stature. The surrounding lands are mostly undeveloped, with some low-density rural and suburban housing development.

3.4.3 Kolob Fingers Road Scenic Byway

This short route is a designated Utah State Scenic Byway and serves as the access road to the Kolob Canyons area of Zion National Park. Beginning at I-15, the roadway immediately heads east and enters the park, passing by the Kolob Canyons Visitor Center. After climbing several switchbacks, the roadway reaches its terminus at the Kolob Canyons viewpoint. This byway provides access to several trailheads and scenic overlooks and offers an assortment of enclosed and panoramic scenic views of the canyon and surrounding landforms. Near the roadway's junction with I-15, the Cedar Valley Pipeline alignment would parallel I-15 on the opposite side of the roadway. The alignment would be visible from the byway but would not cross it. The project would pass this byway in the wide, flat Cedar Valley between Black Ridge and the Pine Valley Mountains. Grasses and crops primarily cover the valley floor, with sage, juniper, and pinyon stippling the valley walls. The valley walls are primarily natural in appearance and hold views to the east and west within the middleground. Distant views open to the north and south over flat agricultural and grazing fields and low-density rural development.

3.5 Historic Trails

3.5.1 Old Spanish National Historic Trail (Armijo Route)

Designated as the 15th National Historic Trail by Congress in 2002, this trail was used primarily as a mule-pack trade route, connecting Santa Fe, New Mexico, to Los Angeles, California. The trail, which extends approximately 1,200 miles through unforgiving landscapes, is a combination of routes established by ancient Indian tribes, Spanish explorers, trappers and traders. The Armijo Route of the Old Spanish National Historic Trail was established between 1829 and 1830 by trader Antonio Armijo, who used a significant shortcut by stitching together previous routes of the Rivera and Dominguez-Escalante expeditions. Armijo's journey was the first commercial roundtrip journey. The proposed alignment would join the Armijo route near MP 4 on U.S. 89 in Utah, where the trail exits the canyon that is now covered by Lake Powell's Wahweap Bay. The project alignments would then generally follow the trail for approximately 130 miles, although the exact route of the trail has yet to be formally established. Between Hurricane Cliffs and the Cliffs of Little Creek Mountain, the proposed alignments would split northward away from the trail. The NPS and BLM are currently developing a management plan and environmental impact statement for this historic trail.

3.5.2 Dominguez-Escalante Historic Trail

Two Spanish friars, along with several other recruits, established the Dominguez-Escalante Trail in 1776 when they set out to find an overland route from Santa Fe, New Mexico, to the newly established settlement at Monterey, California. After abandoning its mission north of Cedarville, Utah, the expedition traveled south and east through the Arizona Strip en route to Santa Fe. Upon failing to cross the Colorado River near Lee's Ferry, the group found a superior location and crossed the river near Lake Powell's Padre Bay, which was subsequently named in the group's honor. The project would cross this historic trail in several locations. The first crossing would be near MP 553.5 on U.S. 89 in Utah, where a portion of the project would cross perpendicular to the trail. Farther west, along White Sage Wash, the project would parallel the trail for approximately 10 miles, crossing it in one location. The project would then split from the trail, only to cross it again at the intersection of Mount Trumbull Road and the Navajo-McCullough transmission line corridor. Although the project would not cross the trail near Sand Hollow Reservoir, the alignments would be visible from the trail, approximately 1 mile to the east.

3.5.3 Honeymoon Historic Trail

The Honeymoon Historic Trail emerged as young Mormon couples from Arizona settlements traveled by wagon or buggy to the St. George Temple to get married—during that time, this was the only Mormon temple west of the Mississippi. After crossing the Colorado River, the route follows the basic alignment of the Dominguez-Escalante Trail until it reaches White Sage Wash. From that point the trail extends through Kanab and Pipe Springs, before dropping to the south of Lost Spring Mountain. The route then joins with the Temple Historic Trail, descending Hurricane Cliffs and continuing on to St. George. The project alignments would cross this trail in several locations, the first being near MP 553.5 on U.S. 89 in Arizona. In this location, the trail follows the Dominguez-Escalante Historic Trail; the project alignments would cross perpendicular to the trail. In White Sage Wash, the trail again follows a segment of the Dominguez-Escalante Historic Trail; at this point, a portion of the alignments would parallel the trail for approximately 7 miles. This segment of the alignments would cross the trail in one location before heading northward to Kanab. East of Kanab, a portion of the alignments would cross the trail near the intersection of U.S. 89 and Lost Spring Wash. This segment of the alignments would cross the trail again near MP 15 on U.S. 89. Shortly after this point the trail passes through Pipe Springs. As the trail continues westward, the alignments would cross the trail again, near Maroney Well. High atop Hurricane Cliffs, the alignments would not cross the trail but would be within the middleground where Honeymoon Historic Trail and Temple Historic Trail join and descend the cliffs.

3.5.4 Temple Historic Trail

Between 1874 and 1876, early settlers constructed the Temple Historic Trail to haul timber from Mount Trumbull to St. George, Arizona, for the construction of the first Mormon temple west of the Mississippi River. This historic wagon road, which actually consists of two separate routes, is approximately 80 miles long. The eastern route of this trail is joined by Honeymoon Historic Trail before it drops through Hurricane Cliffs just southwest of Little Creek Mountain. The proposed alignment would not cross Temple Historic Trail, but the trail would be within the middleground of the proposed alignments before descending the cliffs.

3.6 Areas of Critical Environmental Concern, Wilderness Areas, and Wilderness Study Areas

3.6.1 Areas of Critical Environmental Concern

The designation of areas of critical environmental concern (ACECs) was mandated by Congress through the Federal Land Policy and Management Act to manage areas of BLM land that contain truly unique and significant resource values. ACECs are areas where special management attention is necessary to protect and prevent irreparable damage to important historic, cultural and scenic values; wildlife resources; or other natural systems and processes or to protect human life and safety from natural hazards. The designation is a record of significant values that must be accommodated when considering future management actions and land use proposals. ACECs are individually managed to more specifically protect a particular resource or natural hazard of concern.

Eight ACECs are located within the middleground of the project alignments: Johnson Spring, Shinarump, Kanab Creek, Lone Butte, Moonshine Ridge, Canaan Mountain, Lost Spring Mountain, and Little Creek Mountain. The Kanab Creek ACEC is the only such area that is directly crossed by a proposed alignment. This occurs in two locations on the South Alternative alignment: first at Kanab Creek (near Station 4418+00) and again at Bitter Seeps Wash (near Station 5607+00).

3.6.2 Wilderness Areas and Wilderness Study Areas

Wilderness areas have been established by Congress through the Wilderness Act of 1964 to protect federally-managed land with pristine, undisturbed natural areas and scenery. These areas are subject to common management restrictions aimed at preserving areas in their natural condition for use by the general public. Three wilderness areas are located within the middleground distance zone along the project alignments: Paria Canyon–Vermilion Cliffs (Utah and Arizona); Cottonwood Point (Arizona); and Pine Valley Mountain (Utah). The proposed alignments would not cross these areas at any point.

Wilderness study areas (WSAs) are regions that have been inventoried and recommended for Wilderness Area designation by Congress. Although WSAs are not designated areas, they are required to be managed to maintain their inherent wilderness characteristics until Congress decides to either designate the areas or release them for other uses. The general management standard for WSAs focuses on protecting the areas from changes that would potentially impair their suitability as wilderness areas. Wilderness and WSAs are managed as VRM Class I. Some WSAs also have specific restrictions that limit activities previously allowed in the areas, such as grazing. Six WSAs, all located in Utah, are in the middleground distance zone of the project alignments: Wahweap; Cockscomb; Paria-Hackberry; Canaan Mountain; Cottonwood; and Spring Creek Canyon. The project alignment would closely parallel the Cockscomb WSA for approximately 6 miles between MP 18.5 and MP 24.5 on U.S. 89 in Utah.

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Chapter 4

Environmental Consequences

Environmental consequences in terms of visual or scenic resource impacts are defined as the change in aesthetic value resulting from the introduction of modifications to the landscape. For this assessment, impacts on visual resources were evaluated in terms of their overall direct and indirect impacts, as well as their specific impacts on scenic roads and byways and historic trails. The determination of compliance with the BLM management objectives is also addressed in this section. Cumulative impacts for the project are discussed in Chapter 7 of this assessment.

4.1 Significance Criteria

This assessment of visual impacts includes evaluation of the overall significance of effects on the visual landscape as well as an assessment of the impacts of individual project components. Impacts on visual resources are considered significant if construction, operation, or maintenance activities would result in any of the following conditions:

- Magnitude of change from existing visual character to post-project visual character that is considered to be substantial within the foreground distance zone
- Project feature construction for operations visible within the foreground distance zone from an area of high visual sensitivity attracting attention away from existing landscape conditions and resulting in a fundamental and visually incompatible change in the existing setting
- High level of landscape modification visible within the foreground distance zone from an area of high visual sensitivity, e.g., residence, non-motorized trail, or high volume roadway
- Non-consistency with VRM objectives that would require a plan amendment to change the VRM Class.
- Noncompliance with other agencies' scenic management plans

4.2 Facility Descriptions

The following are general descriptions of proposed project facilities, associated components and include typical site plan examples.

The **Lake Powell Pipeline Intake Pumping Station (LPP-IPS)** would be located on an approximately 6 acre site (Figure 4-1). The facility would include an intake pump station, a paved access road and parking area, an electrical pad, a buried surge tank, a pig launching station, and a flow meter. The intake pump station building would measure approximately 202 feet by 102 feet with a height of approximately 34 feet. The remaining site components would maintain relatively small footprints of less than 1 acre. The electrical pad for the site would measure approximately 160 feet by 137 feet, and the pig launching stations would measure approximately 54 feet by 34 feet. Access roads to the facility would be 24 feet in width, and would measure approximately 1500 feet in length. The site would be surrounded by 10-foot-high chain link security fence, topped with barbed wire.

Chapter 4. Environmental Consequences

The **Lake Powell Pipeline Intake Pumping Station (LPP-IPS) with the Natural Gas Supply Line and Generators Alternative** would be slightly modified due primarily to an increased building size and a smaller electrical pad (Figure 4-2). The intake pump station building would measure approximately 232 feet by 183 feet with an approximate height of 40 feet. Exhaust stacks would also be added to the structure, extending approximately 100 feet from the ground elevation. The electrical pad would decrease to be 50 feet by 50 feet in size.

The **Lake Powell Pipeline Booster Pump Stations (LPP-BPS)** would each be located on approximately 2- to 5-acre sites, with the exception of LPBPS-1, which would have a site footprint of approximately 11 acres (Figure 4-3). Each facility would include a booster pump station building and associated forebay for water storage, a paved access road and parking area, an electrical pad, a detention basin, pig launching/receiving stations, a flow meter, and up to six buried surge tanks. The components of each booster pump station site would be similar in size and layout with the exception of LPBPS-3, which has a linear layout that separates the forebay from the main pumping facility due to site constraints. The booster pump station building for each site measures approximately 164 feet by 81 feet, with a height of approximately 62 feet. The remaining site components would maintain relatively small footprints of less than 1 acre each. The electrical pads for each site would measure either 200 feet by 175 feet or 110 feet by 80 feet. Access roads to each of the facilities would be 24-feet in width and would vary in length—though all would be less than 3,000-ft in total length. These sites would be surrounded by 10-foot-high chain link security fence, topped with barbed wire.

The **Lake Powell Pipeline Booster Pumping Stations (LPP-BPS) with the Natural Gas Supply Line and Generators Alternative** would be slightly modified due primarily to an increased building size and decreased electrical pad (Figure 4-4). The booster pump station building for each site would measure approximately 223 feet by 178 feet, with an approximate height of 40 feet. Exhaust stacks would also be added to the structure, extending approximately 100 feet from the ground elevation. The electrical pad would decrease to be 50 feet by 50 feet in size.

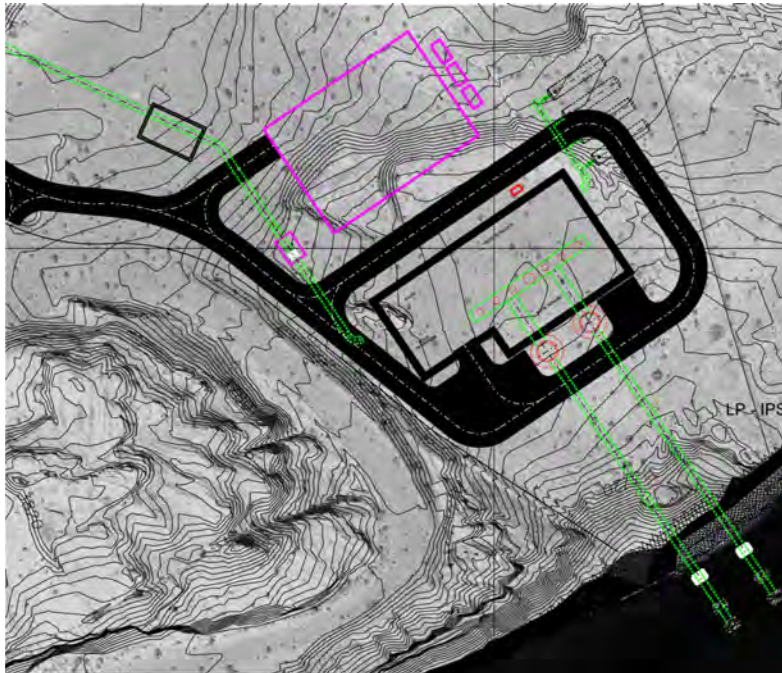


Figure 4-1
Site Plan for Lake Powell Pipeline Intake Pumping Station (LPP-IPS)

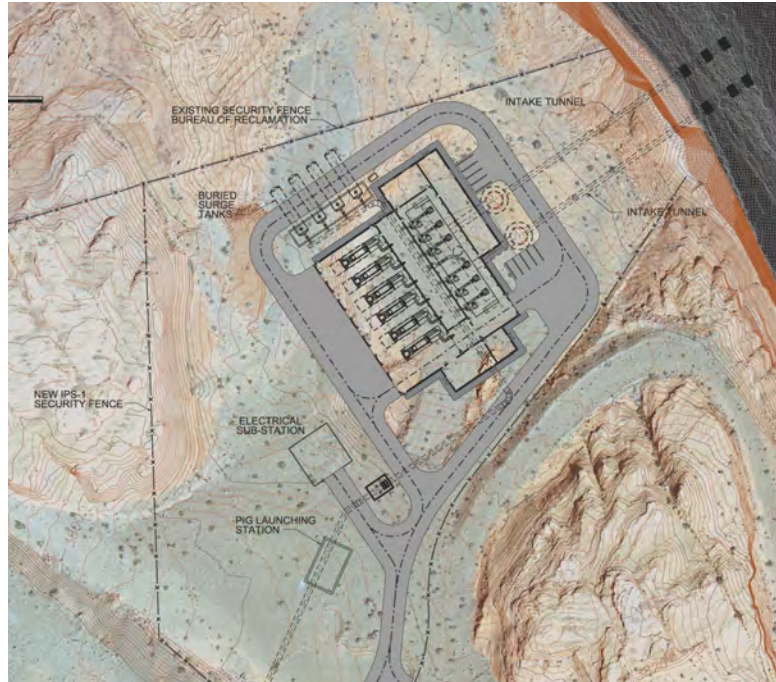


Figure 4-2
Site Plan for Lake Powell Pipeline Intake Pumping Station (LPP-IPS) with
Natural Gas Supply Line and Generators Alternative



Figure 4-3
Typical site plan for
Lake Powell Pipeline Booster Pump Station (LPP-BPS)

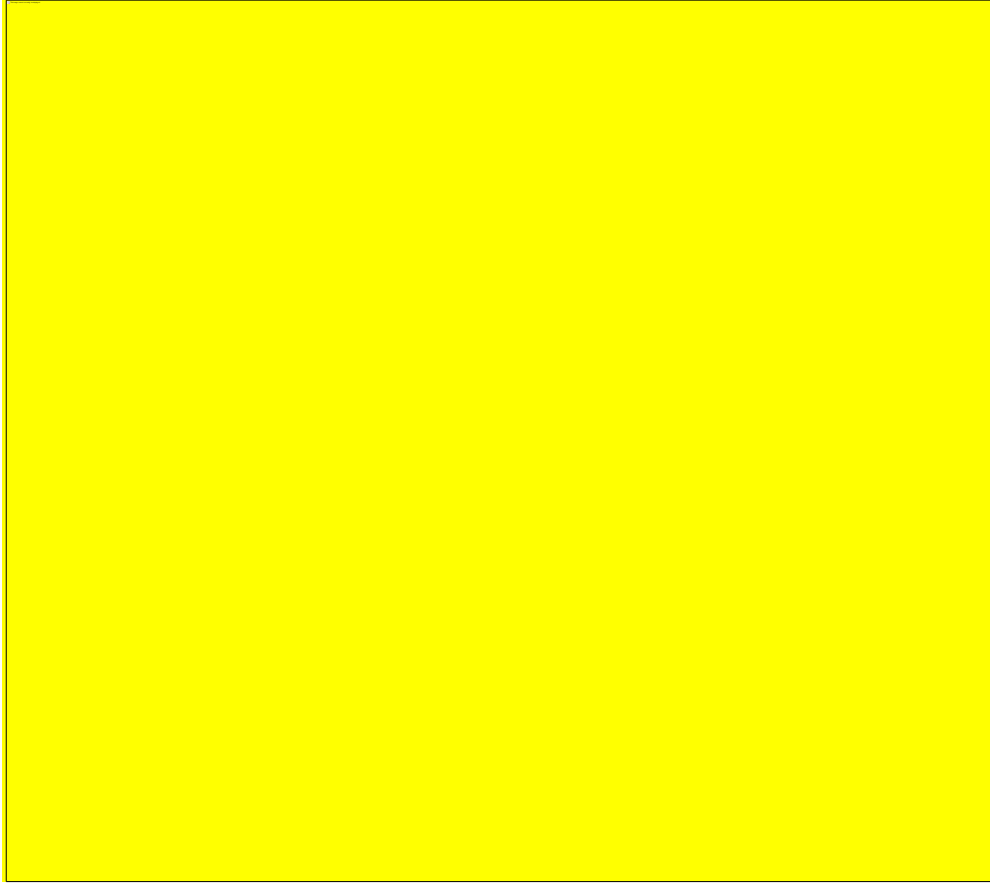


Figure 4-4
Typical site plan for Lake Powell Pipeline Booster Pump Stations (LPP-BPS) with
Natural Gas Supply Line and Generators Alternative

The **Cedar Valley Booster Pump Stations (CVBPS)** would each be located on approximately 2.5-acre sites (Figure 4-5). Each facility would include a booster pump station building, a paved access road and parking area, an electrical pad, a buried surge tank, a flow meter and a detention basin. The booster pump station building for each site would measure approximately 118 feet by 63 feet with an approximate height of 30 feet. The remaining site components would maintain relatively small footprints of less than 1 acre each. Access roads to each of the facilities would be 24 feet in width and would vary in length—though all would be less than 800 feet in length. These sites would be surrounded by 10-foot-high chain link security fence, topped with barbed wire.

The **High Point Regulation Tanks** would each be located on approximately 2- to- 3 acre sites (Figure 4-6). Each facility would include a 130 foot by 18 foot deep underground tank, a detention basin that measure approximately 200 feet by 80 feet and a paved access road and parking area. Each facility would be surrounded by a 10-foot-high chain link fence, topped with barbed wire.

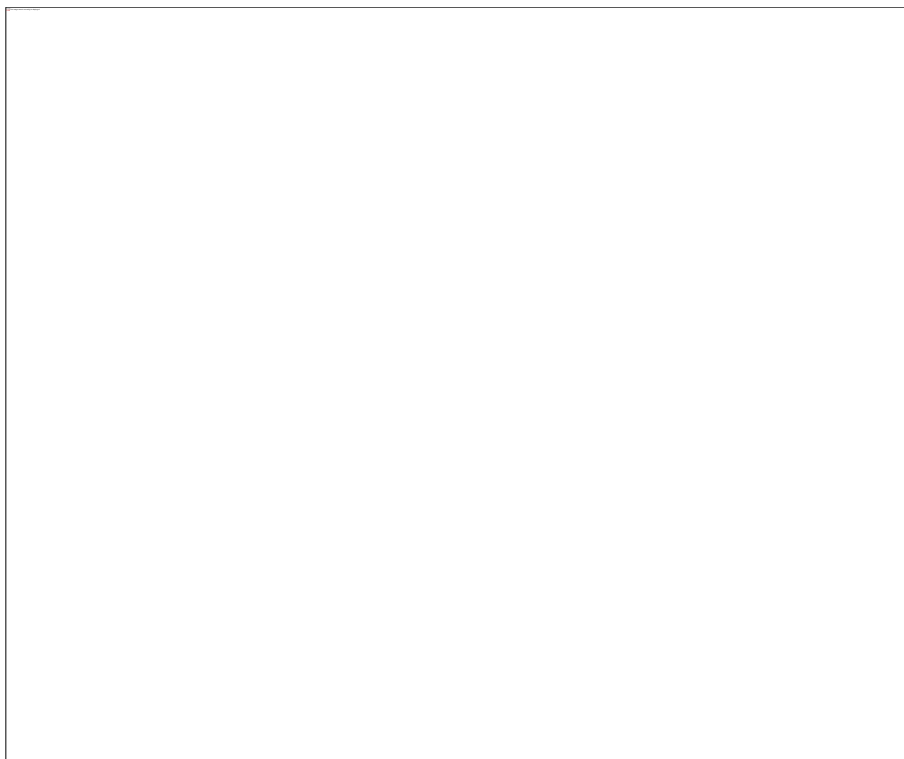


Figure 4-5
Typical site plan for Cedar Valley Booster Pump Stations (CVBPS)

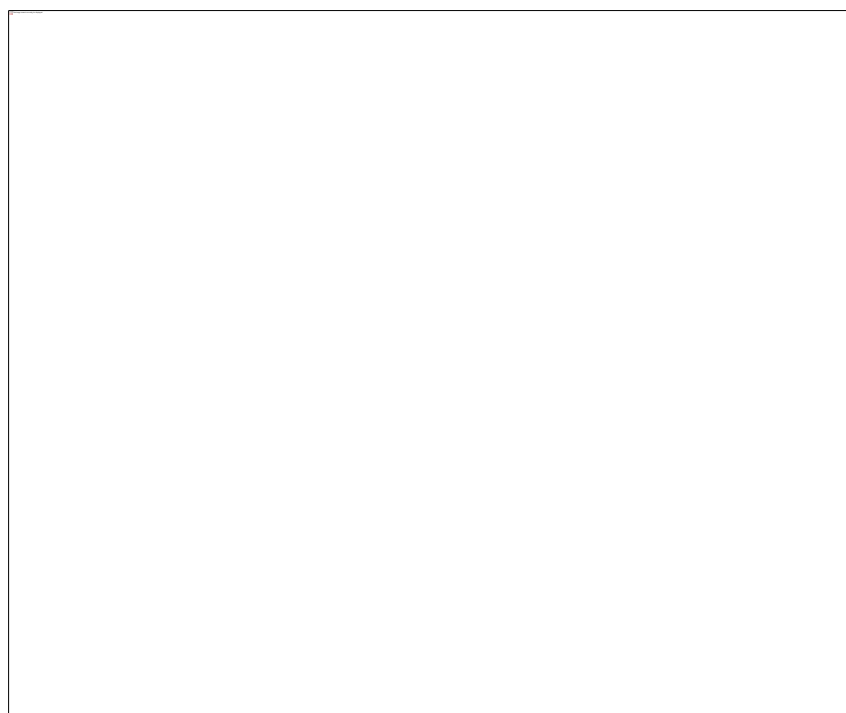


Figure 4-6
Typical site plan for High Point Regulation Tanks

The **Lake Powell Pipeline and Penstock** alignments would consist of buried 69-inch diameter pipe. Installation of the pipe would result in an approximately 130-foot-wide ground disturbance (Figures 4-7 and 4-8). Intermittent pressure-relieving valves with vertical vent structures would be located along the proposed pipeline (Figure 4-9). These structures would occur at all pipe highpoints in the pipeline to relieve pressure from air settling out of the water. These cane-shaped valves and vent structures would be approximately 4 feet in height.

The **Cedar Valley Pipeline** would consist of 36-inch diameter pipe. The pipeline would be buried except for two aerial crossings over deeply incised creeks. Installation of the pipe would result in an approximately 130-foot-wide ground disturbance.

The **Kane County Pipeline** would consist of buried 24-inch diameter pipe. Installation of the pipe would result in an approximately 110-foot-wide ground disturbance.



Figure 4-7
Typical Cross Section of Lake Powell Pipeline and Natural Gas Supply Line
within highway right-of-way

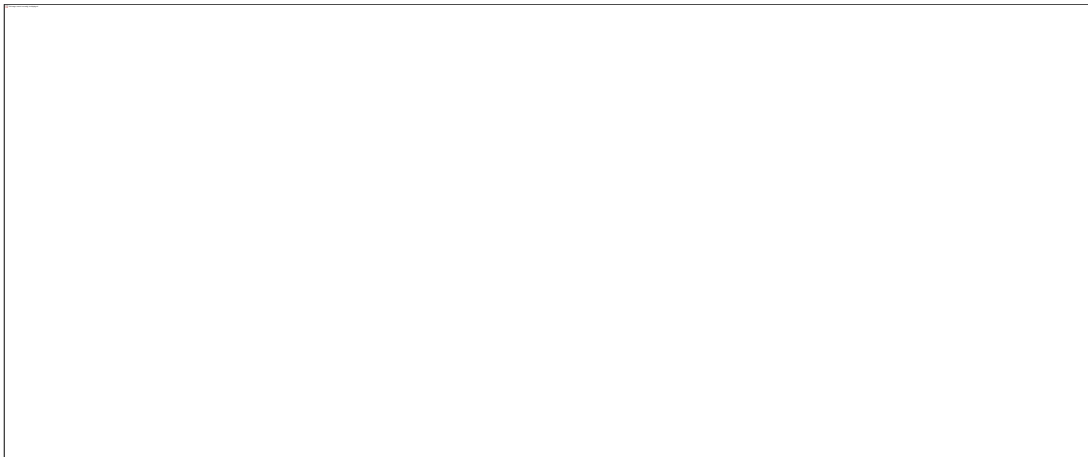


Figure 4-8
Typical Cross Section of Lake Powell Pipeline and Natural Gas Supply Line
within public and private land right-of-way

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The **Natural Gas Supply Line and Generators Alternative** is discussed in Section 1.2.5. Typical cross sections of the Natural Gas Supply Line and its relation to the Lake Powell Pipeline are illustrated in Figures 4-7 and 4-8. Figures 4-10 through 4-14 are examples of a typical installation, meter station, gate station, above ground valve, and pig station/insertion.



Figure 4-9
Typical pressure-relieving valve with vertical vent structure



Figure 4-10
Typical installation of natural gas supply line



Figure 4-11
Typical natural gas metering station (foreground)



Figure 4-12
Typical city gate station (similar to proposed connection near Sand Hollow)



Figure 4-13
Typical aboveground valve on natural gas supply line



Figure 4-14
Crew inserting pig into natural gas supply line at pigging station

These **In-Line Hydropower Stations (HS)** would each be located on approximately 4- to 8-acre sites, with the exception of HS-4 and HS-4 Alternative, which would have site footprints of approximately 53 acres and 18 acres (Figure 4-15). Each facility would include a hydropower station building with forebay or buried afterbay for water storage, a substation, a paved access road and parking area, pig launching and recovery stations and a retention basin. The components of each hydropower station site would be similar in size and layout with the exception of HS-4 and HS-4 Alternative, which would have large waterbody forebays and afterbays covering 38 and 240 acres respectively. The hydropower station building size for each site would measure approximately 75 feet by 50 feet with a height of approximately 25 feet. The remaining site components would maintain relatively small footprints of less than 1 acre each. The substations for each site would have two size option and measure 220 feet by 110 feet or 110 feet by 95 feet. The switchyards would measure 90 feet by 70 feet. Access roads to the each of the facilities would be 24-feet in width and would vary in length—though all would be less than 500 feet in total length. These sites would be surrounded by 10-foot-high chain link security fence, topped with barbed wire.

The **Hurricane Cliffs Pumped Storage Powerhouse** would be the largest of the hydro facilities (Figure 4-16). This facility would be located on an approximately 30 acre site and would include a powerhouse building, a detached 135 foot by 205 foot switchyard, an approximately one-mile paved access road and facility parking area. The site would be surrounded by a 10-foot-high chain link security fence, topped with barbed wire. The hydro station building would measure approximately 380 feet by 98 feet with a height of 60 feet. The Hurricane Cliffs facility would also include a 130 acre afterbay, an approximately 2,500-foot-long tailrace channel spanned by an approximately 600-foot-long bridge

The **Hurricane Cliffs Peaking Hydro Afterbay** would be located on an approximately 27 acre site (Figure 4-17). The facility would include a powerhouse, switchyard, a paved access road and parking area, 15 acre afterbay and an approximately 190 foot-long emergency spillway channel. The powerhouse building would measure approximately 120 feet by 56 feet with a height of approximately 60 feet. The switchyard for the site would measure approximately 72 feet by 50 feet. The access road to the facility would be 24 feet in width, and would measure approximately .5-miles in length. The site would be surrounded by 10-foot-high chain link security fence, topped with barbed wire.

The **Sand Hollow Hydro Station** would be located on an approximately 4 acre site (Figure 4-18). The facility would include a powerhouse, switchyard, a paved access road and parking area and an approximately 190 foot discharge channel that drains into the existing Sand Hallow Reservoir. The powerhouse building would measure approximately 75 feet by 50 feet with a height of approximately 25 feet. The switchyard for the site would measure approximately 120 feet by 100 feet. The access road to the facility would be 24 feet in width, and would measure approximately 305 feet in length. The site would be surrounded by 10-foot-high chain link security fence, topped with barbed wire.

The **Water Treatment Plants (WTP)** would occupy cleared sites approximately 5 to 6 acres in size. These facilities would each include an administration building, a chemical building, a reservoir, basins, drying beds, an electrical pad, recovery tanks, road, and parking areas. The WTP sites would be surrounded by 10-foot-high chain link fence, topped with barbed wire.

The **Hurricane Cliffs Forebay Reservoir** would be contained in a valley between a south dam approximately 2440-feet wide and 140-feet high and a north dam that is approximately 920-feet wide and 20-feet high maintaining an active storage of 11,255 acre-feet of water. The forebay would be approximately 430 acres in size.

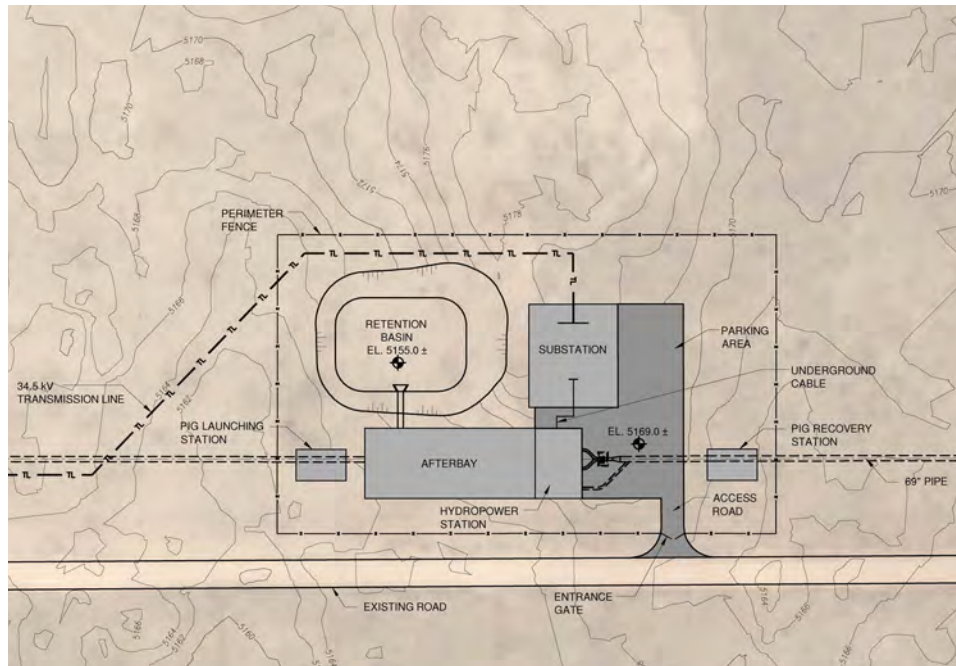


Figure 4-15
Typical Site Plan for In-Line Hydropower Station (HS)

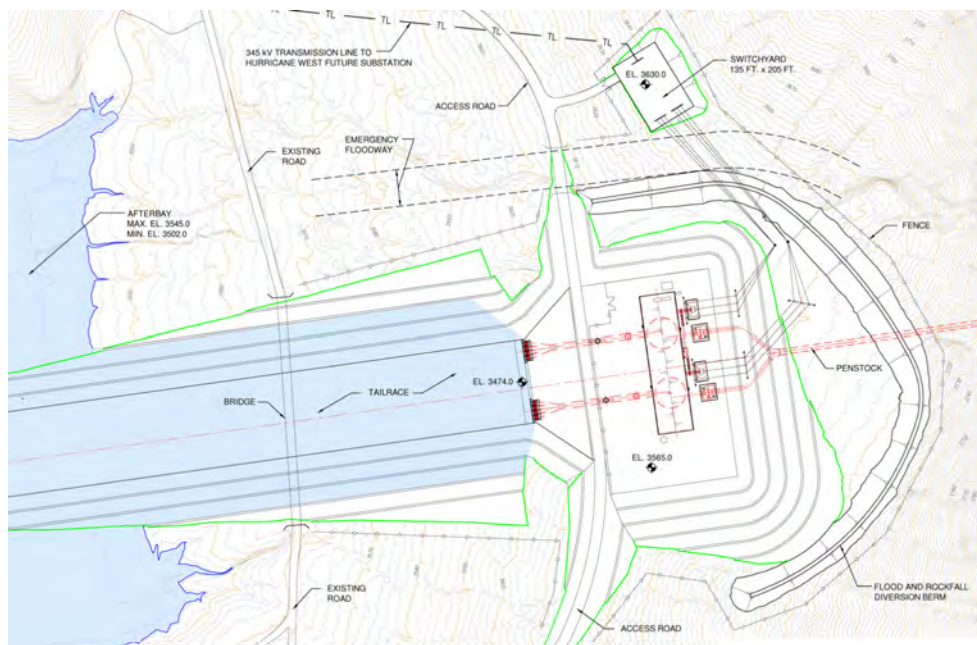


Figure 4-16
Site Plan for Hurricane Cliffs Pumped Storage Powerhouse



Figure 4-17
Site Plan for Hurricane Cliffs Peaking Hydro Station Afterbay

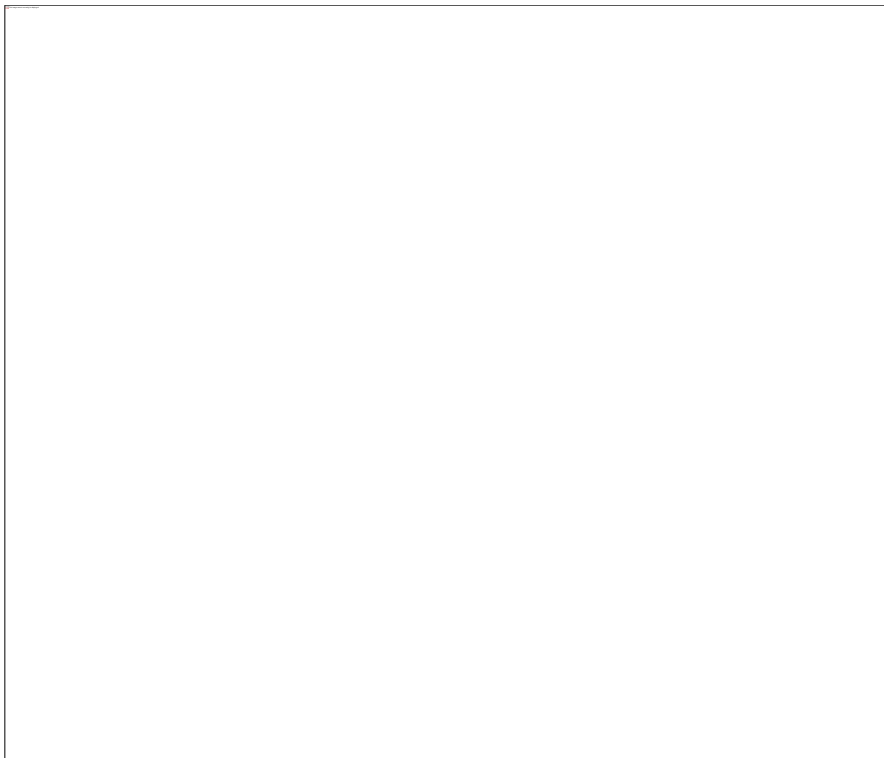


Figure 4-18
Site Plan for Sand Hollow Hydro Station

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The **Peaking Hydro Generating Station Option** would involve a smaller, 200 acre-foot forebay reservoir. The forebay would be approximately 46 acres in size. Both options would be surrounded by 10-foot-high chain link fence, topped with barbed wire.

The **Hurricane Cliffs Afterbay Reservoir** would be contained by a single dam in the valley below the Hurricane Cliffs. The single dam would be approximately 2800-feet wide and 75-feet high. The afterbay would be approximately 143 acres in size.

The **Peaking Hydro Generating Station Option** would reduce the afterbay to approximately 14 acres and include an emergency spillway on the west side of the reservoir that measures approximately 190-feet long by 22-feet wide. Both sites would be surrounded by 10-foot-high chain link fence, topped with barbed wire.

The **Transmission Line Structures** associated with this project vary in height and material. Assumptions are that new 75-foot-high steel poles would be used for all new 138Kv transmission lines leading to proposed pump stations, and 150-foot-high steel poles would be used only for the Hurricane Cliffs Afterbay to Hurricane West Transmission Line. It is assumed that all other new transmission/distribution lines (69Kv or smaller) would be mounted on 40-foot-high wood poles (Figures 4-19 through 4-23).

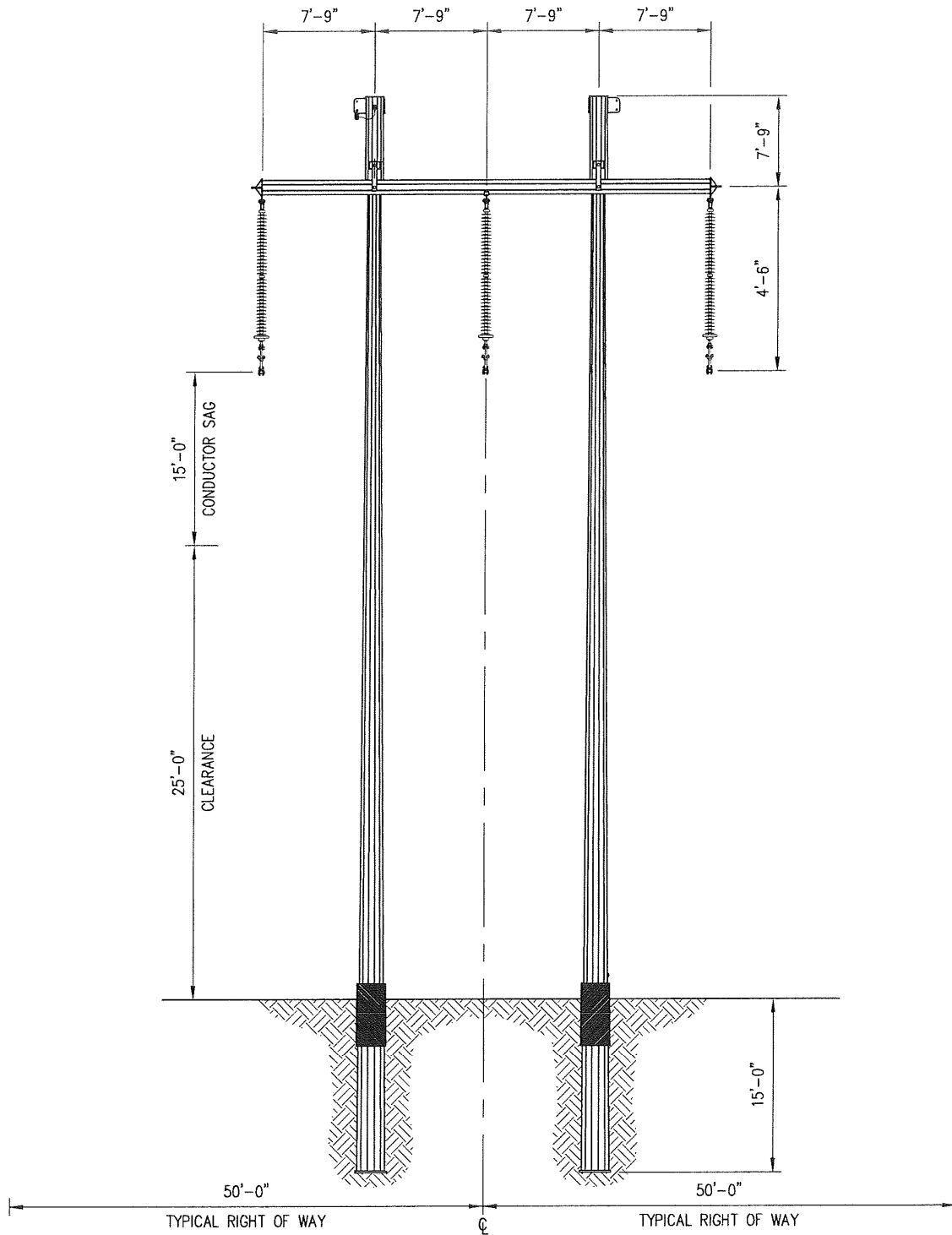


Figure 4-19
Typical 138 kV Pole for BPS-2, BPS-3, BPS-3 (Alt.) and
from Hurricane Cliffs Peaking Hydro Station (Typical height: 70 to 95 feet)



Figure 4-20
Typical 230 kV Pole for Glen Canyon Dam area to Buckskin Substation
(Typical height: 60 to 90 feet)



Lake Powell Pipeline
Modified Draft Visual Resources Study Report

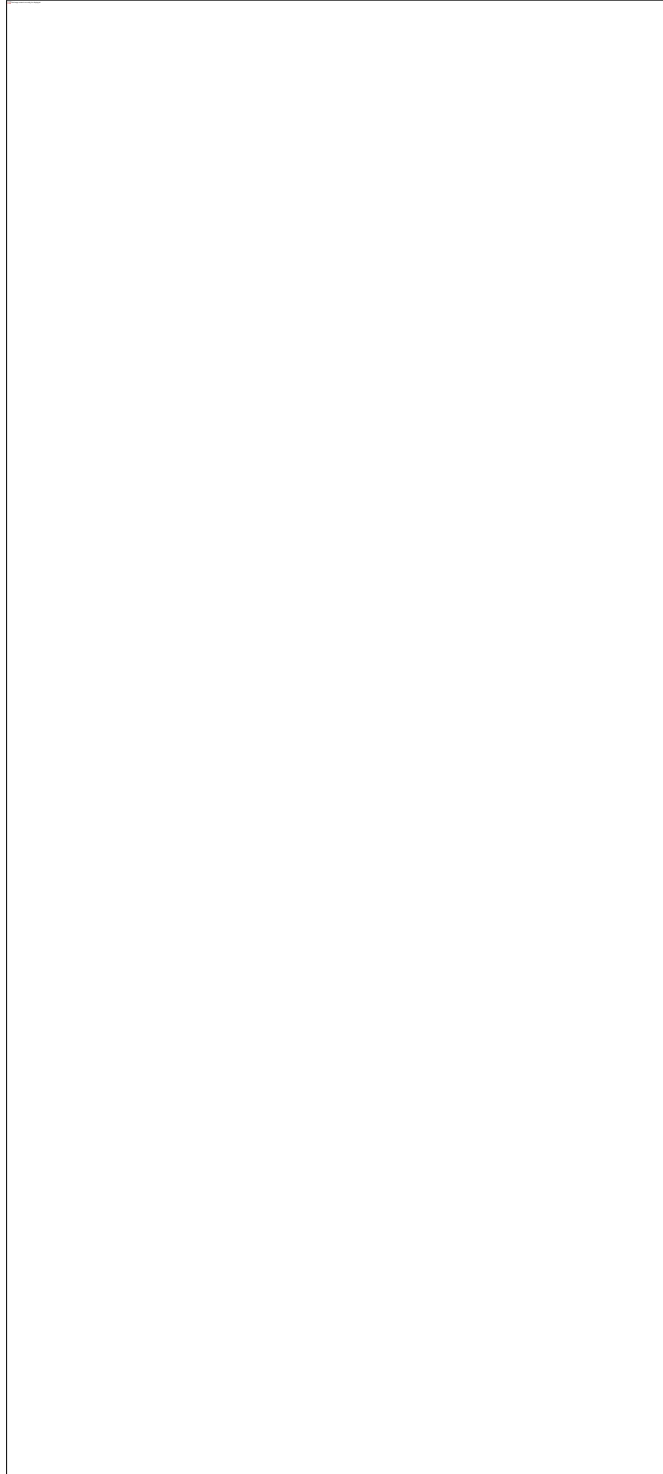


Figure 4-22
Typical 69 kV Pole for Lake Powell IPS; BPS-1, BPS-4, BPS 4 (Alt.)
and from HS-1, HS-1 (Alt.), HS-2, HS-3, HS-4, and HS-4 (Alt.) (Typical height: 50 to 70 feet)

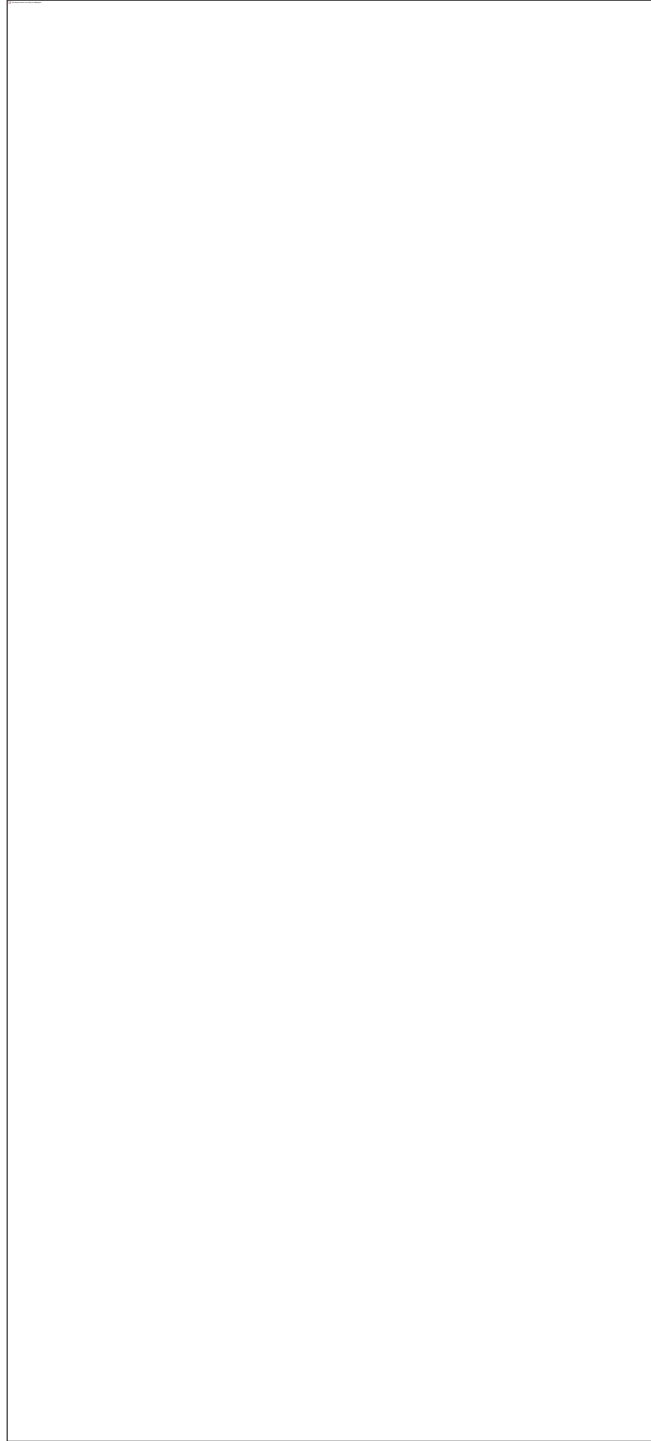


Figure 4-23
Typical 345 kV Tower from Hurricane Cliffs Peaking Hydro Station
(Typical height: 115 to 150 feet)

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A **Paria Substation Upgrade** would be included as part of the proposed project to accommodate the additional power loads to BPS-4 Alternative. The substation upgrade would require an additional 2 acres of privately-owned land adjacent to the existing substation in Kane County, Utah (Figure 4-24). Equipment added to the substation for the upgrade would be similar in scale, structure and color to the components of the existing substation.

A Buckskin Substation Upgrade would be included as part of the proposed project to accommodate the additional power loads from the new 230 kV Glen Canyon to Buckskin transmission line. The substation upgrade would require an additional 5 acres of land within the GSENM adjacent to the existing substation in Kane County, Utah (Figure 4-25). Equipment added to the substation for the upgrade would be similar in scale, structure and color to the components of the existing substation.

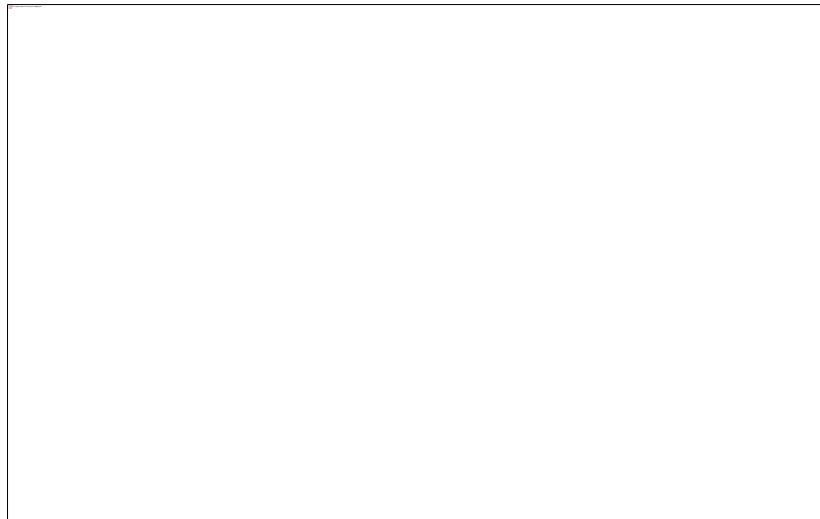


Figure 4-24
Paria Substation Upgrade

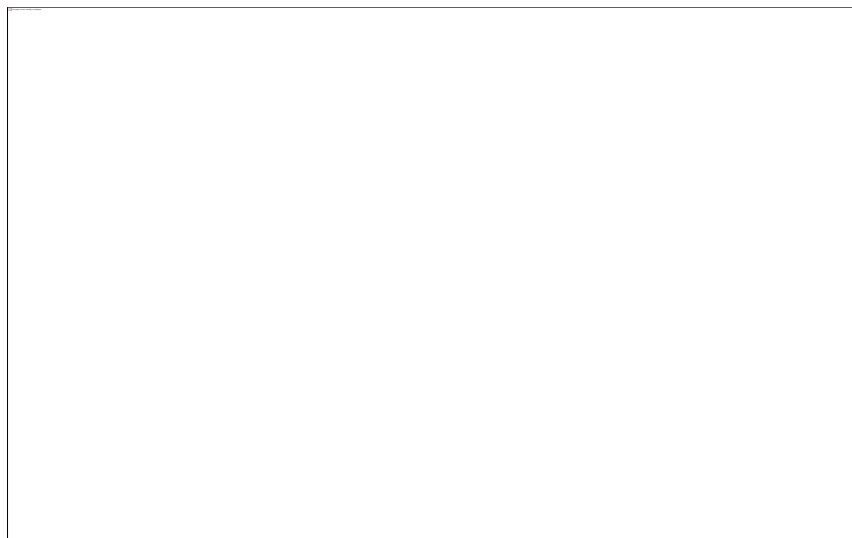


Figure 4-25
Buckskin Substation Upgrade

4.3 Potential Impacts Eliminated From Further Analysis

Potential impacts eliminated from further analysis include visual effects from daytime operation of project facilities. Visual impacts would occur during construction and with the permanent, visible facilities. Constructed project facilities that are visible would incorporate mitigation measures to reduce visual impacts and there would be no further impacts during operation. For nighttime operation, motion-sensitive switches would be incorporated into the design of the facilities as standard construction practice. Therefore, the areas at the sites would only be illuminated if there were operational activities underway or if there were a potential security issue. Potential impacts on the night sky from project lighting were eliminated from further analysis.

4.4 South Alternative

The following subsections qualitatively describe the potential direct impacts on the VAUs from the proposed South Alternative alignment. Impacts are described from east to west.

4.4.1 Direct Impacts on Visual Resources

Each of the VAUs was evaluated in terms of the anticipated magnitude of change in landscape character and visibility of the proposed pipeline alignment and associated surface facilities. This analysis was based on the relative change in landscape character and the degree to which the proposed alignment and surface facilities and disturbances would attract attention based on their visual dominance, scale, continuity, and contrast. The magnitude of change for each VAU was categorized as very low, low, moderate or high for the pipeline alignment and proposed facilities in the foreground distance zone (Table 4-1). Table 4-2 provides a summary description of the impacts to each VAU and a more detailed description is provided in Appendix B. Because the impacts from the project become considerably less discernable in the middleground distance zone, an overall magnitude of change was provided for the middleground in each VAU. Viewing platforms were located in both the foreground and middleground and were evaluated for both distance zones. Where magnitude-of-change range is assigned for the facilities within a VAU, the range reflects differing degrees of contrast for multiple facilities within that VAU. The ranges for views from platforms in Table 4-1 reflect differing degrees of contrast from multiple viewing platforms within the VAU.

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**Table 4-1
Magnitude of Change in Landscape Character
by Visual Assessment Unit for the South Alternative**

Page 1 of 2

No.	Visual Assessment Unit	Foreground		Foreground/ Middleground	Middleground
		Pipeline Alignment	Proposed Facilities	Viewing Platforms	
1	Lake Powell/Glen Canyon	L	M	L/M (5)	VL
2	Wahweap	M	L	VL/M (5)	VL
3	Big Water	M	H	L/H (5)	VL
	• Rock Formation Avoidance Option	M	H	L/H (5)	VL
4	East Clark Bench	L	L	L	VL
	• Northern Pipeline Option	L	L/H(3)	L/H(3)	VL
	• BPS-3 near Cottonwood Road Option A	L	H	M/H (5)	VL
	• BPS-3 near Cottonwood Road Option B	L	H	M/H (5)	VL
5	Rimrocks/Paria River Valley	M	N/A	VL/M	L
	• Northern Pipeline Option	L	N/A	VL/L	L
6	Cockscomb	M	H	M/H	VL
	• BPS-3 near Cottonwood Road Option A/B	M	N/A	L/M	L
7	Fivemile Valley	M	L	L/M	L
	• High Point Highway Alternative	M	H	M/H	L
8	Telegraph Flat	M	M/H (4)	L/H (5)	L
	• High Point Highway Alternative	M	M/H (4)	L/H (5)	L
9	Kanab/Vermilion Cliffs	L	H	L/H (5)	VL
10	Whitesage Wash	L	N/A	L/M (5)	L
	• Direct Alignment Option A	M	N/A	L/M (5)	L
	• Direct Alignment Option B	M	N/A	L/M (5)	L
12	Jacob Canyon/Kanab Creek/Pipe Valley	M	N/A	L/M (5)	VL
15	Cottonwood Wash	L	H	L/H (5)	VL
16	Colorado City/Hildale	L	L	L	VL
17	Uzona-Canaan Wash	M	N/A	M	VL
18	Short Creek	L	N/A	L	VL

Table 4–1
Magnitude of Change in Landscape Character
by Visual Assessment Unit for the South Alternative

Page 2 of 2

No.	Visual Assessment Unit	Foreground		Foreground/ Middleground	Middleground
		Pipeline Alignment	Proposed Facilities	Viewing Platforms	
19	Frog Hollow	M	H	L/H (5)	M
	• Small Forebay Reservoir Option	M	M/H (4)	L/M (5)	M
20	Hurricane Cliffs Road	M	H	VL/H (5)	M
	• Peaking Option	M	M/H (4)	L/H (5)	M
21	Sand Hollow	L	M	M	L
	• Peaking Option	L	M	M	L
22	Sheeps Bridge Road	L	N/A	L	VL
23	SR 9/Zion Park Scenic Byway	L	N/A	L	VL
24	Nephi's Twist	L	N/A	L	VL
25	Toquerville	VL	N/A	VL	VL
26	Ash Creek	L	L	L	VL
27	Kanarra Creek/ Cedar Valley	L	M	VL/M (5)	VL
28	Cedar City	L	M	L/M (5)	L

Source: Logan Simpson Design Inc.

Notes:

(1) VL = very low, L = low, M = moderate, H = high.

(2) VAU numbers 11, 13 and 14 do not occur in this table because the South Alternative would not be located in these VAUs.

(3) This Option would occur along with either the proposed configuration or the BPS-3 near Cottonwood Rd Options A or B. The Magnitude of change would therefore reflect that of the proposed configuration or the BPS-3 near Cottonwood Rd Options A or B.

(4) Range in magnitude of change reflects differing degrees of contrast for multiple facilities in the VAU.

(5) Range in magnitude of change reflects differing degrees of contrast from multiple viewing platforms in the VAU.

Table 4-2 Summary of Direct Impacts on Visual Assessment Units			
Page 1 of 6			
Visual Assessment Unit (VAU)	Direct Impacts from Pipeline Alignment (Foreground)	Direct Impacts from Proposed Facilities (Foreground)	Direct Impacts from Viewing Platforms (Foreground and Middleground)
1. Lake Powell/Glen Canyon The overall magnitude of change in the landscape character created by the project would range from very low* to moderate.	<ul style="list-style-type: none">Ground-disturbing activities would remove a uniform band of low, sparse vegetation, expose lighter soils, and cut through occasional rock formations.Lines, forms and colors of the existing cultural modifications in this VAU would help to diminish the visual prominence of the pipeline.	<ul style="list-style-type: none">The degree of change within the foreground of the Intake Pump Station would be moderate. The facility would attract the attention of lake users near the dam and recreational users at the Chains Day Use Area.The degree of change within the foreground of the BPS-1 structure would be low and would not attract attention. This facility is located near an existing ADOT maintenance facility and the lines and forms of BPS-1 would be similar to existing structures at that facility.	<ul style="list-style-type: none">The proposed pipeline alignment and facilities would be visible from KOPs 1 to 5, but they would be generally consistent with the lines and forms of the existing characteristic landscape.The degree of change from these KOPs 4 and 5 would be moderate because the lines and bold form of the Intake Pump Station would attract attention when viewed from these locations.Proposed project features would also be seen intermittently from linear viewing platforms, such as US 89 and Lake Shore Drive.
2. Wahweap The overall magnitude of change in the landscape character created by the project would range from very low to moderate.	<ul style="list-style-type: none">The alignment would pass over rolling landforms and would elevate the ground disturbance in some locations so that the disturbance area is more visible. This would be a moderate degree of change in the head-on view and would draw attention from the natural setting.Uniform removal of vegetation and exposure of lighter-colored soil would create a moderate contrast in the short term because of the introduction of more distinct lines in the landscape.	<ul style="list-style-type: none">Although there are no facilities planned within this VAU, the BPS-1 structure would be visible.Clearing of sage-scrub vegetation on this site would create a large rectangular shape in the landscape with a subtle level of contrast in line, form, and color. The subtle contrast would result in a low degree of change.	<ul style="list-style-type: none">The project would cross the Dominguez-Escalante Historical trail at a perpendicular angle near Milepost (MP) 553.5 on US 89 in Arizona. The degree of change to the landscape would be low because the lines and form of the project would be consistent with the lines and form of US 89, which the project parallels in this area.Views from linear platforms including US 89, the Old Spanish National Historic Trail-Armijo Route, and the Dominguez-Escalante Historic Trail would be affected. The degree of change, however, would be low because the form and line of the proposed alignment would be consistent with the existing lines and form of the highway.
3. Big Water The overall magnitude of change in the landscape character created by the project would range from very low to high.	<ul style="list-style-type: none">The alignment would be drilled below a large rock formation west of Blue Pool Wash, which would avoid surface disturbance to the rock formation and result in a very low degree of change in the landscape setting. <p><u>Rock Formation Avoidance Option:</u></p> <ul style="list-style-type: none">This option would avoid the large rock formation west of Blue Pool Wash by crossing US 89 east of the formation, and then crossing back under the highway to the west of the formation.	<ul style="list-style-type: none">Although the overall degree of change for this VAU would be very low to moderate, there would be a high degree of change within the foreground of the BPS-2 facility.The vertical lines and rectangular forms of the facility would create a strong contrast with the lines and forms of the natural setting.	<ul style="list-style-type: none">As viewed from KOPs 8 and 9, the project would remove uniform bands of vegetation and expose lighter soils parallel to the highway, resulting in a moderate degree of change in the landscape.The proposed alignment also closely parallels four linear platforms in this VAU and would result in nearly continuous visibility of the pipeline along each platform.The proposed alignment would also closely parallel KOP 10, US 89, and the Old Spanish National Historic Trail-Armijo Route platforms.
4. East Clark Bench The overall magnitude of change in the landscape character created by the project would range from very low* to high, depending on the option constructed.	<ul style="list-style-type: none">The line and form of the pipeline disturbance would be consistent with the line and form of the existing highway that it parallels. This alignment would result in a low degree of change to the landscape setting. <p><u>Northern Pipeline Option:</u></p> <ul style="list-style-type: none">The pipeline alignment would cross US 89 west of the High Point Regulation Tank 1/BPS-3 and High Point Regulation Tank facility. The lines and forms of the ground-disturbing activities would be consistent with the line and form of the highway and would likewise result in a low degree of change to the landscape setting.	<p><u>BPS-3 near Cottonwood Road Option A:</u></p> <ul style="list-style-type: none">This configuration would also require clearing of grass and sage-scrub vegetation in large rectangular shapes, creating a low level of contrast in line and form.Although the overall degree of change in this VAU would be very low to moderate, the degree of change within the foreground of the alternative BPS-3/High Point Reg. Tank 1 facility would be high due to the strong contrast in line and form with the facility. <p><u>BPS-3 near Cottonwood Road Option B:</u></p> <ul style="list-style-type: none">This alternative differs from Option A in that the facility would be located approximately 1,100 feet east and 500 feet south of the site for the proposed Project and Option A. Visual impacts would be similar to Option B.	<p><u>BPS-3 near Cottonwood Road Option A:</u></p> <ul style="list-style-type: none">The degree of contrast visible from KOP 12b would be noticeable, attracting attention to the optional BPS-3/H.P. Reg. Tank 1 facility. The degree of change from this contrast would be moderate. <p><u>BPS-3 near Cottonwood Road Option B:</u></p> <ul style="list-style-type: none">The degree of contrast visible from KOP 12b would be noticeable, attracting attention to the alternative BPS-3/H.P. Reg. Tank 1 facility. The degree of change from this contrast would, be moderate.From the linear platforms of US 89, Cottonwood Road, the Old Spanish National Historic Trail-Armijo Route, and KOP 11b, the degree of change in landscape character would be high for this option because the substantial level of contrast created by the forms and large scale of the facility would begin to dominate the landscape.

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Table 4-2 Summary of Direct Impacts on Visual Assessment Units			
Page 2 of 6			
Visual Assessment Unit (VAU)	Visual Assessment Unit (VAU)	Visual Assessment Unit (VAU)	Visual Assessment Unit (VAU)
5. Rimrocks/Paria River Valley The overall magnitude of change in the landscape character created by the project would range from very low to moderate, depending on the option constructed.	<ul style="list-style-type: none">Rock cuts in the Rimrocks area would create a moderate degree of change in the short and long term because of the inability to blend with the distinct rock stratifications and shapes. <p><u>Northern Pipeline Option:</u></p> <ul style="list-style-type: none">Rock cuts in the Rimrocks area would result in a low degree of change because the soil stratifications and rock formation shapes are less distinctive than those on the south side of the highway.	<ul style="list-style-type: none">The project and alternatives would not include facilities within the Rimrocks/Paria River VAU	<ul style="list-style-type: none">Three linear platforms are also located within this VAU, including US 89, the Old Spanish National Historic Trail-Armijo Route, and KOP 16a.In the proposed configuration, BPS-3/Hydro Station WCH-1 would be located near the base of the Cockscomb landform, on either the north or south side of US 89. <p><u>BPS-3 near Cottonwood Road Options A and B:</u></p> <ul style="list-style-type: none">These optional configurations would include KOP 16b rather than 16a. The optional configuration would have a low degree of change from KOP 16b because the form and line of the proposed alignment would be consistent with the existing features of the highway. This configuration would likewise have a low degree of change on the existing panoramic views.
6. Cockscomb The overall magnitude of change in the landscape character created by the project would range from very low to high, depending on the option constructed.	<ul style="list-style-type: none">Large rock cut slopes would result in a high degree of landscape modification as the pipeline extends through the Cockscomb, the changes would be relatively consistent with the existing lines, forms, colors and textures of the characteristic landscape.	<ul style="list-style-type: none">This facility would require clearing of sage-scrub vegetation in a large rectangular shape and would create a moderate level of contrast. There would be a high degree of change within the foreground of the proposed facility. <p><u>BPS-3 near Cottonwood Rd Option A/B:</u></p> <ul style="list-style-type: none">BPS 3 would be located near Cottonwood Road in the East Clark Bench VAU. Hydro Station WCH 1 would not be included in the project. The impacts to the Cockscomb VAU associated with these facilities would not occur.	<ul style="list-style-type: none">House Rock Road abuts the project from the south on the west side of the Cockscomb. The project would be visible from this platform, but would be consistent with the line and form of US 89 and would not attract attention.The impact to the remaining platforms from the project would range from moderate to high.The BPS 3/Hydro Station WCH 1 would have a high degree of change for the US 89/Old Spanish Trial Platform on the east side of the Cockscomb.
7. Fivemile Valley The overall magnitude of change in the landscape character created by the project would range from low to high, depending on the option constructed.	<ul style="list-style-type: none">The line and form of the pipeline disturbance would be consistent with the line and form of the existing highway it parallels through this VAU.	<ul style="list-style-type: none">The proposed configuration would include the BPS-4 facility on the west side of US 89, directly adjacent to the highway. There would be a high degree of change within the foreground of the BPS-4 facility, though the duration of view would be short because of the location of the facility on the inside of the curve of the highway. <p><u>High Point Realignment Option:</u></p> <ul style="list-style-type: none">In this configuration, BPS-4 would be located on the east side of US 89, approximately 500 feet from the highway. The facility would be located in a valley between US 89 and the Cockscomb landform, where views of the facility would most likely be obstructed from the majority of viewpoints along the highway.	<ul style="list-style-type: none">This includes three linear viewing platforms: US 89, the Old Spanish National Historic Trail-Armijo Route, and KOP 17.Because the proposed alignment runs parallel to these platforms, the project would be seen continuously creating a low to moderate magnitude of change in the landscape character <p><u>High Point Realignment Option:</u></p> <ul style="list-style-type: none">This option would include KOP 18 rather than KOP 17. BPS-4 would be located in an area partially hidden by rolling landforms with scattered pinyon and juniper vegetation. The facility would be seen tangentially from KOP 18 for a short period of time. The lines and forms of the facility would have a low degree of change to the landscape from this KOP and would not attract the attention of those travelling east on US 89.
8. Telegraph Flat The overall magnitude of change in the landscape character created by the project would range from low to high, depending on the option constructed.	<ul style="list-style-type: none">The ground disturbance from the pipeline would parallel US 89, and would be generally consistent with the line and form of the highway. This configuration would create a moderate contrast in color. <p><u>Bureau of Land Management (BLM) Road K4020 Option:</u></p> <ul style="list-style-type: none">The lines and form of the disturbance with the alternative alignment would be consistent with the lines and color of BLM Road K4020 that it would follow. The scale of the disturbance, however, would be larger than the scale of the existing road and would create a moderate contrast in form.	<ul style="list-style-type: none">The Hydro Station HS-1 facility would introduce vertical rectangular forms that would not be in scale with the softly rolling terrain this facility would begin to dominate the landscape. <p><u>BLM Road K4020 Option:</u></p> <ul style="list-style-type: none">The facilities in the optional configuration would also introduce vertical lines and rectangular forms into the existing landscape. The facilities in this option would be located directly adjacent to BLM Road 4020 and would contrast with this mostly undisturbed landscape.	<ul style="list-style-type: none">The change in landscape character for US 89, the Old Spanish National Historic Trail-Armijo Route, and KOP 20 platforms would be moderate due to the introduction of horizontal lines from the pipeline disturbance.The overall degree of change to the Great Western Trail linear platform would be low, there would be a moderate degree of change to the portion of the trail within close proximity to the Great Western Trail platform. <p><u>BLM Road K4020 Option:</u></p> <ul style="list-style-type: none">The pipeline ground disturbance would be visible from both the US 89 and the Old Spanish National Historic Trail-Armijo Route linear platforms.The optional project configuration would likewise introduce horizontal and vertical lines and forms into the landscape as viewed from KOPs 22 and 23.

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Table 4-2 Summary of Direct Impacts on Visual Assessment Units			
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Visual Assessment Unit (VAU)	Visual Assessment Unit (VAU)	Visual Assessment Unit (VAU)	Visual Assessment Unit (VAU)
9. Kanab/Vermilion Cliffs The overall magnitude of change in the landscape character created by the project would range from very low to high.	<ul style="list-style-type: none">This VAU would also include a smaller, 24-inch pipeline that would extend from the 69-inch pipeline west along US 89 and then north along Johnson Canyon Road to the proposed Kane County Water Treatment Facility. This pipeline would have a slightly smaller clearing area, but would be generally similar in line and form to the clearing areas for the 69-inch pipe.	<ul style="list-style-type: none">From US 89, the Kane County Water Treatment Facility would be within the middleground distance zone and the degree of change would be moderate. Within the foreground of the facility, lines and forms of the structures would begin to dominate the landscape and create a high degree of change for residents near Johnson Canyon Road.	<ul style="list-style-type: none">The US 89 and the Old Spanish National Historic Trail-Armijo Route platforms closely parallel the project alignment, resulting in relatively continuous visibility of the project. The lines and form of the project are consistent with the features of the existing landscape.The forms and scale of the Kane County WTF would create a high degree of change in the landscape character from KOP 25 and the Johnson Canyon Road platform.
10. Whitesage Wash The overall magnitude of change in the landscape character created by the project within the Whitesage Wash VAU would range from low to moderate, depending on the option constructed.	<ul style="list-style-type: none">This portion of the project would also include a permanent maintenance road over the pipeline, which would create a long-term impact but it would be a low magnitude of change in the landscape character. <p><u>Alignment Options A and B</u></p> <ul style="list-style-type: none">The pipeline would split from the proposed alignment and extend in a south or southwestern direction through currently undisturbed land resulting in a moderate magnitude of change in the landscape character.	<ul style="list-style-type: none">There are no facilities planned in this VAU, other than occasional pressure-relieving valves that would be located along the proposed pipeline.	<ul style="list-style-type: none">The Honeymoon Historic Trail platform would cross the project alignment perpendicularly and would result in a moderate degree of change to the landscape.The project would parallel the Dominguez-Escalante Historic Trail platform for several miles and would create a low degree of change to the landscape setting of the trail.The project alignment would cross the US 89A linear platform at a perpendicular angle. At this location, the project is also parallel to the existing Navajo-McCullough transmission line. The scale and vertical nature of the existing transmission lines and towers and they would be more dominant than the ground disturbance associated with the project.
11. Kanab/Fredonia/Lost Springs Wash The overall magnitude of change in the landscape character would range from very low to low.	<ul style="list-style-type: none">The area of this VAU near Fredonia and Kanab is urbanized, and the lines and forms of the pipeline disturbance would be consistent with the features in the existing visual setting. The project would create a low degree of change in the landscape character.	<ul style="list-style-type: none">There are no facilities planned in this VAU, other than occasional pressure-relieving valves that would be located along the proposed pipeline.	<ul style="list-style-type: none">The project crosses US 89A perpendicularly in the town of Fredonia and would result in a low degree of change to the platform due to the existing development in the surrounding area.
12. Jacob Canyon/Kanab Creek/Pipe Valley The overall magnitude of change in the landscape character created by the project would range from very low to moderate.	<ul style="list-style-type: none">Ground-disturbing activities would remove a uniform band of even, moderately dense vegetation, expose lighter soils, and cut through several deeply cut washes and rock formations.	<ul style="list-style-type: none">There are no facilities planned in this VAU, other than occasional pressure-relieving valves that would be located along the proposed pipeline.	<ul style="list-style-type: none">The project would create considerable contrast with existing rock formations within the foreground of both KOP 28 and 29.The project would not attract attention in this area due to the visual dominance of the existing Navajo- McCullough transmission lines and structures.The Honeymoon Historic Trail linear platform is also in this VAU and the project crosses it perpendicularly and there would be a low magnitude of change in the existing landscape character.
13. Shinarump Cliffs The overall magnitude of change in the landscape character would range from very low to low.	<ul style="list-style-type: none">The line and form of the majority of the pipeline disturbance would be consistent with the line and form of the existing highway it closely parallels through most of this VAU.	<ul style="list-style-type: none">There are no facilities planned in this VAU, other than occasional pressure-relieving valves that would be located along the proposed pipeline.	<ul style="list-style-type: none">From KOP 31, the project would introduce new horizontal lines and form into the landscape. The lines and form would, however, be similar to the characteristics of US 89.The State Route 389, Old Spanish National Historic Trail-Armijo Route, and Honeymoon Historic Trail linear platforms all parallel the project alignment, at varying distances from the project. From these platforms, the project is almost constantly visible but with a low magnitude of change.

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Table 4-2 Summary of Direct Impacts on Visual Assessment Units				Page 4 of 6
Visual Assessment Unit (VAU)m	Visual Assessment Unit (VAU)	Visual Assessment Unit (VAU)	Visual Assessment Unit (VAU)	
14. Potter Canyon The overall magnitude of change in the landscape character would range from very low to low.	<ul style="list-style-type: none">The line and form of the majority of the pipeline disturbance would be consistent with the line and form of the existing highway it closely parallels through most of this VAU.	<ul style="list-style-type: none">There are no facilities planned in this VAU, other than occasional pressure-relieving valves that would be located along the proposed pipeline.	<ul style="list-style-type: none">This VAU includes three linear platforms: The State Route 389, Old Spanish National Historic Trail-Armijo Route, and Honeymoon Historic Trail. These linear platforms parallel the project alignment at varying distances from the project. From these platforms, the project is almost constantly visible and there would be a low magnitude of change in the landscape character.	
15. Cottonwood Wash The overall magnitude of change in the landscape character created by the project would range from very low* to high.	<ul style="list-style-type: none">The lines and form of the majority of the pipeline disturbance would be consistent with the line and form of the existing highway through most of this VAU.	<ul style="list-style-type: none">The degree of change within the foreground of Hydro Station HS-2 South would be high and would begin to dominate the landscape because there are few other cultural modifications in this area.For the Existing Highway Alternative, the HS-2 facility would be located on the north side of State Route 389 and there would be a high magnitude of change in the landscape character.	<ul style="list-style-type: none">KOP 33 platform parallels the project alignment and result in relatively continuous visibility of the project.The project crosses State Route 389 and the Old Spanish National Historic Trail-Armijo Route platforms perpendicularly and then parallels these platforms. Visibility of the project from these platforms would be relatively continuous with a magnitude of change ranging from low to high because of HS-2.	
16. Colorado City/Hildale The overall magnitude of change in the landscape character created by the project would be very low to low.	<ul style="list-style-type: none">The project would result in a very low degree of change in the landscape setting because there would be no apparent change to the landscape.	<ul style="list-style-type: none">HS-3 would be located within this VAU, immediately west of the developed area along the Arizona-Utah border and be similar to the forms lies and colors of the of the existing development.	<ul style="list-style-type: none">The project would introduce new horizontal lines and rectangular forms into the landscape, which would be similar to the lines and forms already present.This VAU also includes the State Route 389 linear viewing platform, which the project parallels for several miles before crossing the highway and heading west, with a low magnitude of change in the landscape character.	
17. Uzona-Canaan Wash The overall magnitude of change in the landscape character created by the project would be very low to moderate.	<ul style="list-style-type: none">Ground-disturbing activities would remove a uniform band of dense, stippled vegetation, cut through existing rock formations, and expose lighter soils creating a moderate contrast in the short term because of the introduction of distinct lines into the landscape.	<ul style="list-style-type: none">There are no facilities planned in this VAU, other than occasional pressure-relieving valves that would be located along the proposed pipeline.	<ul style="list-style-type: none">The project would introduce horizontal lines and forms into the landscape from KOP 35. They would attract attention and result in a moderate degree of change to the existing landscape.	
18. Short Creek The overall magnitude of change in the landscape character created by the project range from very low to low.	<ul style="list-style-type: none">Because the distinct lines introduced by the project would be fairly consistent with lines from existing unpaved roads, the degree of change to the characteristic landscape would be low and would not attract attention.	<ul style="list-style-type: none">There are no facilities planned in this VAU, other than occasional pressure-relieving valves that would be located along the proposed pipeline.	<ul style="list-style-type: none">This VAU includes both KOP 36 and the Old Spanish National Historic Trail-Armijo Route linear platform. The project would introduce horizontal lines into the visible landscape, but they would cause a low degree of change due to the presence of existing roads in the project area. From the Old Spanish Trail linear platform, the project would run parallel to the trail and create a low degree of contrast. And low magnitude of change in the landscape character.	

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Table 4-2 Summary of Direct Impacts on Visual Assessment Units			
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Visual Assessment Unit (VAU)	Visual Assessment Unit (VAU)	Visual Assessment Unit (VAU)	Visual Assessment Unit (VAU)
19. Frog Hollow The overall magnitude of change in the landscape character created by the project range from low to high, depending on the option constructed.	<ul style="list-style-type: none">The pipeline alignment for this option would traverse mostly undisturbed land until reaching Frog Hollow Road, at which point it would parallel the road northward to Utah State Route 59 resulting in a moderate magnitude of change. <p><u>Small Forebay Reservoir Option:</u></p> <ul style="list-style-type: none">The impacts for the small forebay option would be the same and the proposed project.	<ul style="list-style-type: none">Vertical lines and rectangular forms introduced by HS-4 into the existing landscape would contrast with the lines and forms of the natural setting and the degree of change within the foreground would be high and would begin to dominate the landscape.The Large Hurricane Cliffs Forebay reservoir would create a high level of contrast in form, line, color and texture. <p><u>Small Forebay Reservoir Option:</u></p> <ul style="list-style-type: none">HS-4 would be located along an unnamed OHV road. This road is less heavily used than Frog Hollow Road and the impacts from the facility would affect a lower number of users. The reservoir would create a high level of contrast in form, line, color and texture.	<ul style="list-style-type: none">The degree of change from KOP 37 would be noticeable due to the contrast in line, form, and texture created by the proposed forebay. The large forebay reservoir would not begin to dominate the view from KOP 37. This is due in part by the expansive scale of the landscape from high atop Little Creek Mountain.The project would create contrast in line, form, color and texture to the landscape surrounding KOP 38 and would result in an overall moderate degree of change to the characteristic landscape. <p><u>Small Forebay Reservoir Option:</u></p> <ul style="list-style-type: none">The pipeline alignment would create contrast in line, form, color and texture with the landscape surrounding KOP 38 and would result in an overall moderate degree of change to the characteristic landscape. HS-4 would not be visible from this platform, but the forebay may be visible for a short time at a tangential view.
20. Hurricane Cliffs Road The overall magnitude of change in the landscape character created by the project would range from very low to high, depending on the option constructed.	<ul style="list-style-type: none">The pipeline alignment associated with this option would be tunneled through the landform to the west of the proposed afterbay and there would be a moderate magnitude of change. <p><u>Peaking Option:</u></p> <ul style="list-style-type: none">The pipeline alignment associated with this option would follow Hurricane Cliffs Road northward from the hydro station before turning due west and travelling near another unpaved road resulting in a moderate magnitude of change in the landscape character.	<ul style="list-style-type: none">Proposed facility access roads would create contrast, but would be generally consistent with the line and form created by Hurricane Cliffs Road.The large scale of the pumped storage afterbay would create a high level of contrast in form, line, color and texture because it would introduce an industrial facility into the existing natural landscape. <p><u>Peaking Option:</u></p> <ul style="list-style-type: none">The facility in this option would require clearing of vegetation in a large rectangular shape and would create a moderate level of contrast. The vertical lines and rectangular forms of the facility would contrast strongly with the indistinct lines and forms of the natural setting.The dam surrounding the peaking afterbay would create a moderate level of contrast in form, line, color and texture.	<ul style="list-style-type: none">From KOP 39, the impacts would be similar to those described for the proposed project configuration in this VAU.From KOP 40, the lines, forms, and large scale of the proposed reservoir dam would attract attention. <p><u>Peaking Option:</u></p> <ul style="list-style-type: none">From KOP 39, the impacts would be similar to those described above for the proposed Peaking Option in this VAU.From KOP 40, the proposed facility would be nearly a mile away. The lines, forms, and colors of the facility would contrast subtly with the existing landscape.From the Hurricane Cliffs Road linear KOP, the project would create contrast in line, form, color and texture with the landscape surrounding this platform, resulting in an overall moderate degree of change.
21. Sand Hollow The overall magnitude of change in the landscape character created by the project would range from low to moderate.	<ul style="list-style-type: none">The eastern end of the pipeline alignment associated with this option would be tunneled through the landform to the west of the proposed afterbay. The pipeline would continue toward Sand Hollow with ground disturbance through mostly undisturbed land with a low magnitude of change <p><u>Peaking Option:</u></p> <ul style="list-style-type: none">The pipeline alignment associated with this option would cross mostly undisturbed land, with a variety of existing lines and forms from unpaved roads and there would be a low magnitude of change in the landscape character	<ul style="list-style-type: none">The Sand Hollow Hydro Station facility is located within this VAU.The lines and forms of the facility would, however, be consistent with the lines and forms of other cultural modifications in the landscape, such as the park facility buildings and utility buildings.The Sand Hollow Hydro Station would result in a moderate degree in the landscape setting because the facility would be noticeable, but would not begin to dominate the landscape.	<ul style="list-style-type: none">Ground disturbance from the proposed alignment would be visible from KOP 41, as would the Sand Hollow Hydro Station.Although portions of the Dominguez-Escalante Historic Trail platform are within the Sand Hollow Reservoir in this area, the trail would be located approximately 1 mile from the Sand Hollow Hydro Station.
22. Sheeps Bridge Road The overall magnitude of change in the landscape character created by the project would range from very low to low.	<ul style="list-style-type: none">Ground-disturbing activities would remove a uniform band of dense, evenly spaced vegetation, expose lighter soils, and cut through rock formations, washes, and the vertical rock walls of the Virgin River.The project is parallel to an existing road and the distinct lines introduced by the project would be fairly consistent with the lines of that road resulting in a low magnitude of change.	<ul style="list-style-type: none">There are no facilities planned in this VAU.	<ul style="list-style-type: none">This VAU does not include any specific KOPs or linear platforms, but does include several key off-road bicycling trails. The project would be visible from these trails intermittently, but would be consistent in line and form with the existing unpaved road.reulting in a low magnitude of change in the landscape character.

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Table 4-2 Summary of Direct Impacts on Visual Assessment Units				Page 6 of 6
Visual Assessment Unit (VAU)	Visual Assessment Unit (VAU)	Visual Assessment Unit (VAU)	Visual Assessment Unit (VAU)	
23. State Route 9/Zion Park Scenic Byway The overall magnitude of change in the landscape character created by the project would range from very low to low.	<ul style="list-style-type: none">Ground-disturbing activities would result in a low degree of change to the characteristic landscape and the project would not attract attention and there would be a low magnitude of change in the landscape character.	<ul style="list-style-type: none">There are no facilities planned in this VAU.	<ul style="list-style-type: none">The project would introduce horizontal lines into the visible landscape from the Zion Scenic Byway/State Route 9 linear KOP that would be consistent with the lines of the existing roadway.	
24. Nephi’s Twist The overall magnitude of change in the landscape character created by the project would range from very low to low.	<ul style="list-style-type: none">Because the project parallels an existing underground pipeline in this area, changes to the vegetation and rock formations would be generally consistent with the existing landscape.	<ul style="list-style-type: none">There are no facilities planned in this VAU.	<ul style="list-style-type: none">The project would follow this trail through Nephi’s Twist, as did a previous pipeline project and there would be a very low magnitude of change in the landscape character.	
25. Toquerville The overall magnitude of change in the landscape character created by the project would be very low.	<ul style="list-style-type: none">Lines introduced by the project would be consistent with lines from existing cultural modifications in the landscape.The aerial pipeline crossing at Ash Creek would be a notable addition to the landscape, but would be consistent with existing pipeline crossings along the creek.	<ul style="list-style-type: none">There are no facilities planned in this VAU.	<ul style="list-style-type: none">This VAU contains no KOPs or linear KOPs, but the project would cross State Route 17, a key linear viewing platform in the area.Because the project crosses the highway in a developed area, the lines and forms of the project would be consistent with those of the cultural modifications in the existing landscape.	
26. Ash Creek The overall magnitude of change in the landscape character created by the project would range from very low to low.	<ul style="list-style-type: none">Ground-disturbing activities would remove a uniform band of irregular, dense vegetation, expose lighter soils, and cut through Ash Creek and connecting washes.The height of the pinyon-juniper in this area would partially obscure views of the project and there would be a low magnitude of change in the landscape character.	<ul style="list-style-type: none">The CBPS-1 facility would be located adjacent to an existing quarry and areas of vegetative clearing would be generally consistent with the characteristic landscape.	<ul style="list-style-type: none">The project would be intermittently visible from this platform because it would often be hidden from view by landforms and vegetation where the project passes through the Ash Creek Valley.	
27. Kanarra Creek/Cedar Valley The overall magnitude of change in the landscape character created by the project would range from very low to moderate.	<ul style="list-style-type: none">As agricultural areas are subsequently used for production the project would not be visible and there would be a very low degree of change in the visual setting.	<ul style="list-style-type: none">The CBPS-2 and CBPS-3 facilities are located within this VAU.These facilities would introduce vertical lines and rectangular forms into the existing landscape, but would be consistent with those of existing cultural modifications in the VAU.	<ul style="list-style-type: none">The impacts to the I-15 platform would generally be low, but would be moderate within the foreground of the pump station facilities.The Kolob Fingers Scenic Byway linear KOP is also within this VAU, although views of the project from this platform would be limited.	
28. Cedar City The overall magnitude of change in the landscape character created by the project would range from low to moderate.	<ul style="list-style-type: none">Distinct lines introduced by the project would loosely parallel I-15 before climbing a slope to the proposed Cedar Valley Pipeline WTF.The pipeline along the slope would be visible from the northbound travel lanes of I-15, but there would be a low magnitude of change in the landscape character	<ul style="list-style-type: none">The Cedar Valley WTF is located within this VAU.Because of the large scale and the elevated location of the facility, the degree of change would be moderate and attract attention in the short term from locations in Cedar City and along I-15.As development continues in the vicinity of the WTF, the facility would become less noticeable and be considered normal element of the landscape setting.	<ul style="list-style-type: none">From KOP 42 along Royal Hunt Drive, the facility would be visible but would be consistent in line and form with adjacent cultural modifications.The facility would have a moderate impact to the landscape from this viewpoint and would attract attention, primarily because it would be silhouetted against the skyline of the landform on which it would be located.The I-15 linear viewing platform is also located in this VAU. The project would be visible from this platform, but would introduce lines and forms that would be generally consistent with the characteristic landscape.	

Chapter 4. Environmental Consequences

The direct impacts also consider the visibility of the project. The visibility analysis of the South Alternative identified all areas that would be seen within the foreground and middleground of the alignment. The results of the visibility analyses are shown in Appendices D, E, and F. The project alignments were also evaluated in terms of impacts on visibility over time: short-term impacts were defined as effects that would be seen immediately after construction and long-term impacts were effects that would persist for the duration of the project.

To support the contrast rating process and the evaluation of impacts, simulations of the pipeline and associated facilities were prepared from selected locations. Of the 37 sets of digital visual simulations, 34 were associated with KOPs within the South Alternative. These simulations were generated for the assessment to approximately depict the visual effects of the project over time. The locations for the simulations were determined through coordination with BLM and NPS representatives. The simulation sets illustrate existing conditions, immediate post-construction conditions, and conditions at 5 to 10 years after construction (Appendix C). Table 4-3 catalogs the simulations by name and number; provides the KOP at which each simulation was generated; and provides the VAU in which each simulation was located. The simulations are located in Appendix C.

Per the BLM's Visual Contrast Rating System, contrast-rating forms were prepared to assess potential visual impacts of the proposed alternative (Appendix C). The points at which the ratings were taken were determined through coordination with BLM representatives and correspond with the KOPs along the proposed alignment. The rating forms assisted in revealing the elements and features in the proposed alternative that would cause the greatest impact on the existing visual conditions.

The following section describes the direct impacts on the project area as they occur in each VAU, beginning with a discussion of common impacts that would occur in the VAUs. The impacts are considered in terms of their magnitude of change in landscape character and their visibility. Proposed pipeline disturbances are addressed separately from proposed facilities because their visual impacts generally differ in form, line, color, and texture.

VAUs 1, 12, and 15 are located within the Arizona Strip, as are portions of VAUs 2, 10, and 16.

Table 4-3
Visual Simulation Listing for the South Alternative

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No.	Simulation Name/Subject	Corresponding KOP and Contrast Rating Form Numbers	Corresponding VAU Number
1	Former McDonalds Parking Lot	2	1
2	Gravel Pullout near Bridge	3	1
3	Chains Day Use Area	4	1
4	Chains Day Use Area (NG)	4	1
5	Lake Powell Lake Surface	5	1
6	Lake Powell Lake Surface (NG)	5	1
7	Wahweap Overlook	6	2
8	Grand Staircase-Escalante National Monument Visitor Center	9	3
9	BPS-2 from U.S. 89 Eastbound	10	3
10	BPS-2 from U.S. 89 Eastbound (NG)	10	3
11	BPS-2 from U.S. 89 Westbound	10	3
12	BPS-2 from U.S. 89 Westbound (NG)	10	3
13	High Point Regulation Tank 1 from U.S. 89	11a	4
14	High Point Regulation Tank 1 from U.S. 89	11a	4
15	BPS-3/High Point Regulation Tank 1 from U.S. 89 – Option A	11b	4
16	BPS-3/High Point Regulation Tank 1 from U.S. 89 – Option A (NG)	11b	4
17	BPS-3/ High Point Regulation 1 from U.S. 89 – Option B	11b	4
18	BPS-3/ High Point Regulation 1 from U.S. 89 – Option B (NG)	11b	4
19	High Point Regulation Tank 1 from Cottonwood Road	12a	4
20	BPS-3/High Point Regulation 1from Cottonwood Road – Option A	12b	4
21	BPS-3/High Point Regulation 1from Cottonwood Road – Option A (NG)	12b	4
22	BPS-3/ High Point Regulation 1 from Cottonwood Road – Option B	12b	4
23	BPS-3/ High Point Regulation 1 from Cottonwood Road – Option B (NG)	12b	4
24	Toadstools Trailhead	14	5
25	BPS-3/Hydro Station WCH-1 Eastbound from U.S. 89	16a	6
26	BPS-3/Hydro Station WCH-1 Eastbound from U.S. 89 (NG)	16a	6
27	BPS-3/Hydro Station WCH-1 Westbound from U.S. 89	16a	6
28	BPS-3/Hydro Station WCH-1 Westbound from U.S. 89 (NG)	16a	6
29	BPS-4from Westbound U.S. 89	17	7
30	BPS-4from Westbound U.S. 89 (NG)	17	7
31	BPS-4from Westbound U.S. 89 (tangential view) – East Option	18	7
32	BPS-4from Westbound U.S. 89 (tangential view) – East Option (NG)	18	7

<p align="center">Table 4–3 Visual Simulation Listing for the South Alternative</p> <p align="right">Page 2 of 2</p>			
No.	Simulation Name/Subject	Corresponding KOP and Contrast Rating Form Numbers	Corresponding VAU Number
33	High Point Regulation Tank 2 from Great Western Trailhead	21	8
34	Hydro Station 1 from U.S. 89	20	8
35	U.S. 89 near Pioneer Gap	24	9
36	Kane County Water Treatment Facility	25	9
37	Shinarump Cliffs Overlook	26	10
38	Kanab Creek (Kanab Creek ACEC)	28	12
39	Bitter Seeps Wash (Kanab Creek ACEC)	29	12
40	Mount Trumbull Road	30	12
41	Hydro Station 3 from Uzona Avenue	34	16
42	Uzona Avenue/Canaan Wash	35	17
43	Little Creek Overlook	37	19
44	Hydro Station 4 from Frog Hollow Road	38	19
45	Hurricane Cliffs Road (view to south)	39	20
46	Hurricane Cliffs – Unnamed Off-Highway-Vehicle Road	40	20
47	Cedar Valley Water Treatment Facility	42	28
<p>Source: Logan Simpson Design Inc. Note: ACEC = area of critical environmental concern; BPS = booster pump station; KOP = key observation point; VAU = visual assessment unit; NG = Natural Gas Supply Line and Generators Alternative</p>			

4.4.1.1 Direct Impacts on Visual Assessment Units

4.4.1.1.1 Summary of Direct Impacts in the Foreground from Pipeline Alignment

This section summarizes the direct impacts in the foreground distance zone from the proposed pipeline alignment as planned for the South Alternative. The direct impacts for each VAU are listed in Table 4-1. Detailed descriptions of the direct impacts within each VAU are included in Appendix B.

Ground disturbing activities associated with construction of the pipeline would remove a band of existing vegetation approximately 130 feet in width. A slightly smaller 110-foot-wide disturbance would occur along the short stretch of smaller pipeline that extends from the primary pipeline to the Kane County Water Treatment Facility. Intermittent pressure-relieving valves with vertical vent structures would be located along the Lake Powell Pipeline alignment, but would not occur along the Cedar Valley Pipeline alignment or the pipeline extending to the Kane County WTF. These structures would occur at all pipe highpoints along the Lake Powell Pipeline alignment. The valves and vent structures would be approximately 4 feet in height; the vents would be cane-shaped. The installation of the valve structures would not remove additional vegetation outside the 130-foot-wide disturbance area, but would be fenced and kept clear of vegetation. These sites would introduce short, vertical rectangular shapes into the landscape, as well as square shaped clearings. These shapes would create varying

degrees of contrast with the lines and forms of the existing landscape. The degree of contrast with existing vegetation that would be created by the project would depend primarily on the height, texture/pattern, or color of the vegetation. The pipeline disturbance would generally be more visible in areas with low vegetation because the adjacent undisturbed vegetation does not sufficiently obstruct views of the disturbance. Areas with low to medium height vegetation would more effectively obstruct views of the disturbance. The height of the vegetation is generally low in nine of the 25 VAUs that the South Alternative passes through (VAUs 1, 2, 4, 20, 21, 22, 23, 24, and 25) and is low to medium in the remaining 19.

With the **Natural Gas Supply Line and Generators Alternative**, a natural gas supply line would closely parallel the LPP alignment and result in no additional impacts since it would occur within the ground disturbance of the LPP pipeline alignment. The gas pipeline would require sites for above-ground sectionalizing valves and pig launchers/receivers. Each site would measure 40 feet by 40 feet, would be surrounded with 10-foot-high chain-link fencing topped with barbed wire, and would be cleared of vegetation. The sites would occur approximately every 20 miles along the 138.5 mile long gas pipeline. The western end of the gas pipeline near Sand Hollow Reservoir would also include a gate station site. This site would include above ground pipes and valves, as well as 10-foot high chain link fencing topped with barbed wire, and vegetative clearing within the fence boundaries. Kept devoid of vegetation, these sites would create square shapes in the characteristic landscape and would result in varying degrees of contrast. The valves, pig launchers/receivers, and fences would introduce vertical lines and rectangular forms that would contrast with the lines and forms of the natural settings. These impacts would be permanent because these sites would be in operation for the life of the project. The degree of contrast with existing vegetation that would be created by the project would depend primarily on the height, texture/pattern, or color of the vegetation. Areas with low to medium height vegetation would more effectively obstruct views of the disturbance. The height of the vegetation is generally low in four of the 17 VAUs that the natural gas supply line would pass through (VAUs 1, 2, 4, and 21) and is low to medium in the remaining 12 (VAUs 3, 5, 6, 7, 8, 9, 10, 12, 15, 16, 17, 18, 19, 21).

The project would generally contrast more with existing vegetation that is dense and even in texture/pattern, because the lines and form of the pipeline disturbance would be more distinct. The vegetative texture/pattern in 18 of the VAUs is generally dense and/or even. The remaining 10 VAUs (1, 5, 6, 7, 17, 20, 24, 25, 27, and 28) include vegetation that is generally sparse, irregular, mottled, random, or variable in texture/pattern and the pipeline disturbance would result in lower contrast than in areas with dense/even vegetation.

The color of the existing vegetation would also influence the degree of contrast that the pipeline disturbance creates. The disturbance would generally contrast less with existing vegetation in areas with a higher occurrence of grasses due to the buff color of the vegetation in the dry seasons. The buff color would contrast less with the exposed earth-toned soil colors, particularly where the soil color is buff to brown in color. Grasses are generally dominant in seven VAUs, including VAUs 4, 10, 12, 15, 23, 27, and 28. In addition, color contrast would also be increased in areas with stippled to patchy pinyon/juniper vegetation. The irregular patterns of dark green vegetation in these existing landscapes contrast with the surrounding desertscrub vegetation. If bands of the dark green vegetation were removed, the irregular patterns would be bisected by a regular pattern with distinct lines and forms that would contrast with the existing vegetative patterns.

The ground-disturbing activities would affect the landform throughout the project area by exposing lighter soils, which would contrast with the adjacent soils and vegetation. In areas where the project would cross rock formations, rock/wash formations, and vertical rock faces of creeks and rivers, modifications to the rock formations would be visible and would alter the existing landform in most locations. Impacts on rock formations would occur throughout the project area but would be most notable in VAUs 5, 6, and 12. The rock cuts to the candy-striped badland formations in VAU 5 would create noticeable contrast in the short and long term because

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of the inability to blend with the distinct rock stratifications, changes to the rock formation shapes, and potential localized erosion. In VAU 6, the Cockscomb Unit, the pipeline disturbance would considerably increase existing rock cut slopes alongside U.S. 89. These impacts would create a noticeable change in the characteristic landscape and would have a noticeable effect on the existing degree of enclosure from adjacent landforms because new cut slopes would be located further back from the edge of U.S. 89. The project would also cut through the deeply incised Kanab Creek and Bitter Seeps Wash formations in VAU 12. This would create a noticeable change to the striated rock walls of both formations.

The degree of contrast from the pipeline disturbance would also be influenced by the slopes on which the pipeline traverses. The degree of contrast would increase in areas where the alignment passes over rolling or vertical landforms because the disturbance would intermittently be elevated and would more directly face the viewer. These elevated disturbances would introduce distinct lines and forms into the landscapes, which would often be inconsistent with the lines and forms already present in the landscapes. VAUs with mostly flat terrain would generally have the least amount of contrast associated with slopes, though noticeable contrast could occur at isolated locations within the VAUs. This could occur in 15 VAUs, including VAUs 2, 4, 9, 10, 11, 12, 13, 14, 15, 16, 18, 23, 25, 27, and 28.

Existing cultural modifications within the VAUs would also affect the amount of contrast that the pipeline disturbance would create. VAUs with greater amounts of cultural modification would generally be impacted less by the lines and forms introduced by the disturbance. The VAUs with the highest degree of existing cultural modification are VAU 1 (Lake Powell/Glen Canyon), VAU 25 (Toquerville), and VAU 28 (Cedar City).

The pipeline disturbance would also parallel existing roads and/or pipeline alignments throughout much of the project area. The lines and form of the pipeline disturbance would be similar to the lines and forms of the existing paved roads and would create a subtle degree of contrast with the cultural modifications in these areas. Contrast could be slightly increased in areas where the pipeline disturbance follows existing unpaved roads and pipelines because the scale (width) of the disturbance would be greater than the existing landscape modifications. The project would generally parallel existing roads, pipelines, or both through 19 of the 25 VAUs that the South Alternative passes through. In addition, VAUs 10 and 18 would include a new permanent maintenance road over the pipeline and would create long-term contrasts in line and form.

The varying degrees of contrast from pipeline disturbance throughout the project area would result in differing magnitudes of change in the VAUs along the South Alternative. The magnitude of change to VAU 25 would be very low. The landscape in this VAU would remain intact with no apparent change to the existing landscape. The magnitude of change to VAUs 1, 4, 9, 15, 16, 18, 21, 22, 23, 24, 26, 27, and 28 would be low. The impacts in these VAUs would be subtle, and would not attract attention. There would be a low magnitude of change in VAU 5 only if the Northern Pipeline Option were constructed. If the proposed configuration were constructed in VAU 5, the magnitude of change would be moderate. The magnitude of change would be low in VAU 10 if the proposed configuration were constructed but would be moderate if Direct Alignment Options A or B were constructed. The magnitude of change for VAUs 2, 3, 6, 7, 8, 12, 17, 19, and 20 would be moderate. The changes to the landscapes with a moderate magnitude of change would be noticeable and would attract attention.

4.4.1.1.2 Summary of Direct Impacts in the Foreground from Proposed Facilities

Sixteen of the 25 VAUs in the South Alternative would be directly impacted by project facilities, including VAUs 1, 3, 4, 5, 6, 7, 8, 9, 15, 16, 19, 20, 21, 26, 27, and 28. The direct impacts within the foreground distance zone from proposed facilities are listed in Table 4-1 and are summarized in this section. Summarized descriptions of the direct impacts within each VAU are included in Table 4-2; detailed descriptions of the direct impacts

within each VAU are included in Appendix B. Visibility maps of each of the proposed buildings are included in Appendix E.

Several types of facilities would be constructed with implementation of the project (See Section 4-2 for general descriptions of the facility types).

The clearing of sage-scrub vegetation on the facility sites would create large rectangular shapes in the characteristic landscape and would result in varying degrees of contrast. The facilities would introduce vertical lines and rectangular forms that would contrast with the lines and forms of the natural settings. These impacts would be permanent because the facilities would be in operation for the life of the project. Staging sites would also be located in many of the VAUs, which would slightly increase the area of disturbance in the existing landscape. These sites would not remain in permanent use but would require clearing of vegetation in large rectangular shapes. The contrast from staging areas would diminish in the long term.

With the **Natural Gas Supply Line and Generators Alternative**, the natural gas generators would increase the building sizes and decrease the size of the electrical pads at the IPS, BPS-1, BPS-2, BPS-3, BPS-3 (Alt), BPS-4, and BPS-4 (Alt) sites in VAUs 1, 3, 4, 6, and 7. Each of these buildings would also include multiple vent stacks that would extend approximately 75-100 feet above existing grades at the sites, resulting in a higher degree of visibility of the sites. Conversely, the decreased electrical pads would be associated with the elimination of tall overhead transmission lines to these sites, reducing the general visibility of the project (See Section 4.6.0 for potential impacts from associated transmission line alternatives). Although impacts to the sites with natural gas generators would be slightly higher, the overall impacts to VAUs 1, 3, 4, 6, and 7 would not increase due to the associated elimination of transmission lines to these sites.

A low magnitude of change would occur in VAUs 2, 4, 7, 16, and 26. Because the lines and forms of the facilities would be similar to those of the existing landscape, the degree of contrast would be subtle and would not attract attention. Views of BPS-4 (Alt) associated with the proposed alignment in VAU 7 would also be partially obstructed due to the location of the facility in a valley and behind rolling hills.

The magnitude of change to VAUs 1, 21, 27, and 28 from proposed facilities would be moderate. Although the proposed facilities would add distinct vertical lines and forms to the landscape, they would be similar to lines and forms of the adjacent cultural modifications. These facilities would contrast to a moderate degree with the existing landscape and would attract attention. Although there are no existing cultural modifications directly adjacent to CBPS 2 and 3 in VAU 27, the lines and forms of the proposed pump stations would be consistent with other cultural modifications in the VAU. In VAU 28, the large scale and elevated siting of the Cedar Valley WTF would be silhouetted against the sky and surrounding mountains and would create a moderate impact on the existing landscape in the short term. In the long term, however, the degree of change would subside as the facility would appear to be an extension of the adjacent urban development.

A range of moderate to high magnitude of change would occur in several VAUs and would reflect differing degrees of contrast for multiple facilities within the VAUs. The magnitude of change to VAU 8 would be high if either the proposed configuration or the High Point Highway Alternative were constructed. Although the lines and forms of the High Point Regulation Tank 2 facility in VAU 8 would create a moderate contrast with the existing landscape, the Hydro Station 2 facility would create a high degree of contrast. The distinct lines and bold, rectangular forms of the facility would contrast substantially with the lines and forms of the existing landscape and would begin to dominate the landscape. The High Point Highway Alternative would include HS-2 directly adjacent to the highway, where it would affect a high number of highway users. The proposed alignment would affect far fewer users with its relocation of HS-2 on a dirt road approximately one mile south and east of the

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highway. If the Small Forebay Option were constructed, a moderate to high magnitude of change to VAU 19 would occur. The Small Forebay Option would be large in scale and would contrast strongly with the lines and forms of the existing landscape. The Hydro Station 4 (HS-4) facility, on the other hand, would be located behind rolling landforms on a BLM road that is used less than in the proposed configuration. The facility would contrast to a moderate degree in line and form with the existing landscape. The magnitude of change to VAU 20, the Hurricane Cliffs Road unit, would be moderate to high if the Peaking Option were constructed. The contrast from the dam of the peaking afterbay would be moderate, while the Hurricane Cliffs Hydro facility would contrast with the existing landscape strongly in line and form. The hydro facility would alter the landscape substantially and would begin to dominate the landscape.

The proposed facilities would create a high magnitude of change for the remaining VAUs that are impacted, including VAUs 3, 6, 9, and 15. A high magnitude of change to VAU 4 would also occur, assuming the BPS-3 near Cottonwood Road Option A or B was constructed. However, the contrast associated with Option B would be slightly less than that of Option A. If the High Point Highway Alternative were constructed in VAUs 7, 19, and 20, a high magnitude of change would occur. In all of the VAUs with a high magnitude of change, the distinct vertical lines and rectangular forms of the proposed facilities would create a high degree of contrast with the existing natural landscape. These facilities are all located in mostly undisturbed areas with few existing cultural modifications. The facilities would substantially change the landscape character within the foreground distance zone and would begin to dominate the landscape. The proposed configurations for VAUs 19 and 20 also include large reservoirs that would create strong contrast in line, form, color and texture.

4.4.1.1.3 Summary of Direct Impacts in the Foreground and Middleground from Viewing Platforms

The direct impacts in the foreground- and middleground-distance zones from viewing platforms in the South Alternative are listed in Table 4-1 and are summarized in this section. Detailed descriptions of the direct impacts within each VAU are included in Appendix B.

Viewing platforms within the VAUS include KOPs, historic trails, and existing roads. These platforms represent locations from which visitors experience the scenic landscapes within the project area. The degree of change to the platforms within each VAU varies based on the amount of contrast that would be perceived from each platform. The amount of contrast perceived would also be directly correlated to the distance between the project and the viewing platform. Viewing platforms occur in both the foreground and middleground of the project, and linear platforms sometimes cross both the foreground- and background-distance zones. A range in the magnitude of change would occur in many of the VAU and would reflect the differing degrees of contrast from multiple viewing platforms within the VAUs.

The **Natural Gas Supply Line and Generators Alternative** would traverse 17 VAUs, including 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 17, 18, 19, and 20. As discussed in Sections 4.3.1.1.1 and 4.3.1.1.2 above, the changes associated with the natural gas supply line and generators would be generally similar in magnitude to those from project if it did not include the natural gas supply line and generators.

A very low magnitude of change would occur in VAU 25. The landscapes in this VAU contains urbanized development and the degree of contrast from the project would be minimal in both the foreground and middleground. The existing landscape character in VAU 25 would remain intact with no apparent change to the existing visual elements of line, form, color, and texture.

The landscapes in several VAUs would be subject to a magnitude of change that would be low or would range from very low to low. There would be a low magnitude of change to VAUs 4, 16, 18, 22, 23, 24, and 26. The landscape within VAU 4 would be subject to a low magnitude of change only if BPS-3 was not constructed within

the unit. The degree of contrast created by the lines, forms, colors and textures of the project would be subtle and the changes to the existing landscapes within these VAUs would not attract attention. The magnitude of change would range from very low to low if the Northern Pipeline Option was constructed in VAU 5. The degree of contrast in this VAU created by the lines, forms, colors, and textures of the project would be barely perceptible in the foreground and subtle in the middleground.

A moderate, low to moderate, or very low to moderate magnitude of change would occur in a number of VAUs. The magnitude of change from viewing platforms in VAUs 17 and 21 would be moderate and would attract attention. For VAU 21, the magnitude of change would be moderate if either the proposed or the Peaking Option were constructed. A low to moderate magnitude of change would occur in VAUs 1, 6 (assuming the BPS-3 near Cottonwood Road Option A/B was constructed), 7 (assuming the proposed alignment was constructed), 10 (assuming either the proposed, the Direct Alignment Option A, or the Direct Alignment Option B were constructed), 12, 19 (assuming the Small Forebay Reservoir Option was constructed), and 28. VAUs 6, 7, 10, and 19 would have a low to moderate magnitude of change only if the associated configurations mentioned above were constructed. The lines, forms, colors and textures of the project within these VAUs would create a subtle to noticeable degree of contrast with the characteristic landscapes from these viewing platforms. A range of very low to moderate magnitude of change from viewing platforms would occur in VAU 2, VAU 5 (assuming the proposed configuration was constructed), and VAU 27. VAU 5 would only be subject to a very low to moderate magnitude of change if the proposed configuration were constructed. From the viewing platforms in these VAUs, the project would create varying degrees of contrast in line, form, color, and texture. The degrees of contrast would range from barely perceptible to noticeable.

A number of landscapes within the VAUs would be subject to a magnitude of change from the viewing platforms that would range from very low to high, low to high, and moderate to high. The magnitude of change to VAU 20 would range from very low to high, assuming the proposed configuration was constructed. The lines, forms, colors, and textures of the project in VAU 20 would create varying degrees of contrast from the platforms, ranging from barely perceptible to substantial. A low to high magnitude of change would occur for VAUs 3 (assuming the Rock Formation Avoidance Option were constructed), 8 (assuming either the proposed or the High Point Highway Alternative were constructed), 9, 15, 19 (assuming the proposed configuration were constructed), and 20 (assuming the Peaking Option were constructed). The landscapes in these VAUs would be subject to contrast in line, form, color, and texture from the project that would be subtle to substantial. A moderate to high magnitude of change would occur in VAU 4 (assuming either BPS-3 near Cottonwood Road Options A or B were constructed) and for VAUs 6 and 7 (assuming the proposed configuration were constructed). The contrast from the lines, forms, colors, and textures of the project would create noticeable to substantial changes to the landscapes in these VAUs, depending on the degree of contrast perceptible from each of the platforms.

4.4.1.1.4 Summary of Direct Impacts in the Middleground

The direct impacts in the middleground distance zone from the South Alternative are listed in Table 4-1, and are summarized in this section. Changes in the middleground distance zone are generally perceived in less detail, and are considerably less discernable than those in the foreground. The visual elements of line and form create most of the perceptible contrast, as color and texture are less distinct from this distance. An overall magnitude of change was therefore determined for the middleground in each VAU. The magnitude of change in the middleground distance zone would range from low to moderate, and would not include any areas with a high magnitude of change.

The changes associated with the **Natural Gas Supply Line and Generators Alternative** would be generally similar in magnitude to those from project if it did not include the natural gas supply line and generators, as

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discussed in Sections 4.3.1.1.1 and 4.3.1.1.2. The gas pipeline and generators would occur within 17 VAUs, including 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 17, 18, 19, and 20.

Within the middleground, a very low magnitude of change would occur in the majority of the VAUs, including VAUs 1, 2, 3, 4, 6 (assuming the proposed configuration was constructed), 9, 12, 15, 16, 17, 18, 22, 23, 24, 25, 26, and 27. The landscapes within these VAUs would have no apparent changes from the minimal degree of contrast in line, form, color, and texture from the project.

A number of VAUs would be subject to a low magnitude of change in the middleground, including VAUs 5, 6 (assuming the BPS-3 near Cottonwood Road Option A/B was constructed), 7, 8, 10, 21, and 28. A subtle change would occur to the landscapes in these VAUs from the contrast in line, form, color, and texture associated with the project. The changes to these VAUs would not attract attention.

A moderate magnitude of change would occur in the middleground of VAUs 19 and 20, due to the noticeable changes in landscape character in these areas. The degree of contrast from the lines, forms, colors, and textures associated with the project would attract attention within these VAUs.

4.4.2 Indirect Impacts on Visual Resources

The construction of the proposed pipeline may result in short-term and long-term indirect impacts. The cleared area for the alignments, and permanent access roads would create opportunities for people to park or access previously inaccessible areas of the landscape. This could result in trampling vegetation and additional resource damage, which would lower the scenic attractiveness and level of intactness in these areas. The access to the project area would also provide potential scenic viewing opportunities not currently available to many people. See Section 4.4.5 for indirect impacts on ACECs, WAs and WSAs.

Implementation of the project would supply some areas along the pipeline with additional water, which would support ongoing development in the project area. The characteristics of the ongoing development could indirectly impact the natural character of the landscapes surrounding the project in the long-term.

In addition, facilities located on private land or Utah School and Institutional Trust Lands Administration land could indirectly impact the visible character of adjacent landscapes managed by the BLM and NPS. The distinct lines and vertical, rectangular forms of the proposed facilities could contrast considerably with the generally natural characteristics of the surrounding landscapes managed by the BLM and NPS.

4.4.3 Impacts on Scenic Roads and Byways

4.4.3.1 Fredonia–Vermilion Cliffs Scenic Road/U.S. 89A

The segment of U.S. 89A from Bitter Springs to Fredonia was designated the Fredonia–Vermilion Cliffs Scenic Road after being inventoried in 1996. The Fredonia–Vermilion Cliffs Scenic Road/U.S. 89A scenic road application report evaluation was based on the indicators of memorability, and assessed in terms of vividness, intactness, and unity of the scenic resource. In the report, the following descriptions were assigned to each of these terms:

- Vividness: the memorability of a visual impression; Assessed in terms of spatial definition, topographic relief, landmarks, skyline character, water form/riparian, vegetation, presence of man-made features, and adjacent landform features.

- Intactness: the integrity of the visual order in the natural and built environment, and the extent to which the landscape is free from visual encroachment; Considered in terms of naturalness and degree of conformity.
- Unity: the degree to which the visual resources join together to form a single, coherent, harmonious visual pattern; Measured by two factors – the degree of contrast and the unity of the overall landscape.

In the 1996 scenic road application report evaluation, the road was assessed in terms of distinct visual character units. Ratings of vividness, intactness, and unity for each unit were based on a seven digit scale from very high to very low, with seven being the highest rating and one being the lowest. The South Alternative crosses U.S. 89A perpendicularly near MP 603.3, which is within the Johnson Run character unit. This unit scored a 2.9 in vividness, a 4.9 in intactness, and a 5.0 in unity, for a total unit score of 12.8. This total placed the Johnson Run unit in the moderately high range.

This section of the South Alternative would introduce new, distinct horizontal lines and form that would parallel the existing Navajo-McCullough transmission line corridor. The new horizontal lines and form would, however, be consistent with the lines and form of the existing transmission line access road. Although the project would not have an effect on the vividness or the unity scores within the character unit, the additional lines and forms would have a slight affect on the intactness of the unit. The original assessment determined that utility poles, corrals, and the transmission line corridor were “somewhat distracting to the integrity of the unit.” The project would decrease the intactness of the unit slightly, from a score of 4.9 to a score of 4.7. The total score for the Johnson Run Unit would decrease from 12.8 to 12.6, and would remain in the moderately high range.

Within the foreground distance zone of U.S. 89A, the project would be nearly 100 percent visible, while visibility within the middleground distance zone would be approximately 45 percent (Appendix F).

4.4.3.2 Zion Park Scenic Byway/ State Route 9

A corridor management plan is currently being planned for this portion of the Zion Park Scenic Byway. All designated scenic byways must possess characteristics of regional significance within at least one of six intrinsic qualities, which include archaeological, cultural, historic, natural, recreational, and scenic qualities. The project would be nearly 100 percent visible where it parallels State Route (SR) 9 from approximate MP 17.3 to 14.2. The disturbance from the project could have subtle effects on the scenic quality along the byway. The lines and form of the project would, however, be consistent with the lines and form of the existing road and adjacent water pipeline disturbance.

Because the Zion Park Scenic Byway/SR 9 has no management plan, it was evaluated in this report using the existing conditions as a baseline for this segment of road. This segment is within VAU 23, the SR 9/Zion Park Scenic Byway, and baseline conditions are identified in the VAU table (Table 3-2). The overall magnitude of change to this unit would be low to very low. As discussed in Appendix B for VAU 23, the project would introduce horizontal lines into the visible landscape in this area. These lines would create contrast in the short-term, but would subside over time. Because the project would be parallel to both the highway and another pipeline disturbance, the lines introduced would be consistent with the existing character of the roadway. The impacts on the existing conditions would therefore be subtle in nature and would not attract attention.

4.4.3.3 Kolob Fingers Road Scenic Byway

Kolob Fingers Road Scenic Byway has no known management plan. This byway is located within Zion National Park, which is managed by the NPS. The NPS does not have a specific management program for visual resources. This byway was therefore evaluated using the existing conditions as a baseline. This road is within VAU 27 (Kanarra Creek/Cedar Valley). The baseline conditions for this unit can be found in Table 3-2. This assessment unit would have an overall low to very low magnitude of change. As discussed in Appendix B for VAU 27, views of the project from this scenic byway are fairly limited. Although approximately 80 percent of the project would be visible within the foreground, the project would only be approximately 12 percent visible in the middleground distance zone (Appendix F). Where visible, the lines introduced by the project would create contrast in the short-term, but would subside over time. Because the project would be parallel to the I-15 corridor, the lines introduced would be consistent with the existing character of the roadway. CBPS-2 would be visible in the middleground distance zone, but would be similar in form, line and scale to other cultural modifications visible from the roadway. The impacts on the existing conditions would therefore be subtle in nature and would not attract attention. The project would also have subtle effects on the intrinsic scenic quality along the byway. The lines and form of the project, however, would be consistent with the lines and form of I-15.

4.4.4 Impacts on Historic Trails

Impacts on the historic trails in the project area would be dependent on the accurate location of the trails, which is currently unknown. Impacts are therefore discussed based on the currently available data, as shown on the VAU maps in Appendix A.

The project generally follows the Armijo Route of the Old Spanish Trail through 13 VAUs, including Big Water, East Clark Bench, Rimrocks/Paria River Valley, Cockscomb, Fivemile Valley, Telegraph Flat, Kanab/Vermillion Cliffs, Kanab/Fredonia/Lost Springs Wash, Shinarump Cliffs, Potter Canyon, Cottonwood Wash, Uzona-Canaan Wash, and Short Creek. The magnitude of change for these VAUs would range from very low to moderate and would include several localized areas where proposed facilities would result in a high magnitude of change. Assuming the project does follow the trail, the project would attract attention intermittently and would begin to dominate the landscape in areas near proposed facilities. In most locations, potential changes to the characteristic landscape would be subtle. The project would be similar in line and form to the existing cultural modifications, which exist throughout the area.

The Dominguez-Escalante Historic Trail is present within the middleground of four VAUs, including Wahweap, Whitesge Wash, Jacob Canyon/Kanab Creek/Pipe Valley, and Sand Hollow. The magnitude of change for these VAUs ranges from very low to moderate. Assuming the trail is located as shown on the maps in Appendix A, the project would attract attention from the trail in portions of the Whitesage Wash and Sand Hollow VAUs. In other locations, potential changes to the characteristic landscape would be subtle, or would create no apparent change because the lines and forms of the project would create a low to very low degree of contrast.

The Honeymoon Historic Trail is present within the middleground of three VAUs, including Whitesge Wash, Jacob Canyon/Kanab Creek/Pipe Valley, and Frog Hollow. The magnitude of change for these VAUs ranges from very low to moderate and includes one localized area where the proposed HS-4 facility would result in a high magnitude of change. Assuming the trail is located as shown on the maps in Appendix A, the project would attract attention from the trail in a portion of the Whitesage Wash VAU. In other locations, potential changes to the characteristic landscape would be subtle, or would create no apparent change because the lines and forms of the project would create a low to very low degree of contrast. HS-4 would be located approximately 3.5 miles from the trail, and would create a subtle change from this distance.

The Temple Historic Trail is present within the middleground of the Frog Hollow VAU. The magnitude of change for this VAUs ranges from very low to moderate and includes one localized area where the proposed HS-4 facility would result in a high magnitude of change. Assuming the trail is located as shown on the maps in Appendix A, the project would not attract attention. HS-4 would be located approximately 3.5 miles from the trail and would create a subtle change from this distance.

4.4.5 Impacts on ACECs, Wilderness Areas and Wilderness Study Areas

A number of ACECs are located in the vicinity of the project. The Kanab Creek ACEC, in the Arizona Strip District, is the only ACEC that the project directly crosses. The project crosses this ACEC twice, first at Kanab Creek, and again at Bitter Seeps Wash. According to the Arizona Strip RMP, the Kanab Creek ACEC is designated for the protection of various resources, including scenic resources. At the proposed crossings, the project would remove uniform bands of vegetation and would create moderate contrast in line and form. The project would also create moderate to strong contrast in line, color and texture where it cuts through the existing rock formations and boulder-covered slopes.

Johnson Spring ACEC and Littlecreek Mountain ACEC are both located within the foreground of the project, while Shinarump ACEC, Lone Butte ACEC, Moonshine Ridge ACEC, and Lost Spring Mountain ACEC are located within the middleground distance zone. The project would be visible from areas within these ACECs, and would indirectly impact the ACECs by changing portions of the natural and undisturbed landscapes near them. Impacts, however, would be minimal because the changes to the visual setting from the project would be similar in line, form, color, and texture to the existing cultural modifications in the project area. In the short-term, the sights, noise, dust, and traffic associated with construction of the facilities would have a subtle impact on the ACECs. The project would also have a subtle impact on the visual setting of the ACECs in the long-term.

There are several WAs and WSAs within the vicinity of the project. The South Alternative would not cross any of these areas and would have no direct impacts on them. The project would, however, have indirect impacts on these areas. The Paria Canyon-Vermillion Cliffs WA, Wahweap WSA, and Cockscomb WSA are all located within the foreground distance zone of the project, while the Cottonwood Point WA, Pine Valley Mountain WA, Paria-Hackberry WSA, Canaan Mountain WSA, Cottonwood WSA, and Spring Creek Canyon WSA are located in the middleground. The project would indirectly impact the wilderness values of these WAs and WSAs by changing portions of the natural and undisturbed landscapes nearby. Impacts, however, would be minimal because the changes from the project would be similar in line, form, color, and texture to the existing cultural modifications in the project area. In the short term, the sights, noise, dust, and traffic associated with construction of the facilities would have a subtle impact on the qualities of naturalness and solitude in portions of the WAs and WSAs. The short-term impacts would slightly diminish the quality of the primitive and unconfined recreation experience in the areas of the WAs and WSAs from which the project is visible. In the long term, the project would have no apparent change to the wilderness characteristics in the areas of the WAs and WSAs from which the project is visible. The impacts on the visual setting would affect only a small portion of the WAs and WSAs.

4.4.6 Compliance with Management Objectives

4.4.6.1 BLM Visual Resource Management System Classes

BLM has developed measurable standards for managing the visual resources of BLM lands. As previously noted, management classes with established objectives have been identified for visual resources in the project area as

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part of the RMPs process. The analysis described below determined whether or not the South Alternative and its associated aboveground facilities would be in compliance with the established objectives. The BLM's Visual Resource Contrast System (BLM Handbook 8431-1) was used to evaluate the visual contrast between the proposed project and the existing landscape. The contrast rating evaluations were conducted from KOPs within the project area. Of the 42 KOPs identified for this assessment, 40 are located within the South Alternative. Table 4-4 provides the location of each KOP. The associated contrast rating evaluations and associated visual simulations are included in Appendix C.

VRM class objectives would not be met in several VAUs, depending on the various project configurations and the distance zones from which they would be viewed. The project would not meet VRM Class II in the foreground distance zone of 6 VAUs, including Unit 5 with either the proposed configuration or the Northern Pipeline Option, Unit 6 with either the proposed or with BPS-3 near Cottonwood Road Options A or B, Unit 7 with the High Point Highway Alternative, Unit 8 with either the proposed or the High Point Highway Alternative, Unit 12 with the proposed configuration, and Unit 20 with the proposed configuration. The associated project configurations within the VAUs noted above would include the following facilities:

- BPS-3/Hydro Station WCH-1 (South)
- BPS-3/Hydro Station WCH-1 (North)
- BPS-4
- High Point Regulation Tank 2
- High Point Regulation Tank 2 (High Point Highway Alternative)
- Hydro Station HS-1
- Hydro Station HS-1 (High Point Highway Alternative)
- Hurricane Cliffs Hydro Station, Hurricane Cliffs Afterbay Reservoir
- Hurricane Cliffs Peaking Hydro Station
- Hurricane Cliffs Peaking Hydro Afterbay

The project would also not meet VRM Class II in the middleground distance zone of VAU 20 with the proposed configuration. The associated project configurations within this VAU would include the following facilities:

- Hurricane Cliffs Hydro Station, Hurricane Cliffs Afterbay Reservoir
- Hurricane Cliffs Peaking Hydro Station
- Hurricane Cliffs Peaking Hydro Afterbay

VRM Class III would not be met within the foreground distance zone in 3 VAUs, including Unit 4 with BPS-3a near Cottonwood Road Option A, Unit 7 with the High Point Highway Alternative, and Unit 8 with either the proposed configuration or the High Point Highway Alternative. The associated project configurations within the VAUs noted above would include the following facilities:

- BPS-3 near Cottonwood Road Option A
- BPS-4
- High Point Regulation Tank 2
- High Point Regulation Tank 2 (High Point Highway Alternative)
- Hydro Station HS-1
- Hydro Station HS-1 (High Point Highway Alternative)

Table 4-5 indicates the various management classes by BLM district and by visual assessment unit, as well as the determination of whether the proposed action would be in compliance with the associated VRM class objectives. The determination of compliance was based on the results of the contrast-rating evaluations at the KOPs. If there were no KOPs identified, the magnitude of change in the landscape character was based on the magnitude of change to the regional landscape character. Based on this evaluation, the proposed pipeline and associated facilities would create changes to the landscape ranging from very low to high. The changes in many areas would be perceived by the casual observer, particularly at facility locations, because of the moderate to high level of contrast in visual elements of form, line, color and texture.

The majority of the South Alternative would comply with VRM objectives for Classes III and IV with implementation of the standard mitigation measures as identified in Chapter 5, Mitigation and Monitoring. The exception would be BPS-3 near Cottonwood Road Option A, BPS-4, and HS-1—all of which would require extraordinary mitigation measures not defined in this document in order to meet the associated VRM Class III designations in these areas. For areas with a Class II designation, additional mitigation measures identified in Chapter 5, Mitigation and Monitoring would be required in some locations to further reduce potential impacts. In addition, BPS-4 and HS-1 would require extraordinary mitigation measures not defined in this document in order to meet the associated VRM Class II designations in these areas. If the standard, additional, and extraordinary mitigation measures were implemented, along with site-specific mitigation measures that would be determined in the project Plan of Development, the changes associated with the project would be subordinate, i.e., repeat the basic elements found in the natural and cultural landscape characteristics.

In the Rim Rocks/Paria River Valley unit, the Class II objective would not be met with the proposed Hydro/Pump Station facility on the east side of the Cockscomb without extraordinary design modifications. The facility would remain a discordant feature in the landscape and attract the attention of the casual visitor traveling U.S. 89 if only standard and additional mitigation techniques were implemented. Without extraordinary design modifications, the form line and texture of the facility would not repeat those visual elements of the adjacent Cockscomb landform.

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Table 4-4
Key Observation Point Listing for the South Alternative

Page 1 of 2

No.	Key Observation Point	Approx. Station Number	VRM Class	District
1	Potato Hill	Near 0+00	N/A	NPS – GCNRA
2	Former McDonalds Parking Lot	Near 0+00	N/A	NPS – GCNRA
3	Gravel Pullout near Bridge	Near 0+00	N/A	NPS – GCNRA
4	Chains Day Use Area	Near 0+00	N/A	NPS – GCNRA
5	Lake Powell Lake Surface	Near 0+00	N/A	NPS – GCNRA
6	Wahweap Overlook	140+00, R 0.8 MI	N/A	NPS – GCNRA
7	U.S. 89 at Blue Pool Wash	553+60-606+40	N/A	NPS - GCNRA
8	U.S. 89/Larkspur Road Intersection	547+00	N/A	NPS – GCNRA
9	Grand Staircase-Escalante National Monument Visitor Center	770+00	N/A	BLM – GSENM
10	BPS-2 from U.S. 89	813+60-866+40	N/A	BLM – GSENM
11a	High Point Regulation Tank 1 from U.S. 89	1293+60-1346+40	III	BLM – GSENM
11b	BPS-3/H.P. Regulation Tank 1 from U.S. 89	1293+60-1346+40	III	BLM – GSENM
12a	High Point Regulation Tank 1 from Cottonwood Road	1332+00, Right 0.5 MI	III	BLM – GSENM
12b	BPS-3/Hydro Station WCH-1 from Cottonwood Road	1332+00, Right 0.5 MI	III	BLM – GSENM
13	Toadstools Trailhead from U.S. 89	1383+60-1436+40	II, III	BLM - GSENM
14	Toadstools Trailhead	1410+00	II	BLM – GSENM
15	Paria Contact Station	1490+00, Left 0.15 MI	II	BLM – GSENM
16a	BPS-3/Hydro Station WCH-1 from U.S. 89	1680+00	II	BLM - GSENM
16b	Pipeline from U.S. 89	1680+00	II	BLM – GSENM
17	BPS-4 from U.S. 89, High Point Highway Alternative	1907+60-1960+40	III	BLM – GSENM
18	BPS-4 – from U.S. 89	1890+00-1940+00, Right 0.1 MI	N/A	BLM – GSENM
19	Road To Paria Interpretive Site	2016+00	III	BLM – GSENM
20	Hydro Station 1 from U.S. 89	2716+60-2769+40	III	BLM – GSENM
21	High Point Regulation Tank 2 from Great Western Trailhead	2681+00	III	BLM – GSENM
22	Hydro Station 1 (Alt) from BLM Road K4020	—	III	BLM – GSENM
23	High Point Regulation Tank 2 (Alt) from BLM Road K4020	—	III	BLM – GSENM
24	U.S. 89 near Pioneer Gap	3011+00	III	BLM – KANAB
25	Kane County WTP	—	N/A	BLM – GSENM

Table 4-4
Key Observation Point Listing for the South Alternative

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No.	Key Observation Point	Approx. Station Number	VRM Class	District
26	Shinarump Cliffs Overlook	3298+00, Right 1.0 MI	II, viewing III	BLM – AZ Strip
27	Dominguez-Escalante and Honeymoon Trails Crossing	3403+00	II	BLM – AZ Strip
28	Kanab Creek (Kanab Creek ACEC)	4438+00, Left 0.1 MI	II	BLM – AZ Strip
29	Bitter Seeps Wash (Kanab Creek ACEC)	4612+00	IV	BLM – AZ Strip
30	Mount Trumbull Road	4696+00	IV	BLM – AZ Strip
33	Hydro Station 2 from County Road 239–South Alternative	5582+60-5635+40	III	BLM – AZ Strip
34	Hydro Station 3 from Uzona Avenue	5758+00-H, 6152+00-S	N/A	BLM – St. George
35	Uzona Avenue/Canaan Wash	5883+00-H, 6275+00-S	III	BLM – St. George
36	Canaan Gap	6122+00-H, 6513+00-S	IV	BLM – St. George
37	Little Creek Overlook	6581+00-H, 6973+00-S, Right 1.2 MI	III, viewing IV	BLM – St. George
38	Hydro Station 4 from Frog Hollow Road	6648+00-H, 7040+00-S	IV	BLM – St. George
39	Hurricane Cliffs Road – View to South	—	IV	BLM – St. George
40	Hurricane Cliffs – From Unnamed Off-Highway-Vehicle Road	—	IV	BLM – St. George
41	Sand Hollow State Park	—	N/A	BLM – St. George
42	Cedar Valley WTP	3000+00 (CVP)	N/A	BLM – Cedar City

Source: Logan Simpson Design Inc.

Notes:

1. ACEC = area of critical environmental concern; BLM = Bureau of Land Management; BPS = booster pumping station; VRM = visual resource management; WTF = water treatment facility
2. KOPs 31 and 32 do not appear in this table because they are intended only for the Existing Highway Alternative.

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Table 4-5
South Alternative Compliance with Visual Resource Management Class

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No.	Visual Assessment Unit	Foreground				Middleground	
		VRM Class	Compliance with VRM Class	Additional Mitigation Measures Required	VRM Class	Compliance with VRM Class	Additional Mitigation Measures Required
GSENM District							
4	East Clark Bench	III	Y	N	III	Y	N
	• Northern Pipeline Option	III	Y	N	III	Y	N
	• BPS-3 near Cottonwood Rd Option A	III	N(1)	Y	III	Y	N
	• BPS-3 near Cottonwood Rd Option B	N/A	N/A	N/A	N/A	N/A	N/A
5	Rimrocks/Paria River Valley	II	N	Y	II	Y	N
	• Northern Pipeline Option	II	N	Y	II	Y	N
6	Cockscomb	II	N(2)	Y	II	N/A	N/A
	• BPS-3 near Cottonwood Rd Option A/B	II	N	Y	II	Y	N
7	Fivemile Valley	III	Y	N	III	Y	N
	• High Point Highway Alternative	II	N(3)	Y	II	Y	N
		III	N(3)	Y	III	Y	N
8	Telegraph Flat	II	N(4)	Y	II	Y	N
		III	N(4)	Y	III	Y	N
	• High Point Highway Alternative	II	N(4)	Y	II	Y	N
		III	N(4)	Y	III	Y	N
9	Kanab/Vermilion Cliffs	II	Y(7)	N	II	Y	N
		III	Y	N	III	Y	N
Kanab District							
8	Telegraph Flat	II	N	Y	II	Y	N
		III	Y	N	III	Y	N
	• High Point Highway Alternative	II	N	Y	II	Y	N
		III	Y	N	III	Y	N
10	Whitesage Wash	II	Y	N	II	Y	N
		III	Y	N	III	Y	N
		IV	Y	N	IV	Y	N
	• Direct Alignment	II	Y	N	II	Y	N
	• Option A	III	Y	N	III	Y	N
	• Direct Alignment	II	Y	N	II	Y	N

Table 4-5
South Alternative Compliance with Visual Resource Management Class

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No.	Visual Assessment Unit	Foreground				Middleground	
		VRM Class	Compliance with VRM Class	Additional Mitigation Measures Required	VRM Class	Compliance with VRM Class	Additional Mitigation Measures Required
	• Option B	III	Y	N	III	Y	N
9	Kanab/Vermilion Cliffs	II	Y(7)	N	II	Y	N
		III	Y	N	III	Y	N
Arizona Strip District							
10	Whitesage Wash	II	Y	N	II	Y	N
		III	Y	N	III	Y	N
		IV	Y	N	IV	Y	N
12	Jacob Canyon/Kanab Creek/ Pipe Valley	II	N	Y	II	Y	N
		III	Y	N	III	Y	N
		IV	Y	N	IV	Y	N
15	Cottonwood Wash	III	Y(8)	N	III	Y	N
16	Colorado City/Hildale	III	Y	N	III	Y	N
17	Uzona/Canaan Wash	III	Y	N	III	Y	N
		IV	Y	N	IV	Y	N
St. George District							
17	Uzona/Canaan Was	III	Y	N	III	Y	N
		IV	Y	N	IV	Y	N
18	Short Creek	IV	Y	N	IV	Y	N
19	Frog Hollow	III	Y	N	III	Y	N
		IV	Y(5)	N	IV	Y	N
	• Small Forebay Reservoir Option	IV	Y(5)	N	III	Y	N
20	Hurricane Cliffs Road	II	N	Y	II	N	Y
		IV	Y(6)	N	IV	Y	N
	• Peaking Option	IV	Y(6)	N	IV	Y	N
21	Sand Hollow	IV	Y	N	IV	Y	N
	• Peaking Option	IV	Y	N	IV	Y	N
22	Sheeps Bridge Road	II	Y	N	II	Y	N
		III	Y	N	III	Y	N
23	SR 9/Zion Park Scenic Byway Unit	II	Y	N	II	Y	N

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Table 4-5
South Alternative Compliance with Visual Resource Management Class

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No.	Visual Assessment Unit	Foreground				Middleground	
		VRM Class	Compliance with VRM Class	Additional Mitigation Measures Required	VRM Class	Compliance with VRM Class	Additional Mitigation Measures Required
24	Nephi's Twist	II	Y	N	II	Y	N
25	Toquerville	III	Y	N	III	Y	N
26	Ash Creek	III	Y	N	III	Y	N
Cedar City District							
27	Kanarra Creek/Cedar Valley	III	Y	N	III	Y	N
		IV	Y	N	IV	Y	N
28	Cedar City	IV	Y	N	IV	Y	N
Source: Logan Simpson Design Inc. Notes: VRM = visual resource management (1) Would not meet VRM Class III within foreground of BPS-3 near Cottonwood Road Option A without extraordinary mitigation measures not defined in this document. (2) Proposed BPS-3/Hydro Station WCH-1 facility would not meet VRM Class II without extraordinary mitigation measures. (3) BPS-4 would not meet VRM Class II or III without extraordinary mitigation measures not defined in this document. (4) HS-1 would not meet VRM Class II or III without extraordinary mitigation measures not defined in this document. (5) HS-4 and both Forebay Reservoir Options would meet VRM Class IV. (6) Hurricane Cliffs Hydro Station and both Afterbay Reservoir Options would meet VRM Class IV. (7) The Kane County WTF would not affect VRM Class compliance since it is not on BLM land. (8) HS-2 would not affect VRM Class compliance since it is not on BLM land in either Option.							

4.4.6.2 National Park Service

4.4.6.2.1 Glen Canyon National Recreation Area

Although the Glen Canyon National Recreation Area (GCNRA) has no specific management program for visual resources, the impacts on this area are evaluated by VAU in Table 4-1 and in Appendix B. Three VAUs cross the GCNRA boundaries; Lake Powell/Glen Canyon; Wahweap; and a small segment of the Big Water VAU, near Blue Pool Wash. The overall magnitude of change in these areas would range from very low to moderate. Because the impacts would generally be consistent with the existing landscape character, the project would fulfill the GCNRA's mission to "preserve and protect the scenic (features)" in the area. Nonetheless, standard mitigation measures as identified in Chapter 5 would be necessary in order to minimize impacts from the project.

4.4.6.2.2 Zion National Park

The project would not directly cross Zion National Park; therefore, there are no objectives to be met for the park.

4.4.6.3 Scenic Roads and Byways

4.4.6.3.1 Fredonia–Vermilion Cliffs Scenic Road/U.S. 89A

As discussed in Section 4.3.3.1.1, the project would have no impact on the vividness, and unity ratings for the associated visual assessment unit in the Fredonia–Vermilion Cliffs Scenic Road/ U.S. 89A application report. The project would slightly decrease the intactness of the scenic road, but would not lower the scenic quality of the Fredonia–Vermilion Cliffs Scenic Road below the threshold for its designation as a scenic road.

4.4.6.3.2 Zion Park Scenic Byway/SR-9

As discussed in Section 4.3.3.1.2, the project would have subtle impacts on the existing conditions of Zion Park Scenic Byway/SR-9, and could therefore have subtle impacts on the intrinsic scenic quality of the byway. Because the impacts would be subtle, it is unlikely that the project would lower the scenic quality of the road below the threshold for its designation as a scenic byway.

4.4.6.3.3 Kolob Fingers Road Scenic Byway

As discussed in Section 4.3.3.1.3, the project would have subtle impacts on the existing conditions of Kolob Fingers Road Scenic Byway, and could therefore have subtle impacts on the intrinsic scenic quality of the byway. Because the impacts would be subtle, it is unlikely that the project would lower the scenic quality of the road below the threshold for its designation as a scenic byway.

4.4.6.4 Historic Trails

The portions of the existing historic trails impacted by the project have no known management objectives. See Section 4.3.4 for an overview of potential impacts to the trails. The magnitude of change for the VAUs that the Armijo Route of the Old Spanish Trail cross generally range from very low to moderate, though project facilities would create a high magnitude of change in several localized areas. The Dominguez-Escalante Historic Trail would cross VAUs with magnitudes of change ranging from very low to moderate. The magnitude of change for the VAUs that both the Honeymoon Historic Trail and Temple Historic Trail would traverse would range from very low to moderate, and include one localized area with a high magnitude of change.

Areas with a very low to low magnitude of change would not sufficiently impact the trails. Areas with a moderate to high magnitude of change could potentially impact the setting of the trails and diminish the interpretive qualities of user experience of the trails, though this is unlikely in most areas because the landscape setting has already been partially compromised by power lines, roads, and other built features.

4.4.6.5 ACECs, Wilderness Areas, and Wilderness Study Areas

Although the Kanab Creek ACEC has general management objectives for scenic resources, it requires no specific compliance criteria. With mitigation as recommended in Chapter 5, Mitigation and Monitoring, and site-specific measures that will be determined in the project Plan of Development, the impacts associated with the proposed project would be subtle in the long term.

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Because the impacts on WAs and WSAs would be subtle and affect only a small portion of the WAs and WSAs, their wilderness characteristics would be retained. The WAs' and WSAs' suitability would not be diminished below the threshold for designation.

4.5 Existing Highway Alternative

This section addresses direct and indirect impacts on visual resources for the Existing Highway Alternative. Compliance with management objectives for the Existing Highway Alternative is also included.

4.5.1 Direct Impacts on Visual Resources

The following subsections qualitatively describe the potential direct impacts on the VAUs from the proposed Existing Highway Alternative alignment (Table 4-6). Impacts are described from east to west.

Many of the assessment units in this alternative have an identical magnitude of change to units in the South Alternative, and are presented in Table 4-1. These VAUs include Lake Powell/Glen Canyon; Wahweap; Big Water; East Clark Bench; Rimrocks/Paria River Valley; Cockscomb; Fivemile Valley; Telegraph Flat; Colorado City/Hildale; Uzona-Canaan Wash; Short Creek; Frog Hollow; Sheeps Bridge Road; SR 9/Zion Park Scenic Byway; Nephi's Twist; Toquerville; Ash Creek; Kanarra Creek/Cedar Valley; and Cedar City.

Table 4-6 Magnitude of Change in Landscape Character by Visual Assessment Unit for the Existing Highway Alternative					
No.	Visual Assessment Unit	Foreground		Foreground/ Middleground	Middleground
		Pipeline Alignment	Proposed Facilities	Viewing Platforms	
9	Kanab/Vermilion Cliffs	L	H	L/H	VL
11	Kanab/Fredonia/Lost Springs Wash	L	N/A	L	VL
13	Shinarump Cliffs	L	N/A	L	VL
14	Potter Canyon	L	N/A	L	VL
15	Cottonwood Wash	L	H	L/H	VL
Source: Logan Simpson Design Inc. Note: L= low; H = high; VL = very low					

The visibility analysis of the Existing Highway Alternative identified all areas that can be seen within the foreground and middleground of the alignment. The results of the visibility analysis are located in Appendices D, E, and F.

Many of the simulations for this alternative are the same as simulations in the South Alternative and are shown in Table 4-3. These include simulations 1-27 and 31-37. Table 4-7 catalogs additional simulations for the Existing

Highway Alternative by name and number; provides the KOP at which each simulation was generated; and lists the VAU in which each simulation is located.

Table 4-7 Visual Simulation Listing for the Existing Highway Alternative			
No.	Simulation Name/Subject	Corresponding KOP and Contrast Rating Form Numbers	Corresponding VAU Number
28	Kaibab Paiute Tribal Headquarters	31	13
29	Hydro Station 2 (Highway) Eastbound from U.S. 89	32	15
30	Hydro Station 2 (Highway) Westbound from U.S. 89	32	15
Source: Logan Simpson Design Inc. Note: KOP = key observation point; VAU = visual assessment unit			

The following discussion describes the direct impacts on the project area as they occur in each VAU for the Existing Highway Pipeline Alignment. Impacts on many of the VAUs are identical to those in the South Alternative. Refer to Sections 4.3.1.1.1 through 4.3.1.1.4 and Appendix B for direct impacts on the Lake Powell/Glen Canyon, Wahweap, Big Water, East Clark Bench, Rimrocks/Paria River Valley, Cockscomb, Fivemile Valley, Telegraph Flat, Cottonwood Wash, Colorado City/Hildale, Uzon-Canaan Wash, Short Creek, Frog Hollow, Sheeps Bridge Road, SR 9/Zion Park Scenic Byway, Nephi's Twist, Toquerville, Ash Creek, Kanarra Creek/Cedar Valley, and Cedar City assessment units.

VAUs 1, 12, 13, 14, and 15 are located within the Arizona Strip, as are portions of VAUs 2, 10, 11, and 16.

Direct impacts from the **Natural Gas Supply Line and Generators Alternative** would be similar to those described for the South Alternative, with the exception that the gas pipeline and associated features would cross VAUs 11, 13, and 14 rather than VAUs 10 and 12. The impacts to VAUs 11, 13, and 14 would be similar in magnitude to those from project if it did not include the natural gas supply line and generators.

4.5.1.1 Direct Impacts on Visual Assessment Units

4.5.1.1.1 Summary of Direct Impacts in the Foreground from Pipeline Alignment

The direct impacts in the foreground from the pipeline alignment in the Existing Highway Alternative would be similar to those described in Section 4.3.1.1.1 for the South Alternative, with the exception of the areas within VAUs 11, 13, and 14. The direct impacts are listed in Table 4-1 and Table 4-6. Detailed descriptions of the direct impacts within each VAU are included in Appendix B.

The height of the vegetation in VAUs 11, 13, and 14 would be low to medium. These VAUs would more effectively obstruct views of the disturbance than VAUs with low vegetation. The vegetative patterns in these VAUs are generally dense, which would create greater contrast than VAUs with sparse vegetative patterns. Because VAUs 11, 13, and 14 are not dominated with grass species, the pipeline disturbance contrast with the color of the existing vegetation more than if buff-colored grasses were present.

In areas with stippled to patchy pinyon/juniper vegetation, color contrast would also be increased. If bands of the dark green pinyon/juniper vegetation were removed, the irregular patterns would be bisected by a regular pattern

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with distinct lines and forms that would contrast with the existing vegetative patterns. The ground-disturbing activities in these VAUs would affect the landform throughout the project area by exposing lighter soils, which would contrast with the adjacent soils and vegetation. In areas where the project would cross rock formations, the modifications to the formations would be visible, and in most locations, would physically alter the existing landform. In addition to those mentioned in Section 4.3.1.1.1, VAU 13 would also have notable impacts on the rock formations along the north side of SR 389. The lands that the pipeline disturbance would cross in VAUs 11, 13, and 14 are flat to rolling. The degree of contrast from the project would increase in areas where the alignment passes over rolling or vertical landforms because the disturbance would be elevated to more directly face the viewer. These areas of elevated disturbance would introduce distinct lines and forms into the landscape and would often be inconsistent with the lines and forms of the existing landscape.

VAUs 13 and 14 are mostly undeveloped but do include existing cultural modifications such as existing roads. The project would parallel SR 389 through both of these units. The lines and forms of the project would be similar to those of the highway and would contrast subtly with the lines and forms of the existing landscape. In VAU 11, the pipeline disturbance would separate from the highway and traverse mostly undisturbed lands. The lines and form of the ground disturbance would, however, be similar in line and form to the various roads that currently cross this landscape.

The magnitude of change from the pipeline disturbance to VAUs 11, 13, and 14 would be low for the Existing Highway Alternative.

4.5.1.1.2 Summary of Direct Impacts in the Foreground from Proposed Facilities

The direct impacts in the foreground from the proposed facilities in the Existing Highway Alternative would be similar to those described in Section 4.3.1.1.2 for the South Alternative. The direct impacts are listed in Table 4-1. Detailed descriptions of the direct impacts within each VAU are included in Appendix B. Visibility maps of each of the proposed buildings are included in Appendix E.

4.5.1.1.3 Summary of Direct Impacts in the Foreground and Middleground from Viewing Platforms

The direct impacts in the foreground and middleground from the viewing platforms in the Existing Highway Alternative would be similar to those described in Section 4.3.1.1.3 for the South Alternative, with the exception of the areas within VAUs 11, 13, and 14. The direct impacts are listed in Table 4-1 and Table 4-6. Detailed descriptions of the direct impacts within each VAU are included in Appendix B.

A low magnitude of change would occur in VAUs 11, 13, and 14. The changes to the existing landscapes within these VAUs would be subtle and would not attract attention.

4.5.1.1.4 Summary of Direct Impacts in the Middleground

The direct impacts in the middleground from the Existing Highway Alternative would be similar to those described in Section 4.3.1.1.4 for the South Alternative, with the exception of the areas within VAUs 11, 13, and 14. The direct impacts are listed in Table 4-1 and Table 4-6. Detailed descriptions of the direct impacts within each VAU are included in Appendix B.

A very low magnitude of change would occur in the middleground to VAUs 11, 13, and 14. There would be no apparent change to the existing landscapes within these VAUs because the degree of contrast from the lines, forms, colors, and textures of the project would be barely perceptible.

4.5.2 Indirect Impacts on Visual Resources

Indirect impacts for the Existing Highway Alternative would be similar to those for the South Alternative, as described in Section 4.3.2. See Section 4.4.5 for indirect impacts on ACECs, WAs, and WSAs.

4.5.3 Impacts on Scenic Roads and Byways

Impacts on Scenic Roads and Byways would be similar to those in the South Alternative, as discussed in Section 4.3.3. The only exception would be the impacts on the Fredonia-Vermilion Cliffs Scenic Road/U.S. 89A. Although the Existing Highway Alternative does cross U.S. 89A, it would not cross the portion of the highway that is designated as a scenic road.

4.5.4 Impacts on Historic Trails

Impacts on historic trails for the Existing Highway Alternative would be similar to those for the South Alternative, as described in Section 4.3.4.

In addition, the proposed pipeline alignment would cross the Honeymoon Historic Trail in VAU 9, the Kanab/Vermilion Cliffs unit. The magnitude of change from the pipeline alignment in this VAU would be low in the foreground and very low in the middleground (Table 4-6). Assuming the trail is located as shown on the maps in Appendix A, the degree of contrast from the lines, forms, colors, and shapes of the project would not attract attention within the foreground of the trail, and would result in no apparent change within the middleground distance zone.

4.5.5 Impacts on ACECs, Wilderness Areas and Wilderness Study Areas

A number of ACECs are located in the vicinity of the project. Shinarump ACEC and Littlecreek Mountain ACEC are both located within the foreground of the project, while Johnson Spring ACEC, Lone Butte ACEC, Moonshine Ridge ACEC, and Lost Spring Mountain ACEC are located within the middleground distance zone. The project would be visible from areas within these ACECs and would indirectly impact the ACECs by changing portions of the natural and undisturbed landscapes nearby. Impacts, however, would be minimal because the changes from the project would be similar in line, form, color, and texture to the existing cultural modifications in the project area. In the short term, the sights, noise, dust, and traffic associated with construction of the facilities would have a subtle impact on the ACECs. The project would also have a subtle impact on the visual setting of the ACECs in the long term.

Impacts on WAs and WSAs would be similar to those for the South Alternative, as discussed in Section 4.3.5.

4.5.6 Compliance with Management Objectives

4.5.6.1 BLM Visual Resource Management System Classes

All of the 42 KOPs identified for the project are located within the Existing Highway Alternative. Many KOPs for the Existing Highway Alternative are the same as those for the South Alternative. These include KOPs 1 through 30 and 33 through 42, all of which are listed in Table 4-4. Table 4-8 provides the location of two additional KOPs, which occur only in the Existing Highway alignment. The associated contrast rating evaluations and associated visual simulations are included in Appendix C.

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Table 4-8 Key Observation Point Listing for the Existing Highway Alternative				
No.	Key Observation Point	Approx. Station	VRM Class	District
31	Kaibab Paiute Tribal Headquarters	—	N/A	Arizona Strip
32	Hydro Station 2 from U.S. 89	—	N/A	Arizona Strip
Source: Logan Simpson Design				

Table 4-9 indicates the various management classes by BLM district and by visual assessment unit, as well as the determination of whether the proposed action would be in compliance with the associated VRM class objectives. For many of the VAUs, VRM class compliance in the Existing Highway Alternative would be identical to that of the South Alternative. The compliance for these VAUs can be found in **Error! Reference source not found.:** Lake Powell/Glen Canyon, Wahweap, Big Water, East Clark Bench, Rimrocks/Paria River Valley, Cockscomb, Fivemile Valley, Telegraph Flat, Cottonwood Wash, Colorado City/Hildale, Uzon-Canaan Wash, Short Creek, Frog Hollow, Sheeps Bridge Road, SR 9/Zion Park Scenic Byway, Nephi's Twist, Toquerville, Ash Creek, Kanarra Creek/Cedar Valley, and Cedar City VAUs.

<div>Table 4-9</div> <div>Existing Highway Alternative Compliance with Visual Resource Management Class</div>							
No.	Visual Assessment Unit	Foreground				Middleground	
		VRM Class	Compliance with VRM Class	Additional Mitigation Measures Required	VRM Class	Compliance with VRM Class	Additional Mitigation Measures Required
Kanab District							
9	Kanab/Vermillion Cliffs	II	Y(1)	N	II	Y	N
		III	Y	N	III	Y	N
11	Kanab/Fredonia/Lost Springs Wash Unit	III	Y	N	III	Y	N
Arizona Strip District							
13	Shinarump Cliffs Unit	(3)	(3)	(3)	(3)	(3)	(3)
11	Kanab/Fredonia/Lost Springs Wash Unit	III	Y	N	III	Y	N
14	Potter Canyon Unit	III	Y	N	III	Y	N
15	Cottonwood Wash Unit	III	Y(2)	N	III	Y	N
Source: Logan Simpson Design							
Notes:							
(1) The Kane County WTF would not affect VRM Class compliance since it is not on BLM land.							
(2) HS-2 would not affect VRM Class compliance since it is not on BLM land in either Option.							
(3) Unit does not include any BLM surface-managed lands.							

The determination of compliance was based on the results of the contrast-rating evaluations at the KOPs. If there were no KOPs identified, the magnitude of change in the landscape character was based on the magnitude of change to the regional landscape character. Based on this evaluation, the proposed pipeline and associated facilities would create changes to the landscape ranging from low to high. The changes in many areas would be

perceived by the casual observer, particularly at facility locations, because of the moderate to high level of contrast in visual elements of form, line, color and texture.

The Existing Highway Alternative would comply with VRM objectives for Classes III and IV with implementation of the standard mitigation measures as identified in Chapter 5, Mitigation and Monitoring. For Class II areas however, additional mitigation measures identified in Chapter 5, Mitigation and Monitoring, would be required in some areas to further reduce potential impacts. If the standard and additional mitigation measures are implemented, along with site-specific mitigation measures that would be determined in the project Plan of Development, the changes associated with the project would be subordinate—that is, would repeat the basic elements found in the natural and cultural landscape characteristics.

The VAUs, project configurations, and associated facilities that would not meet VRM objectives would be similar to those summarized for the South Alternative in Section 4.4.6.1.

4.5.6.2 National Park Service

Compliance with the NPS would be similar to that for the South Alternative, as discussed in Section 4.3.6.2.

4.5.6.3 Scenic Roads and Byways

Compliance regarding scenic road and byway designations would be similar to those in the South Alternative, as discussed in Section 4.3.6.3. The only exception would be with regard to the compliance for the Fredonia–Vermilion Cliffs Scenic Road/U.S. 89A. The Existing Highway Alternative does not cross the portion of U.S. 89A that is designated as a scenic road, and would therefore have no effect to the scenic road designation for the Fredonia–Vermilion Cliffs Scenic Road.

4.5.6.4 Historic Trails

Compliance with management objectives for historic trails would be similar compliance for the South Alternative, as discussed in Section 4.3.6.4.

4.5.6.5 ACECs, Wilderness Areas, and Wilderness Study Areas

There would be no direct impacts on ACECs, in this alternative; therefore compliance with management objectives is not relevant.

Because the impacts on WAs and WSAs would be subtle and affect only a small portion of the WAs and WSAs, their wilderness characteristics would be retained. The WA's and WSA's suitability would not be diminished below the threshold for designation.

4.6 Southeast Corner Alternative

This section addresses direct and indirect impacts on visual resources for the Southeast Corner Alternative. Compliance with management objectives for the Southeast Corner Alternative is also included.

Chapter 4. Environmental Consequences

4.6.1 Direct Impacts on Visual Resources

The direct impacts on the VAUs from the Southeast Corner Alternative would be similar to those of the South Alternative, with one exception. The alignment in the Southeast Corner Alternative differs from the South Alternative within the Jacob Canyon/Kanab Creek/Pipe Valley unit. Rather than jogging around the Kaibab Indian Reservation as identified in the South Alternative, the South Alternative alignment would follow the Navajo-McCullough transmission line corridor through reservation land from approximate Station 4040+00 to 4320+00. Because the alternative alignment would be parallel to the existing transmission lines, the lines and forms of the ground disturbance would contrast less than that of the South Alternative in this location. The overall magnitude of change for the Jacob Canyon/Kanab Creek/Pipe Valley VAU, however, would remain consistent with that of the South Alternative (Table 4-1).

The magnitude of change to the remaining VAUs would also be consistent with those of the South Alternative (Table 4-1). These VAUs include Lake Powell/Glen Canyon; Wahweap; Big Water; East Clark Bench; Rimrocks/Paria River Valley; Cockscomb; Fivemile Valley; Telegraph Flat; Kanab/Vermillion Cliffs; Whitesage Wash; Cottonwood Wash; Colorado City/Hildale; Uzon-Canaan Wash; Short Creek; Frog Hollow; Sheeps Bridge Road; SR 9/Zion Park Scenic Byway; Nephi's Twist; Toquerville; Ash Creek; Kanarra Creek/Cedar Valley; and Cedar City.

Direct impacts from the **Natural Gas Supply Line and Generators Alternative** would be similar to those described for the South Alternative.

The visibility analysis of the Southeast Corner Alternative identified all areas that can be seen within the foreground and middleground of the alignment. The results of the visibility analysis are located in Appendix D.

The simulations for this alternative are the same as those in the South Alternative, and are shown in Table 4-3.

4.6.2 Indirect Impacts on Visual Resources

Indirect impacts for the Southeast Corner Alternative would be similar to those for the South Alternative, as described in Section 4.3.2.

4.6.3 Impacts on Scenic Roads and Byways

Impacts on Scenic Roads and Byways would be similar to those in the South Alternative, as discussed in Section 4.3.3.

4.6.4 Impacts on Historic Trails

Impacts on Historic Trails for the Southeast Corner Alternative would be similar to those for the South Alternative, as described in Section 4.3.4.

4.6.5 Impacts on ACECs, Wilderness Areas and Wilderness Study Areas

Impacts on ACECs, WAs, and WSAs for the Southeast Corner Alternative would be similar to those for the South Alternative, as described in Section 4.3.5.

4.6.6 Compliance with Management Objectives

4.6.6.1 BLM Visual Resource Management System Classes

Of the 42 KOPs identified for this assessment, 40 are located within the Southeast Corner Alternative. These KOPs are the same as those for the South alternative, as shown in Table 4-4. This table also provides the location of each KOP. The contrast rating evaluations and associated visual simulations are included in Appendix C.

Table 4-9 indicates the various management classes by BLM district and by visual assessment unit, as well as the determination of whether the proposed action would be in compliance with the associated VRM class objectives. For many of the VAUs, VRM class compliance in the Existing Highway Alternative would be identical to that of the South Alternative. The compliance for these VAUs can be found in Table 4-4: Lake Powell/Glen Canyon; Wahweap; Big Water; East Clark Bench; Rimrocks/Paria River Valley; Cockscomb; Fivemile Valley; Telegraph Flat; Kanab/Vermillion Cliffs; Whitesage Wash; Cottonwood Wash; Colorado City/Hildale; Uzon-Canaan Wash; Short Creek; Frog Hollow; Sheeps Bridge Road; SR 9/Zion Park Scenic Byway; Nephi's Twist; Toquerville; Ash Creek; Kanarra Creek/Cedar Valley; and Cedar City.

The determination of compliance was based on the results of the contrast-rating evaluations at the KOPs. If there were no KOPs identified, the magnitude of change in the landscape character was based on the magnitude of change to the regional landscape character. Based on this evaluation, the proposed pipeline and associated facilities would create changes to the landscape ranging from low to high. The changes in many areas would be perceived by the casual observer, particularly at facility locations, because of the moderate to high level of contrast in visual elements of form, line, color and texture.

The Southeast Corner Alternative would comply with VRM objectives for Classes III and IV with implementation of the standard mitigation measures as identified in Chapter 5, Mitigation and Monitoring. For Class II areas however, additional mitigation measures identified in Chapter 5, Mitigation and Monitoring, would be required in some areas to further reduce potential impacts. If the standard and additional mitigation measures are implemented, along with site-specific mitigation measures that would be determined in the project Plan of Development, the changes associated with the project would be subordinate—that is, would repeat the basic elements found in the natural and cultural landscape characteristics.

The VAUs, project configurations, and associated facilities that would not meet VRM objectives would be similar to those summarized for the South Alternative in Section 4.4.6.1.

4.6.6.2 National Park Service

Compliance with the NPS would be similar to that for the South Alternative, as discussed in Section 4.3.6.2.

4.6.6.3 Scenic Roads and Byways

Compliance regarding scenic road and byway designations would be similar to those in the South Alternative, as discussed in Section 4.3.6.3.

4.6.6.4 Historic Trails

Compliance with management objectives for historic trails would be similar to that of the South Alternative, as discussed in Section 4.3.6.4.

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4.6.6.5 ACECs, Wilderness Areas, and Wilderness Study Areas

Compliance with ACECs, WAs, and WSAs would be similar to that of the South Alternative, as discussed in Section 4.3.6.5.

4.7 Transmission Line Alternatives

4.7.1 Transmission Line Alternatives Parallel to Existing Transmission Lines

Several of the transmission line alternatives would parallel existing transmission lines. The lines, forms, color, and texture of these alternatives would be similar to those in the existing visual setting, and would have a very low to low magnitude of change. The alternatives are discussed below based on the magnitude of change they would have to the existing landscape.

Very Low Magnitude of Change

The **Glen Canyon to Buckskin Transmission Line**, the **Buckskin to Paria Transmission Line**, and the **Paria Substation** Alternatives would all have a very low magnitude of change. The **Glen Canyon to Buckskin Transmission Line** would create no apparent change to the existing landscape character. The visibility of the line would be primarily limited to users of back country roads and would be partially within the foreground distance zone of U.S. 89. The majority of the new line would be strung on existing towers, and any new towers that may be required would not result in a noticeable change from the existing conditions.

Similar to the Glen Canyon to Buckskin Transmission Line, the **Buckskin to Paria Transmission Line** is an upgrade of an existing transmission line. The minimal degree of contrast in line, form, color, and texture from this alternative would create no apparent change to the existing landscape character.

The upgrade of the existing **Paria Substation** would result in a very low magnitude of change, and would create no apparent change to the visual setting. The existing facility is generally screened from view from U.S. 89. New facilities and equipment would be similar in form, line and color to the existing facilities and equipment and would not be a noticeable change to travelers using U.S. 89 or visitors using roads and trails in the area.

Low Magnitude of Change

The **Intake Transmission Line** would have a low magnitude of change to the existing landscape. This alternative would be located parallel to an existing transmission line and would create no apparent contrast. The line form and color of the transmission line would be similar to the other transmission lines in proximity to the new Intake Transmission Line. The new transmission line crossing of U.S. 89 would be a subtle change to the landscape character at that location. The new line would be noticeable but would not attract attention because of the other existing transmission lines and facilities in the area visible along the segment of U.S. 89.

4.7.2 Transmission Line Alternatives Not Parallel to Existing Transmission Lines

The remaining Transmission Line Alternatives would include segments of transmission lines that would not parallel existing transmission lines. The lines, forms, colors, and textures of these alternatives would result in impacts on the existing visual character ranging from very low to high. The alternatives are discussed below based on the magnitude of change or range in magnitude of change that they would have to the existing landscape.

Very Low Magnitude of Change

Several of the transmission line alternatives would create a minimal amount of contrast that would result in a very low magnitude of change, including the three transmission lines for the **Cedar Valley Pipeline System**, and the **Cedar Valley Water Treatment Facility Transmission Lines**. Each of the three transmission lines for the Cedar Valley Pipeline System would include a new crossing of a transmission line over I-15. There are existing transmission lines and low intensity development dispersed throughout the I-15 corridor and the new transmission lines would result in no apparent change in the landscape character.

The **Cedar Valley Water Treatment Facility Transmission Line** would also create no apparent change to the existing landscape. The transmission line would be located in an area of existing development, and the lines and forms of the transmission line would be consistent with those in the existing visual setting.

Range of Very Low to Low Magnitude of Change

A range of very low to low magnitude of change would occur with the **Sand Hollow/Dixie Springs Transmission Line**. This transmission line would follow along the east side of Sand Hollow reservoir past an existing water tank and extend north along the base of a low escarpment. The line would have a subtle change in the visual character for approximately 1 mile where it is adjacent to the reservoir in open landscape. Development and facilities of various kinds, including roads and other power lines are visible around the reservoir and the new line would not attract attention. At the base of the escarpment, the view of the poles and line would be against the background of the vegetation and the landform and would be less visible than in the open areas. Approximately 1.2 miles from HS-4, the transmission line would parallel an existing road and transmission line to the substation and the magnitude of change in the landscape character would be very low. The new transmission line would be similar in form, line, and scale to the existing line and there would be no apparent change in the existing landscape character.

Low Magnitude of Change

Three of the transmission line alternatives would have a low magnitude of change, including the **BPS-1 Transmission Line**, the **BPS-4 Transmission Line**, and the **HS-2 South Transmission Line**. The **BPS-1 Transmission Line** would create a low degree of contrast that would result in a subtle change to the landscape character and would not attract the attention of the travelers along this portion of U.S. 89. The transmission line would be similar in form, line and scale to other power lines and facilities visible in the landscape.

The lines and forms of the **BPS-4 Transmission Line** would have a low degree of contrast with the existing landscape character. The new line crossing the highway would be similar to an existing transmission line crossing the highway to the substation at the same location. The transmission line located along the west side of the highway for approximately 0.6 mile would be a subtle change in the visual setting for a brief period of time for travelers along U.S. 89, based on posted travel speed, and would not attract attention or disrupt the visual setting for highway travelers.

The **HS-2 South Transmission Line** would have low degree of contrast with the existing landscape character. The transmission line would be similar in line, form, and scale to the existing transmission line on the north side of SR 389. The new line along the existing road to HS-2 would be a subtle change in this location but would not attract attention because of the similar visual characteristics to the existing power lines along SR 389.

Range of Very Low to Moderate Magnitude of Change

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The **BPS-2 to Alternative Transmission Line** would have a very low level of landscape modification except for the segment where it departs from the Rocky Mountain Power transmission line alignment. For the segment parallel to the Rocky Mountain Power line, the line, form, and scale of the new line would be similar to the existing line and there would be no apparent change in the existing visual setting. When the new line departs the parallel 230-kV alignment it would cross a generally undisturbed landscape. This segment would have a moderate level of landscape modification. Similar to the BPS-2 transmission line, the form and line of the new poles and transmission line would have a moderate contrast with the existing landscape and would attract attention as a new visual element.

Moderate Magnitude of Change

Five of the transmission line alternatives would have a moderate change to the existing landscape character, including the **BPS-2 Transmission Line**, the **BPS-3 Transmission Line South**, the **BPS-3 Alternative Transmission Line North**, the **BPS-3 Alternative Transmission Line South**, and the **HS-4 Transmission Line**.

The **BPS-2 Transmission Line** would have a moderate degree of contrast with the existing landscape character because the new 70-95-foot-high towers would be a noticeable change from the existing visual setting. The line and form would be similar to the existing line but the scale of the new poles would be greater. From the location where the new transmission line would depart from the distribution line, the transmission line would cross a generally undisturbed landscape. The form and line of new poles and transmission line would have a strong contrast with the existing landscape. The new line would also attract attention as a new visual element in the foreground viewshed of U.S. 89 as it approached BPS-2. The new line would be visible within the foreground and middleground distance zones from U.S. 89. The new substation west of Big Water would also have a moderate level of landscape modification. The substation would be a noticeable change from the existing visual setting and would have a moderate level of contrast in the line, form, and color of the surrounding landscape. The existing visual intrusions in the natural landscape of the buildings and development associated with Big Water would somewhat reduce the level of attention that the substation would attract, but the substation would remain a discordant feature in the visual setting.

Both the **BPS-3 Transmission Line North** and the **BPS-3 Alternative Transmission Line North** would result in a moderate magnitude of change.

The **BPS-3 Transmission Line North** would parallel the highway for approximately 16 miles. The line and form of the new transmission line would be similar to the existing distribution line along the north side of the highway, but would be a new transmission line in existing open space along the highway. The scale of the 70-95-foot-high pole compared to the shorter distribution line pole would be noticeably different and would attract attention, disrupting the distant views of travelers along the highway. The transmission line passing near the Three Pigs rock feature on the south side of U.S. 89 would not substantially change the visual setting of the landform. An existing transmission line currently passes to the west of the rock feature, crosses U.S. 89, and continues to the northwest. The new transmission line would be similar in form and line to the existing line.

The impacts of the **BPS-3 Alternative Transmission Line North** would be similar to the BPS-3 Transmission Line North, except that the impacts along U.S. 89 would be reduced because the transmission line would not extend approximately 6.8 miles along U.S. 89 west of the Alternative BPS-3 site.

The **BPS-3 Transmission Line South** would have a reduced effect on the visual character along U.S. 89 as compared to the BPS-3 Transmission line North alternative because it would parallel the highway for a shorter distance—approximately 6.8 miles instead of 16 miles. The line would have a moderate magnitude of change in

the existing landscape character along the BLM road leading to U.S. 89. There would be a noticeable change in the visual elements of form and line in the visual character along the road since the transmission line would be a new element in the existing landscape that does not currently exist.

The **HS-4 Transmission Line** would have a moderate magnitude of change with the existing landscape and would attract the attention of travelers along Frog Hollow Road. The transmission line would attract attention because it would introduce a new visual element into existing landscape and would create a moderate contrast to the form and line of the existing visual character.

The **Hurricane Cliffs Afterbay to Sand Hollow Transmission Line** would create a moderate contrast in line and form with the visual setting. The transmission line would cross an area with few existing cultural modifications and would cause a noticeable change in the landscape. The transmission line would attract the attention of those using the existing unpaved roads for recreational purposes.

High Magnitude of Change

The **BPS-3 Alternative Transmission Line South** would have a high magnitude of change to the existing landscape. The transmission lines and towers would introduce new lines, forms, and colors into the landscape that would be highly visible in the currently undisturbed area. The substantial amount of contrast created by the transmission lines and poles would begin to dominate the visual setting for recreation users on or near the existing BLM road. The effects along U.S. 89 would be eliminated because there would not be a new transmission line along the highway.

A high magnitude of change would occur from the substantial contrast caused by the **Hurricane Cliffs Afterbay to Hurricane West Transmission Line**. This transmission line would be carried on 115-150-foot-high steel poles across areas with limited cultural modifications. The line, form, and scale of the transmission line would contrast with the existing visual setting and would begin to dominate the landscape.

4.8 No Lake Powell Water Alternative

Under the No Lake Powell Water Alternative, there would be no impacts on the existing visual character from construction and maintenance of the pipeline and its associated facilities. New water treatment facilities not associated with the pipeline would be required to meet water supply needs and there could be a change in the visual setting in the vicinity of where those facilities would be constructed.

4.9 No Action Alternative

Under the No Action Alternative the pipeline and associated facilities would not be constructed. There would be no impacts on the existing visual character.

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Chapter 5 Mitigation and Monitoring

5.1 South Pipeline and all Action Alternatives

Mitigation measures to reduce the potential impacts on visual resources from the proposed pipeline construction and maintenance have been identified. The following list identifies standard mitigation measures for the proposed project and additional mitigation measures that would be required on a site-specific basis: mitigation measures would apply to project construction and restoration activities for all action alternatives. Additional site-specific mitigation may be required to further reduce visual resource impacts from pipeline construction and associated activities and to meet land management objectives. Any site-specific mitigation measures, if needed, will be developed using the design and construction details provided in the Plan of Development.

Standard Mitigation Measures

- Work with the BLM to ensure that construction, operation and maintenance of the pipeline and associated aboveground facilities in Class II areas would be consistent with the objectives and guidelines of Class II areas.
- Segregate topsoil from the trench line and spoil storage area for the entire length of the project.
- Restore disturbed areas to match existing and characteristic landforms. This recontouring applies to all existing landforms, including rounding of cut slopes along maintenance roads, pipeline alignments and streambanks/washes to blend with surrounding natural contours. Stabilize restored slopes exceeding 6:1 with erosion control techniques.
- Use seed mixes that include species similar to those currently residing in the natural plant communities of the project disturbance area to facilitate the recovery of the preconstruction plant community.
- Monitor the success of revegetation.
- Blend aboveground facilities with the existing landscape colors as closely as possible. Select colors in coordination with BLM.
- Redistribute slash across the right-of-way following final cleanup and seeding in areas.
- Control nighttime lighting at aboveground facility sites by using shielded and down-casting fixtures and motion detection switches.
- Trample or shear existing vegetation, instead of clearing entire right-of-way, to leave existing root systems intact to encourage regrowth and revegetation in disturbance and soil storage areas.
- Clear additional trees in juniper areas to create uneven, natural appearing openings in vegetative cover adjacent to the pipeline alignment.
- Feather trees and shrubs along the edge of the right-of-way with selective thinning to create variations in density and creating by uneven edges, to minimize the linear impact of right-of-way clearing.

Chapter 5. Mitigation and Monitoring

- Reduce facility site sizes and fenced areas to minimize footprints of sites.
- Mitigate to meet scenery objectives of specially designated lands that the project crosses.
- Add supplemental fill material or “plating” to the outside faces of the forebay and afterbay dam structures to allow for revegetation and contouring.
- Grade plating material on dam structures to be similar to surrounding landforms.
- Revegetate dam structures with container material of species specific to the site, in addition to a seed mix, to enhance establishment and cover of vegetation and minimize potential erosion.
- Blend new plantings with natural vegetation at the edges, and configure new plantings to match existing vegetation patterns and provide horizontal and vertical diversity.
- Retain existing vegetation that screens pipeline alignments, flow-control facilities, parking lots and other features from key viewing areas to the extent feasible.
- Select exterior finish, color and texture of buildings and other structures to blend with the characteristic landscape. Choose paint colors to blend in with the existing landscape colors as closely as possible. Select colors in coordination with BLM.
- Use non-specular finish components for all facilities and associated parts at substations.

Additional Mitigation Measures

- Use rock staining on exposed rock surfaces to blend with the surrounding rock formations.
- Shape rock cut slopes to mimic adjacent rock formations.
- Salvage surface boulders for relocation in the disturbance area to simulate preconstruction conditions.
- Use pitting and vertical mulching in sensitive locations to reduce contrast and visibility of the pipeline corridor and discourage vehicular access along the disturbed area.

Transmission Line Mitigation Measures

- Use poles with non-reflective gray surface.
- Use only conductors and wires with a nonspecular surface finish.

5.2 Existing Highway Alternative

(See Section 5.1 for mitigation and monitoring measures.)

5.3 Southeast Corner Alternative

(See Section 5.1 for mitigation and monitoring measures.)

5.4 Transmission Line Alternatives

(See Section 5.1 for mitigation and monitoring measures.)

5.5 No Lake Powell Water Alternative

Mitigation and monitoring measures for the Lake Powell Pipeline would not be directly applicable to the future planned projects that could be developed with the No Lake Powell Water Alternative.

5.6 No Action Alternative

The No Action Alternative would not directly impact the characteristic landscape and would therefore require no mitigation or monitoring measures.

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Chapter 6

Unavoidable Adverse Impacts

6.1 South Alternative

Unavoidable adverse impacts from the project would include impacts from all permanent aboveground features and changes to existing rock formations. Proposed aboveground features such as the intake facility, pump station facilities, regulation tank facilities, hydro facilities, the forebay reservoir, pressure-relieving valves and transmission lines and towers would have a sustained impact on the landscapes that they are planned in. These impacts would last for the life of the project and possibly longer. Changes to rock formations would create a permanent change to the landscape, which would permanently alter the characteristic landscape.

6.2 Existing Highway Alternative

(See Section 6.1 for unavoidable adverse impacts.)

6.3 Southeast Corner Alternative

(See Section 6.1 for unavoidable adverse impacts.)

6.4 Transmission Line Alternatives

(See Section 6.1 for unavoidable adverse impacts.)

6.5 No Lake Powell Water Alternative

Unavoidable adverse impacts from the No Lake Powell Water Alternative would include potential impacts from permanent aboveground features and potential changes to existing rock formations. Proposed aboveground features associated with future projects could have a sustained impact on the landscapes that they are planned in. These impacts could last for the lives of these projects and possibly longer. Changes to rock formations could create a permanent change to the landscape, which could permanently alter the characteristic landscape.

6.6 No Action Alternative

The No Action Alternative would have no unavoidable adverse impacts.

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Chapter 7 Cumulative Impacts

7.1 South Pipeline and All Action Alternatives

Cumulative impacts on visual resources could occur if construction of the Proposed Project would combine with those of other interrelated projects, including past, present and reasonably foreseeable future projects that also affect the visual landscape. The projects determined to have potential cumulative impacts along with LPP on the visual resources are briefly described below. More detailed information on the projects as well as the complete list of the interrelated projects that are considered to have potential cumulative impacts in conjunction with the LPP will be included in the Preliminary Permit Application.

- **Southern Corridor Highway** The Southern Corridor is a four-lane, limited-access highway beginning at Interstate 15 (I-15) near the southwest end of St. George about 2 miles from the Arizona border at the Atkinville interchange and will connect with state Route 9 (S.R. 9) at about 2800 West, near Hurricane. A portion of the Southern Corridor Highway has been constructed and is in service from I-15 to the exit for the new St. George municipal airport.
- **Jackson Flat Reservoir** – The Jackson Flat Reservoir is a 4,228 acre-foot reservoir that will store non-culinary water. The reservoir will be located just south of Kanab and just east of Kanab municipal airport in Kane County, Utah.
- **Anderson Junction Reservoir** – Anderson Junction Reservoir is pending construction at Anderson Junction (I-15 and Hwy 17). The reservoir will be supplied by the Ash Creek Pipeline and interconnected with the Toquerville Secondary Water System.
- **Ash Creek Pipeline** – The Ash Creek Pipeline will convey water from the existing Ash Creek Reservoir to the proposed Anderson Junction Reservoir. The LPP project proposed Cedar Valley Pipeline would be constructed adjacent to the Ash Creek Pipeline in the same ROW.
- **Kern River-Hurricane Natural Gas Pipeline** – Questar Gas Company is proposing a natural gas pipeline from the existing Kearns River Gas Pipeline to Hurricane, Utah. One alternative follows State Route 18 to the Southern Parkway where it turns north and follows it to Hurricane, Utah. The second alternative runs south of Gunlock Reservoir to State Route 8 which it then follows to the Southern Parkway. It then follows the Southern Parkway north to Hurricane.
- **BLM - St. George Field Office National Conservation Area Resource Management Plans** The St. George Field Office (SGFO) is preparing Resource Management Plans for the 63,500 acre Beaver Dam Wash National Conservation Area (NCA) and the 45,000 acre Red Cliffs NCA, on public lands in Washington County, Utah. The purposes of the new NCAs are: “to conserve, protect, and enhance for the benefit and enjoyment of present and future generations the ecological, scenic, wildlife, recreational, cultural, historical, natural, educational, and scientific resources” of each unit.

The cumulative impacts from LPP along with these projects would not result in a noticeable change in the overall visual setting of the area. These interrelated projects are primarily located within or near developed areas of the local communities where the landscape has been modified. The visual impacts of the LPP project would be similar to the interrelated projects and be generally consistent with the form, line, color and texture of the existing modified landscape. While the addition of the LPP project would increase the overall level of disturbance, when

Chapter 7. Cumulative Impact

considered in conjunction with existing and proposed projects, the general characteristics of the landscape would not change.

Therefore, when considered along with past, present, and reasonably foreseeable projects in the geographic area of influence, the LPP project would not contribute incrementally to an adverse impact on visual resources.

7.2 Existing Highway Alternative

The cumulative impacts of the Existing Highway Alternative would be similar to those of the South Alternative. Though the project would be on a different alignment in some areas, the difference would not be noticeably different and the South Alternative would not contribute to the cumulative impacts on the existing landscape.

7.3 Southeast Corner Alternative

The cumulative impacts of the Existing Highway Alternative would be similar to those of the South Alternative. Though the project would be on a different alignment in some areas, the difference would not be noticeably different and the South Alternative would not contribute to the cumulative impacts on the existing landscape.

7.4 No Lake Powell Water Alternative

The No Lake Powell Water Alternative would have no cumulative impacts from the proposed project because the project and associated facilities would not be constructed.

7.5 No Action Alternative

The No Action Alternative would have no cumulative impacts from the proposed project because the project and associated facilities would not be constructed.

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Abbreviations and Acronyms

ACEC	area of critical environmental concern
BLM	Bureau of Land Management
CICWCD	Central Iron County Water Conservancy District
FO	field office
GCNRA	Glen Canyon National Recreation Area
GSENM	Grand Staircase-Escalante National Monument
KCWCD	Kane County Water Conservancy District
KOP	key observation point
NPS	National Park Service
RMP	Resource Management Plan
VAU	visual assessment unit
VRM	Visual Resource Management
WCWCD	Washington County Water Conservancy District
WA	wilderness area
WSA	wilderness study area
WTF	water treatment facility

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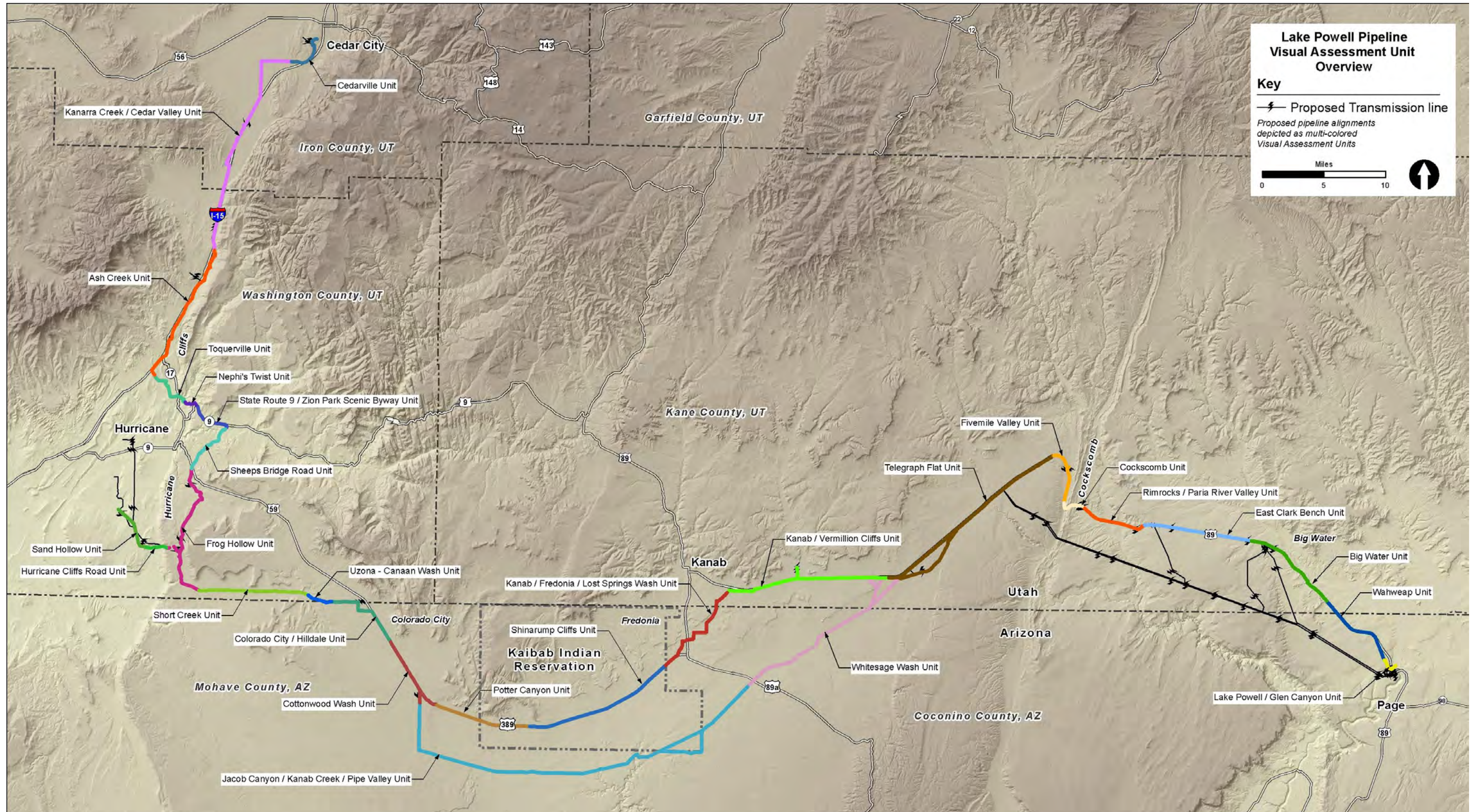
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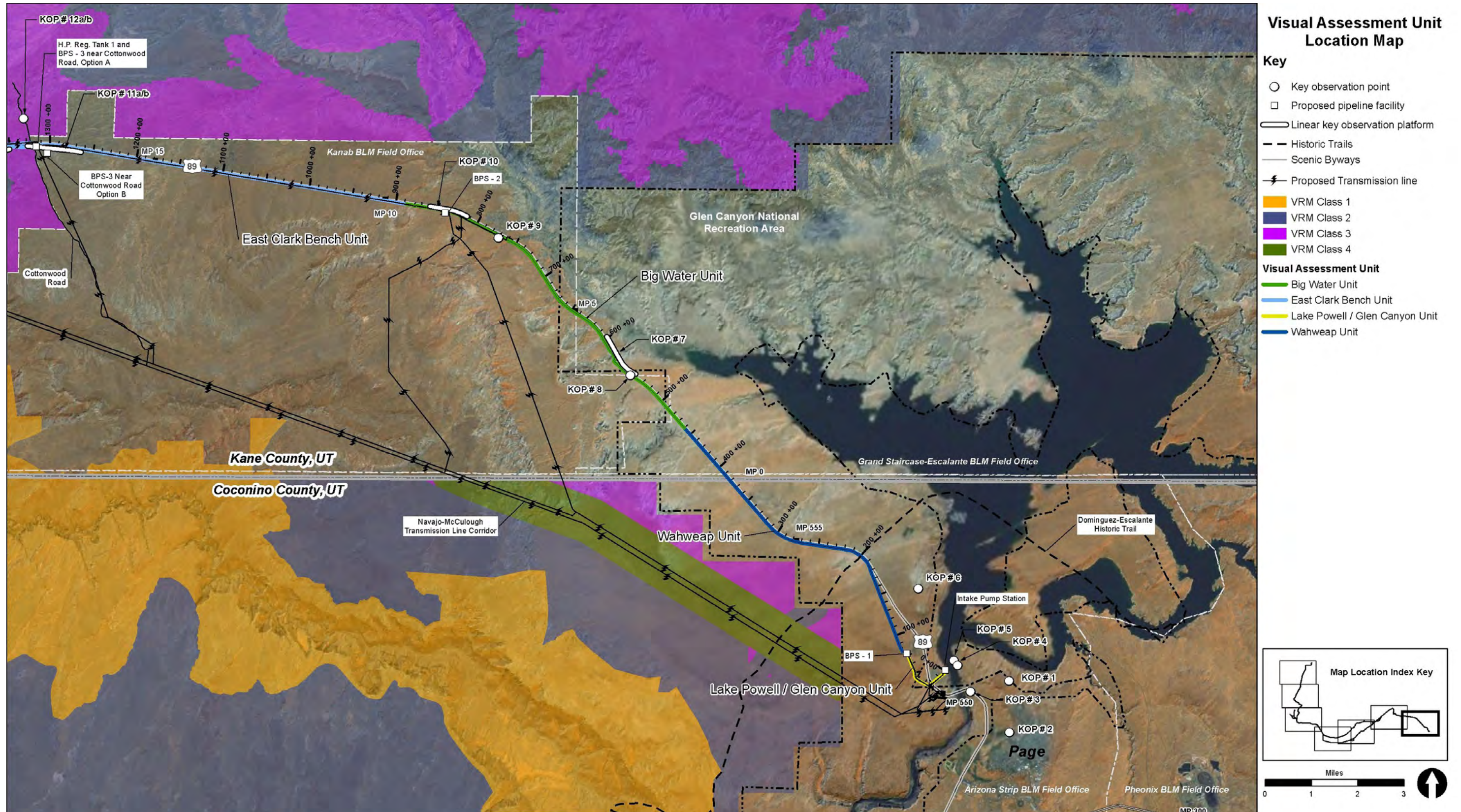
Name	Degree(s)	Role
Logan Simpson Design, Inc.		
Diane Simpson-Colebank, RLA LSD, Inc.	M.L.A. – Landscape Architecture B.S. – Biology	Project Principal
Mark Meyer, RLA LSD, Inc.		Project Manager/Senior Landscape Architect
Craig Johnson, RLA LSD, Inc.		Senior Landscape Architect
Chris Thompson LSD, Inc.		Senior GIS Specialist
Montgomery Watson Harza (MWH) Consultant Team		
Brian Liming MWH, Inc.	M.S. – Civil and Environmental Engineering B.S. – Ecosystems Analysis	Report QA/QC Review
Diana Barnes MWH, Inc.	A.A. – Secretarial Science	Word Processing and Formatting

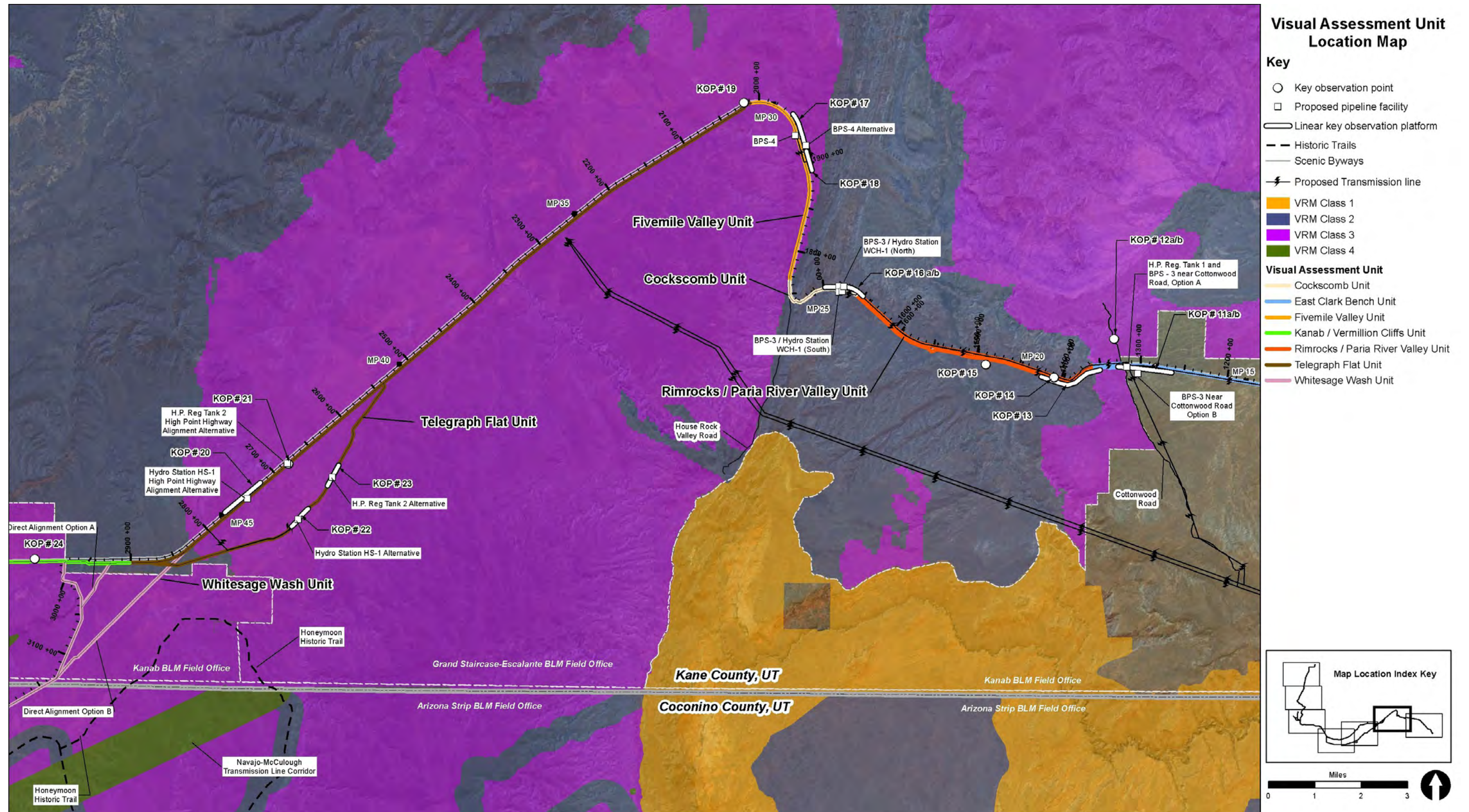
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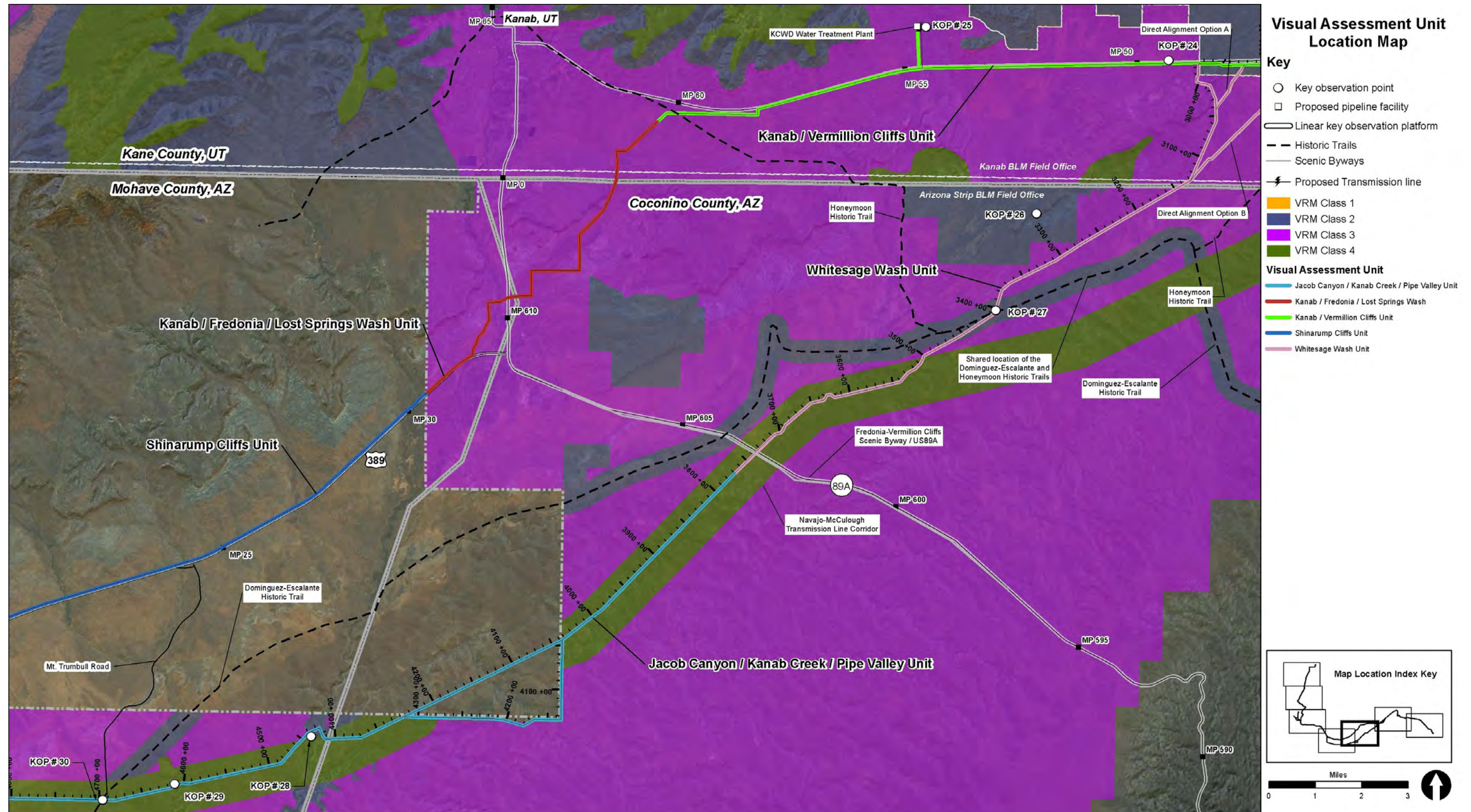
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Appendix A
Visual Assessment Unit Maps

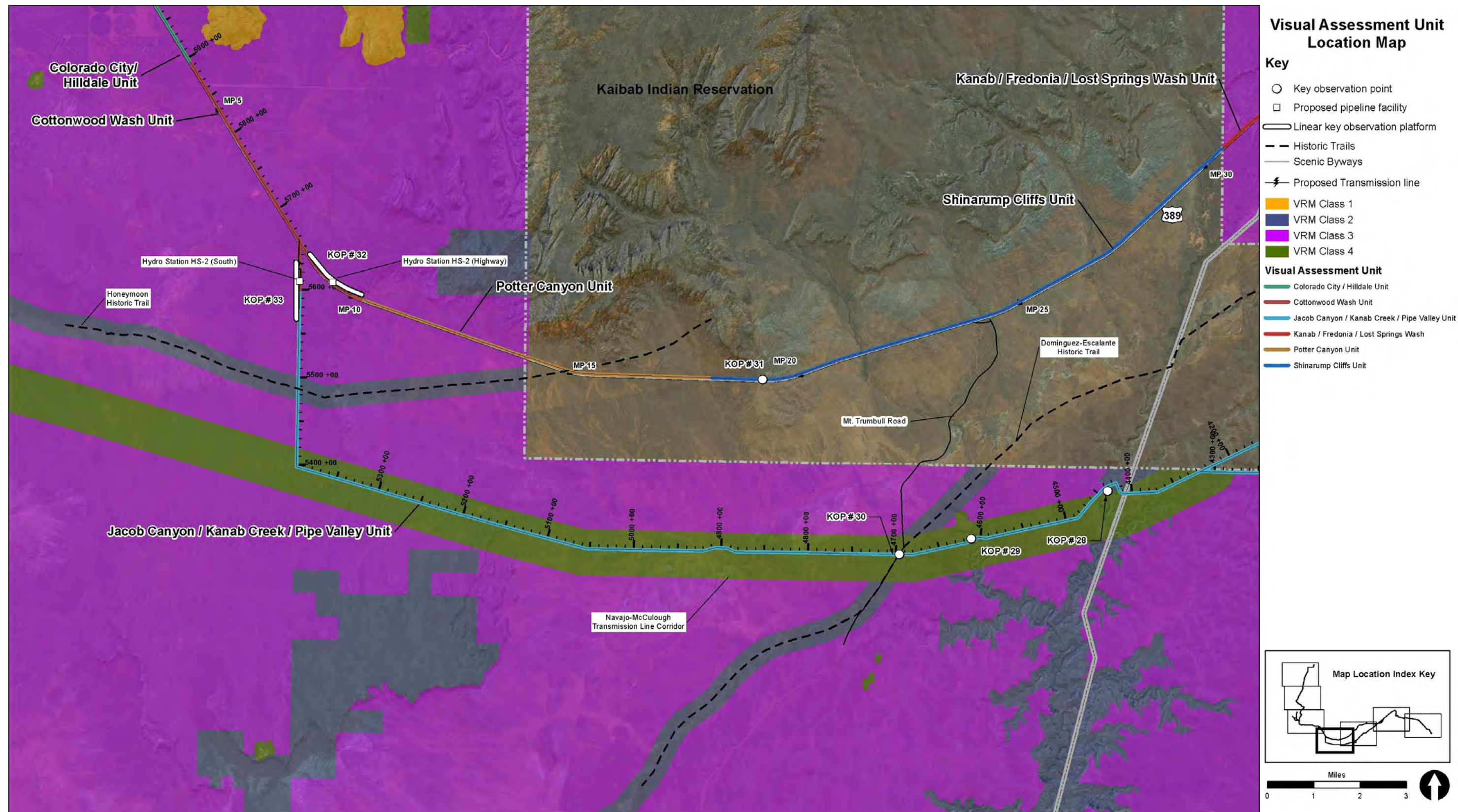


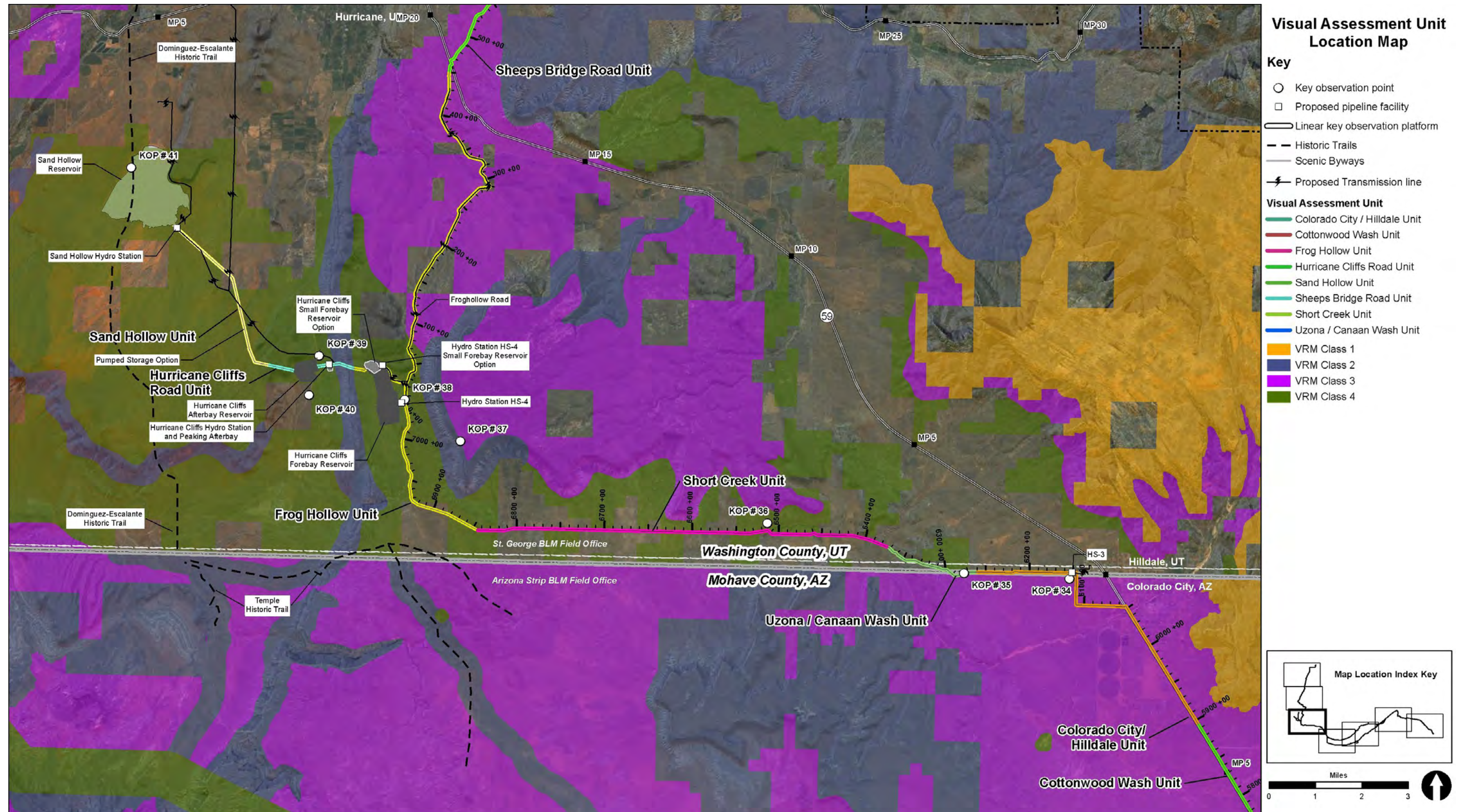


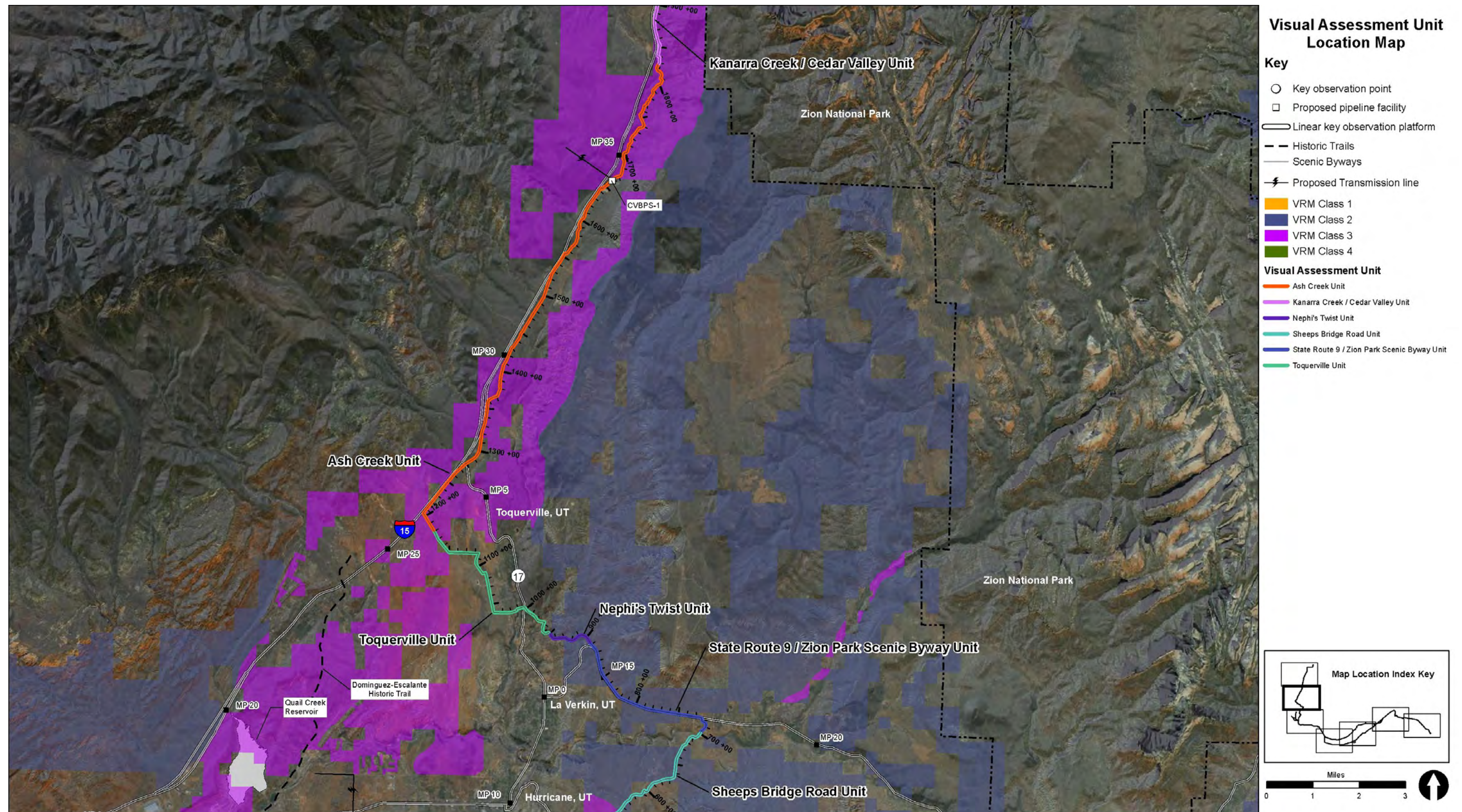




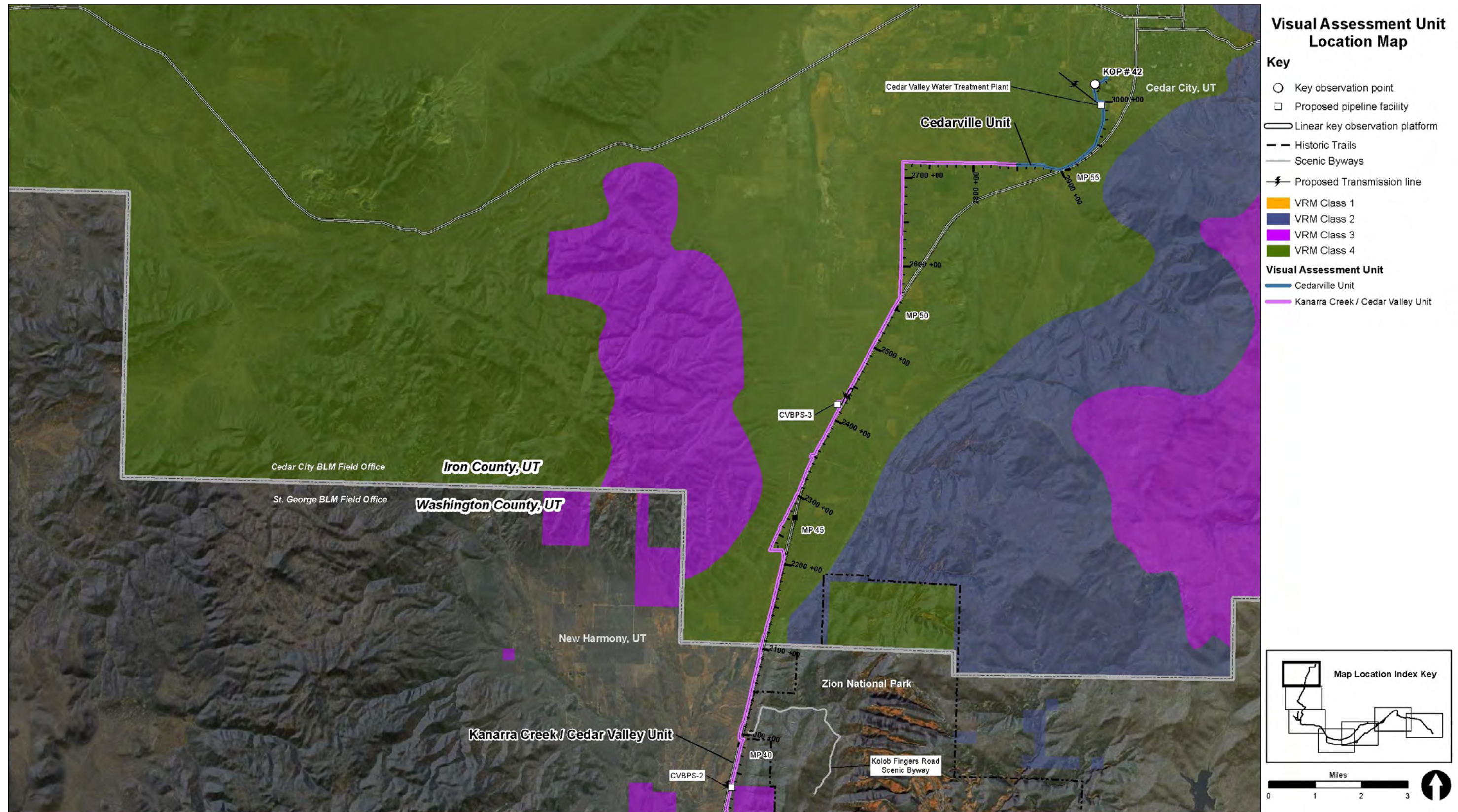
Map C









Map F





Appendix A
Visual Assessment Unit Maps


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Appendix B
Direct Impacts on Visual Assessment Units


Visual Assessment Unit (VAU)	Direct Impacts from Pipeline Alignment (Foreground)	Direct Impacts from Proposed Facilities (Foreground)	Direct Impacts from Viewing Platforms (Foreground and Middleground)
<div><div>1. Lake Powell/Glen Canyon</div><div></div><div><p>The overall magnitude of change in the landscape character created by the project within the Lake Powell/Glen Canyon VAU would range from very low* to moderate.</p><p>*The very low magnitude of change would occur in the middleground distance zone.</p></div></div>	<ul style="list-style-type: none">• Ground-disturbing activities would remove a uniform band of low, sparse vegetation, expose lighter soils, and cut through occasional rock formations. These impacts would create a low degree of change in the characteristic landscape in the short and long term because of the sparse vegetation density and visibility of existing disturbed areas and would not draw attention from the natural setting.• Uniform removal of vegetation and exposure of lighter-colored soil would also create a low degree of change in the short term because of the introduction of more distinct lines into the landscape.• Lines, forms and colors of the existing cultural modifications in this VAU would help to diminish the visual prominence of the pipeline.• <i>Direct impacts from the pipeline alignment in the foreground would have a low magnitude of change.</i>	<ul style="list-style-type: none">• The Intake Pump Station and the BPS-1 facilities would be located within the Lake Powell/Glen Canyon VAU.• Clearing of sage-scrub vegetation on these sites would create large rectangular shapes in the characteristic landscape with a low degree of contrast in line, form and color. These facilities would introduce vertical lines and rectangular forms that would increase contrast with the lines and forms of the natural setting. The introduced lines and forms would, however, be generally consistent with the lines and forms of the existing cultural modifications in the VAU.• The degree of change within the foreground of the Intake Pump Station would be moderate. The facility would attract the attention of lake users near the dam and recreational users at the Chains Day Use Area.• The degree of change within the foreground of the BPS-1 structure would be low and would not attract attention. This facility is located near an existing ADOT maintenance facility and the lines and forms of BPS-1 would be similar to existing structures at that facility.• Pressure-relieving valves would introduce short, vertical rectangular shapes into the landscape. These shapes would create a low degree of contrast with the lines and forms of the existing landscape and cause a low degree of change.• The rectangular clearings for the staging sites in this VAU would create a low degree of change in the short term that would diminish in the long term.• <i>Direct impacts from the proposed facilities in the foreground would have a moderate magnitude of change.</i>	<ul style="list-style-type: none">• This VAU includes KOPs 1 to 5 located within and surrounding the Glen Canyon National Recreation Area.• The proposed pipeline alignment and facilities would be visible from these points, but they would be generally consistent with the lines and forms of the existing characteristic landscape.• The degree of change to the landscape as viewed from the KOPs would be low, except for KOPs 4 and 5. The degree of change from these two KOPs would be moderate because the lines and bold form of the Intake Pump Station would attract attention when viewed from these locations.• Proposed project features would also be seen intermittently from linear viewing platforms, such as US 89 and Lake Shore Drive. The degree of change to linear platforms would also be low due to the limited contrast created by the project and the existence of existing cultural modifications.• The project would create an overall low degree of change and would not draw attention from existing panoramic views.• <i>Direct impacts from viewing platforms in the foreground and middleground would have a magnitude of change ranging from low to moderate.</i>
<div><div>2. Wahweap</div><div></div><div><p>The overall magnitude of change in the landscape character created by the project within the Wahweap VAU would range from very low to moderate.</p></div></div>	<ul style="list-style-type: none">• Ground-disturbing activities would remove a uniform band of low, stippled vegetation, expose lighter soils, and cut through occasional rock formations and washes.• Uniform removal of vegetation and exposure of lighter-colored soil would create a moderate contrast in the short term because of the introduction of more distinct lines in the landscape.• The forms and lines of the proposed alignment would be consistent with forms and lines already present in the VAU and would create a moderate degree of change.• The alignment would also pass over rolling landforms and would elevate the ground disturbance in some locations so that the disturbance area is more visible. This would be a moderate degree of change in the head-on view and would draw attention from the natural setting.• <i>Direct impacts from the pipeline alignment in the foreground would have a moderate degree of change.</i>	<ul style="list-style-type: none">• Although there are no facilities planned within this VAU, the BPS-1 structure would be visible.• Clearing of sage-scrub vegetation on this site would create a large rectangular shape in the landscape with a subtle level of contrast in line, form, and color. The subtle contrast would result in a low degree of change.• These facilities would also introduce vertical lines and rectangular forms that would increase contrast with the lines and forms of the natural setting. The introduced lines and forms would, however, be consistent with the lines and forms of the existing cultural modifications, such as buildings, roads, and power lines.• Impacts from pressure-relieving valves and staging areas would be similar to those for the Lake Powell/Glen Canyon VAU.• <i>Direct impacts from the proposed facilities in the foreground would have a low magnitude of change.</i>	<ul style="list-style-type: none">• KOP 6, at the Wahweap overlook, is located within this VAU.• The proposed pipeline alignment and facilities would create a moderate impact in the foreground from this location, but would create a very low impact in the middleground because the lines and forms would be consistent with the characteristics of the existing landscape.• Views from linear platforms including US 89, the Old Spanish National Historic Trail-Armijo Route, and the Dominguez-Escalante Historic Trail would be affected. Because the proposed alignment runs parallel to US 89 and the Old Spanish Trail in this VAU, the project would be seen almost constantly from these two platforms. The degree of change, however, would be low because the form and line of the proposed alignment would be consistent with the existing lines and form of the highway.• The contrast caused by vegetation clearing would be moderate in the short term, but would diminish over time as vegetation becomes reestablished in the disturbed areas. The degree of change created by the contrast would be moderate.• The project would cross the Dominguez-Escalante Historical trail at a perpendicular angle near Milepost (MP) 553.5 on US 89 in Arizona. The degree of change to the landscape would be low because the lines and form of the project would be consistent with the lines and form of US 89, which the project parallels in this area.• <i>Direct impacts from viewing platforms in the foreground and middleground would have a magnitude of change ranging from very low to moderate.</i>


Visual Assessment Unit (VAU)	Direct Impacts from Pipeline Alignment (Foreground)	Direct Impacts from Proposed Facilities (Foreground)	Direct Impacts from Viewing Platforms (Foreground and Middleground)
<div>3. Big Water</div> <div></div> <div>The overall magnitude of change in the landscape character created by the project within the Big Water VAU would range from very low to high.</div>	<ul style="list-style-type: none">• Ground-disturbing activities would remove a uniform band of low, evenly spaced vegetation, expose lighter soils, and cut through occasional rock formations and washes.• Uniform removal of vegetation and exposure of lighter-colored soil would create noticeable contrast in the short term because of the introduction of more distinct lines into the landscape.• The line and form of the pipeline disturbance would be consistent with the line and form of the existing highway that it parallels, and the degree of change would be moderate.• The alignment would also pass over rolling landforms, elevating the ground disturbance in some locations. This would create a moderate degree of change in the head-on view, and would draw attention from the natural setting.• The alignment would be drilled below a large rock formation west of Blue Pool Wash, which would avoid surface disturbance to the rock formation and result in a very low degree of change in the landscape setting.• <i>Direct impacts from the pipeline alignment in the foreground would have a moderate magnitude of change.</i> <p><u>Rock Formation Avoidance Option:</u></p> <ul style="list-style-type: none">○ This option would avoid the large rock formation west of Blue Pool Wash by crossing US 89 east of the formation, continuing parallel to US 89 on the north side, and then crossing back under the highway to the west of the formation. This option would avoid any potential disturbance to the rock formation, but would result in intersecting views of the ground disturbance and the visibility of the disturbance to Blue Pool Wash. The lines and form of the disturbance would be consistent with the lines and form of the highway, and the degree of change to the existing landscape setting would be low.○ <i>Direct impacts from the pipeline alignment in the foreground would have a moderate magnitude of change.</i>	<ul style="list-style-type: none">• The BPS-2 facility is located within the Big Water VAU.• Although the overall degree of change for this VAU would be very low to moderate, there would be a high degree of change within the foreground of the BPS-2 facility. Construction of this facility would require clearing of sage-scrub vegetation in a large rectangular shape which would create a moderate level of contrast in line, form, and color.• The vertical lines and rectangular forms of the facility would create a strong contrast with the lines and forms of the natural setting. There would be a high degree of change in the landscape character and the facility would begin to dominate the landscape in the foreground.• Impacts from pressure-relieving valves and staging areas would be similar to those explained for the Lake Powell/Glen Canyon VAU.• <i>Direct impacts from the proposed facilities in the foreground would have a high magnitude of change.</i>	<ul style="list-style-type: none">• As viewed from KOPs 8 and 9, the project would remove uniform bands of vegetation and expose lighter soils parallel to the highway, resulting in a moderate degree of change in the landscape.• The proposed alignment also closely parallels four linear platforms in this VAU and would result in nearly continuous visibility of the pipeline along each platform. The degree of change visible from the KOP 7 platform would be low due to the alignment’s similarities in line and form with the existing highway that it would parallel.• The proposed alignment would also closely parallel KOP 10, US 89, and the Old Spanish National Historic Trail-Armijo Route platforms. BPS-2 is at a tangential view to these linear platforms on an interior curve, and is within a mile of the cultural modifications in and around Big Water. Nonetheless, the presence of the facility creates a high degree of change to the landscape by introducing an industrial facility into an undisturbed area.• In both eastbound and westbound directions, the bold rectangular shape of the proposed structure would be intermittently silhouetted against the skyline and would begin to dominate the visible landscape. The facility would also draw attention from the existing panoramic views in this area.• <i>Direct impacts from viewing platforms in the foreground and middleground would have a magnitude of change ranging from low to high.</i>


Visual Assessment Unit (VAU)	Direct Impacts from Pipeline Alignment (Foreground)	Direct Impacts from Proposed Facilities (Foreground)	Direct Impacts from Viewing Platforms (Foreground and Middleground)
<div>4. East Clark Bench</div> <div></div> <div>The overall magnitude of change in the landscape character created by the project within the East Clark Bench VAU would range from very low* to high, depending on the option constructed.</div> <div>*The very low magnitude of change would occur in the middleground distance zone.</div>	<ul style="list-style-type: none">Ground-disturbing activities would remove a uniform band of low, evenly spaced vegetation, expose lighter soils, and cut through occasional small washes. These impacts would not draw attention from the natural setting in the short or long term. The project would create a low degree of change to the characteristic landscape because the alignment would have a low level of visibility in the flat terrain.Uniform removal of vegetation and exposure of lighter-colored soil would also create a low degree of change in the short term because of the introduction of more distinct lines into the landscape.The line and form of the pipeline disturbance would be consistent with the line and form of the existing highway that it parallels. The pipeline alignment would remain on the south side of the road from the High Point Regulation Tank 1/BPS-3 and High Point Regulation Tank facility to the west. This alignment would result in a low degree of change to the landscape setting.<i>Direct impacts from the pipeline alignment in the foreground would have a low magnitude of change.</i> <p><u>Northern Pipeline Option:</u></p> <ul style="list-style-type: none">The pipeline alignment would cross US 89 west of the High Point Regulation Tank 1/BPS-3 and High Point Regulation Tank facility. The alignment would then continue westward on the north side of the highway. The lines and forms of the ground-disturbing activities would be consistent with the line and form of the highway and would likewise result in a low degree of change to the landscape setting.<i>Direct impacts from the pipeline alignment in the foreground would have a low magnitude of change.</i>	<ul style="list-style-type: none">Impacts from pressure-relieving valves and staging areas would be similar to those explained in the Lake Powell/Glen Canyon VAU.This project includes the High Point Reg. Tank 1 facility within this VAU. This location would require clearing of grass and sage-scrub vegetation in large rectangular shapes and would create a low level of contrast in line and form.Vertical lines and rectangular forms would also be introduced into the landscape and would have a low degree of contrast with the lines and forms of the natural setting. The degree of change within the foreground of this facility would be low.<i>Direct impacts from the proposed facilities in the foreground would have a low magnitude of change.</i> <p><u>BPS-3 near Cottonwood Road Option A:</u></p> <ul style="list-style-type: none">This configuration includes the BPS-3 facility and High Point Reg. Tank 1 co-located in place of the High Point Reg. Tank 1 facility in the proposed project. This configuration would also require clearing of grass and sage-scrub vegetation in large rectangular shapes, creating a low level of contrast in line and form.Larger vertical lines and bold rectangular forms would be introduced into the existing landscape, and would have a strong contrast with the lines and forms of the natural setting.Although the overall degree of change in this VAU would be very low to moderate, the degree of change within the foreground of the alternative BPS-3/High Point Reg. Tank 1 facility would be high due to the strong contrast in line and form with the facility.<i>Direct impacts from the proposed facilities in the foreground would have a high magnitude of change.</i> <p><u>BPS-3 near Cottonwood Road Option B:</u></p> <ul style="list-style-type: none">This configuration includes the BPS-3 facility and High Point Reg. Tank 1 co-located in place of the High Point Reg. Tank 1 facility in the proposed project. This alternative differs from Option A in that the facility would be located approximately 1,100 feet east and 500 feet south of the site for the proposed Project and Option A.Similar to Option A, this configuration would require clearing of grass and sage-scrub vegetation in large rectangular shapes, creating a low level of contrast in line and form.The proposed facility would introduce vertical lines and bold rectangular forms into the existing landscape and would have a strong contrast with the lines and forms of the natural setting. Because the facility in this alternative would be further from US 89, the degree of contrast with the highway would be slightly less than that of Option A.Although the overall degree of change in this VAU would be very low to moderate, the degree of change within the foreground of the BPS-3/High Point Reg. Tank 1 facility in this location would be high due to the strong contrast in line and form with the facility.<i>Direct impacts from the proposed facilities in the foreground would have a high magnitude of change.</i>	<ul style="list-style-type: none">This VAU includes KOP 12a, as well as linear platforms such as US 89, Cottonwood Road, the Old Spanish National Historic Trail-Armijo Route, and KOP 11a.In the proposed configuration, the project would introduce horizontal and vertical lines and forms into the landscape when viewed from KOP 12a. The vertical rectangular form of the proposed fencing would have a low degree of contrast and would not attract attention. The degree of change in landscape character for the linear platforms would be low with the proposed Reg. Tank 1 facility. The proposed configuration would likewise have an overall low degree of change on existing panoramic views.<i>Direct impacts from viewing platforms in the foreground and middleground would have a low magnitude of change.</i> <p><u>BPS-3 near Cottonwood Road Option A:</u></p> <ul style="list-style-type: none">In this configuration the project would introduce larger scale horizontal and vertical lines, as well as bold rectangular forms into the landscape.The degree of contrast visible from KOP 12b would be noticeable, attracting attention to the optional BPS-3/H.P. Reg. Tank 1 facility. The degree of change from this contrast would be moderate.From the linear platforms of US 89, Cottonwood Road, the Old Spanish National Historic Trail-Armijo Route, and KOP 11b, the degree of change in landscape character would be high because the substantial contrast created by the forms and large scale of the facility would begin to dominate the landscape.<i>Direct impacts from viewing platforms in the foreground and middleground would have a magnitude of change ranging from moderate to high.</i> <p><u>BPS-3 near Cottonwood Road Option B:</u></p> <ul style="list-style-type: none">In this configuration the project would introduce horizontal and vertical lines, as well as bold rectangular forms into the landscape.The degree of contrast visible from KOP 12b would be noticeable, attracting attention to the alternative BPS-3/H.P. Reg. Tank 1 facility. The degree of contrast would be less than that of Option A because of the further distance to the facility. The degree of change from this contrast would, however, remain moderate.From the linear platforms of US 89, Cottonwood Road, the Old Spanish National Historic Trail-Armijo Route, and KOP 11b, the degree of change in landscape character would be high for this option because the substantial level of contrast created by the forms and large scale of the facility would begin to dominate the landscape.<i>Direct impacts from viewing platforms in the foreground and middleground would have a magnitude of change ranging from moderate to high.</i>



Visual Assessment Unit (VAU)	Direct Impacts from Pipeline Alignment (Foreground)	Direct Impacts from Proposed Facilities (Foreground)	Direct Impacts from Viewing Platforms (Foreground and Middleground)
<div>5. Rimrocks/Paria River Valley</div> <div></div> <div>The overall magnitude of change in the landscape character created by the project within the Rimrocks/Paria River Valley VAU would range from very low to moderate, depending on the option constructed.</div>	<ul style="list-style-type: none">Ground-disturbing activities would remove a uniform band of irregular, stippled vegetation, expose lighter soils, and cut through the Paria River bed and the candy-striped Rimrock formations. In most areas, the lines and forms of the ground-disturbing activities would be consistent with the line and form of US 89 and would not attract attention.Rock cuts in the Rimrocks area would, however, create a moderate degree of change in the short and long term because of the inability to blend with the distinct rock stratifications and shapes.Potential localized erosion could also create a moderate degree of change to the landscape.Uniform removal of vegetation and exposure of lighter-colored soil would also create a moderate degree of change in the short term because of the introduction of more distinct lines into the landscape. In this configuration the pipeline alignment would be located on the south side of US 89 from the High Point Reg. Tank facility to the west.<i>Direct impacts from the pipeline alignment in the foreground would have a moderate magnitude of change.</i> <p><u>Northern Pipeline Option:</u></p> <ul style="list-style-type: none">In this configuration the pipeline alignment would be located on the north side of US 89. The lines and forms of the ground-disturbing activities would be consistent with the line and form of the highway and would not attract attention. Rock cuts in the Rimrocks area would result in a low degree of change because the soil stratifications and rock formation shapes are less distinctive than those on the south side of the highway.<i>Direct impacts from the pipeline alignment in the foreground would have a low magnitude of change.</i>	<ul style="list-style-type: none">Impacts from pressure-relieving valves and staging areas would be similar to those explained in the Lake Powell/Glen Canyon VAU.This configuration would not include the BPS-3/Hydro Station WCH-1 facility within this VAU. <p><u>BPS-3 near Cottonwood Road Options A and B:</u></p> <ul style="list-style-type: none">This configuration would not include the BPS-3/Hydro Station WCH-1 facility within this VAU. Potential impacts associated with the facility at the base of the Cockscomb landform would not occur.	<ul style="list-style-type: none">The Rimrocks/Paria River Valley VAU includes KOPs 13, 14 and 15.The proposed pipeline alignment would be seen from the KOP 14, and would introduce lines and forms generally consistent with the characteristics of the existing highway. The degree of change to KOP 14 would be low.From KOP 15, the project would be barely perceptible, and would create a very low degree of change to the characteristic landscape.Three linear platforms are also located within this VAU, including US 89, the Old Spanish National Historic Trail-Armijo Route, and KOP 16a. Since the proposed alignment runs parallel to these platforms, the project would be seen almost constantly.In the proposed configuration, BPS-3/Hydro Station WCH-1 would be located near the base of the Cockscomb landform, on either the north or south side of US 89. The distinct lines and rectangular forms of the facility would create a moderate degree of change to the landscape from the linear platforms because of the distance of the view to the facility.From KOP 13, rock cuts in the Rimrocks for the proposed alignment would create noticeable contrast in the short and long term because of the inability to blend with the distinct rock stratifications and shapes. Potential localized erosion could also result in a moderate degree of change. These impacts would be most noticeable for those traveling eastbound on US 89.<i>Direct impacts from viewing platforms in the foreground and middleground would have a magnitude of change ranging from very low to moderate.</i> <p><u>BPS-3 near Cottonwood Road Options A and B:</u></p> <ul style="list-style-type: none">These optional configurations would include KOP 16b rather than 16a. The optional configuration would have a low degree of change from KOP 16b because the form and line of the proposed alignment would be consistent with the existing features of the highway. This configuration would likewise have a low degree of change on the existing panoramic views.<i>Direct impacts from viewing platforms in the foreground and middleground would have a magnitude of change ranging from very low to low.</i>



Visual Assessment Unit (VAU)	Direct Impacts from Pipeline Alignment (Foreground)	Direct Impacts from Proposed Facilities (Foreground)	Direct Impacts from Viewing Platforms (Foreground and Middleground)
<div>6. Cockscomb</div> <div></div> <div><p>The overall magnitude of change in the landscape character created by the project within the Cockscomb VAU would range from very low* to high, depending on the option constructed.</p><p>*The very low magnitude of change would occur in the middleground distance zone if the proposed option were constructed.</p></div>	<ul style="list-style-type: none">Ground-disturbing activities would remove a uniform band of mottled vegetation, expose lighter soils, and considerably increase existing rock cut slopes alongside US 89. Although large rock cut slopes would result in a high degree of landscape modification as the pipeline extends through the Cockscomb, the changes would be relatively consistent with the existing lines, forms, colors and textures of the characteristic landscape.The project would also have a moderate degree of change to the existing degree of enclosure from adjacent landforms because new cut slopes would be located further back from the edge of US 89 and lessen the degree of enclosure.These impacts would draw attention from the natural setting in the short and long term, and create a moderate degree of change in the characteristic landscape.<i>Direct impacts from the pipeline alignment in the foreground would have a moderate magnitude of change.</i>	<ul style="list-style-type: none">Impacts from pressure-relieving valves and staging areas would be similar to those explained in the Lake Powell/Glen Canyon VAU.In the proposed project the BPS-3/Hydro Station WCH-1 facility is located within this VAU, at the base of the Cockscomb. The location of the facility would depend on the chosen pipeline alignment option.If the pipeline alignment were located on the north side of the highway, the facility would also be located on the north side of the highway. Likewise, if the pipeline alignment were located on the south side of the highway, so would the facility.Regardless of the optional locations, this facility would require clearing of sage-scrub vegetation in a large rectangular shape and would create a moderate level of contrast. There would be a high degree of change within the foreground of the proposed facility.Distinct vertical lines and rectangular forms would be introduced into the existing landscape, which would contrast strongly with the rugged lines and forms of the natural setting near the Cockscomb landform.<i>Direct impacts from the proposed facilities in the foreground would have a high magnitude of change.</i> <p><u>BPS-3 near Cottonwood Rd Option A/B:</u></p> <ul style="list-style-type: none">BPS 3 would be located near Cottonwood Road in the East Clark Bench VAU. Hydro Station WCH 1 would not be included in the project. The impacts to the Cockscomb VAU associated with these facilities would not occur.	<ul style="list-style-type: none">The Cockscomb VAU does not include any KOPs, but does include the linear platforms of US 89, House Rock Road, and the Old Spanish National Historic Trail-Armijo Route.House Rock Road abuts the project from the south on the west side of the Cockscomb. The project would be visible from this platform, but would be consistent with the line and form of US 89 and would not attract attention.The impact to the remaining platforms from the project would range from moderate to high. Although large rock cut slopes would result in a high degree of landscape modification as the pipeline extends through the Cockscomb, the changes would be relatively consistent with the existing lines, forms, colors and textures of the characteristic landscape.The project would also cause a moderate degree of change to the existing degree of enclosure from adjacent landforms because new cut slopes would be located further back from the edge of US 89 and lessen the degree of enclosure.The BPS 3/Hydro Station WCH 1 would have a high degree of change for the US 89/Old Spanish Trial Platform on the east side of the Cockscomb. The facility would begin to dominate the view approaching from the westbound lanes.<i>Direct impacts from viewing platforms in the foreground and middleground would have a magnitude of change ranging from moderate to high.</i> <p><u>BPS-3 near Cottonwood Rd Option A/B:</u></p> <ul style="list-style-type: none"><i>Direct impacts from viewing platforms in the foreground and middleground would have a magnitude of change ranging from low to moderate.</i>
<div>7. Fivemile Valley</div> <div></div> <div><p>The overall magnitude of change in the landscape character created by the project within the Fivemile Valley VAU would range from low to high, depending on the option constructed.</p></div>	<ul style="list-style-type: none">Ground-disturbing activities would remove a uniform band of vegetation, expose lighter soils, and cut through occasional washes. The alignment would also pass over rolling landforms, elevating the ground disturbance in some locations. These impacts would draw attention from the natural setting in the short and long term and create a moderate degree of change in the characteristic landscape.Uniform removal of vegetation (juniper, in particular) and exposure of lighter-colored soil would also create moderate contrast in the short term because of the introduction of more distinct line and color contrast into the landscape.The line and form of the pipeline disturbance would, however, be consistent with the line and form of the existing highway it parallels through this VAU.<i>Direct impacts from the pipeline alignment in the foreground would have a moderate magnitude of change.</i>	<ul style="list-style-type: none">The BPS-4 facility is located within the Fivemile Valley VAU.This facility would require clearing of sage-scrub and pinyon/juniper vegetation in a large rectangular shape and would create a moderate level of contrast.Impacts from pressure-relieving valves and staging areas would be similar to those explained in the Lake Powell/Glen Canyon VAU.The proposed configuration would include the BPS-4 facility on the west side of US 89, directly adjacent to the highway. There would be a high degree of change within the foreground of the BPS-4 facility, though the duration of view would be short because of the location of the facility on the inside of the curve of the highway.Vertical lines and rectangular forms would be introduced into the existing landscape, which would increase the contrast with the lines and forms of the natural setting. The contrast would be strong and would begin to dominate the landscape.<i>Direct impacts from the proposed facilities in the foreground would have a high magnitude of change.</i> <p><u>High Point Realignment Option:</u></p> <ul style="list-style-type: none">In this configuration, BPS-4 would be located on the east side of US 89, approximately 500 feet from the highway. The facility would be located in a valley between US 89 and the Cockscomb landform, where views of the facility would most likely be obstructed from the majority of viewpoints along the highway.Where visible, the distinct lines and bold rectangular forms of the facility would contrast with the existing lines and forms in the natural landscape. The duration of view would be very short because the facility would be mostly obscured by landforms.Portions of the facility would also be similar in line and form to the elements of the adjacent Paria Substation. The degree of change in the landscape setting would be low. The degree of contrast with the facility would be low and would not attract the attention of travelers along the highway.<i>Direct impacts from the proposed facilities in the foreground would have a low magnitude of change.</i>	<ul style="list-style-type: none">This VAU does not include any point-related KOPs, but does include three linear viewing platforms: US 89, the Old Spanish National Historic Trail-Armijo Route, and KOP 17.Because the proposed alignment runs parallel to these platforms, the project would be seen continuously. The clearing of juniper/pinyon vegetation would create a moderate degree of change for those using the highway.In this configuration, views of BPS-4 would be limited in duration because the facility would be at a tangential view to the linear platforms. The facility would also be located on an interior curve along the linear platforms, which would limit direct views of the facility. The strong lines and bold forms of the facility nonetheless create a high degree of change to the landscape. Westbound views, in particular, would be impacted by the silhouetted building against the sky.<i>Direct impacts from viewing platforms in the foreground and middleground would have a magnitude of change ranging from moderate to high.</i> <p><u>High Point Realignment Option:</u></p> <ul style="list-style-type: none">This option would include KOP 18 rather than KOP 17. BPS-4 would be located in an area partially hidden by rolling landforms with scattered pinyon and juniper vegetation. The facility would be seen tangentially from KOP 18 for a short period of time. The lines and forms of the facility would have a low degree of change to the landscape from this KOP and would not attract the attention of those travelling east on US 89.<i>Direct impacts from viewing platforms in the foreground and middleground would have a magnitude of change ranging from low to moderate.</i>



Visual Assessment Unit (VAU)	Direct Impacts from Pipeline Alignment (Foreground)	Direct Impacts from Proposed Facilities (Foreground)	Direct Impacts from Viewing Platforms (Foreground and Middleground)
<div>8. Telegraph Flat</div> <div></div> <div>The overall magnitude of change in the landscape character created by the project within the Telegraph Flat VAU would range from low to high, depending on the option constructed.</div>	<ul style="list-style-type: none">Ground-disturbing activities would remove a uniform band of dense sage-scrub and pinyon/juniper vegetation, expose lighter soils, and cut through occasional washes. These impacts would draw attention from the natural setting in the short and long term, and create a moderate degree of change in the characteristic landscape.Uniform removal of vegetation and exposure of lighter-colored soil would also create moderate contrast in the short term because of the introduction of additional distinct lines in the landscape.The ground disturbance from the pipeline would parallel US 89, and would be generally consistent with the line and form of the highway. This configuration would, however, create a moderate contrast in color.<i>Direct impacts from the pipeline alignment in the foreground would have a moderate magnitude of change.</i> <p><u>Bureau of Land Management (BLM) Road K4020 Option:</u></p> <ul style="list-style-type: none">The lines and form of the disturbance with the alternative alignment would be consistent with the lines and color of BLM Road K4020 that it would follow. The scale of the disturbance, however, would be larger than the scale of the existing road and would create a moderate contrast in form. The alignment disturbance would be viewed by fewer people because the location is only intermittently visible from US 89 and is approximately 1 mile from the highway. However, the disturbance would occur in a location where those using BLM K4020 would expect to view undisturbed open space.<i>Direct impacts from the pipeline alignment in the foreground would have a moderate magnitude of change.</i>	<ul style="list-style-type: none">Both High Point Reg. Tank 2 and Hydro Station HS-1 are within this VAU, as are the alternative locations for both of these facilities.These facilities would require clearing of sage-scrub and pinyon/juniper vegetation in large rectangular shapes and would create a moderate level of contrast in form.Impacts from pressure-relieving valves and staging areas would be similar to those explained in the Lake Powell/Glen Canyon VAU.The proposed facilities would introduce vertical lines and rectangular forms in the existing landscape, which would contrast with the lines and forms of the natural setting.The hydro facility, in particular, would introduce vertical rectangular forms that would not be in scale with the softly rolling terrain. There would be a high degree of change within the foreground of the proposed location of the Hydro Station HS-1 facility. This facility would begin to dominate the landscape, particularly for those travelling on US 89.The degree of change within the foreground of the proposed location of High Point Reg. Tank 2 would be moderate because the facility is smaller in scale and partially screened by vegetation.Direct impacts from the proposed facilities in the foreground would have a magnitude of change ranging from moderate to high. <p><u>BLM Road K4020 Option:</u></p> <ul style="list-style-type: none">The facilities in the optional configuration would also introduce vertical lines and rectangular forms into the existing landscape. The facilities in this option would be located directly adjacent to BLM Road 4020 and would contrast with this mostly undisturbed landscape. The contrast in line and form created by the optional location of High Point Reg. Tank 2 would be moderate within the foreground of the facility. Although the contrast in line and form from the optional HS-1 location would begin to dominate the landscape within the foreground of the facility, the overall degree of change in the characteristic landscape along Road 4020 would be moderate.<i>Direct impacts from the proposed facilities in the foreground would have a magnitude of change ranging from moderate to high.</i>	<ul style="list-style-type: none">The Telegraph Flat VAU includes KOPs 19 and 21, as well as the US 89, BLM Road K4020, Great Western Trail, Old Spanish National Historic Trail-Armijo Route, and KOP 20.The proposed project configuration would introduce horizontal and vertical lines and forms into the landscape. The degree of contrast from KOP 19 would be low and would not attract attention. From KOP 21, on the other hand, new vertical lines and forms from High Point Reg. Tank 2 would create a moderate degree of change in the landscape character.The proposed alignment closely parallels the linear platforms in this VAU, resulting in nearly continuous visibility of the pipeline along each platform.The change in landscape character for US 89, the Old Spanish National Historic Trail-Armijo Route, and KOP 20 platforms would be moderate due to the introduction of horizontal lines from the pipeline disturbance.Within the foreground of the proposed Hydro Station HS-1 location from KOP 20, the vertical lines and rectangular forms of the facility would result in a high degree of change, and would begin to dominate the landscape because there are few other cultural modifications in the area.Although the overall degree of change to the Great Western Trail linear platform would be low, there would be a moderate degree of change to the portion of the trail within close proximity to the Great Western Trail platform. The horizontal and vertical lines of the project within the foreground of this KOP would create a moderate degree of change in the landscape.<i>Direct impacts from viewing platforms in the foreground and middleground would have a magnitude of change ranging from low to high.</i> <p><u>BLM Road K4020 Option:</u></p> <ul style="list-style-type: none">Similar to the proposed configuration, the degree of contrast visible from KOP 19 would be low and would not attract attention.The pipeline ground disturbance would be visible from both the US 89 and the Old Spanish National Historic Trail-Armijo Route linear platforms. The lines and form of the disturbance would be consistent with the lines and forms of both US 89 and BLM Road K4020 and would result in a low degree of change to the characteristic landscape.HS-1 would be located more than a mile from US 89, the most sensitive viewing platform in this VAU. The degree of change from the highway would be low, and would not attract attention.This option would also include KOPs 22 and 23, rather than KOPs 20 and 21.The optional project configuration would likewise introduce horizontal and vertical lines and forms into the landscape. Within the foreground of the proposed Hydro Station HS-1 location from KOP 22, the vertical lines and rectangular forms of the facility would result in a high degree of change and would begin to dominate the landscape because there are few other cultural modifications in the area.From KOP 23, the vertical lines and rectangular forms of H.P. Reg. Tank 2 would be less bold and would be a moderate change to the landscape.The alternative project configuration would parallel the Great Western Trail linear platform for approximately 0.25 mile. This impact would constitute a low degree of change because it would be consistent in line and form with the BLM Road K4020 that it would closely parallel.Within the foreground of the proposed Hydro Station HS-1 location along the BLM Road 4020 linear platform, the vertical lines and rectangular forms of the facility would result in a high degree of change and would begin to dominate the landscape.The degree of change within the foreground of the proposed location of High Point Reg. Tank 2 along BLM Road 4020 would be moderate because the contrast created by the distinct lines and forms of the facility would draw attention from the natural landscape.<i>Direct impacts from viewing platforms in the foreground and middleground would have a magnitude of change ranging from low to high.</i>



Visual Assessment Unit (VAU)	Direct Impacts from Pipeline Alignment (Foreground)	Direct Impacts from Proposed Facilities (Foreground)	Direct Impacts from Viewing Platforms (Foreground and Middleground)
<div>9. Kanab/Vermilion Cliffs</div> <div></div> <div><p>The overall magnitude of change in the landscape character created by the project within the Kanab/Vermilion Cliffs VAU would range from very low* to high.</p><p>*The very low magnitude of change would occur in the middleground distance zone.</p></div>	<ul style="list-style-type: none">• Ground-disturbing activities would remove a uniform band of dense sage-scrub and pinyon-juniper vegetation, expose lighter soils, and cut through occasional small washes. These impacts would not draw attention from the natural setting in the short or long term, and would create a low degree of change in the characteristic landscape.• Uniform removal of vegetation and exposure of lighter-colored soil would also create a low degree of contrast in the short term because of the introduction of more distinct lines into the landscape.• The line and form of the majority of the pipeline disturbance would, however, be consistent with the line and form of the existing highway it closely parallels through most of this VAU.• This VAU would also include a smaller, 24-inch pipeline that would extend from the 69-inch pipeline west along US 89 and then north along Johnson Canyon Road to the proposed Kane County Water Treatment Facility. This pipeline would have a slightly smaller clearing area (110-foot width rather than 130-foot width for the 69-inch pipe), but would be generally similar in line and form to the clearing areas for the 69-inch pipe.• <i>Direct impacts from the pipeline alignment in the foreground would have a low magnitude of change.</i>	<ul style="list-style-type: none">• The Kane County Water Treatment Facility is located within this VAU.• This site would require clearing of sage-scrub vegetation in a large rectangular shape and would create a moderate level of contrast. Vertical lines and rectangular forms would also be introduced into the existing landscape, which would contrast with the lines and forms of the natural setting.• From US 89, the facility would be within the middleground distance zone and the degree of change would be moderate. Within the foreground of the facility, lines and forms of the structures would begin to dominate the landscape and create a high degree of change for residents near Johnson Canyon Road.• Impacts from pressure-relieving valves and staging areas would be similar to those explained in the Lake Powell/Glen Canyon VAU.• <i>Direct impacts from the proposed facilities in the foreground would have a high magnitude of change.</i>	<ul style="list-style-type: none">• The Kanab/Vermilion Cliffs VAU includes KOP 24.• From this location, horizontal lines from the project would be introduced into the landscape. The degree of contrast visible from this KOP would result in a low degree of change.• The proposed alignment also parallels linear platforms in this VAU; the US 89 and the Old Spanish National Historic Trail-Armijo Route platforms closely parallel the project alignment, resulting in relatively continuous visibility of the project. The lines and form of the project, however, are consistent with the features of the existing landscape and would create a low degree of change in the views from the platforms.• The forms and scale of the Kane County WTF would create a high degree of change in the landscape character from KOP 25 and the Johnson Canyon Road platform.• <i>Direct impacts from viewing platforms in the foreground and middleground would have a magnitude of change ranging from low to high.</i>


Visual Assessment Unit (VAU)	Direct Impacts from Pipeline Alignment (Foreground)	Direct Impacts from Proposed Facilities (Foreground)	Direct Impacts from Viewing Platforms (Foreground and Middleground)
<div><div>10. Whitesage Wash</div><div></div><div>The overall magnitude of change in the landscape character created by the project within the Whitesage Wash VAU would range from low to moderate, depending on the option constructed.</div></div>	<ul style="list-style-type: none">Ground-disturbing activities would remove a uniform band of dense sage-scrub and pinyon-juniper vegetation, expose lighter soils, and cut through occasional washes. Uniform removal of vegetation and exposure of lighter-colored soil would create low degree of contrast in the short term because of the introduction of more distinct lines into the landscape.This portion of the project would also include a permanent maintenance road over the pipeline, which would create a long-term impact. Although the road would introduce a new line in the landscape, the scale of the wide-open landscape and the height of the surrounding sage-scrub would diminish the degree of contrast with existing features. The new road would cause a low degree of change in the landscape character and would not attract attention.<i>Direct impacts from the pipeline alignment in the foreground would have a low magnitude of change.</i> <p><u>Direct Alignment Option A:</u></p> <ul style="list-style-type: none">The pipeline would split from the proposed alignment near Station 3040+00 and extend in a southwestern direction through currently undisturbed land to approximately Station 2920+00. The distinct lines and banded form of the pipeline disturbance would contrast with the indistinct lines and forms of the existing landscape. The degree of change to the landscape character would be moderate and would attract attention.<i>Direct impacts from the pipeline alignment in the foreground would have a moderate magnitude of change.</i> <p><u>Direct Alignment Option B:</u></p> <ul style="list-style-type: none">The pipeline would split from the proposed alignment near Station 3130+00 and would extend in a southwestern direction through currently undisturbed land to approximately Station 2840+00. The distinct lines and banded form of the pipeline disturbance would contrast with the indistinct lines and forms of the existing landscape. The degree of change to the landscape character would be moderate and would attract attention in this option.<i>Direct impacts from the pipeline alignment in the foreground would have a moderate magnitude of change.</i>	<ul style="list-style-type: none">There are no facilities planned in this VAU, other than occasional pressure-relieving valves that would be located along the proposed pipeline.Impacts from pressure-relieving valves and staging areas would be similar to those explained in the Lake Powell/Glen Canyon VAU.	<ul style="list-style-type: none">The Whitesage Wash VAU includes KOP 26 and 27.The project would be visible in the middleground from KOP 26, and would have a low degree of change to the landscape. The project would not attract attention due to its distance from KOP 26 and the perpendicular view of the alignment from that viewpoint.Although the overall degree of change for this VAU would be low, the degree of change from KOP 27 would be moderate because the project directly crosses this KOP.This VAU also includes the Honeymoon Historic Trail, the Dominguez-Escalante Historic Trail, and the Fredonia–Vermilion Cliffs Scenic Road/US 89A linear platforms. The Honeymoon Historic Trail platform would cross the project alignment perpendicularly and would result in a moderate degree of change to the landscape.The Dominguez-Escalante Historic Trail platform would parallel this platform for several miles and would create a low degree of change to the landscape setting of the trail. The project would also cross the Dominguez-Escalante Historic Trail at an acute angle and would create a moderate degree of change to the landscape.The project alignment would also cross the US 89A linear platform at a perpendicular angle and would create a low degree of change on the existing landscape character. At this location, the project is also parallel to the existing Navajo-McCullough transmission line. The scale and vertical nature of the existing transmission lines and towers make them a noticeable feature in the landscape and they would be more dominant than the ground disturbance associated with the project.<i>Direct impacts from viewing platforms in the foreground and middleground would have a magnitude of change ranging from low to moderate.</i>


Visual Assessment Unit (VAU)	Direct Impacts from Pipeline Alignment (Foreground)	Direct Impacts from Proposed Facilities (Foreground)	Direct Impacts from Viewing Platforms (Foreground and Middleground)
<div><div><div>11. Kanab/Fredonia/ Lost Springs Wash</div><div></div></div><div><p>Impacts to this VAU would occur with the Existing Highway Alternative. The overall magnitude of change in the landscape character created by the project within the Kanab/Fredonia/Lost Springs Wash VAU would range from very low* to low.</p><p>*The very low magnitude of change would occur in the middleground distance zone.</p></div></div>	<ul style="list-style-type: none">Ground-disturbing activities would remove a uniform band of dense vegetation, expose lighter soils, and cut through occasional washes. These impacts would not draw attention from the natural setting in the short or long term, and would create a low magnitude of change in the characteristic landscape.Uniform removal of vegetation and exposure of lighter-colored soil would also create a low degree of contrast in the short term because of the introduction of more distinct lines into the landscape.The area of this VAU near Fredonia and Kanab is urbanized, and the lines and forms of the pipeline disturbance would be consistent with the features in the existing visual setting. The project would create a low degree of change in the landscape character.<i>Direct impacts from the pipeline alignment in the foreground would have a low magnitude of change.</i>	<ul style="list-style-type: none">There are no facilities planned in this VAU, other than occasional pressure-relieving valves that would be located along the proposed pipeline.Impacts from pressure-relieving valves and staging areas would be similar to those explained in the Lake Powell/Glen Canyon VAU.	<ul style="list-style-type: none">This VAU does not include any key observation points, but does contain a segment of US 89A. This segment is not part of the scenic road, but is nonetheless a notable linear viewing platform.The project crosses US 89A perpendicularly in the town of Fredonia and would result in a low degree of change to the platform due to the existing development in the surrounding area and the project’s consistency in line and form with the characteristic landscape.<i>Direct impacts from viewing platforms in the foreground and middleground would have a low magnitude of change.</i>
<div><div><div>12. Jacob Canyon/Kanab Creek/ Pipe Valley</div><div></div></div><div><p>The overall magnitude of change in the landscape character created by the project within the Jacob Canyon/Kanab Creek/Pipe Valley VAU would range from very low* to moderate.</p><p>*The very low magnitude of change would occur in the middleground distance zone.</p></div></div>	<ul style="list-style-type: none">Ground-disturbing activities would remove a uniform band of even, moderately dense vegetation, expose lighter soils, and cut through several deeply cut washes and rock formations.These impacts would draw attention from the natural setting in the short and long term, and create a moderate degree of change in the characteristic landscape because of the introduction of distinct lines into the landscape.<i>Direct impacts from the pipeline alignment in the foreground would have a moderate magnitude of change.</i>	<ul style="list-style-type: none">There are no facilities planned in this VAU, other than occasional pressure-relieving valves that would be located along the proposed pipeline.Impacts from pressure-relieving valves and staging areas would be similar to those explained in the Lake Powell/Glen Canyon VAU.	<ul style="list-style-type: none">This VAU includes three KOPs.The project would create considerable contrast with existing rock formations within the foreground of both KOP 28 and 29 and the degree of change would be moderate. These impacts would draw attention from the natural setting and result in a moderate degree of change to the landscape.The degree of change within the foreground of KOP 30, on the other hand, would be low. The project would not attract attention in this area due to the visual dominance of the existing Navajo- McCullough transmission lines and structures, which are directly adjacent to the project in this location.Linear viewing platforms in this VAU include Mt. Trumbull Road and Dominguez-Escalante Historic Trail, which both cross the project as they intersect the Navajo-McCullough transmission-line corridor.The intersecting view of the project from the platforms would create a low degree of change and not attract attention because the lines and form of the project would be consistent with those of the existing transmission-line access road.In addition, Mt. Trumbull Road would be widened and improved as an access road for the project. The characteristics of the improved road would be generally consistent with the line and form of the existing road. The degree of change to Mt. Trumbull road would be low and would not attract attention.The Honeymoon Historic Trail linear platform is also in this VAU and the project crosses it perpendicularly. The degree of change to the trail would be low and would not attract attention since the lines and form of the project would be similar to county road 239, which the project parallels in this location.<i>Direct impacts from viewing platforms in the foreground and middleground would have a magnitude of change ranging from low to moderate.</i>



Visual Assessment Unit (VAU)	Direct Impacts from Pipeline Alignment (Foreground)	Direct Impacts from Proposed Facilities (Foreground)	Direct Impacts from Viewing Platforms (Foreground and Middleground)
<div>13. Shinarump Cliffs</div> <div></div> <div>Impacts to this VAU would occur with the Existing Highway Alternative. The overall magnitude of change in the landscape character created by the project within the Shinarump Cliffs VAU would range from very low to low.</div>	<ul style="list-style-type: none">• Ground-disturbing activities would remove a uniform band of dense vegetation, expose lighter soils, and cut through a number of rock formations. These impacts would not draw attention from the natural setting in the short or long term, and would create a low degree of change in the characteristic landscape.• Uniform removal of vegetation and exposure of lighter-colored soil would also create a low degree of contrast in the short term because of the introduction of more distinct lines into the landscape.• The line and form of the majority of the pipeline disturbance would, however, be consistent with the line and form of the existing highway it closely parallels through most of this VAU.• <i>Direct impacts from the pipeline alignment in the foreground would have a low magnitude of change.</i>	<ul style="list-style-type: none">• There are no facilities planned in this VAU, other than occasional pressure-relieving valves that would be located along the proposed pipeline.• Impacts from pressure-relieving valves and staging areas would be similar to those explained in the Lake Powell/Glen Canyon VAU.	<ul style="list-style-type: none">• This VAU includes one KOP and three linear platforms.• From KOP 31, the project would introduce new horizontal lines and form into the landscape. The lines and form would, however, be similar to the characteristics of US 89. The degree of change would be low and would not attract attention.• The State Route 389, Old Spanish National Historic Trail-Armijo Route, and Honeymoon Historic Trail linear platforms all parallel the project alignment, at varying distances from the project. From these platforms, the project is almost constantly visible. The line and form of the project would, however, be consistent with the features of the existing landscape and create a low degree of change.• <i>Direct impacts from viewing platforms in the foreground and middleground would have a low magnitude of change.</i>
<div>14. Potter Canyon</div> <div></div> <div>Impacts to this VAU would occur with the Existing Highway Alternative. The overall magnitude of change in the landscape character created by the project within the Potter Canyon VAU would range from very low* to low.</div> <div>*The very low magnitude of change would occur in the middleground distance zone.</div>	<ul style="list-style-type: none">• Ground-disturbing activities would remove a uniform band of dense vegetation and expose lighter soils. These impacts would not draw attention from the natural setting in the short or long term, and would create a low degree of change in the characteristic landscape.• Uniform removal of vegetation and exposure of lighter-colored soil would also create a low degree of contrast in the short term because of the introduction of more distinct lines into the landscape.• The line and form of the majority of the pipeline disturbance would, however, be consistent with the line and form of the existing highway it closely parallels through most of this VAU.• <i>Direct impacts from the pipeline alignment in the foreground would have a low magnitude of change.</i>	<ul style="list-style-type: none">• There are no facilities planned in this VAU, other than occasional pressure-relieving valves that would be located along the proposed pipeline.• Impacts from pressure-relieving valves and staging areas would be similar to those explained in the Lake Powell/Glen Canyon VAU.	<ul style="list-style-type: none">• This VAU includes three linear platforms: The State Route 389, Old Spanish National Historic Trail-Armijo Route, and Honeymoon Historic Trail. These linear platforms parallel the project alignment at varying distances from the project. From these platforms, the project is almost constantly visible. The line and form of the project would, however, be consistent with the features of the existing landscape and create a low degree of change.• <i>Direct impacts from viewing platforms in the foreground and middleground would have a low magnitude of change.</i>



Visual Assessment Unit (VAU)	Direct Impacts from Pipeline Alignment (Foreground)	Direct Impacts from Proposed Facilities (Foreground)	Direct Impacts from Viewing Platforms (Foreground and Middleground)
<div>15. Cottonwood Wash</div> <div></div> <div>The overall magnitude of change in the landscape character created by the project within the Cottonwood Wash VAU would range from very low* to high.</div> <div>*The very low magnitude of change would occur in the middleground distance zone.</div>	<ul style="list-style-type: none">• Ground-disturbing activities would remove a uniform band of dense sage-scrub and pinyon/juniper vegetation and expose lighter soils. These impacts would not draw attention from the natural setting in the short and long term, and would create a low degree of change in the characteristic landscape.• Uniform removal of vegetation and exposure of lighter-colored soil would also create low degree of contrast in the short term because of the introduction of more distinct lines into the landscape.• The lines and form of the majority of the pipeline disturbance would, however, be consistent with the line and form of the existing highway through most of this VAU• <i>Direct impacts from the pipeline alignment in the foreground would have a low magnitude of change.</i>	<ul style="list-style-type: none">• This VAU includes the Hydro Station 2-South facility.• This facility would require clearing of sage-scrub vegetation in a large rectangular shape, creating a moderate level of contrast. Vertical lines and rectangular forms would also be introduced into the existing landscape and would contrast with the lines and forms of the natural setting.• The degree of change within the foreground of this facility would be high and would begin to dominate the landscape because there are few other cultural modifications in this area.• For the Existing Highway Alternative, the HS-2 facility would be located on the north side of State Route 389 at approximately MP 9.5. Impacts from the facility at this location would be similar to those described for the proposed location except that the change in landscape character would be visible to a higher number of people because of the location along the highway.• Impacts from pressure-relieving valves and staging areas would be similar to those explained in the Lake Powell/Glen Canyon VAU.• <i>Direct impacts from the proposed facilities in the foreground would have a high magnitude of change.</i>	<ul style="list-style-type: none">• This VAU includes three linear platforms.• The KOP 33 platform parallels the project alignment and result in relatively continuous visibility of the project. Although the overall degree of change for this VAU would be low to very low, the vertical lines and rectangular forms introduced by the hydro facility would result in a high degree of change and would begin to dominate this landscape.• The project first crosses the State Route 389 and Old Spanish National Historic Trail-Armijo Route platforms perpendicularly and then parallels these platforms. Visibility of the project from these platforms would be relatively continuous because the project is parallel. Because the lines and forms of the project would be consistent with the existing highway, the degree of change would be low and would not attract attention.• <i>Direct impacts from viewing platforms in the foreground and middleground would have a magnitude of change ranging from low to high.</i>
<div>16. Colorado City/Hildale</div> <div></div> <div>The overall magnitude of change in the landscape character created by the project within the Colorado City/Hildale VAU would be very low to low.</div>	<ul style="list-style-type: none">• Ground-disturbing activities would remove a uniform band of dense sage-scrub and pinyon/juniper vegetation and expose lighter soils.• The lines and forms of the project, however, would be consistent with the lines and forms of other cultural modifications in the existing landscape.• The project would result in a very low degree of change in the landscape setting because there would be no apparent change to the landscape.• <i>Direct impacts from the pipeline alignment in the foreground would have a low magnitude of change.</i>	<ul style="list-style-type: none">• HS-3 would be located within this VAU, immediately west of the developed area along the Arizona-Utah border.• Ground-disturbing activities would remove a large rectangular form of dense sage-scrub and pinyon/juniper vegetation and expose lighter soils.• The lines and forms of the facility would be consistent with the lines and forms of other cultural modifications in the existing landscape.• The project would create a low degree of change to the landscape.• <i>Direct impacts from the proposed facilities in the foreground would have a low magnitude of change.</i>	<ul style="list-style-type: none">• KOP 34 is included in this VAU.• The project would introduce new horizontal lines and rectangular forms into the landscape, which would be similar to the lines and forms already present. The degree of change from this KOP would be very low and would result in no apparent change to the landscape.• This VAU also includes the State Route 389 linear viewing platform, which the project parallels for several miles before crossing the highway and heading west. The project would be highly visible from this platform, but would be consistent with the features of the existing landscape and would result in a very low degree of change to the landscape character.• <i>Direct impacts from viewing platforms in the foreground and middleground would have a low magnitude of change.</i>



Visual Assessment Unit (VAU)	Direct Impacts from Pipeline Alignment (Foreground)	Direct Impacts from Proposed Facilities (Foreground)	Direct Impacts from Viewing Platforms (Foreground and Middleground)
<div>17. Uzona-Canaan Wash</div> <div></div> <div>The overall magnitude of change in the landscape character created by the project within the Uzona-Canaan Wash VAU would be very low* to moderate.</div> <div>*The very low magnitude of change would occur in the middleground distance zone.</div>	<ul style="list-style-type: none">• Ground-disturbing activities would remove a uniform band of dense, stippled vegetation, cut through existing rock formations, and expose lighter soils. These impacts would draw attention from the natural setting in the short and long term, and would create a moderate degree of change in the characteristic landscape.• Uniform removal of vegetation and exposure of lighter-colored soil would also create moderate contrast in the short term because of the introduction of distinct lines into the landscape.• <i>Direct impacts from the pipeline alignment in the foreground would have a moderate magnitude of change.</i>	<ul style="list-style-type: none">• There are no facilities planned in this VAU, other than occasional pressure-relieving valves that would be located along the proposed pipeline.• Impacts from pressure-relieving valves and staging areas would be similar to those explained in the Lake Powell/Glen Canyon VAU.	<ul style="list-style-type: none">• This VAU includes KOP 35.• The project would introduce horizontal lines and forms into the landscape from this viewpoint. They would attract attention and result in a moderate degree of change to the existing landscape.• <i>Direct impacts from viewing platforms in the foreground and middleground would have a moderate magnitude of change.</i>
<div>18. Short Creek</div> <div></div> <div>The overall magnitude of change in the landscape character created by the project within the Short Creek VAU would range from very low* to low.</div> <div>*The very low magnitude of change would occur in the middleground distance zone.</div>	<ul style="list-style-type: none">• Ground-disturbing activities would remove a uniform band of dense, patchy vegetation, cut through Short Creek, and expose lighter soils.• Because the distinct lines introduced by the project would be fairly consistent with lines from existing unpaved roads, the degree of change to the characteristic landscape would be low and would not attract attention.• The permanent maintenance road proposed over the pipeline along this stretch would make this a long-term impact.• <i>Direct impacts from the pipeline alignment in the foreground would have a low magnitude of change.</i>	<ul style="list-style-type: none">• There are no facilities planned in this VAU, other than occasional pressure-relieving valves that would be located along the proposed pipeline.• Impacts from pressure-relieving valves and staging areas would be similar to those explained in the Lake Powell/Glen Canyon VAU.	<ul style="list-style-type: none">• This VAU includes both KOP 36 and the Old Spanish National Historic Trail-Armijo Route linear platform. The project would introduce horizontal lines into the visible landscape, but they would cause a low degree of change due to the presence of existing roads in the project area. From the Old Spanish Trail linear platform, the project would run parallel to the trail and create a low degree of contrast. The degree of change from these locations would be low.• <i>Direct impacts from viewing platforms in the foreground and middleground would have a low magnitude of change.</i>



Visual Assessment Unit (VAU)	Direct Impacts from Pipeline Alignment (Foreground)	Direct Impacts from Proposed Facilities (Foreground)	Direct Impacts from Viewing Platforms (Foreground and Middleground)
<div><div>19. Frog Hollow</div><div></div><div><p>The overall magnitude of change in the landscape character created by the project within the Frog Hollow VAU would range from low to high, depending on the option constructed.</p></div></div>	<ul style="list-style-type: none">Ground-disturbing activities would remove a uniform band of dense, evenly spaced vegetation, expose lighter soils, and cut through several washes and rock formations. These impacts would draw attention from the natural setting in the short and long term and create a moderate degree of change in the characteristic landscape because they would be immediately adjacent to Frog Hollow Road.These changes would also create moderate contrast in the short term because of the introduction of more distinct lines into the landscape from the removal of vegetation.The pipeline alignment for this option would traverse mostly undisturbed land until reaching Frog Hollow Road, at which point it would parallel the road northward to Utah State Route 59.<i>Direct impacts from the pipeline alignment in the foreground would have a moderate magnitude of change.</i> <p><u>Small Forebay Reservoir Option:</u></p> <ul style="list-style-type: none">The pipeline alignment for this option would traverse mostly undisturbed land until reaching Frog Hollow Road, at which point it would parallel the road northward to Utah State Route 59.This option would also include a spur of pipeline to the Hydro Station HS-4 location associated with this option. The spur would extend from Frog Hollow Road approximately 0.6 mile along an unnamed off-highway-vehicle (OHV) road.These impacts would result in a moderate degree of change to the existing landscape.<i>Direct impacts from the pipeline alignment in the foreground would have a moderate magnitude of change.</i>	<ul style="list-style-type: none">Impacts from pressure-relieving valves and staging areas would be similar to those explained in the Lake Powell/Glen Canyon VAU.The Hydro Station HS-4 facility is located within this VAU.Construction of this facility would require clearing of vegetation in a large rectangular shape which would create a moderate level of contrast.Vertical lines and rectangular forms introduced into the existing landscape would contrast with the lines and forms of the natural setting. The degree of change within the foreground of the Hydro Station HS-4 facility would be high and would begin to dominate the landscape. HS-4 would be located along Frog Hollow Road. This road is heavily used and the impacts from the facility would affect a higher number of users.The Large Hurricane Cliffs Forebay reservoir would also be within this VAU. The reservoir would create a high level of contrast in form, line, color and texture. The degree of change within the foreground of the reservoir would be high and would begin to dominate the view. This forebay would cover an area approximately 7,500 feet long and 2,500 feet wide.<i>Direct impacts from the proposed facilities in the foreground would have a high magnitude of change.</i> <p><u>Small Forebay Reservoir Option:</u></p> <ul style="list-style-type: none">HS-4 would be located along an unnamed OHV road. This road is less heavily used than Frog Hollow Road and the impacts from the facility would affect a lower number of users.The impacts from HS-4 in this location would be moderate and would attract attention.The Small Hurricane Cliffs Forebay reservoir would also be within this VAU. The reservoir would create a high level of contrast in form, line, color and texture. The degree of change within the foreground of the reservoir would be high and would begin to dominate the view.This forebay option would cover an area approximately 2,000 feet long and 1,000 feet wide and would therefore affect a smaller area than the proposed configuration.<i>Direct impacts from the proposed facilities in the foreground would have a magnitude of change ranging from moderate to high.</i>	<ul style="list-style-type: none">The degree of change from KOP 37 would be noticeable due to the contrast in line, form, and texture created by the proposed forebay.The proposed forebay reservoir is quite large and would draw attention from the natural setting. It would result in a moderate degree of change to the visual landscape.The large forebay reservoir would not begin to dominate the view from this KOP. This is due in part by the expansive scale of the landscape from high atop Little Creek Mountain. The presence of an existing reservoir in the distance with similar characteristics also diminishes the potential dominance of the feature from this location.KOP 38 is also located within this VAU. The project would create contrast in line, form, color and texture to the landscape surrounding this platform and would result in an overall moderate degree of change to the characteristic landscape.The degree of change from KOP 38 within the foreground of Hydro Station 4 would be high and would begin to dominate the landscape.The Honeymoon Historic Trail and Temple Historic Trail (eastern route) linear platforms are also present in this VAU, approximately 1 mile southeast of the project. From these platforms, the lines and forms introduced by the project would create a subtle contrast with those of the existing landscape and would result in a low degree of change.<i>Direct impacts from viewing platforms in the foreground and middleground would have a magnitude of change ranging from low to high.</i> <p><u>Small Forebay Reservoir Option:</u></p> <ul style="list-style-type: none">The degree of change from KOP 37 would be low due to the weak contrast in line, form, and texture created by the small forebay.The presence of an existing reservoir in the distance with similar characteristics also diminishes the potential contrast from this location. This impact would not draw attention from the natural setting.KOP 38 is also located within this VAU. The pipeline alignment would create contrast in line, form, color and texture with the landscape surrounding this platform and would result in an overall moderate degree of change to the characteristic landscape. HS-4 would not be visible from this platform, but the forebay may be visible for a short time at a tangential view. The degree of contrast created by the lines, form and color of the forebay would be low.<i>Direct impacts from viewing platforms in the foreground and middleground would have a magnitude of change ranging from low to moderate.</i>

Visual Assessment Unit (VAU)	Direct Impacts from Pipeline Alignment (Foreground)	Direct Impacts from Proposed Facilities (Foreground)	Direct Impacts from Viewing Platforms (Foreground and Middleground)
<div>20. Hurricane Cliffs Road</div> <div></div> <div>The overall magnitude of change in the landscape character created by the project within the Hurricane Cliffs VAU would range from very low to high, depending on the option constructed.</div>	<ul style="list-style-type: none">The pipeline alignment associated with this option would be tunneled through the landform to the west of the proposed afterbay. The alignment would therefore have no visible ground disturbance and create a very low degree of change.<i>Direct impacts from the pipeline alignment in the foreground would have a moderate magnitude of change.</i> <p><u>Peaking Option:</u></p> <ul style="list-style-type: none">The pipeline alignment associated with this option would follow Hurricane Cliffs Road northward from the hydro station before turning due west and travelling near another unpaved road.Ground-disturbing activities would remove a uniform band of even to stippled vegetation and expose lighter soils.The project would not draw attention from the natural setting in the short or long term because the lines and form of the ground disturbance would be consistent with the lines and forms of the existing roads in this landscape.<i>Direct impacts from the pipeline alignment in the foreground would have a moderate magnitude of change.</i>	<ul style="list-style-type: none">The Hurricane Cliffs Hydro Station facility is located within this VAU.Impacts from pressure-relieving valves and staging areas in this VAU would be similar to those in the Lake Powell/Glen Canyon VAU.Proposed facility access roads would create contrast, but would be generally consistent with the line and form created by Hurricane Cliffs Road.The facility in this configuration would require clearing of vegetation in large rectangular shapes and would create a moderate level of contrast. The vertical lines and rectangular forms of the facility would contrast strongly with the indistinct lines and forms of the natural setting.The large scale of the pumped storage afterbay would create a high level of contrast in form, line, color and texture because it would introduce an industrial facility into the existing natural landscape.The degree of change within the foreground of the pumped storage hydro facility and afterbay would be high and would begin to dominate the view.<i>Direct impacts from the proposed facilities in the foreground would have a high magnitude of change.</i> <p><u>Peaking Option:</u></p> <ul style="list-style-type: none">The proposed access road would create contrast, but would be generally consistent with the line and form created by Hurricane Cliffs Road.The facility in this option would require clearing of vegetation in a large rectangular shape and would create a moderate level of contrast. The vertical lines and rectangular forms of the facility would contrast strongly with the indistinct lines and forms of the natural setting.The dam surrounding the peaking afterbay would create a moderate level of contrast in form, line, color and texture.The degree of change within the foreground of the peaking hydro facility would be high and would begin to dominate the view.<i>Direct impacts from the proposed facilities in the foreground would have a magnitude of change ranging from moderate to high.</i>	<ul style="list-style-type: none">This VAU includes KOP 39 and 40, as well as the Hurricane Cliffs Road linear platform.From KOP 39, the impacts would be similar to those described for the proposed project configuration in this VAU. The overall degree of change from this KOP would therefore be high and would dominate the view.From KOP 40, the lines, forms, and large scale of the proposed reservoir dam would attract attention.From the Hurricane Cliffs Road linear platform, the project would create contrast in line, form, color and texture with the landscape surrounding this platform and would result in an overall moderate degree of change. The degree of change within the foreground of the Hydro Station along this linear platform would be high and would begin to dominate the landscape.<i>Direct impacts from viewing platforms in the foreground and middleground would have a magnitude of change ranging from very low to high.</i> <p><u>Peaking Option:</u></p> <ul style="list-style-type: none">From KOP 39, the impacts would be similar to those described above for the proposed Peaking Option in this VAU. The overall degree of change from this KOP would therefore be high and would dominate the view from this viewpoint.From KOP 40, the proposed facility would be nearly a mile away. The lines, forms, and colors of the facility would contrast subtly with the existing landscape.From the Hurricane Cliffs Road linear KOP, the project would create contrast in line, form, color and texture with the landscape surrounding this platform, resulting in an overall moderate degree of change. The degree of change within the foreground of the Hydro Station along this linear KOP would be high and would begin to dominate the landscape.The impacts from the Hurricane Cliffs Road platform would be similar to those described above for the proposed project configuration in this VAU.<i>Direct impacts from viewing platforms in the foreground and middleground would have a magnitude of change ranging from low to high.</i>

Visual Assessment Unit (VAU)	Direct Impacts from Pipeline Alignment (Foreground)	Direct Impacts from Proposed Facilities (Foreground)	Direct Impacts from Viewing Platforms (Foreground and Middleground)
<div>21. Sand Hollow</div> <div></div> <div>The overall magnitude of change in the landscape character created by the project within the Hurricane Cliffs VAU would range from low to moderate.</div>	<ul style="list-style-type: none">Ground-disturbing activities would remove a uniform band of evenly stippled vegetation and expose lighter soils. The eastern end of the pipeline alignment associated with this option would be tunneled through the landform to the west of the proposed afterbay. To the west of this landform, the pipeline would continue toward Sand Hollow with ground disturbance through mostly undisturbed land.The alignment would not draw attention from the natural setting in the short and long term because the lines and form of the ground disturbance would be consistent with the lines and forms of the variety of roads in this landscape.<i>Direct impacts from the pipeline alignment in the foreground would have a low magnitude of change.</i> <p><u>Peaking Option:</u></p> <ul style="list-style-type: none">The pipeline alignment associated with this option would cross mostly undisturbed land, with a variety of existing lines and forms from unpaved roads. The alignment would not draw attention from the natural setting in the short and long term because the lines and form of the ground disturbance would be consistent with the lines and forms of the variety of roads in this landscape.<i>Direct impacts from the pipeline alignment in the foreground would have a low magnitude of change.</i>	<ul style="list-style-type: none">The Sand Hollow Hydro Station facility is located within this VAU.This facility would require clearing of vegetation in a large rectangular shape at the edge of the reservoir would create a moderate level of contrast within the indistinct form of the existing vegetation. The vertical lines and rectangular forms of the facility would also contrast noticeably with the features of the natural landscape.The lines and forms of the facility would, however, be consistent with the lines and forms of other cultural modifications in the landscape, such as the park facility buildings and utility buildings.The Sand Hollow Hydro Station would result in a moderate degree in the landscape setting because the facility would be noticeable, but would not begin to dominate the landscape.<i>Direct impacts from the proposed facilities in the foreground would have a moderate magnitude of change.</i>	<ul style="list-style-type: none">This VAU includes KOP 41.Ground disturbance from the proposed alignment would be visible from this platform, as would the Sand Hollow Hydro Station. The degree of change from the project would be moderate and the lines and forms from the pipeline and associated facilities would attract attention.Although portions of the Dominguez-Escalante Historic Trail platform are within the Sand Hollow Reservoir in this area, the trail would be located approximately 1 mile from the Sand Hollow Hydro Station. Ground disturbance from the proposed alignment would be visible from this platform, as would the Sand Hollow Hydro Station.The degree of change from the project would be moderate, and the lines and forms from the pipeline and associated facilities would attract attention.<i>Direct impacts from viewing platforms in the foreground and middleground would have a moderate magnitude of change.</i>
<div>22. Sheeps Bridge Road</div> <div></div> <div>The overall magnitude of change in the landscape character created by the project within the Sheeps Bridge Road VAU would range from very low* to low.</div> <div>*The very low magnitude of change would occur in the middleground distance zone.</div>	<ul style="list-style-type: none">Ground-disturbing activities would remove a uniform band of dense, evenly spaced vegetation, expose lighter soils, and cut through rock formations, washes, and the vertical rock walls of the Virgin River.The project is parallel to an existing road and the distinct lines introduced by the project would be fairly consistent with the lines of that road.The degree of change to the characteristic landscape would be low and would not attract attention.<i>Direct impacts from the pipeline alignment in the foreground would have a low magnitude of change.</i>	<ul style="list-style-type: none">There are no facilities planned in this VAU.	<ul style="list-style-type: none">This VAU does not include any specific KOPs or linear platforms, but does include several key off-road bicycling trails.The project would be visible from these trails intermittently, but would be consistent in line and form with the existing unpaved road.The degree of change would therefore be low in nature and the subtle change in the landscape setting would not attract attention.<i>Direct impacts from viewing platforms in the foreground and middleground would have a low magnitude of change.</i>

Visual Assessment Unit (VAU)	Direct Impacts from Pipeline Alignment (Foreground)	Direct Impacts from Proposed Facilities (Foreground)	Direct Impacts from Viewing Platforms (Foreground and Middleground)
<p>23. State Route 9/Zion Park Scenic Byway</p>  <p>The overall magnitude of change in the landscape character created by the project within the State Route 9/Zion Park Scenic Byway VAU would range from very low* to low.</p> <p>*The very low magnitude of change would occur in the middleground distance zone.</p>	<ul style="list-style-type: none">• Ground-disturbing activities would remove a uniform band of moderately dense vegetation, cut through small washes, and expose lighter soils.• Distinct lines introduced by the project would be consistent with lines from the highway and the existing pipeline disturbance that the project closely parallels in this area.• The ground-disturbing activities would result in a low degree of change to the characteristic landscape and the project would not attract attention.• <i>Direct impacts from the pipeline alignment in the foreground would have a low magnitude of change.</i>	<ul style="list-style-type: none">• There are no facilities planned in this VAU.	<ul style="list-style-type: none">• This VAU contains the Zion Scenic Byway/State Route 9 linear KOP.• The project would introduce horizontal lines into the visible landscape that would be consistent with the lines of the existing roadway.• The degree of contrast would be low and would not attract attention.• <i>Direct impacts from viewing platforms in the foreground and middleground would have a low magnitude of change.</i>
<p>24. Nephi’s Twist</p>  <p>The overall magnitude of change in the landscape character created by the project within the Nephi’s Twist VAU would range from very low* to low.</p> <p>*The very low magnitude of change would occur in the middleground distance zone.</p>	<ul style="list-style-type: none">• Ground-disturbing activities would remove a band of irregular, patchy vegetation, expose lighter soils, and cut through rock formations and washes.• Because the project parallels an existing underground pipeline in this area, changes to the vegetation and rock formations would be generally consistent with the existing landscape.• This would result in a low degree of change to the characteristic landscape and would not attract attention.• <i>Direct impacts from the pipeline alignment in the foreground would have a low magnitude of change.</i>	<ul style="list-style-type: none">• There are no facilities planned in this VAU.	<ul style="list-style-type: none">• This VAU contains one linear platform, the Nephi’s Twist Trail.• The project would follow this trail through Nephi’s Twist, as did a previous pipeline project.• Changes to the landscape from the project would generally be consistent with those already present in the area.• <i>Direct impacts from viewing platforms in the foreground and middleground would have a low magnitude of change.</i>

Visual Assessment Unit (VAU)	Direct Impacts from Pipeline Alignment (Foreground)	Direct Impacts from Proposed Facilities (Foreground)	Direct Impacts from Viewing Platforms (Foreground and Middleground)
<div>25. Toquerville</div> <div></div> <div>The overall magnitude of change in the landscape character created by the project within the Toquerville VAU would be very low.</div>	<ul style="list-style-type: none">Ground-disturbing activities would remove a band of varying vegetative patterns and add distinct lines to the landscape.Lines introduced by the project would be consistent with lines from existing cultural modifications in the landscape. This would result in a low degree of change to the characteristic landscape.The aerial pipeline crossing at Ash Creek would be a notable addition to the landscape, but would be consistent with existing pipeline crossings along the creek.<i>Direct impacts from the pipeline alignment in the foreground would have a very low magnitude of change.</i>	<ul style="list-style-type: none">There are no facilities planned in this VAU.	<ul style="list-style-type: none">This VAU contains no KOPs or linear KOPs, but the project would cross State Route 17, a key linear viewing platform in the area.Because the project crosses the highway in a developed area, the lines and forms of the project would be consistent with those of the cultural modifications in the existing landscape. This would result in a very low degree of change to the characteristic landscape.<i>Direct impacts from viewing platforms in the foreground and middleground would have a very low magnitude of change.</i>
<div>26. Ash Creek</div> <div></div> <div>The overall magnitude of change in the landscape character created by the project within the Ash Creek VAU would range from very low* to low. *The very low magnitude of change would occur in the middleground distance zone.</div>	<ul style="list-style-type: none">Ground-disturbing activities would remove a uniform band of irregular, dense vegetation, expose lighter soils, and cut through Ash Creek and connecting washes.Distinct lines introduced by the project would parallel I-15 in the foreground, winding through rural developments, around landforms, and through the Ash Creek Valley.The height of the pinyon-juniper in this area would partially obscure views of the project. The form of the pipeline disturbance would also be somewhat consistent with the meandering line and form of Ash Creek.This would result in a low degree of change to the characteristic landscape and would not attract attention.<i>Direct impacts from the pipeline alignment in the foreground would have a low magnitude of change.</i>	<ul style="list-style-type: none">The CBPS-1 facility is located within this VAU.This facility would be located adjacent to an existing quarry and areas of vegetative clearing would be generally consistent with the characteristic landscape.Vertical lines and rectangular forms would also be introduced into the existing landscape, and would also be consistent with those of existing structures in the VAU.The degree of change created by these facilities would be low and would not attract attention.<i>Direct impacts from the proposed facilities in the foreground would have a low magnitude of change.</i>	<ul style="list-style-type: none">The I-15 linear viewing platform is located in this VAU.The project would be intermittently visible from this platform because it would often be hidden from view by landforms and vegetation where the project passes through the Ash Creek Valley.The project would introduce horizontal lines into the visible landscape and would create a low degree of change.<i>Direct impacts from viewing platforms in the foreground and middleground would have a low magnitude of change.</i>

Visual Assessment Unit (VAU)	Direct Impacts from Pipeline Alignment (Foreground)	Direct Impacts from Proposed Facilities (Foreground)	Direct Impacts from Viewing Platforms (Foreground and Middleground)
<div>27. Kanarra Creek/Cedar Valley</div> <div></div> <div>The overall magnitude of change in the landscape character created by the project within the Kanarra Creek/Cedar Valley VAU would range from very low to moderate.</div>	<ul style="list-style-type: none">• Ground-disturbing activities would remove a uniform band of mostly agricultural and pastoral vegetation, expose lighter soils, and cut through small washes.• As agricultural areas are subsequently used for production the project would not be visible and there would be a very low degree of change in the visual setting.• Distinct lines introduced by the project would primarily parallel I-15, but would diverge from the highway and parallel property fence lines in the northern portion of the VAU. This would result in a low degree of change to the characteristic landscape and would not attract attention.• <i>Direct impacts from the pipeline alignment in the foreground would have a low magnitude of change.</i>	<ul style="list-style-type: none">• The CBPS-2 and CBPS-3 facilities are located within this VAU.• These facilities would introduce vertical lines and rectangular forms into the existing landscape, but would be consistent with those of existing cultural modifications in the VAU.• The degree of change created by these facilities would be moderate and would attract attention in the short term.• <i>Direct impacts from the proposed facilities in the foreground would have a moderate magnitude of change.</i>	<ul style="list-style-type: none">• The I-15 linear viewing platform is located in this VAU.• The project would be intermittently visible from this platform and would introduce lines and forms generally consistent with the characteristic landscape.• The impacts to the I-15 platform would generally be low, but would be moderate within the foreground of the pump station facilities.• The Kolob Fingers Scenic Byway linear KOP is also within this VAU, although views of the project from this platform would be limited. Where visible, the lines introduced by the project would be similar to those of the I-15 corridor and there would be a very low degree of change to the landscape character.• <i>Direct impacts from viewing platforms in the foreground and middleground would have a magnitude of change ranging from very low to moderate.</i>
<div>28. Cedar City</div> <div></div> <div>The overall magnitude of change in the landscape character created by the project within the Cedar City VAU would range from low to moderate.</div>	<ul style="list-style-type: none">• Ground-disturbing activities would remove a uniform band of irregular vegetation and expose lighter soils.• Distinct lines introduced by the project would loosely parallel I-15 before climbing a slope to the proposed Cedar Valley Pipeline WTF.• The pipeline along the slope would be visible from the northbound travel lanes of I-15. The project would then continue northward across Cross Hollow Road to an existing reservoir in Cedar City.• The lines introduced by the project would be generally consistent with those of the existing urban and agricultural landscape and would result in a low degree of change that would not attract attention.• <i>Direct impacts from the pipeline alignment in the foreground would have a low magnitude of change.</i>	<ul style="list-style-type: none">• The Cedar Valley WTF is located within this VAU.• This facility would introduce vertical lines and rectangular forms into the existing landscape, which would be generally consistent with those of existing cultural modifications in the VAU.• Because of the large scale and the elevated location of the facility, the degree of change would be moderate and attract attention in the short term from locations in Cedar City and along I-15.• As development continues in the vicinity of the WTF, the facility would become less noticeable and be considered normal element of the landscape setting.• <i>Direct impacts from the proposed facilities in the foreground would have a moderate magnitude of change.</i>	<ul style="list-style-type: none">• This VAU includes KOP 42.• From this viewpoint along Royal Hunt Drive, the facility would be visible but would be consistent in line and form with adjacent cultural modifications.• The facility would have a moderate impact to the landscape from this viewpoint and would attract attention, primarily because it would be silhouetted against the skyline of the landform on which it would be located.• The I-15 linear viewing platform is also located in this VAU. The project would be visible from this platform, but would introduce lines and forms that would be generally consistent with the characteristic landscape. The facility would create an overall low degree of change and not attract attention.• <i>Direct impacts from viewing platforms in the foreground and middleground would have a magnitude of change ranging from low to moderate.</i>

Appendix B
Direct Impacts on Visual Assessment Units

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Appendix C
Visual Contrast Rating Worksheets and Visual Simulations

Date: December 1, 2009
District: NPS-GCNRA
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 1 **VRM:** N/A

Potato Hill

Location: Township 41N Range 9E Section 19



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ steep cliff faces and landforms	Indistinct, low	Rectangular, distinct, contrasting, flat roads, vertical utility poles/towers
Line	Horizontal, irregular, complex	Complex, indistinct	Distinct, straight, horizontal and repeating vertical
Color	Brown/beige, gray/white, orange, red, and deep blue/green water	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	White, gray, beige
Texture	Fine to coarse, striated, random, and smooth to fine water surface	Medium to fine, stippled to gradational	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ steep cliff faces and landforms	Indistinct, low	Rectangular, slightly more distinct, contrasting, flat roads, vertical utility poles/towers
Line	Horizontal, slightly more regular, complex	Complex, slightly more distinct	More distinct, straight, horizontal and repeating vertical
Color	Brown/beige, gray/white, orange, red, and deep blue/green water, slightly lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	White, gray, beige
Texture	Fine to coarse, striated, random, and smooth to fine water surface	Medium to fine, stippled to gradational	Fine

IV. CONTRAST RATING KOP 1

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☐ No Not applicable on GCNRA land.

Additional mitigation measures recommended? ☐ Yes ☒ No



View to west from Potato hill.



View to north from Potato Hill.

Date: December 1, 2009
District: NPS-GCNRA
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 2 **VRM:** N/A

Former McDonalds Parking Lot

Location: Township 41N Range 9E Section 30



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ steep cliff faces and landforms	Indistinct, low	Rectangular, distinct, contrasting, horizontal roads, vertical utility poles/towers
Line	Horizontal, irregular, complex	Complex, indistinct	Distinct, straight, horizontal and repeating vertical
Color	Brown/beige, gray/white, orange, red, and deep blue/green water	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	White, gray, tan
Texture	Fine to coarse, striated, random, and smooth to fine water surface	Medium to fine, stippled to gradational	Fine to medium

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ steep cliff faces and landforms	Indistinct, low	Rectangular, slightly more distinct, contrasting, horizontal roads, vertical utility poles/towers
Line	Horizontal, slightly more regular, complex	Complex, slightly more distinct	More distinct, straight, horizontal and repeating vertical
Color	Brown/beige, gray/white, orange, red, and deep blue/green water, slightly lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	White, gray, tan
Texture	Fine to coarse, striated, random, and smooth to fine water surface	Medium to fine, stippled to gradational	Fine to medium

IV. CONTRAST RATING KOP 2

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: ST = short term (0-1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☐ No Not applicable on GCNRA land.

Additional mitigation measures recommended? ☐ Yes ☒ No



View to northwest from former McDonalds parking lot.



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Year Post-Construction Conditions Simulation



**Zero to One Year Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**



**Five to Ten Years Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**

VISUAL CONTRAST RATING WORKSHEET (CONTINUED)

Date: December 1, 2009
District: NPS-GCNRA
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 3 **VRM:** N/A
 Gravel Pullout near Bridge

Location: Township 41N Range 8E Section 24



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ steep landforms	Indistinct, low	Rectangular, distinct, contrasting, horizontal roads, vertical utility poles/towers and light poles
Line	Horizontal, irregular, complex	Complex, indistinct	Distinct, straight, horizontal and repeating vertical
Color	Brown/beige, gray/white, orange, red	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	White, gray, tan
Texture	Fine to coarse, striated, random	Medium to fine, stippled to gradational	Fine to medium

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ steep landforms	Indistinct, low	Rectangular, slightly more distinct, contrasting, horizontal roads, vertical utility poles/towers and light poles
Line	Horizontal, slightly more regular, complex	Complex, slightly more distinct	More distinct, straight, horizontal and repeating vertical
Color	Brown/beige, gray/white, orange, red, slightly lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	White, gray, tan
Texture	Fine to coarse, striated, random	Medium to fine, stippled to gradational	Fine to medium

IV. CONTRAST RATING KOP 3

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: ST = short term (0-1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☐ No Not applicable on GCNRA land.

Additional mitigation measures recommended? ☐ Yes ☒ No



View to northwest from gravel pullout near bridge.



View to southwest from gravel pullout near bridge.



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation



**Zero to One Year Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**



**Five to Ten Years Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**

Date: December 1, 2009
District: NPS-GCNRA
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 4 **VRM:** N/A

Chains Day Use Area

Location: Township 41N Range 8E Section 24



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ steep cliff faces and landforms	Indistinct, low	Rectangular, horizontal and curved dam/bridge, and repeating vertical poles/towers
Line	Horizontal, irregular, complex	Complex, indistinct	Distinct, straight, horizontal and repeating vertical
Color	Brown/beige, gray/white, green, orange, red, and deep blue/green water	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Gray, brown/beige
Texture	Fine to coarse, with smooth to coarse water surface	Medium to fine, sparse to stippled and gradational	Fine to medium

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ steep cliff faces and landforms	Indistinct, low	Rectangular, horizontal and curved dam/bridge, bold rectilinear intake structure, and repeating vertical poles/towers
Line	Horizontal, slightly more regular, complex	Complex, slightly more distinct	More distinct, straight, horizontal and repeating vertical
Color	Brown/beige, gray/white, green, orange, red, and deep blue/green water, slightly lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed area	Gray, brown/beige
Texture	Fine to coarse, with smooth to coarse water surface	Medium to fine, sparse to stippled and gradational	Fine to medium

IV. CONTRAST RATING KOP 4

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0–1year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☐ No Not applicable on GCNRA land.

Additional mitigation measures recommended? ☐ Yes ☒ No



View to south from chains day use area.



View to southwest from chains day use area.



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation—Panoramic View



**Zero to One Year Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**



**Five to Ten Years Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**

Date: December 1, 2009
District: NPS-GCNRA
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powell Pipeline

KOP: 5 **VRM:** N/A

Lake Powell Lake Surface

Location: Township 41N Range 8E Section 24



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ steep cliff faces and landforms	Indistinct, low	Rectangular, horizontal and curved dam/bridge, and repeating vertical poles/towers
Line	Horizontal, irregular, complex	Complex, indistinct	Straight, horizontal and repeating vertical
Color	Brown/beige, gray/white, green, orange, red, and deep blue/green water	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Gray, brown/beige
Texture	Fine to coarse, with smooth to coarse water surface	Medium to fine, sparse to stippled and gradational	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ steep cliff faces and landforms	Indistinct, low	Rectangular, horizontal and curved dam/bridge, bold rectilinear intake structure, and repeating vertical poles/towers
Line	Horizontal, slightly more regular, complex	Complex, slightly more distinct	Bold, straight, horizontal and repeating vertical
Color	Brown/beige, gray/white, green, orange, red- slightly lighter where disturbed, deep blue/green water	Green to blue/gray, seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Gray, brown/beige, solid building color
Texture	Fine to coarse, with smooth to coarse water surface	Medium to fine, sparse to stippled and gradational	Medium structure, smooth building surfaces

IV. CONTRAST RATING KOP 5

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0-1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☒ No Not applicable on GCNRA lands

Additional mitigation measures recommended? ☐ Yes ☒ No



View northwest from Chains Day Use Area



View south from Chains Day Use Area



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation—Panoramic View



**Zero to One Year Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**



**Five to Ten Years Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**

Date: December 1, 2009
District: NPS-GCNRA
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 6 **VRM:** N/A

Wahweap Overlook

Location: Township 41N Range 8E Section 11



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ deep cut valleys and steep cliff faces	Indistinct, low, amorphous	Rectangular, distinct, contrasting, horizontal roads, vertical poles/towers
Line	Horizontal, irregular, complex	Complex, indistinct	Distinct, straight, horizontal and repeating vertical
Color	Brown/beige, gray/white, orange, red, and deep blue/green water	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	White, gray, brown/beige
Texture	Fine to coarse, with smooth to fine water surface	Fine to medium, stippled to gradational	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ deep cut valleys and steep cliff faces	Indistinct, low, amorphous	Rectangular, slightly more distinct, contrasting, horizontal roads, vertical poles/towers
Line	Horizontal, more regular, complex	Complex, more distinct	Bold, straight, geometric, horizontal and repeating vertical
Color	Brown/beige, gray/white, orange, red, and deep blue/green water, slightly lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	White, Gray, brown/beige, solid building color
Texture	Fine to coarse, with smooth to fine water surface	Fine to medium, stippled to gradational	Fine

IV. CONTRAST RATING KOP 6

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☐ No Not applicable on GCNRA lands

Additional mitigation measures recommended? ☐ Yes ☒ No



View Southeast from Wahweap Overlook



View South from Wahweap Overlook



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Constructions Simulation



**Zero to One Year Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**



**Five to Ten Years Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**

Date: December 1, 2009
District: NPS-GCNRA
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 7 **VRM:** N/A

US 89 at Blue Pool Wash

Location: Township 43S Range 3E Section 32



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ vertical cliffs and buttes	Indistinct, low	Rectangular, distinct, contrasting, horizontal road, vertical fence posts and utility poles
Line	Horizontal, irregular, complex	Complex, indistinct	Straight, repeating vertical
Color	Brown/beige, gray/white, orange, red	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	White, gray, brown/beige
Texture	Fine to coarse	Medium to fine, stippled to gradational	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ vertical cliffs and buttes	Indistinct, low	Rectangular, distinct, contrasting, horizontal road, vertical fence posts and utility poles
Line	Horizontal, more distinct, complex	Complex, more distinct	Straight, geometric, repeating vertical
Color	Brown/beige, gray/white, orange, red – Slightly lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow – Bright green in disturbed areas	White, gray, brown/beige
Texture	Fine to coarse	Medium to fine, stippled to gradational	Fine

IV. CONTRAST RATING KOP 7

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☐ No Not applicable on GCNRA lands

Additional mitigation measures recommended? ☐ Yes ☒ No



View Northwest from US 89/Larkspur Intersection



View Northwest from Larkspur Road

Date: December 1, 2009
District: NPS-GCNRA
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 8 **VRM:** N/A

US 89/Larkspur Road Intersection

Location: Township 43S Range 3E Section 32



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ vertical cliffs and buttes	Indistinct, low	Rectangular, distinct, contrasting, horizontal road, vertical fence posts and utility poles
Line	Horizontal, irregular, complex	Complex, indistinct	Straight, repeating vertical
Color	Brown/beige, gray/white, orange, red	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	White, gray, brown/beige
Texture	Fine to coarse	Medium to fine, stippled to gradational	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ vertical cliffs and buttes	Indistinct, low	Rectangular, distinct, contrasting, horizontal road, vertical fence posts and utility poles
Line	Horizontal, more distinct, complex	Complex, more distinct	Straight, geometric, repeating vertical
Color	Brown/beige, gray/white, orange, red – Slightly lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow – Bright green in disturbed areas	White, gray, brown/beige
Texture	Fine to coarse	Medium to fine, stippled to gradational	Fine

IV. CONTRAST RATING KOP 8

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☐ No Not applicable on GCNRA lands

Additional mitigation measures recommended? ☐ Yes ☒ No



View Northwest from US 89/Larkspur Intersection



View Northwest from Larkspur Road

Date: December 1, 2009
District: Grand Staircase-Escalante National Monument
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 9 **VRM:** N/A

GSENM Visitor Center

Location: Township 43S Range 2E Section 14



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ vertical cliffs in distance	Indistinct, low	Rectangular, distinct, contrasting, horizontal road, vertical fence posts, utility poles, and street lights
Line	Horizontal, gently curving, indistinct	Complex, indistinct	Bold, straight, horizontal, curvilinear, and repeating vertical
Color	Brown/beige, orange	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	White, gray, brown/beige
Texture	Fine	Medium to fine, stippled to gradational	Fine to medium

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ vertical cliffs in distance	More distinct, low	Rectangular, distinct, contrasting, horizontal road, vertical fence posts, utility poles, and street lights
Line	Horizontal, gently curving, more distinct	Complex, more distinct	Bold, straight, horizontal, and repeating vertical
Color	Brown/beige, orange, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	White, gray, brown/beige
Texture	Fine	Medium to fine, stippled to gradational	Fine to medium

IV. CONTRAST RATING KOP 9

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☒ No Not applicable

Additional mitigation measures recommended? ☐ Yes ☒ No



View of GSENM Visitor Center



View West from GSENM Visitor Center Entrance



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation

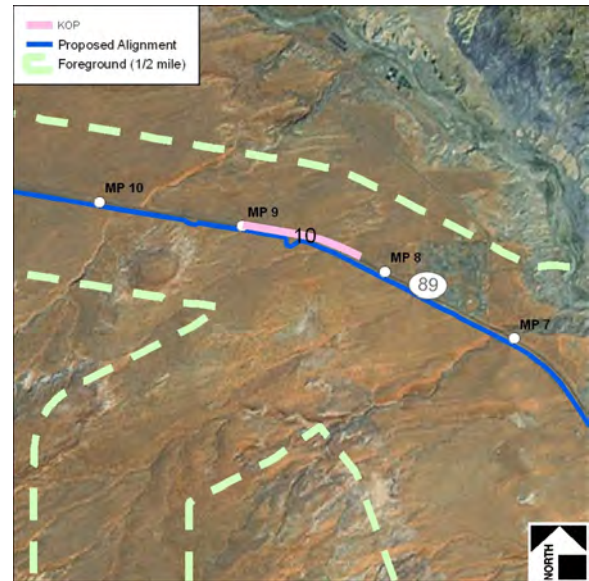
Date: December 1, 2009
District: Grand Staircase-Escalante National Monument
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powell Pipeline

KOP: 10 **VRM:** N/A
 BPS 2 from US 89 EB and WB

Location: Township 43S Range 2E Section 14



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ vertical cliffs in distance	Indistinct, low	Distinct, horizontal road, vertical fence posts, utility poles
Line	Horizontal, gently curving, indistinct	Complex, indistinct	Distinct, straight, horizontal, and repeating vertical
Color	Brown/beige, orange	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	White, gray, brown/beige
Texture	Fine	Medium to fine, stippled to gradational	Fine to medium

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ vertical cliffs in distance	More distinct, low	Geometric, distinct, contrasting, horizontal road, vertical fence posts, utility poles, and street lights
Line	Horizontal, gently curving, more distinct	Complex, more distinct	Bold, straight, geometric, horizontal, and repeating vertical
Color	Brown/beige, orange, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	White, gray, brown/beige, solid building
Texture	Fine	Medium to fine, stippled to gradational	Fine to medium

IV. CONTRAST RATING KOP 10

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☐ No Not applicable on SITLA lands

Additional mitigation measures recommended? ☐ Yes ☒ No



View Southeast from US 89 Near Proposed
BPS-2 Location



View West from US 89 Near Proposed
BPS-2 Location

BPS 2 from US 89 Eastbound



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation



**Zero to One Year Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**



**Five to Ten Years Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**

BPS 2 from US 89 Westbound



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation



**Zero to One Year Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**



**Five to Ten Years Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**

Date: December 1, 2009
District: Grand Staircase-Escalante National Monument
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powell Pipeline

KOP: 11a **VRM:** Class 3
 Proposed H.P. Reg. Tank 1 and from US 89

Location: Township 42S Range 1E Section 31



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling with various vertical land formations to the west	Indistinct, low	Flat road, vertical but short fence posts
Line	Horizontal, softly curving, diffused, indistinct	Complex, indistinct	Repeating vertical
Color	Brown/beige, gray/white, orange, red	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Gray, brown/beige
Texture	Fine to coarse, even to striated	Medium to fine, stippled, random	Fine to medium

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling with various vertical land formations to the west	More distinct, low	Rectangular to curving, distinct, vertical utility poles/towers, flat road/parking area
Line	Horizontal, softly curving, diffused, more distinct	Complex, slightly more distinct	Distinct, horizontal, and increased number of repeating vertical
Color	Brown/beige, gray/white, orange, red, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Gray, brown/beige, contrasting
Texture	Fine to coarse, even to striated	Medium to fine, stippled, random	Fine to medium, more medium fence texture

IV. CONTRAST RATING KOP 11A

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0–5 year); LT = long term (20-plus years)

Summary and Recommendations

Does project design meet visual resource objectives? ☒ Yes ☐ No

Additional mitigation measures recommended? ☐ Yes ☒ No



View Southeast from US 89/Cottonwood Road Intersection



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation

Date: December 1, 2009
District: Grand Staircase-Escalante National Monument
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 11b **VRM:** Class 3
 BPS-3/ H.P. Reg. Tank 1 (Options A and B)
 from US 89

Location: Township 42S Range 1E Section 31



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling with various vertical land formations to the west	Indistinct, low	Distinct, vertical fence posts
Line	Horizontal, softly curving, diffused, indistinct	Complex, slightly more distinct	Distinct, straight, horizontal, and repeating vertical
Color	Brown/beige, gray/white, orange, red	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Gray, brown/beige
Texture	Fine to coarse, even to striated	Medium to fine, stippled, random	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling with various vertical land formations to the west	Low, more distinct	Rectangular, distinct, vertical utility poles/towers/fence posts
Line	Horizontal, softly curving, diffused more distinct	Complex, slightly more distinct	Bold, straight, horizontal, and increased number of repeating vertical
Color	Brown/beige, gray/white, orange, red, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Gray, brown/beige, solid building color
Texture	Fine to coarse, even to striated	Medium to fine, stippled, random	Fine to medium, smooth building surfaces

IV. CONTRAST RATING KOP 11B

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☒ No

Additional mitigation measures recommended? ☒ Yes ☐ No

Additional mitigation as included in Chapter 5, as well as site specific mitigation identified in POD.

Notes:

- Option A would be located on BLM land, in a VRM Class 3. Option B would be located on SITLA land, and would therefore have no associated VRM class.
- Option B would result in slightly less contrast than Option A from this KOP, due to the facility's increased distance from US 89.



View Southeast from US 89/Cottonwood Road Intersection

BPS-3/ H.P. Reg. Tank 1 (Option A) from US 89 Eastbound



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation



**Zero to One Year Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**

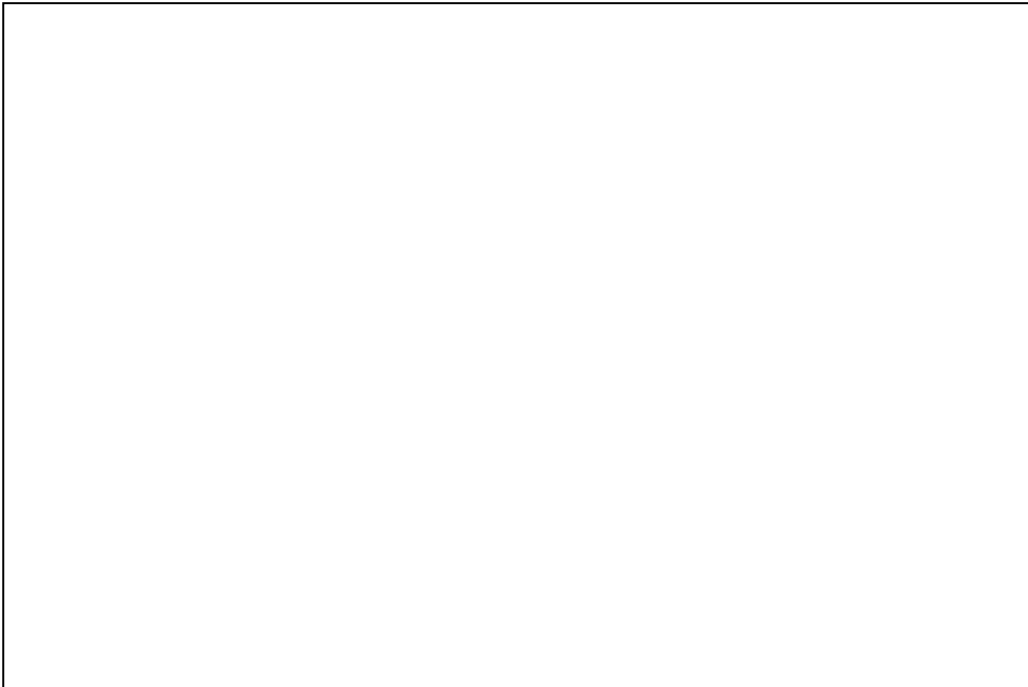


**Five to Ten Years Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**

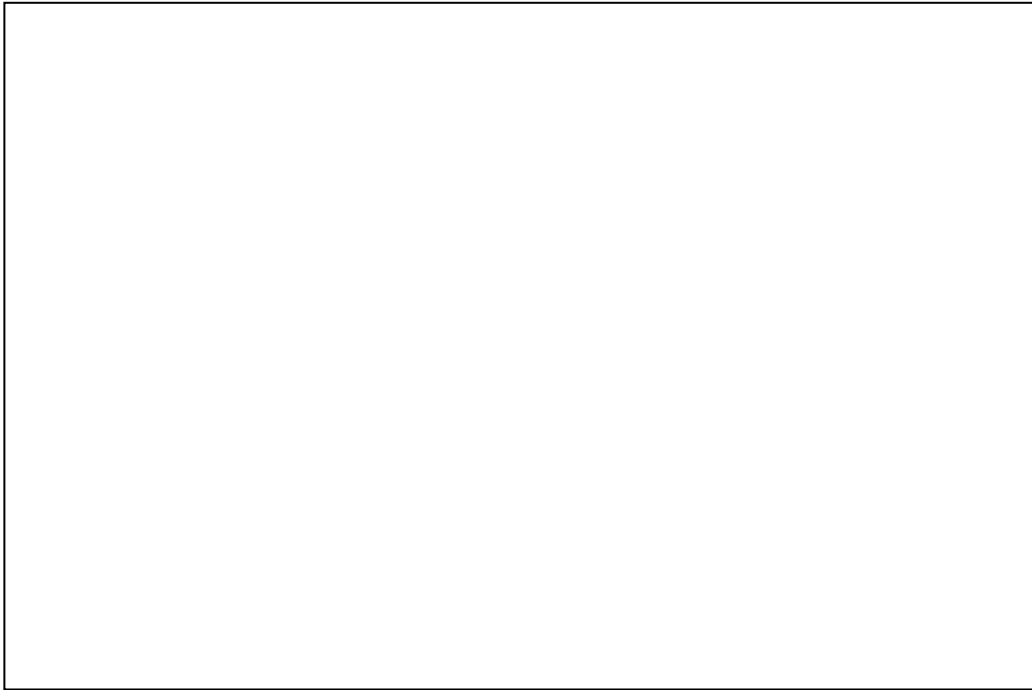
BPS-3/ H.P. Reg. Tank 1 (Option B) from US 89 Eastbound



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation
(Simulation to be completed when additional information is available)



Five to Ten Years Post-Construction Conditions Simulation
(Simulation to be completed when additional information is available)

Date: December 1, 2009
District: Grand Staircase-Escalante National Monument
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 12a **VRM:** Class 3

Proposed H. P. Reg. Tank 1 from Cottonwood Road

Location: Township 42S Range 1E Section 31



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling with various vertical land formations to the west	Indistinct, low	Flat roads, distinct, vertical utility poles/towers
Line	Horizontal, softly curving	Complex, indistinct	Distinct, straight to curved, horizontal, and repeating vertical
Color	Brown/beige, gray/white, orange, red	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Gray, brown/beige
Texture	Fine to coarse, even to striated	Medium to fine, stippled, random	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling with various vertical land formations to the west	Indistinct, low	Rectangular, straight, more distinct, vertical utility poles/towers
Line	Horizontal, softly curving	Complex, slightly more distinct	Distinct, straight to curved, horizontal, and increased number of repeating vertical
Color	Brown/beige, gray/white, orange, red, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Gray, brown/beige
Texture	Fine to coarse, even to striated	Medium to fine, stippled, random	Fine to medium

IV. CONTRAST RATING KOP 12A

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5 -10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☒ Yes ☐ No

Additional mitigation measures recommended? ☐ Yes ☒ No



View Southeast from Cottonwood Road



View Southwest from Cottonwood Road



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation

Date: December 1, 2009
District: Grand Staircase-Escalante National Monument
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 12b **VRM:** Class 3
 BPS 3/H. P. Reg. Tank 1 (Options A and B) from
 Cottonwood Road

Location: Township 42S Range 1E Section 31



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling with various vertical land formations to the west	Indistinct, low	Flat roads, distinct, vertical utility poles/towers
Line	Horizontal, softly curving	Complex, indistinct	Distinct, straight to curved, horizontal, and repeating vertical
Color	Brown/beige, gray/white, orange, red	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Gray, brown/beige
Texture	Fine to coarse, even to striated	Medium to fine, stippled, random	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling with various vertical land formations to the west	Low, more distinct	Rectangular building structure, flat roads, distinct, vertical utility poles/towers
Line	Horizontal, softly curving	Complex, slightly more distinct	Distinct, straight to curved, geometric, horizontal, and increased number of repeating verticals
Color	Brown/beige, gray/white, orange, red, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Gray, brown/beige, solid building color
Texture	Fine to coarse, even to striated	Medium to fine, stippled, random	Fine to medium, smooth building

IV. CONTRAST RATING KOP 12B

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☒ Yes ☐ No

Additional mitigation measures recommended? ☐ Yes ☒ No

Notes: Option A would be located on BLM land, in a VRM Class 3. Option B would be located on SITLA land, and would therefore have no associated VRM class.



View Southeast from Cottonwood Road



View Southwest from Cottonwood Road

BPS 3/H. P. Reg. Tank 1 Option A



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation



**Zero to One Year Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**

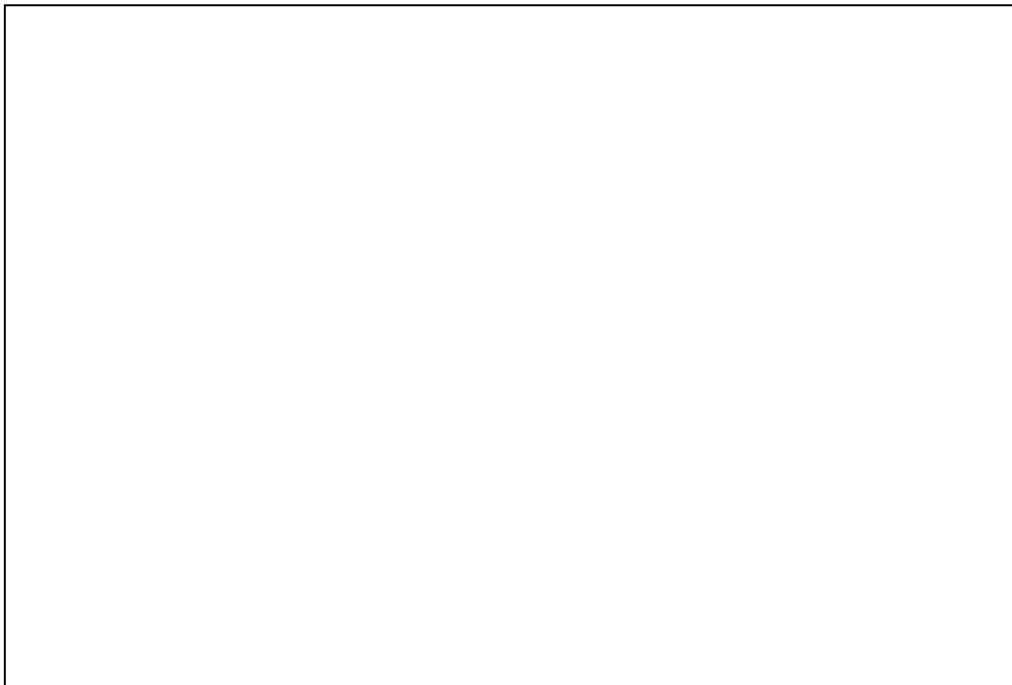


**Five to Ten Years Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**

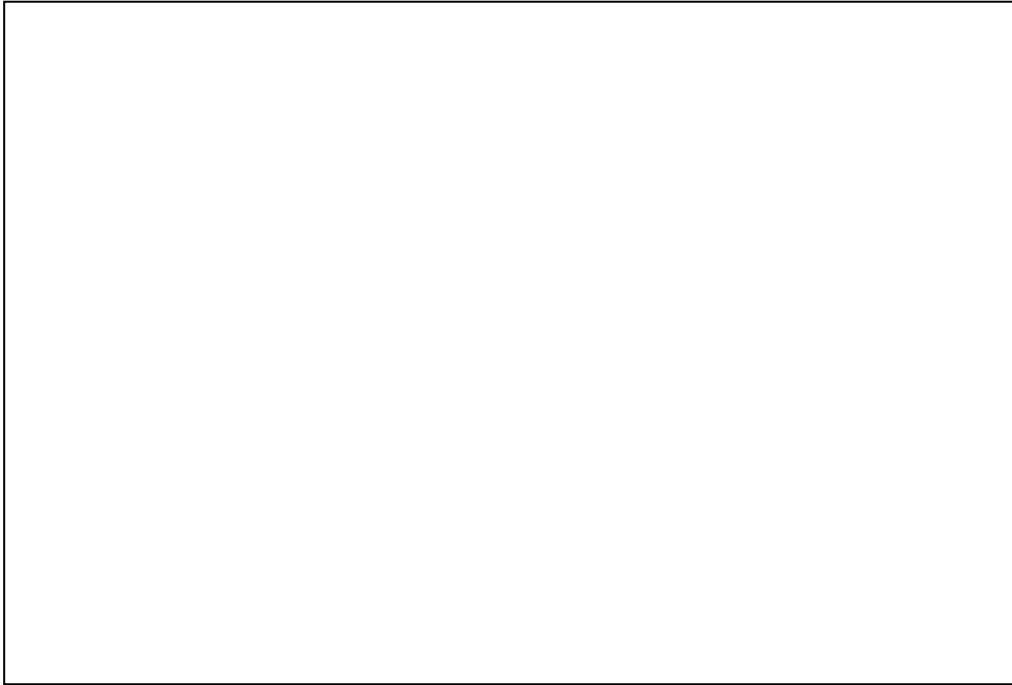
BPS 3/H. P. Reg. Tank 1 Option B



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation
(Simulation to be completed when additional information is available)



Five to Ten Years Post-Construction Conditions Simulation
(Simulation to be completed when additional information is available)

Date: December 1, 2009
District: Grand Staircase-Escalante National Monument
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

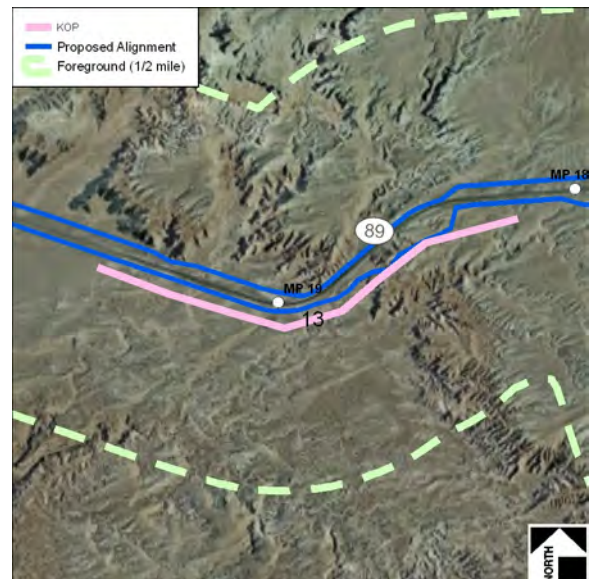
I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 13 **VRM:** Class 2

Toadstools Trailhead

Location: Township 43S Range 1W Section 2



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Undulating w/ variety of distinct vertical landforms	Indistinct, low	Flat road, vertical utility poles
Line	Horizontal, undulating, irregular and complex	Complex, indistinct	Distinct, straight to curved, repeating vertical
Color	Brown/beige, gray/white, orange, red	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Gray, brown/beige
Texture	Fine to coarse, striated, random	Fine to medium, stippled to gradational	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Undulating w/ variety of distinct vertical landforms	Low, more distinct	Flat road, vertical utility poles
Line	Horizontal, undulating, irregular and complex	Complex, more distinct	Distinct, straight to curved, repeating vertical
Color	Brown/beige, gray/white, orange, red, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Gray, brown/beige
Texture	Fine to coarse, striated, random	Fine to medium, stippled to gradational	Fine

IV. CONTRAST RATING KOP 13

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☒ No

Additional mitigation measures recommended? ☒ Yes ☐ No

Additional mitigation as included in Chapter 5, as well as site specific mitigation identified in POD.

Note: The optional alignment north of US 89 would have weak contrast in form, line and color of the landforms.



View West from Toadstools Trailhead on US 89



View East from Toadstools Trailhead on US 89



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation

Date: December 1, 2009
District: Grand Staircase-Escalante National Monument
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 14 **VRM:** Class 2

Toadstools Trailhead

Location: Township 43S Range 1W Section 2



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Undulating w/ variety of distinct vertical landforms	Indistinct, low	Flat road, vertical utility poles
Line	Horizontal, undulating, irregular and complex	Complex, indistinct	Distinct, straight to curved, repeating vertical
Color	Brown/beige, gray/white, orange, red	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Gray, brown/beige
Texture	Fine to coarse, striated, random	Fine to medium, stippled to gradational	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Undulating w/ variety of distinct vertical landforms	Low, more distinct	Flat road, vertical utility poles
Line	Horizontal, undulating, irregular and complex	Complex, more distinct	Distinct, straight to curved, repeating vertical
Color	Brown/beige, gray/white, orange, red, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Gray, brown/beige
Texture	Fine to coarse, striated, random	Fine to medium, stippled to gradational	Fine

IV. CONTRAST RATING KOP 14

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☒ No

Additional mitigation measures recommended? ☒ Yes ☐ No

Additional mitigation as included in Chapter 5, as well as site specific mitigation identified in POD.



View West from Toadstools Trailhead on US 89



View East from Toadstools Trailhead on US 89



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation

(Note that both the north and south pipeline alignments are shown in this simulation. Only one alignment would be implemented.)



Five to Ten Years Post-Construction Conditions Simulation

(Note that both the north and south pipeline alignments are shown in this simulation. Only one alignment would be implemented.)

Date: December 1, 2009
District: Grand Staircase-Escalante National Monument
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

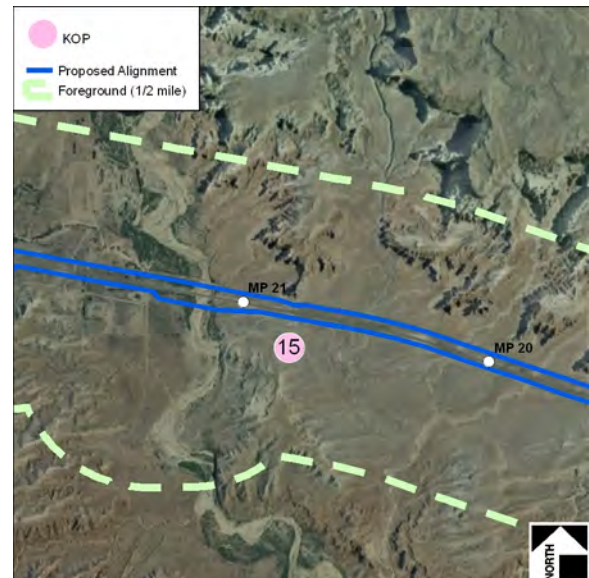
I. PROJECT INFORMATION

Project Name: Lake Powell Pipeline

KOP: 15 **VRM:** Class 2

Paria Contact Station

Location: Township 43S Range 1W Section 3



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ vertical cliffs, mesas, and rock formations	Indistinct, low to high	Rectangular, distinct, horizontal road, vertical utility poles
Line	Horizontal, irregular, complex	Complex, indistinct	Bold, straight, repeating vertical
Color	Brown/beige, gray/white, orange, red	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	White, gray, brown/beige
Texture	Fine to coarse, striated, random	Fine to medium, stippled to even, gradational	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ vertical cliffs, mesas, and rock formations	Indistinct, low to high	Rectangular, distinct, horizontal road, vertical utility poles
Line	Horizontal, irregular, complex	Complex, slightly more distinct	Bold, straight, repeating vertical
Color	Brown/beige, gray/white, orange, red, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	White, gray, brown/beige
Texture	Fine to coarse, striated, random	Fine to medium, stippled to even, gradational	Fine

IV. CONTRAST RATING KOP 15

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☒ Yes ☐ No

Additional mitigation measures recommended? ☐ Yes ☒ No



View West from Paria Contact Station

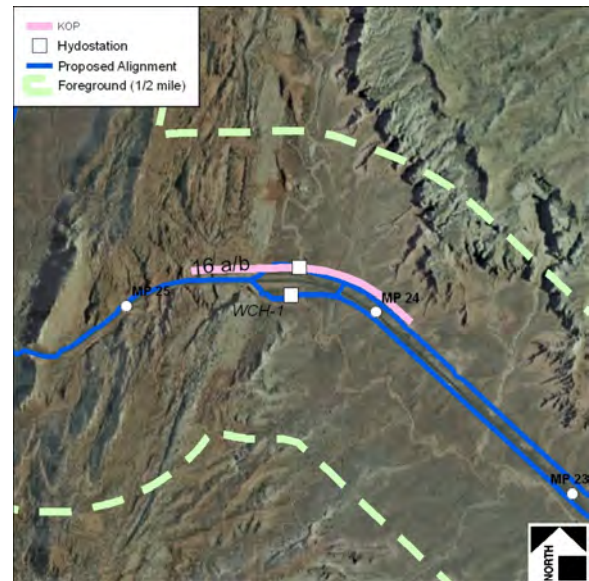
Date: December 1, 2009
District: Grand Staircase-Escalante National Monument
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 16a **VRM:** Class 2
 BPS 3/ Hydro Station WCH-1 from US 89

Location: Township 43S Range 1W Section 3



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ vertical cliffs, mesas, and rock formations	Indistinct, low to high	Distinct, flat road, vertical utility poles
Line	Horizontal, irregular, complex	Complex, indistinct	Distinct, straight to curved, repeating vertical
Color	Brown/beige, gray/white, orange, red	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	White, gray, brown/beige
Texture	Fine to coarse, striated, random	Fine to medium, stippled to even, gradational	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ vertical cliffs, mesas, and rock formations	More distinct, low to high	Bold, rectangular, flat road, vertical utility poles
Line	Horizontal, irregular, complex	Complex, slightly more distinct	Bold, straight to curved, repeating vertical and horizontal
Color	Brown/beige, gray/white, orange, red, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	White, gray, brown/beige
Texture	Fine to coarse, striated, random	Fine to medium, stippled to even, gradational	Fine

IV. CONTRAST RATING KOP 16A

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☒ No -

Additional mitigation measures recommended? ☒ Yes ☐ No

Additional mitigation as included in Chapter 5, as well as site specific mitigation identified in POD.



View Southeast from US 89 at East Edge of Cockscomb.



View West from US 89 Toward East Side of Cockscomb.



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation



**Zero to One Year Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**



**Five to Ten Years Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**

Date: December 1, 2009
District: Grand Staircase-Escalante National Monument
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 16b **VRM:** Class 2
 No BPS 3/ Hydro Station WCH-1 at Cockscomb
 from US 89

Location: Township 43S Range 1W Section 3



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ vertical cliffs, mesas, and rock formations	Indistinct, low to high	Geometric, distinct, horizontal road, vertical utility poles
Line	Horizontal, irregular, complex	Complex, indistinct	Bold, straight, geometric, repeating vertical
Color	Brown/beige, gray/white, orange, red	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	White, gray, brown/beige
Texture	Fine to coarse, striated, random	Fine to medium, stippled to even, gradational	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling w/ vertical cliffs, mesas, and rock formations	Indistinct, low to high	Geometric, distinct, horizontal road, vertical utility poles
Line	Horizontal, irregular, complex	Complex, slightly more distinct	Bold, straight, geometric, repeating vertical
Color	Brown/beige, gray/white, orange, red, lighter where scarred	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in scars	White, gray, brown/beige
Texture	Fine to coarse, striated, random	Fine to medium, stippled to even, gradational	Fine

IV. CONTRAST RATING KOP16B

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☒ No

Additional mitigation measures recommended? ☒ Yes ☐ No

Additional mitigation as included in Chapter 5, as well as site specific mitigation identified in POD.



View West from US 89 Toward East Side of Cockscumb.



View Southeast from US 89 at East Edge of Cockscumb.



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation



**Zero to One Year Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**



**Five to Ten Years Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**

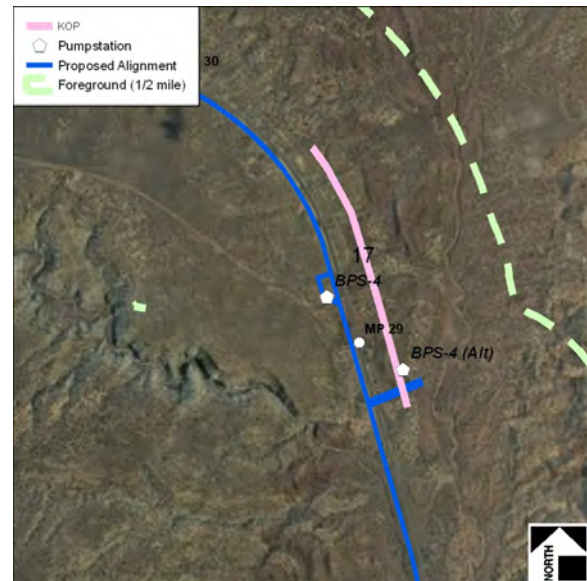
Date: December 1, 2009
District: Grand Staircase-Escalante National Monument
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 17 **VRM:** Class 3
 Proposed BPS 4 from US 89

Location: Township 43S Range 1W Section 2



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling, moderate	Indistinct	Flat road, repeating vertical posts
Line	Horizontal, undulating	Indistinct	Distinct, straight to curved
Color	Brown/beige, gray/white, orange, red	Deep green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Gray, brown/beige
Texture	Medium to coarse, striated, random	Medium-course, clumped	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling, moderate	More distinct	Rectangular, prominent, angular, tall, flat road, repeating vertical posts
Line	Horizontal, undulating	More distinct	Bold, horizontal/vertical, rectangular
Color	Brown/beige, gray/white, orange, red, lighter where disturbed	Deep green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Gray, brown/beige, solid building color
Texture	Medium to coarse, striated, random, fine	Medium-course, clumped	Fine, smooth building color

IV. CONTRAST RATING KOP 17

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☒ No

Additional mitigation measures recommended? ☒ Yes ☐ No

Additional mitigation as included in Chapter 5, as well as site specific mitigation identified in POD.



View west from US 89 near proposed BPS-4 location.



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation



**Zero to One Year Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**



**Five to Ten Years Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation



**Zero to One Year Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**



**Five to Ten Years Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**

Date: April 13, 2010
District: Grand Staircase-Escalante National Monument
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powell Pipeline

KOP: 18 **VRM:** N/A
 BPS 4 East Option, from US 89

Location: Township 43S Range 1W Section 2



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling, moderate	Indistinct	Flat road, repeating vertical mileposts
Line	Horizontal, undulating	Indistinct	Distinct, straight to curved
Color	Brown/beige, gray/white, orange, red	Deep green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Gray, brown/beige
Texture	Medium to coarse, striated, random	Medium-course, clumped	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling, moderate	More distinct	Rectangular, tall, flat road, repeating vertical
Line	Horizontal, undulating	More distinct	Bold, horizontal/vertical, rectangular
Color	Brown/beige, gray/white, orange, red, lighter where disturbed	Deep green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Gray, brown/beige, solid building color
Texture	Medium to coarse, striated, random	Medium-course, clumped	Contrasting, fine

IV. CONTRAST RATING KOP 18

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☐ No Not applicable on private land.

Additional mitigation measures recommended? ☐ Yes ☒ No



View East from US 89 near Proposed BPS-4 East Option Location.



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation



**Zero to One Year Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**



**Five to Ten Years Post-Construction Conditions Simulation
(Natural Gas Supply Line and Generator Alternative)**

Date: December 1, 2009
District: Grand Staircase-Escalante National Monument
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 19 **VRM:** Class 3

Road to Paria Interpretive Site

Location: Township 42S Range 2W Section 3



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to rolling with steep cliff faces	Indistinct, low to medium	Distinct, flat roads, vertical utility poles
Line	Horizontal, simple	Complex, indistinct	Bold, straight, repeating vertical poles and posts
Color	Brown/beige, gray/white, orange, vermillion red	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Gray, brown/beige
Texture	Fine to coarse, striated	Medium to fine, stippled to even, gradational	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to rolling with steep cliff faces	More distinct, low to medium	Distinct, flat roads, vertical utility poles
Line	Horizontal, simple	Complex, more distinct	Bold, straight, repeating vertical poles and posts
Color	Brown/beige, gray/white, orange, vermillion red, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Gray, brown/beige
Texture	Fine to coarse, striated	Medium to fine, stippled to even, gradational	Fine

IV. CONTRAST RATING KOP 19

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☒ Yes ☐ No

Additional mitigation measures recommended? ☐ Yes ☒ No



View East from Road to Paria Interpretive Site



View South from Road to Paria Interpretive Site

Date: December 1, 2009
District: Grand Staircase-Escalante National Monument
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 20 **VRM:** Class 3

H. P. Reg. Tank 2 from Great Western Trailhead

Location: Township 43S Range 3W Section 18



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Gently rolling	Indistinct, low to medium	Vertical and horizontal fence
Line	Horizontal, simple	Complex, indistinct	Straight, vertical and horizontal
Color	Brown/beige, orange	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Gray, brown/beige
Texture	Fine	Medium to fine, stippled to random	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling	More distinct, low to medium	More distinct vertical and horizontal fence
Line	Horizontal, simple	Complex, more distinct	Increased amount of straight, vertical and horizontal
Color	Brown/beige, orange, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Gray, brown/beige; gray fence
Texture	Fine	Medium to fine, stippled to random	Fine to medium

IV. CONTRAST RATING KOP 20

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☒ Yes ☐ No

Additional mitigation measures recommended? ☐ Yes ☒ No



View Northeast from Great Western Trailhead on US 89



View Southwest from Great Western Trailhead on US 89



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation

Date: December 1, 2009
District: Grand Staircase-Escalante National Monument
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

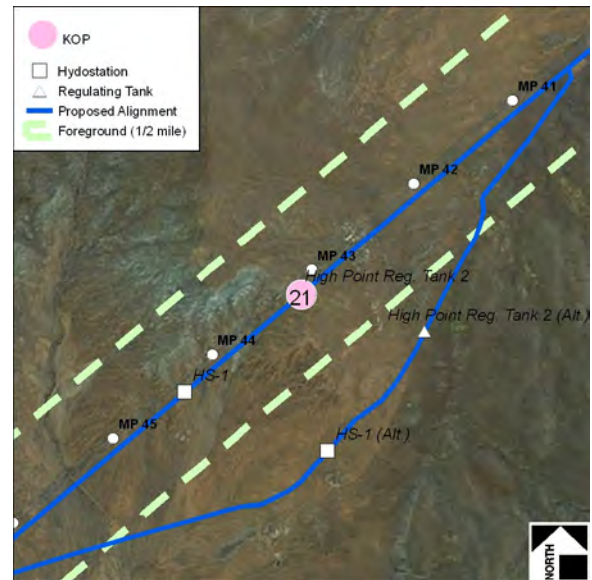
I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 21 **VRM:** Class 3

Hydro Station HS-1 From US 89

Location: Township 43S Range 3W Section 18



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Gently rolling	Indistinct, low to medium	Vertical utility poles, fence posts, horizontal power lines
Line	Horizontal, simple	Complex, indistinct	Straight, vertical and horizontal, parallel
Color	Brown/beige, orange	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Gray, brown/beige
Texture	Fine	Medium to fine, clumped	Fine, uniform

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling	More distinct, low to medium	More distinct vertical elements
Line	Horizontal, simple	Complex, more distinct	Increased amount of straight, vertical and horizontal
Color	Brown/beige, orange, lighter where scarred	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in scar	Gray, brown/beige; gray/silver fence
Texture	Fine	Medium to fine, clumped	Fine to medium

IV. CONTRAST RATING KOP 21

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☒ No

Additional mitigation measures recommended? ☒ Yes ☐ No

Additional mitigation as included in Chapter 5, as well as site specific mitigation identified in POD.





Existing Conditions



Immediately Post-Construction Conditions



Five to Ten Years Post-Construction

Date: December 1, 2009
District: Grand Staircase-Escalante National Monument
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powell Pipeline

KOP: 22 **VRM:** Class 3
 HS-1 (Alt) from BLM Road K4020

Location: Township 43S Range 3W Section 18



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Gently rolling	Indistinct, low to medium	Flat road
Line	Horizontal, simple	Complex, indistinct	Straight, converging
Color	Brown/beige, orange	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Brown/beige, orange
Texture	Fine	Medium to fine, stippled to random	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling	More distinct, low to medium	Rectangular, bold, vertical and horizontal, flat road
Line	Horizontal, simple	Complex, more distinct	Distinct, vertical and horizontal, straight, converging
Color	Brown/beige, orange, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Brown/beige, orange, gray/silver fence, solid building color
Texture	Fine	Medium to fine, stippled to random	Fine to medium

IV. CONTRAST RATING KOP 22

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☒ Yes ☐ No

Additional mitigation measures recommended? ☐ Yes ☒ No



View Southwest from BLM road K4020 near
Optional HS-1 Location.



View West from BLM road K4020 near
Optional HS-1 Location.

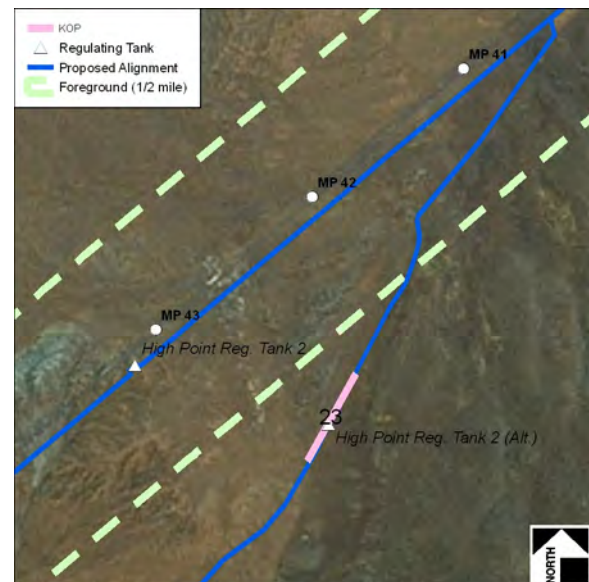
Date: December 1, 2009
District: Grand Staircase-Escalante National Monument
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powell Pipeline

KOP: 23 **VRM:** Class 3
 Highpoint Regulation Tank (Alt) from BLM Road
 K4020

Location: Township 43S Range 3W Section 18



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Gently rolling	Indistinct, low to medium	Flat road
Line	Horizontal, simple	Complex, indistinct	Straight, converging
Color	Brown/beige, orange	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Brown/beige, orange
Texture	Fine	Medium to fine, stippled to random	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling	More distinct, low to medium	Distinct vertical and horizontal fence, flat road
Line	Horizontal, simple	Complex, more distinct	Vertical and horizontal, straight, converging
Color	Brown/beige, orange, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Brown/beige, orange, gray/silver fence
Texture	Fine	Medium to fine, stippled to random	Fine to medium

IV. CONTRAST RATING KOP 23

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☒ No

Additional mitigation measures recommended? ☒ Yes ☐ No

Additional mitigation as included in Chapter 5, as well as site specific mitigation identified in POD.



View Southwest from BLM road K4020 near
Optional H.P. Reg. Tank Location.



View West from BLM road K4020 near
Optional H.P. Reg. Tank Location.

Date: December 1, 2009
District: Kanab
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 24 **VRM:** Class 3
 US 89 near Pioneer Gap

Location: Township 43S Range 4W Section 30



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to rolling	Indistinct, low to medium	Rectangular/trapezoidal, distinct
Line	Horizontal, simple	Complex, indistinct	Horizontal road, repeating vertical posts and poles
Color	Brown/beige, orange	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Gray, brown/beige
Texture	Fine	Fine to coarse, random	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to rolling	More distinct, low to medium	Rectangular/trapezoidal, distinct
Line	Horizontal, simple	Complex, more distinct	Horizontal road, repeating vertical posts and poles
Color	Brown/beige, orange, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Gray, brown/beige
Texture	Fine	Fine to coarse, random	Fine

IV. CONTRAST RATING KOP 24

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☒ Yes ☐ No

Additional mitigation measures recommended? ☐ Yes ☒ No



View East from US 89 near Pioneer Gap



View East from US 89 near Pioneer Gap



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation

Date: August 4, 2009
District: Kanab
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson-Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powell Pipeline

KOP: 25 **VRM:** N/A

Kane County Water Treatment Plant

Location: Township 43S Range 5W Sections 24 and 25



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to gently rolling, bold, distinct cliffs	Indistinct, low stature	Rectangular, small scale distinct residential buildings
Line	Horizontal slightly angular, undulating	Indistinct, irregular	Horizontal, vertical, angular
Color	Light gray to red, banded	Gray-green to dark green	Various - white, brown, green
Texture	Medium, smooth	Medium to coarse, stippled	Smooth surfaces, medium, directional forms

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Gently rolling valley, bold, distinct cliffs	Indistinct, low stature	Rectangular, bold, large scale
Line	Horizontal slightly angular, undulating	Indistinct, irregular	Horizontal, vertical, angular
Color	Light gray to red, banded	Gray-green to dark green	Tan to reddish brown
Texture	Medium, smooth	Medium to coarse, stippled	Smooth surfaces, ordered, directional coarse forms

IV. CONTRAST RATING (KOP 25)

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0–5 years); LT = long term (20-plus years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☐ No Not applicable on private land.

Additional mitigation measures recommended? ☐ Yes ☒ No



View North along Johnson Canyon Road near Proposed Kane County WTP Location.



View West along Johnson Canyon Road near Proposed Kane County WTP Location.

Date: December 1, 2009
District: Arizona Strip
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 26 **VRM:** From Class 2, Viewing Class 3
 Shinarump Cliffs Overlook

Location: Township 42N Range 10E Section 32



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to rolling, wide valley	Indistinct, low to medium	Trapezoidal utility towers
Line	Horizontal, simple	Complex, indistinct	Straight, repeating vertical/horizontal/angular
Color	Brown/beige, white/gray, orange	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Gray
Texture	Fine	Medium to fine, stippled to even	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to rolling, wide valley	More distinct, low to medium	Trapezoidal utility towers
Line	Horizontal, simple	Complex, more distinct	Straight, repeating vertical/horizontal/angular
Color	Brown/beige, white/gray, orange, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Gray
Texture	Fine	Medium to fine, stippled to even	Fine

IV. CONTRAST RATING KOP 26

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☒ Yes ☐ No

Additional mitigation measures recommended? ☐ Yes ☒ No



View Southeast from Shinarump Cliffs Overlook



View Southeast from Shinarump Cliffs Overlook



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation

Date: December 1, 2009
District: Arizona Strip
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 27 **VRM:** Class 2
 Dominguez-Escalante and Honeymoon Trails
 Crossing

Location: Township 41N Range 10E Section 7



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to gently rolling, wide valley	Indistinct, low to medium	Trapezoidal utility towers
Line	Horizontal, simple	Simple, indistinct	Straight, repeating vertical/horizontal/angular
Color	Brown/beige, orange	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Gray
Texture	Fine	Medium to fine, even low scrub with scattered pinyon	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to gently rolling, wide valley	More distinct, low to medium	Trapezoidal utility towers
Line	Horizontal, simple	Simple, more distinct	Straight, repeating vertical/horizontal/angular
Color	Brown/beige, orange, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Gray
Texture	Fine	Medium to fine, even low scrub with scattered pinyon	Fine

IV. CONTRAST RATING KOP 27

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☒ Yes ☐ No

Additional mitigation measures recommended? ☐ Yes ☒ No



View Southwest from Whitesage Wash Near Shinarump Cliffs Overlook



View West from Whitesage Wash to the West of the Dominguez-Escalante and Honeymoon Trails Crossing

Date: December 1, 2009
District: Arizona Strip
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 28 **VRM:** Class 4
 Kanab Creek (Kanab Creek ACEC)

Location: Township 39N Range 3W Section 6



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to rolling with deeply cut wash/cliff faces	Indistinct, low to medium	Trapezoidal utility towers
Line	Horizontal, irregular, complex	Complex, indistinct	Straight, repeating vertical/horizontal/angular
Color	Brown/beige, gray/white, orange, red	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Gray
Texture	Fine to coarse, striated	Medium to fine, stippled to even	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to rolling with deeply cut wash/cliff faces, flattened vertical cliff faces	More distinct, low to medium	Trapezoidal utility towers
Line	Horizontal, vertical, regular, complex	Complex, more distinct	Straight, repeating vertical/horizontal/angular
Color	Brown/beige, gray/white, orange, red, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Gray
Texture	Fine to coarse, striated, increased fine texture	Medium to fine, stippled to even, increased fine texture	Fine

IV. CONTRAST RATING KOP 28

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5–10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☒ Yes ☐ No

Additional mitigation measures recommended? ☐ Yes ☒ No



View Northeast from West Edge of Kanab Creek near
Proposed Pipeline Crossing



View Southeast from West Edge of Kanab Creek near
Proposed Pipeline Crossing



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation

Date: December 1, 2009
District: Arizona Strip
Resource Area:
Activity (program): Water Pipeline/Transmission Lines
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 29 **VRM:** Class 4
 Bitter Seeps Wash (Kanab Creek ACEC)

Location: Township 40N Range 3W Section 34



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to rolling with deeply cut wash/steep vertical slopes and outcrops	Indistinct, low	Trapezoidal utility towers
Line	Horizontal, irregular, complex	Complex, indistinct	Straight, repeating vertical/horizontal/angular
Color	Brown/beige, orange, red	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Gray
Texture	Medium to coarse, blocky	Medium to fine, stippled to even	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to rolling with deeply cut wash/steep slopes and outcrops, flattened vertical slopes and outcrops	More distinct, low	Trapezoidal utility towers
Line	Horizontal, vertical, regular, complex	Complex, more distinct	Straight, repeating vertical/horizontal/angular
Color	Brown/beige, orange, red, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Gray
Texture	Medium to coarse, blocky; fine where vertical slopes/outcrops are flattened	Medium to fine, stippled to even, increased fine texture	Fine

IV. CONTRAST RATING KOP 29

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5–10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☒ Yes ☐ No

Additional mitigation measures recommended? ☐ Yes ☒ No



View East from West Edge of Bitter Seeps Wash near
Proposed Pipeline Crossing



View Southeast from West Edge of Bitter Seeps Wash near
Proposed Pipeline Crossing



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation

Date: December 1, 2009
District: Arizona Strip
Resource Area:
Activity (program): Water Pipeline/Transmission Line
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powell Pipeline

KOP: 30 **VRM:** Class 4
 Mount Trumbull Road

Location: Township 39N Range 4W Section 1



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to gently rolling	Indistinct, low	Trapezoidal utility towers
Line	Horizontal, simple	Complex, indistinct	Straight, repeating vertical/horizontal/angular
Color	Brown/beige, orange	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Gray
Texture	Fine, even	Medium to fine, stippled to even	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to gently rolling	Distinct, low	Trapezoidal utility towers
Line	Horizontal, simple	Complex, more distinct	Straight, repeating vertical/horizontal/angular
Color	Brown/beige, orange, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Gray
Texture	Fine, even	Medium to fine, stippled to even, increased fine texture	Fine

IV. CONTRAST RATING KOP 30

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☒ Yes ☐ No

Additional mitigation measures recommended? ☐ Yes ☒ No



View Southeast near crossing of Mount Trumbull Road and the Navajo-McCulough Transmission Line Corridor



View Northeast near crossing of Mount Trumbull Road and the Navajo-McCulough Transmission Line Corridor



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation

Date: December 1, 2009
District: Kaibab-Paiute Indian Reservation
Resource Area:
Activity (program): Water Pipeline/Transmission Line
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 31 **VRM:** N/A

Kaibab-Paiute Tribal Headquarters

Location: Township 40N Range 4W Section 21



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to sloped, adjacent cliffs	Indistinct, low to medium	Rectangular, distinct, contrasting, horizontal roads, vertical utility poles/towers, signs and fences
Line	Horizontal, simple	Simple, indistinct	Bold, straight, geometric, horizontal and repeating vertical
Color	Brown/beige, orange, red	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	White, gray, brown/beige
Texture	Fine, even	Medium to fine, stippled to even	Fine to medium

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to sloped, adjacent cliffs	More distinct, low to medium	Rectangular, distinct, contrasting, horizontal roads, vertical utility poles/towers, signs and fences
Line	Horizontal, simple	Simple, more distinct	Bold, straight, geometric, horizontal and repeating vertical
Color	Brown/beige, orange, red, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	White, gray, brown/beige
Texture	Fine, even	Medium to fine, stippled to even	Fine to medium

IV. CONTRAST RATING KOP 31

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: ST = short term (0–5 years); LT = long term (20-plus years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☐ No Not applicable on reservation land.

Additional mitigation measures recommended? ☐ Yes ☒ No





Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation

Date: December 1, 2009
District: Arizona Strip
Resource Area:
Activity (program): Water Pipeline/Transmission Line
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

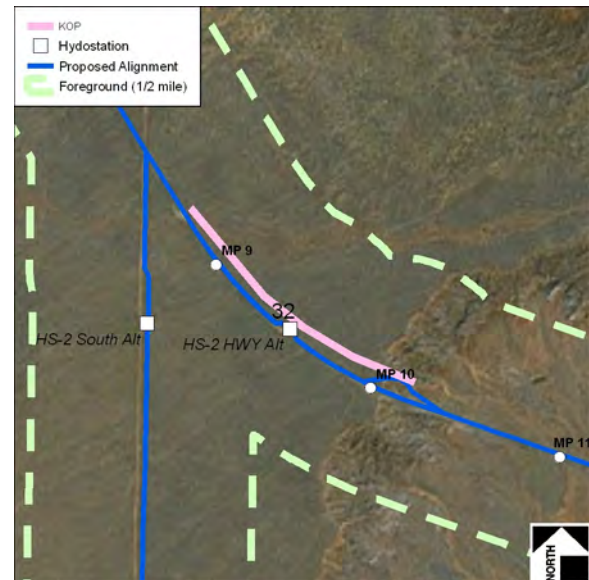
I. PROJECT INFORMATION

Project Name: Lake Powell Pipeline

KOP: 32 **VRM:** N/A

Hydro Station 2- Highway Alternative EB and WB

Location: Township 39N Range 4W Section 1



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to gently rolling	Indistinct, low	Vertical utility poles, flat road
Line	Horizontal, simple	Complex, indistinct	Geometric, straight, repeating vertical/horizontal, parallel
Color	Brown/beige	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Gray
Texture	Fine, even	Medium to fine, stippled to even	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to gently rolling	Distinct, low	Vertical utility poles, flat road, distinct rectangular, horizontal
Line	Horizontal, simple	Complex, more distinct	Geometric, straight, repeating vertical/horizontal, parallel
Color	Brown/beige, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Gray, brown/beige, solid building color
Texture	Fine, even	Medium to fine, stippled to even, increased fine texture	Fine

IV. CONTRAST RATING KOP 32

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☐ No Not applicable on private land.

Additional mitigation measures recommended? ☐ Yes ☒ No



View to East from US 89 near HS-2



View to West from US 89 near HS-2

Hydro Station 2- Highway Alternative Eastbound



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation

Hydro Station 2- Highway Alternative Westbound



Existing Conditions



Immediately Post-Construction Conditions



Five to Ten Years Post-Construction Conditions

Date: December 1, 2009
District: Arizona Strip
Resource Area:
Activity (program): Water Pipeline/Transmission Line
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

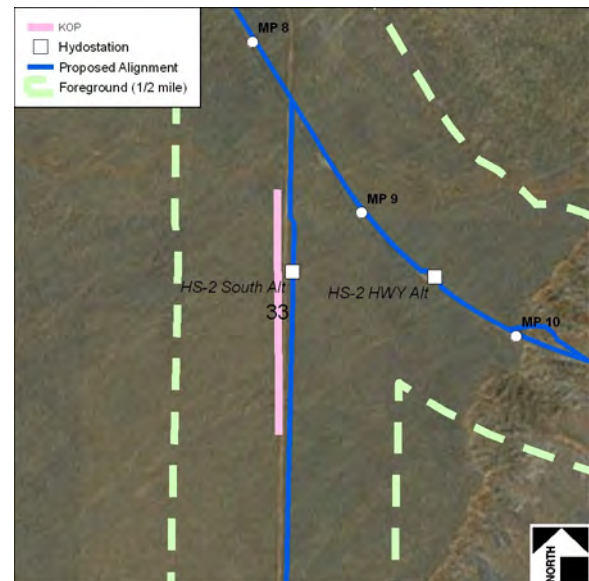
I. PROJECT INFORMATION

Project Name: Lake Powell Pipeline

KOP: 33 **VRM:** N/A

Hydro Station 2- South Alternative,
from Co. Rd 239

Location: Township 39N Range 4W Section 1



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to gently rolling	Indistinct, low	Vertical fence/posts, flat road
Line	Horizontal, simple	Complex, indistinct	Geometric, straight, repeating vertical/horizontal, parallel
Color	Brown/beige	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Gray, brown
Texture	Fine, even	Medium to fine, stippled to even	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to gently rolling	Distinct, low	Vertical fence/posts, flat road, distinct rectangular, horizontal
Line	Horizontal, simple	Complex, more distinct	Geometric, straight, repeating vertical/horizontal, parallel
Color	Brown/beige, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Gray, brown/beige, solid building color
Texture	Fine, even	Medium to fine, stippled to even, increased fine texture	Fine

IV. CONTRAST RATING KOP 33

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☐ No Not applicable on private land.

Additional mitigation measures recommended? ☐ Yes ☒ No



View to East from US 89 near HS-2



View to West from US 89 near HS-2

Date: December 1, 2009
District: Private, near St. George
Resource Area:
Activity (program): Water Pipeline/Transmission Line
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 34 **VRM:** N/A
 Hydro Station 3 from Uzona Avenue

Location: Township 43S Range 10W Section 32



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat with backdrop of tall vertical cliff faces	Indistinct, low to medium	Rectangular, distinct, contrasting, horizontal roads, vertical utility poles/towers
Line	Horizontal, diverse	Complex, indistinct	Distinct, straight, horizontal and repeating vertical
Color	Brown/beige, gray/white, orange, vermillion red	Blue/gray to green, and seasonal colors incl. bright green and straw/yellow	White, gray, brown/beige
Texture	Fine to coarse, striated, random	Medium, random	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat with backdrop of tall vertical cliff faces	More distinct, low to medium	Rectangular, bold, contrasting, horizontal roads, vertical utility poles/towers
Line	Horizontal, diverse	Complex, more distinct	Bold, straight, geometric, horizontal and increased amount of repeating vertical
Color	Brown/beige, gray/white, orange, vermillion red, lighter where disturbed	Blue/gray to green, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	White, gray, brown/beige, gray/silver, solid building color
Texture	Fine to coarse, striated, random	Medium, random	Fine to medium

IV. CONTRAST RATING KOP 34

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☐ No Not applicable on private land

Additional mitigation measures recommended? ☐ Yes ☒ No



View Northeast from Uzona Ave near Proposed Hydro Station 3 Location



View North from Uzona Ave near Proposed Hydro Station 3 Location



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation

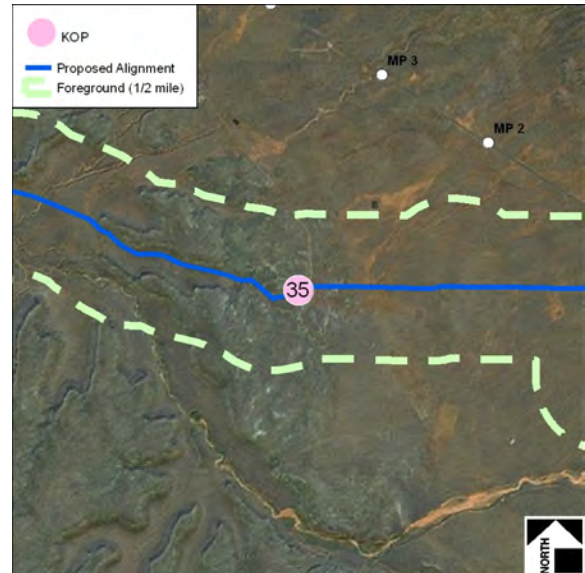
Date: December 1, 2009
District: St. George
Resource Area:
Activity (program): Water Pipeline/Transmission Line
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powell Pipeline

KOP: 35 **VRM:** Class 3
 Uzona Avenue/Canaan Wash

Location: Township 42N Range 7W Section 33



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Wash/valley w/ sloped to vertical valley walls	Indistinct, low to medium	Flat road and trails
Line	Horizontal to vertical, irregular, complex	Complex, indistinct	Gently curving
Color	Brown/beige, orange, red	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Beige/brown/red
Texture	Fine to coarse, blocky	Fine to medium, stippled to even	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Wash/valley w/ sloped to vertical valley walls	Distinct, low to medium	Flat road and trails
Line	Horizontal to vertical, irregular, complex	Complex, distinct	Gently curving
Color	Brown/beige, orange, red, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Beige/brown/red
Texture	Fine to coarse, blocky	Fine to medium, stippled to even, increased fine texture	Fine

IV. CONTRAST RATING KOP 35

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☒ Yes ☐ No

Additional mitigation measures recommended? ☐ Yes ☒ No



View West near West End of Uzona Ave



View Southeast of Canaan Wash from Canaan Gap



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simualtion

Date: December 1, 2009
District: St. George
Resource Area:
Activity (program): Water Pipeline/Transmission Line
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 36 **VRM:** Class 4

Canaan Gap

Location: Township 43S Range 11W Section 30



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Wide, flat valley w/ vertical cliff faces/mesas	Indistinct, low to medium	Rectangular, distinct, contrasting
Line	Horizontal to vertical and sloped, simple	Simple, indistinct	Distinct, straight, horizontal and vertical
Color	Brown/beige, gray/white, orange, red	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	White, gray, brown/beige
Texture	Fine to coarse	Fine to medium, even to dotted	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Wide, flat valley w/ vertical cliff faces/mesas	Distinct, low to medium	Rectangular, distinct, contrasting
Line	Horizontal to vertical and sloped, simple	Simple, distinct	Distinct, straight, horizontal and vertical
Color	Brown/beige, gray/white, orange, red, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	White, gray, brown/beige
Texture	Fine to coarse	Fine to medium, even to dotted	Fine

IV. CONTRAST RATING KOP 36

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☒ Yes ☐ No

Additional mitigation measures recommended? ☐ Yes ☒ No



View Southwest of Canaan Wash From Canaan Gap



View Southwest of Littlecreek Mountain, Short Creek, and Lost Spring Mountain, from top of Littlecreek Mountain

Date: December 1, 2009
District: St. George
Resource Area:
Activity (program): Water Pipeline/Transmission Line
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powell Pipeline

KOP: 37 **VRM:** From Class 3, viewing Class 4
 Little Creek Overlook

Location: Township 43S Range 12W Section 19



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to rolling w/ variety of diverse vertical land forms	Indistinct, low, amorphous	Indistinct
Line	Horizontal, irregular, complex, diverse	Complex, indistinct	Indistinct, weak
Color	Brown/beige, orange, red; deep blue water	Green, and seasonal colors incl. bright green and straw/yellow	White, gray, black
Texture	Medium to fine; smooth water	Fine, scattered to stippled	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to rolling w/ variety of diverse vertical land forms; squared shape of water where abutting south dam	More distinct, low, amorphous	Generally indistinct, though southern dam would be distinct
Line	Horizontal, irregular, complex, diverse; distinct line of water's edge	Complex, more distinct	Generally indistinct and weak, though southern dam would add distinct straight/angled line
Color	Brown/beige, orange, red; increased deep blue water color	Green, and seasonal colors incl. bright green and straw/yellow	White, gray, black; brown/beige dam
Texture	Medium to fine; increased smooth water surface	Fine, scattered to stippled	Fine

IV. CONTRAST RATING KOP 37

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☒ Yes ☐ No

Additional mitigation measures recommended? ☐ Yes ☒ No



View Southwest from Littlecreek Overlook



View Northwest from Littlecreek Overlook



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation—Panoramic View

Date: December 1, 2009
District: St. George
Resource Area:
Activity (program): Water Pipeline/Transmission Line
Evaluators: Diane Simpson Colebank, Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 38 **VRM:** Class 4
 Hydro Station 4 from Frog Hollow Road

Location: Township 43S Range 13W Section 13



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to rolling with small irregular landforms and vertical cut faces along road	Indistinct, low to medium	Flat Road
Line	Horizontal, flowing	Complex, indistinct	Straight to curving road
Color	Brown/beige, orange	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow	Beige to gray
Texture	Fine, even	Medium to fine, random	Fine

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Flat to rolling	Distinct, low to medium	Distinct, rectangular, contrasting, flat road
Line	Horizontal, flowing	Complex, distinct	Horizontal and vertical, repeating, straight to curving road
Color	Brown/beige, orange, lighter where disturbed	Green to blue/gray, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Gray to brown/beige, solid building color
Texture	Fine, even	Medium to fine, random; more fine	Fine to medium, ordered

IV. CONTRAST RATING KOP 38

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0–1 year); LT = long term (5-10 years)

Summary and Recommendations

Does project design meet visual resource objectives? ☒ Yes ☐ No

Additional mitigation measures recommended? ☐ Yes ☒ No



View Southwest from Frog Hollow Road near Proposed HS-4 Location



View Northwest from Frog Hollow Road near Proposed HS-4 Location



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation

Date: April 13, 2010
District: St. George
Resource Area:
Activity (program): Water Pipeline/Transmission Line
Evaluators: Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 39 **VRM:** Class 4
Hurricane Cliffs Road, View to south

Location: Township 43S Range 13W Section 9



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Wide, flat valley w/ gentle slopes up to vertical land forms and cliffs	Indistinct, low	-
Line	Horizontal to vertical and angled, simple	Complex, indistinct	-
Color	Gray, brown/beige, red/orange soils to south	Green, and seasonal colors incl. bright green and straw/yellow	-
Texture	Fine to coarse	Medium to fine, stippled to gradational	-

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Wide, flat valley w/ gentle slopes up to vertical land forms and cliffs; cut/fill bench for re-aligned road	Distinct, low	Geometric, bold
Line	Horizontal to vertical and angled, simple; straight to curved lines of cut/fill for re-aligned road	Complex, distinct	Horizontal and some vertical, bold
Color	Gray, brown/beige, lighter where disturbed	Green, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Brown/beige
Texture	Fine to coarse	Medium to fine, stippled to gradational	Fine to medium

IV. CONTRAST RATING KOP 39

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0–5 years); LT = long term (20-plus years)

Summary and Recommendations

Does project design meet visual resource objectives? ☒ Yes ☐ No

Additional mitigation measures recommended? ☐ Yes ☒ No



View South from Hurricane Cliffs Road.



View Northeast from Hurricane Cliffs Road.



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation
(Simulation to be completed when additional information is available)



Five to Ten Years Post-Construction Conditions Simulation
(Simulation to be completed when additional information is available)



Zero to One Year Post-Construction Conditions Simulation—Left Side Enlargement
(Simulation to be completed when additional information is available)



Zero to One Year Post-Construction Conditions Simulation—Right Side Enlargement
(Simulation to be completed when additional information is available)



Five to Ten Years Post-Construction Conditions Simulation—Left Side Enlargement
(Simulation to be completed when additional information is available)



Five to Ten Years Post-Construction Conditions Simulation—Right Side Enlargement
(Simulation to be completed when additional information is available)

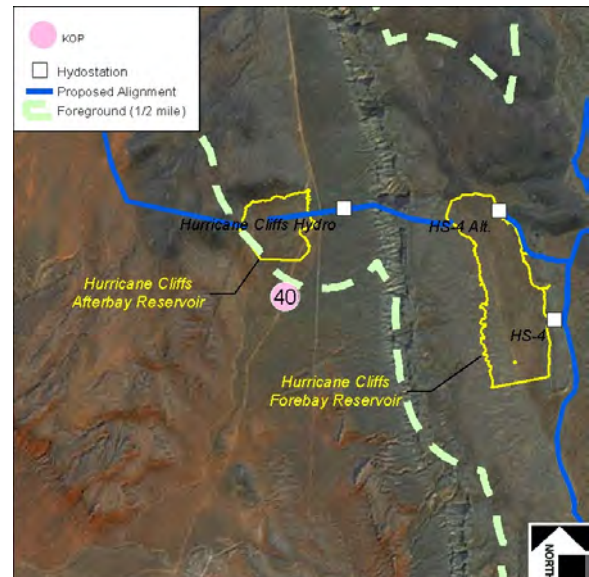
Date: April 13, 2010
District: St. George
Resource Area:
Activity (program): Water Pipeline/Transmission Line
Evaluators: Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powel Pipeline

KOP: 40 **VRM:** Class 4
Hurricane Cliffs - Unnamed OHV road, View to North

Location: Township 43S Range 13W Section 9



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Wide, flat valley w/ gentle slopes up to vertical land forms and cliffs	Indistinct, low	
Line	Horizontal to vertical and angled, simple	Complex, indistinct	
Color	Gray, brown/beige, reds/oranges of soils	Green, and seasonal colors incl. bright green and straw/yellow	
Texture	Fine to coarse	Medium to fine, stippled to gradational	

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Wide, flat valley w/ gentle slopes up to vertical land forms and cliffs; cut/fill bench for re-aligned road	Distinct, low	Geometric, bold
Line	Horizontal to vertical and angled, simple; straight to curved lines of cut/fill for re-aligned road	Complex, Distinct	Horizontal and some vertical, bold
Color	Gray, brown/beige, lighter where disturbed, reds and oranges still visible	Green, and seasonal colors incl. bright green and straw/yellow, bright green in disturbed areas	Brown/beige
Texture	Fine to coarse	Medium to fine, stippled to gradational	Fine to medium

IV. CONTRAST RATING KOP 40

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0–5 years); LT = long term (20-plus years)

Summary and Recommendations

Does project design meet visual resource objectives? ☒ Yes ☐ No

Additional mitigation measures recommended? ☐ Yes ☒ No



View North from Unnamed BLM Road.



View Northeast from Unnamed BLM Road.



Existing Conditions



Zero to One Year Post-Construction Conditions Simulation



Five to Ten Years Post-Construction Conditions Simulation

Date: April 13, 2010
District: St. George
Resource Area:
Activity (program): Water Pipeline/Transmission Line
Evaluators: Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powell Pipeline

KOP: 41 **VRM:** N/A

Sand Hollow State Park

Location: Township 42 S Range 14 W Section 24



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling hills and flat mesas, flat water surface	Low, indistinct, irregular	Rectangular, distinct
Line	Horizontal, angled, irregular; jagged in foreground	Indistinct	Horizontal, vertical, regular, distinct
Color	Brown to reddish tan, light to dark grey	Gray and green	Brown to red/brown
Texture	Fine to medium; rough and jagged in foreground	Fine, even to stippled	Smooth surfaces, coarse forms

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling hills and flat mesas, flat water surface	Low, indistinct, irregular	Rectangular, more distinct
Line	Horizontal, angled, irregular; jagged in foreground	Indistinct	Horizontal, vertical, regular, more distinct
Color	Brown to reddish tan, light to dark grey, lighter in disturbed areas	Gray and green, brighter green in disturbed areas	Brown to red/brown
Texture	Fine to medium; rough and jagged in foreground	Fine, even to stippled	Smooth surfaces, coarse forms

IV. CONTRAST RATING (KOP 41)

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Texture												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0–5 years); LT = long term (20-plus years)

Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☐ No Not applicable on state land.

Additional mitigation measures recommended? ☐ Yes ☒ No



View to South from main parking/boat launch area.



View to Southeast from main parking/boat launch area.

Date: April 13, 2010
District: St. George
Resource Area:
Activity (program): Water Pipeline/Transmission Line
Evaluators: Mark Meyer, Craig Johnson

I. PROJECT INFORMATION

Project Name: Lake Powell Pipeline

KOP: 42 **VRM:** N/A
 Cedar Valley Water Treatment Plant

Location: Township 36S Range 11W Section 21



II. CHARACTERISTIC LANDSCAPE DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling hills with flat valleys and high mountains surrounding	Low, indistinct, irregular	Rectangular, distinct
Line	Horizontal, angled, irregular	Indistinct	Horizontal, vertical, regular, distinct
Color	Brown to reddish tan	Gray, dark green	Tan, gray, green
Texture	Fine to medium, partially jagged in background	Fine to coarse, stippled	Smooth surfaces, coarse forms

III. PROPOSED ACTIVITY DESCRIPTION

	Land/Waterbody	Vegetation	Structures
Form	Rolling hills with flat valleys and high mountains surrounding	Low, indistinct, irregular	Rectangular, distinct
Line	Horizontal, angled, irregular	Indistinct	Horizontal, vertical, regular, distinct
Color	Brown to reddish tan, lighter in disturbed areas	Gray, dark green, brighter green in disturbed areas	Tan, gray, green
Texture	Fine to medium, partially jagged in background	Fine to coarse, stippled	Smooth surfaces, coarse forms

IV. CONTRAST RATING (KOP 42)

	Land/Waterbody				Vegetation				Structures			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Form												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line												
ST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color												
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LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Texture												
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LT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: ST = short term (0–5 years); LT = long term (20-plus years)

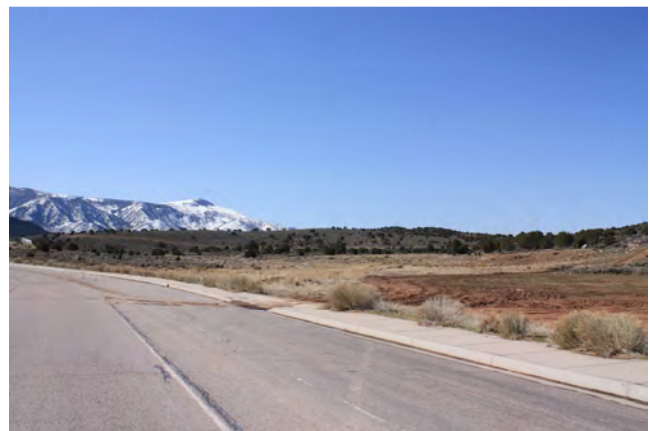
Summary and Recommendations

Does project design meet visual resource objectives? ☐ Yes ☐ No Not applicable on state or private land.

Additional mitigation measures recommended? ☐ Yes ☒ No



View to Southwest from SB I-15 on-ramp overpass.

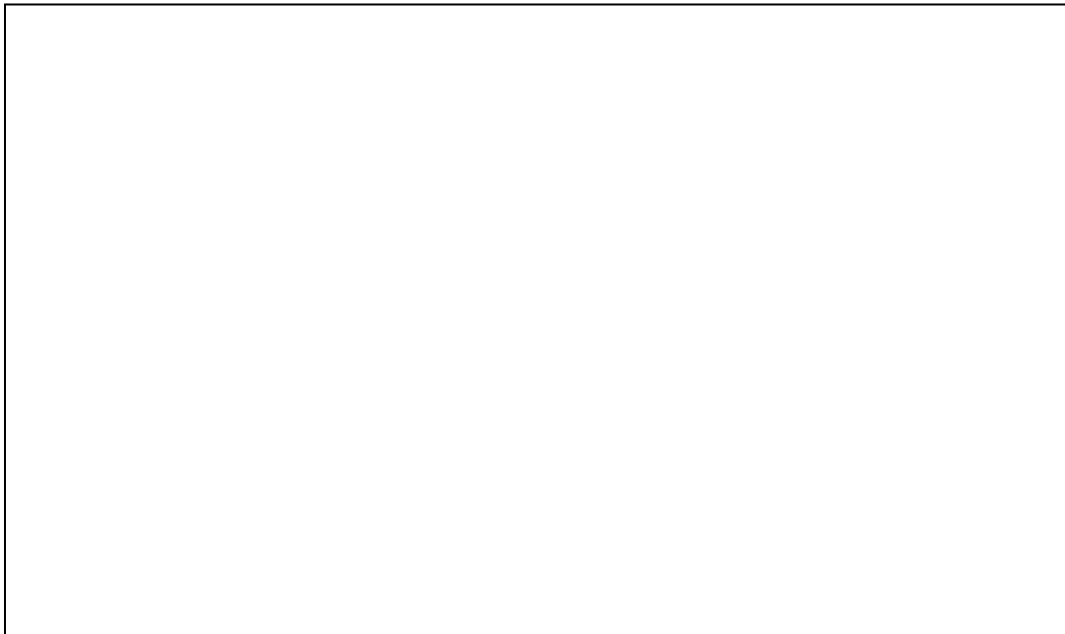


View to South from Royal Hunt Drive.



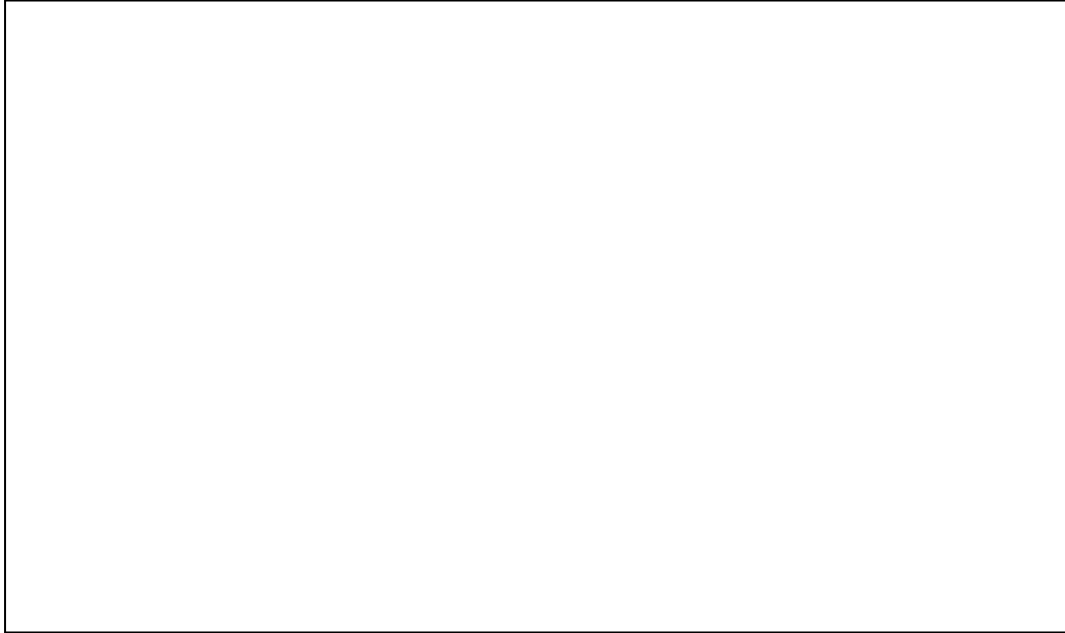
Existing Conditions

(Simulation to be completed when additional information is available)



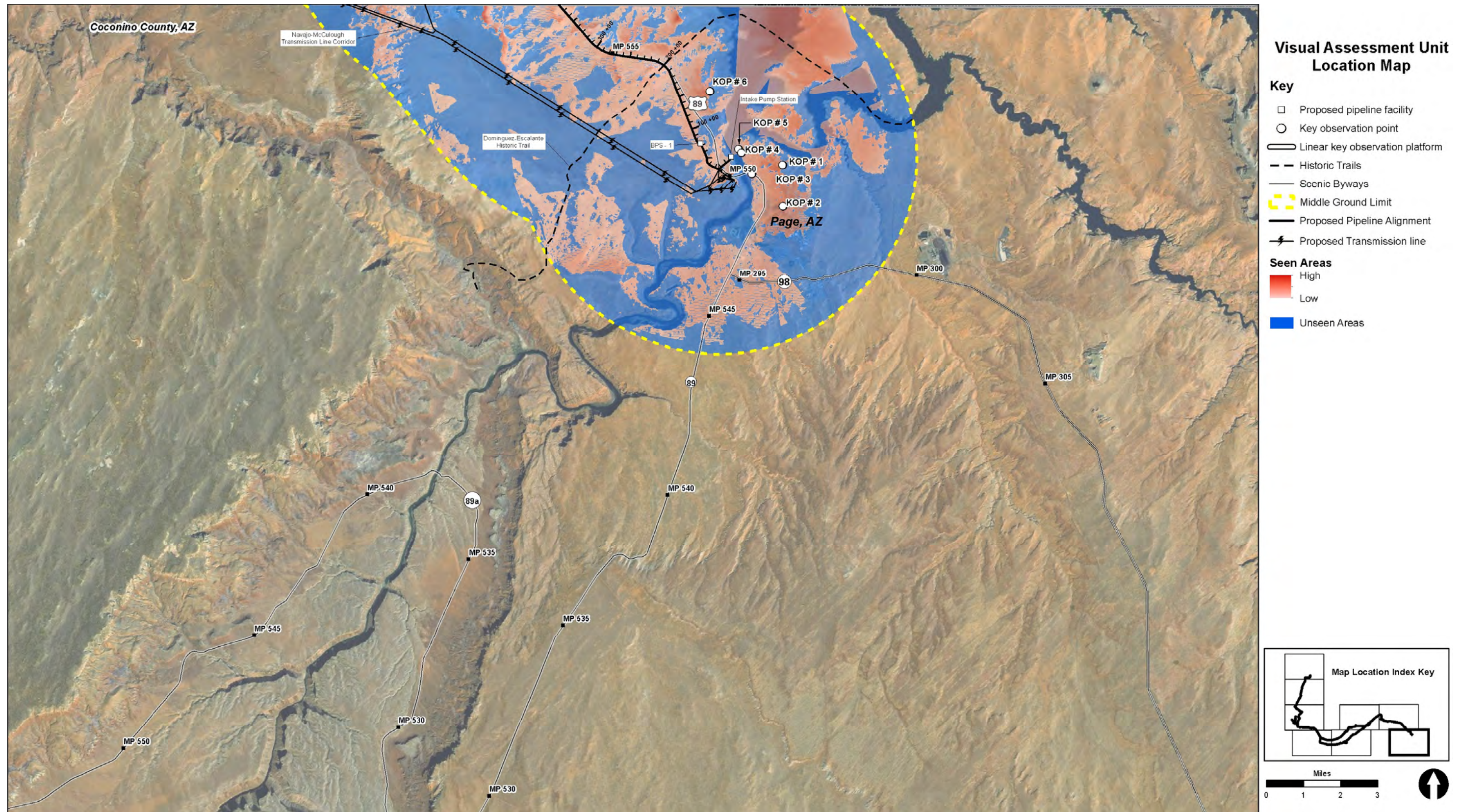
Zero to One Year Post-Construction Conditions Simulation

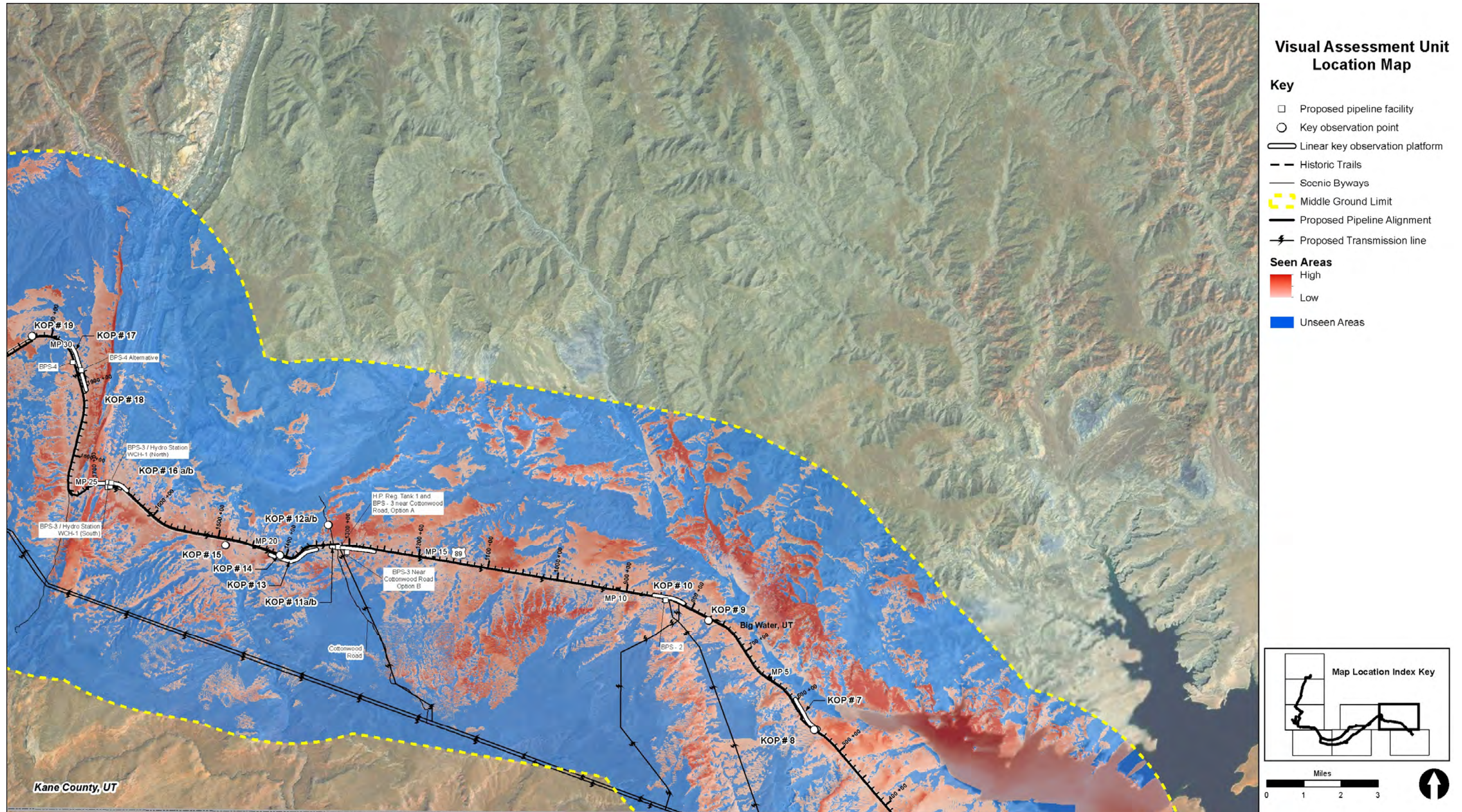
(Simulation to be completed when additional information is available)



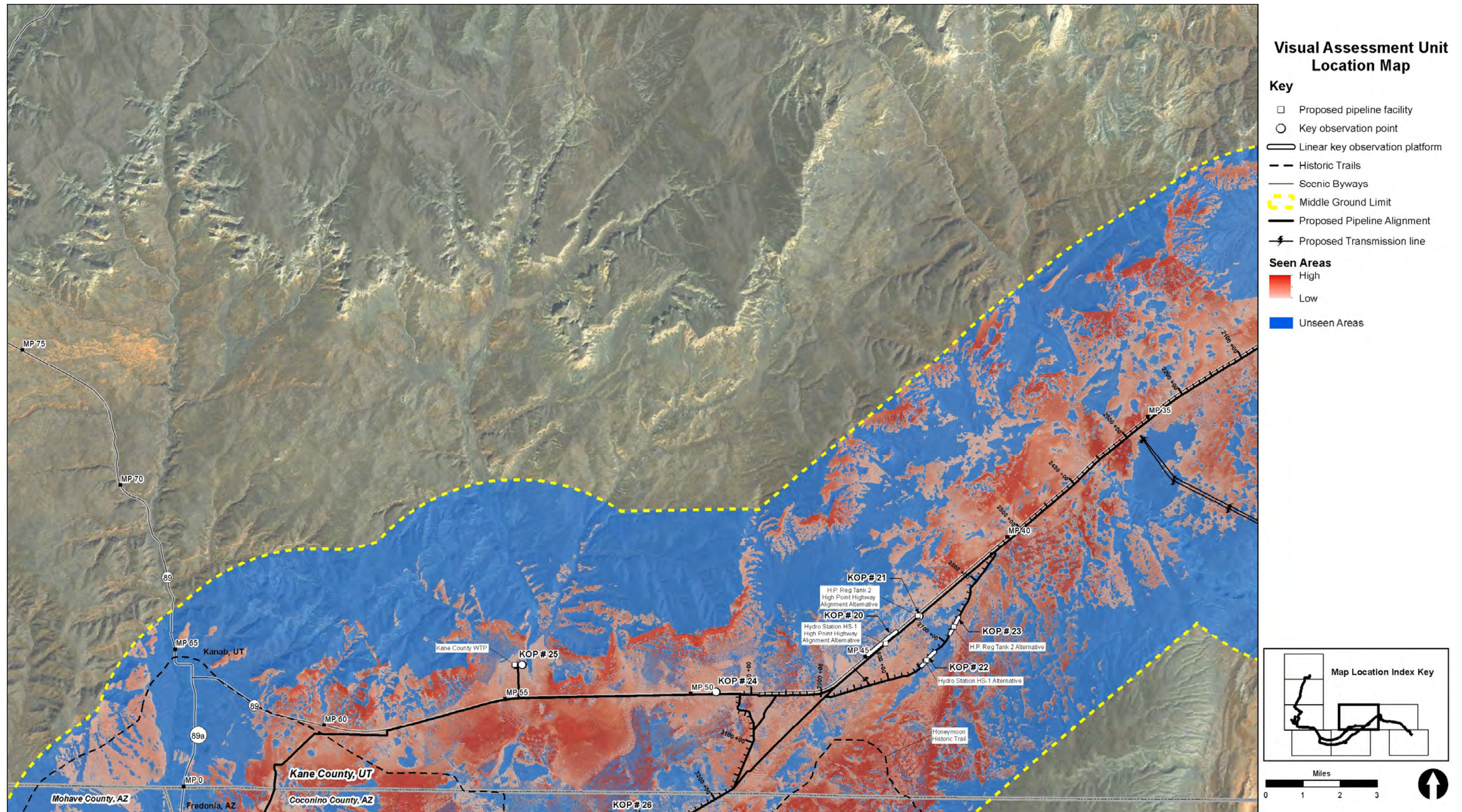
Five to Ten Years Post-Construction Conditions Simulation
(Simulation to be completed when additional information is available)

Appendix D
South and Existing Highway Alternatives
Visibility Analysis Maps

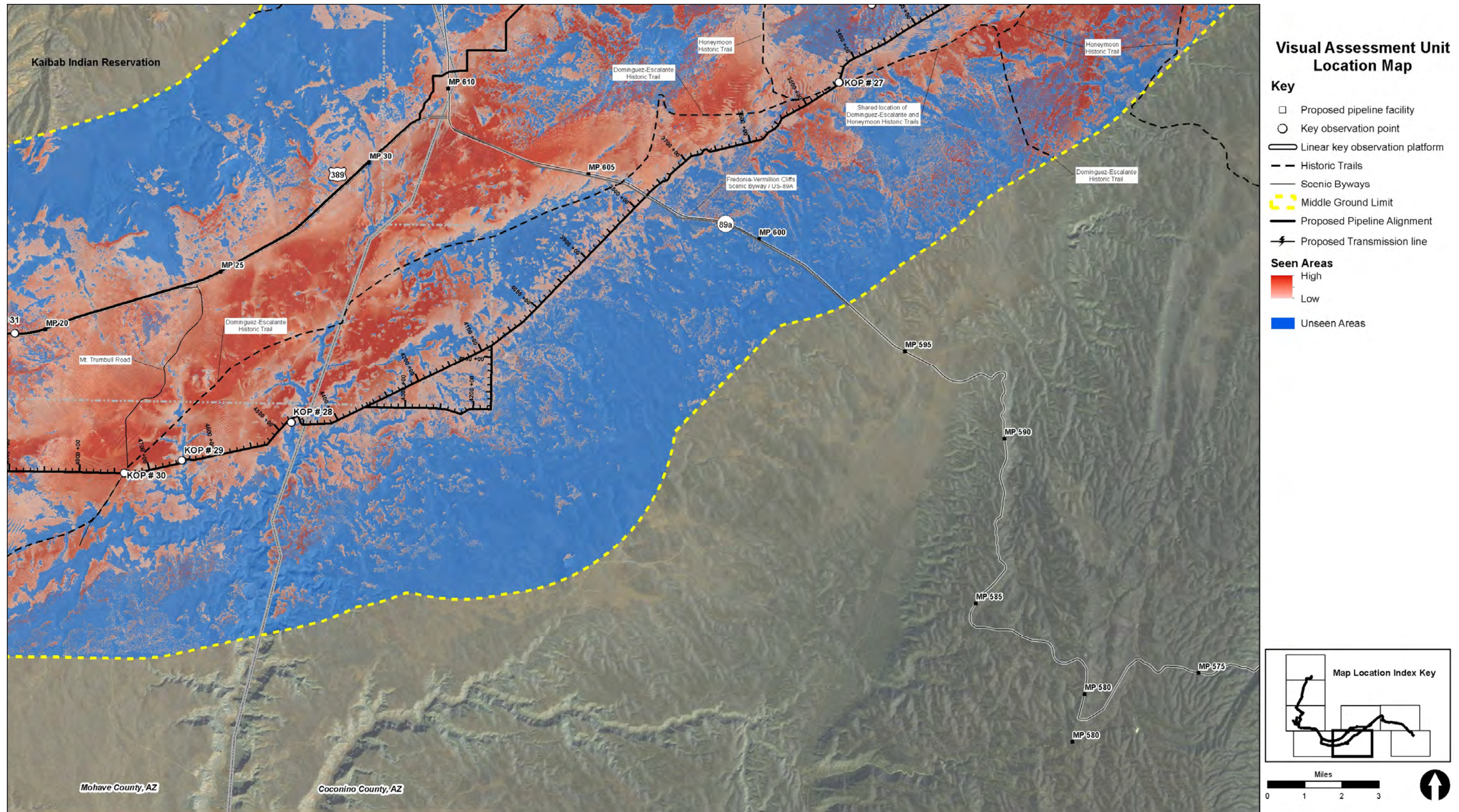


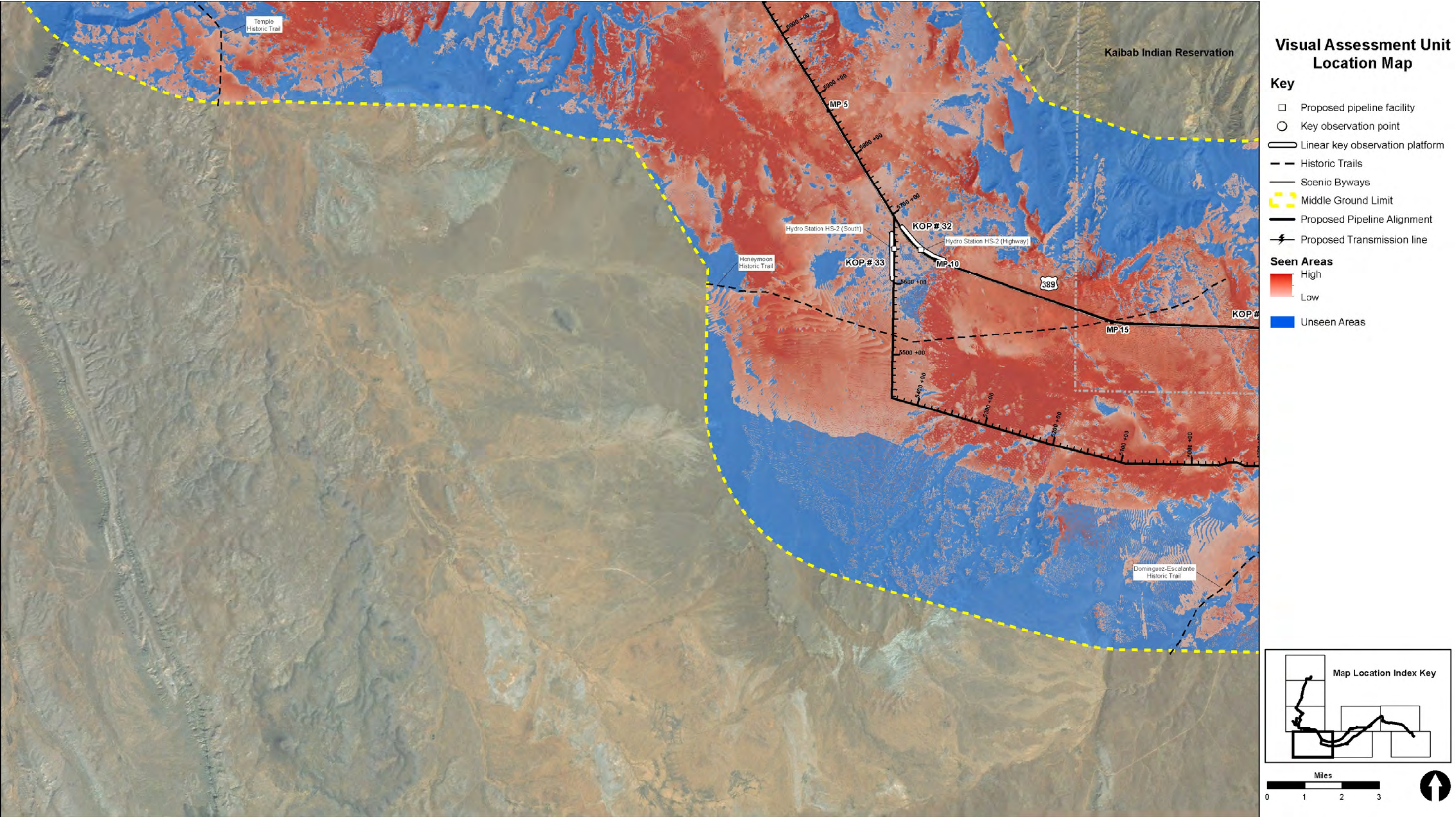


Map B

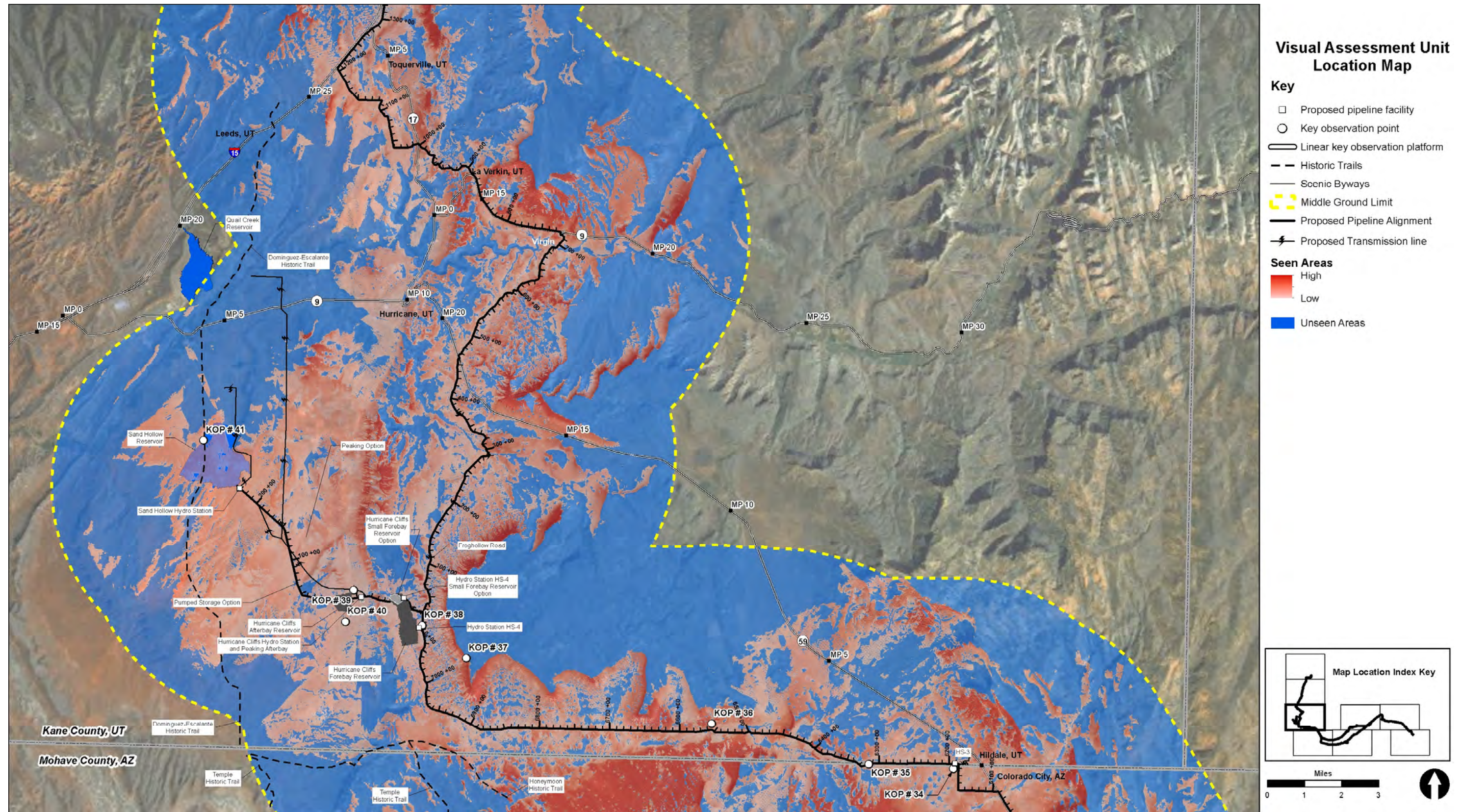


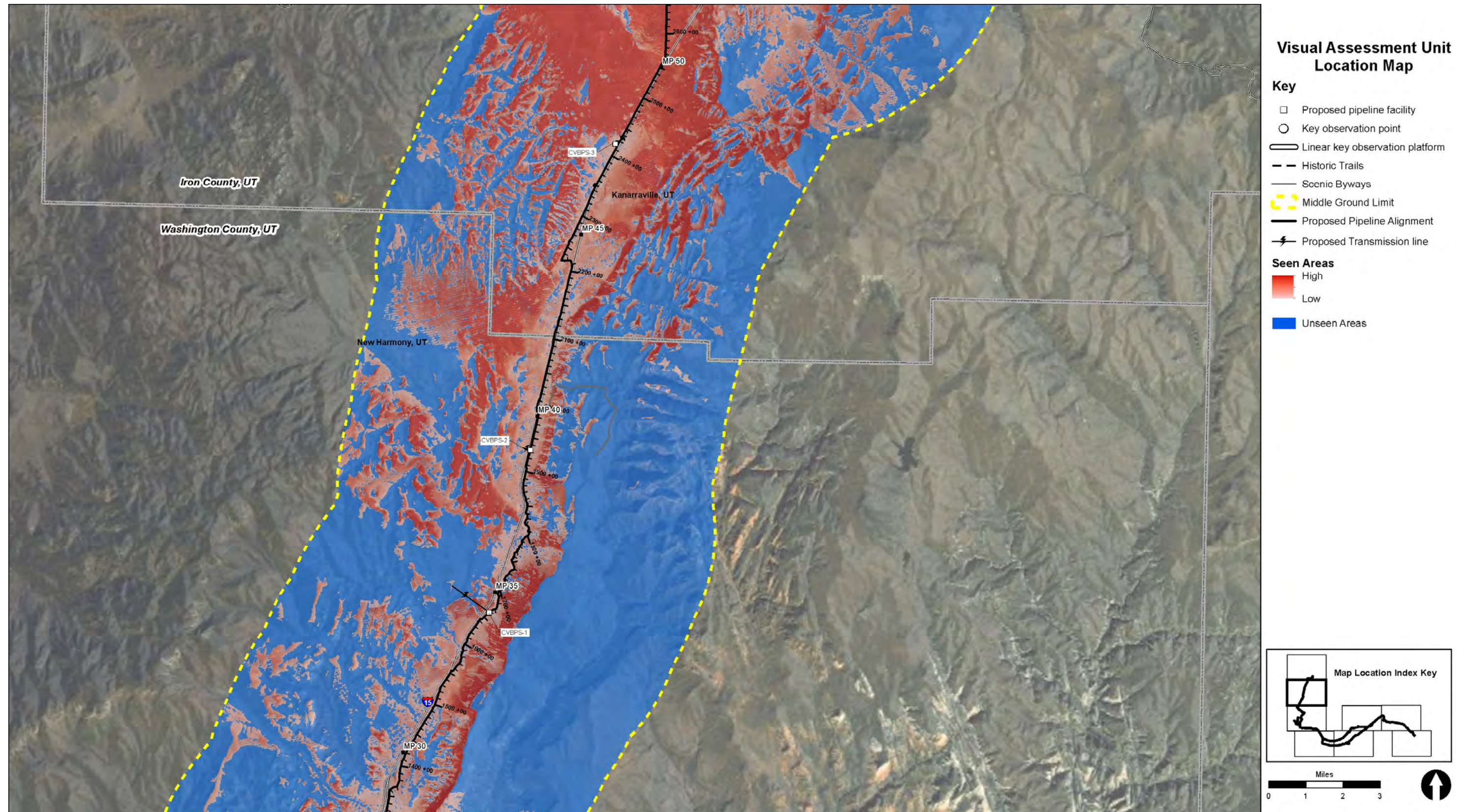
Map C



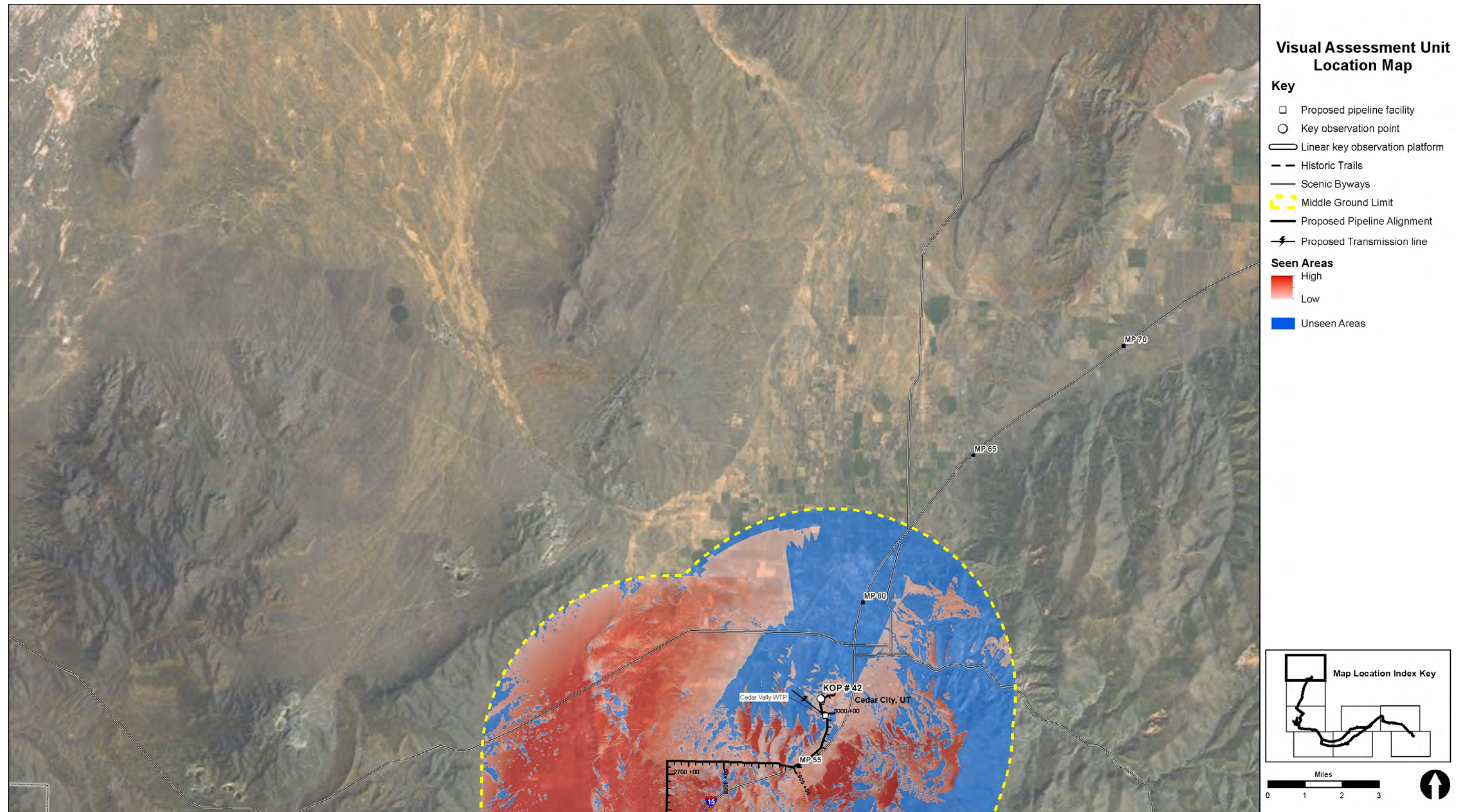


Map E





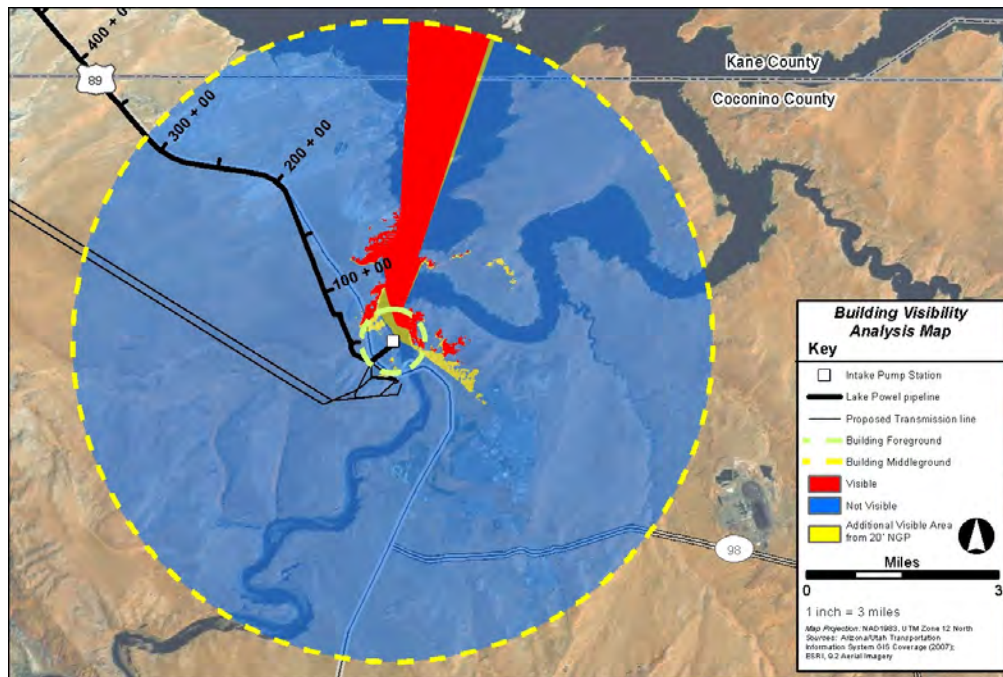
Map G



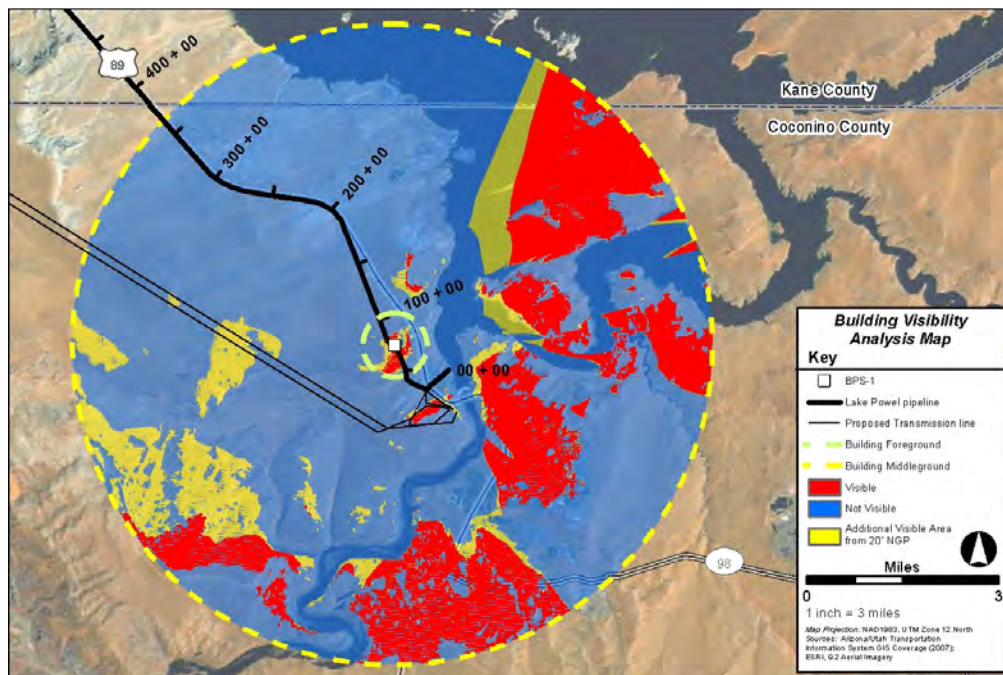
Appendix D
South and Existing Highway Alternatives Visibility Maps

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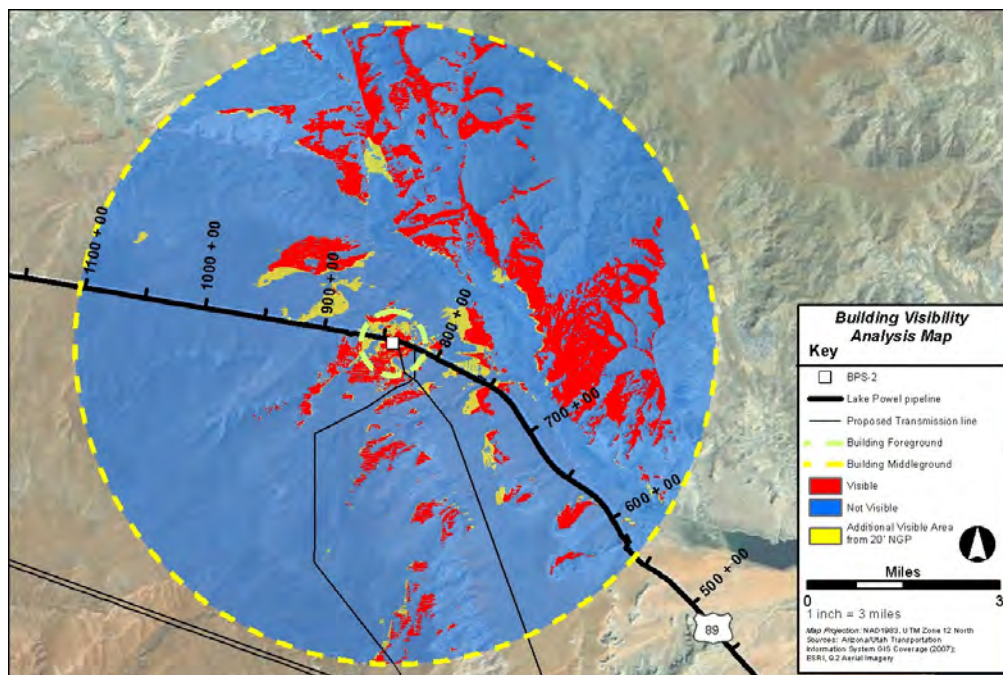
Appendix E
Proposed Building Visibility Analysis Maps



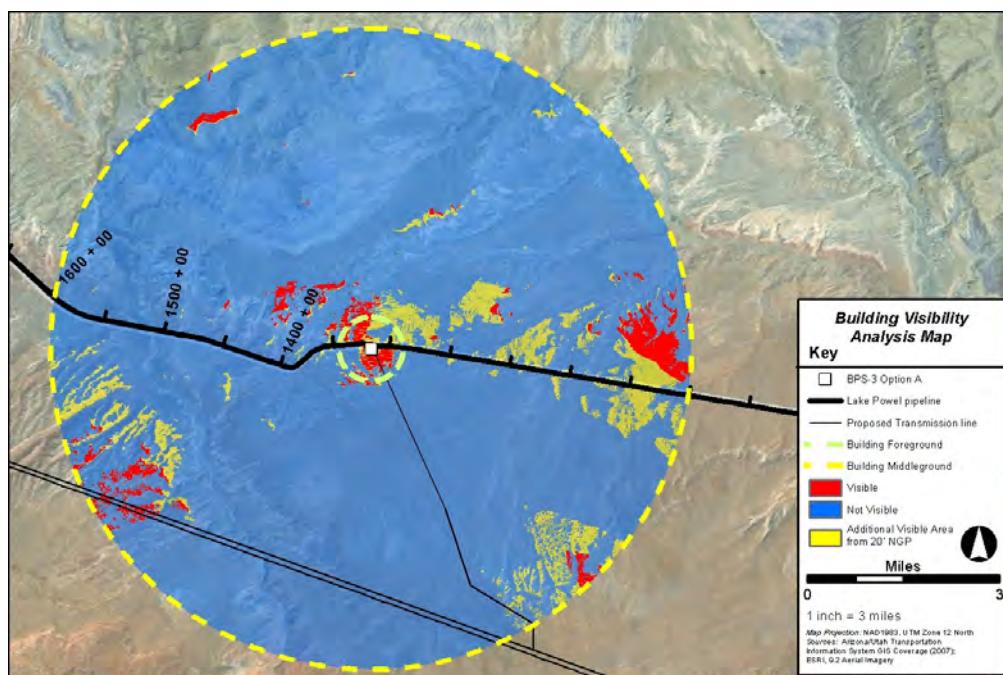
Visibility from Building at
Intake Pump Station Facility



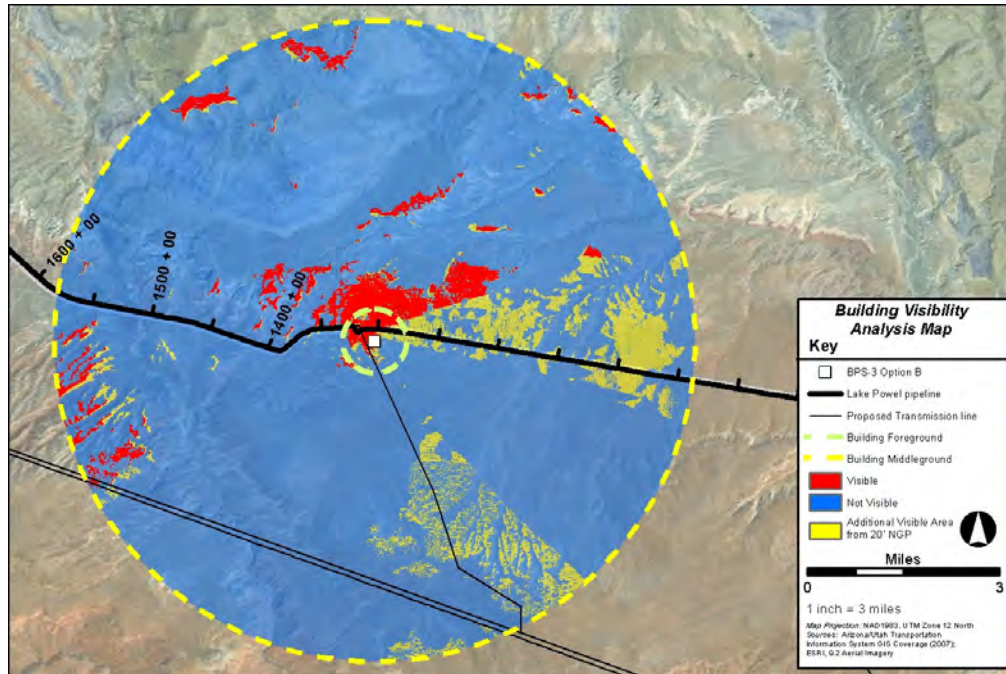
Visibility from Building at
BPS-1 Facility



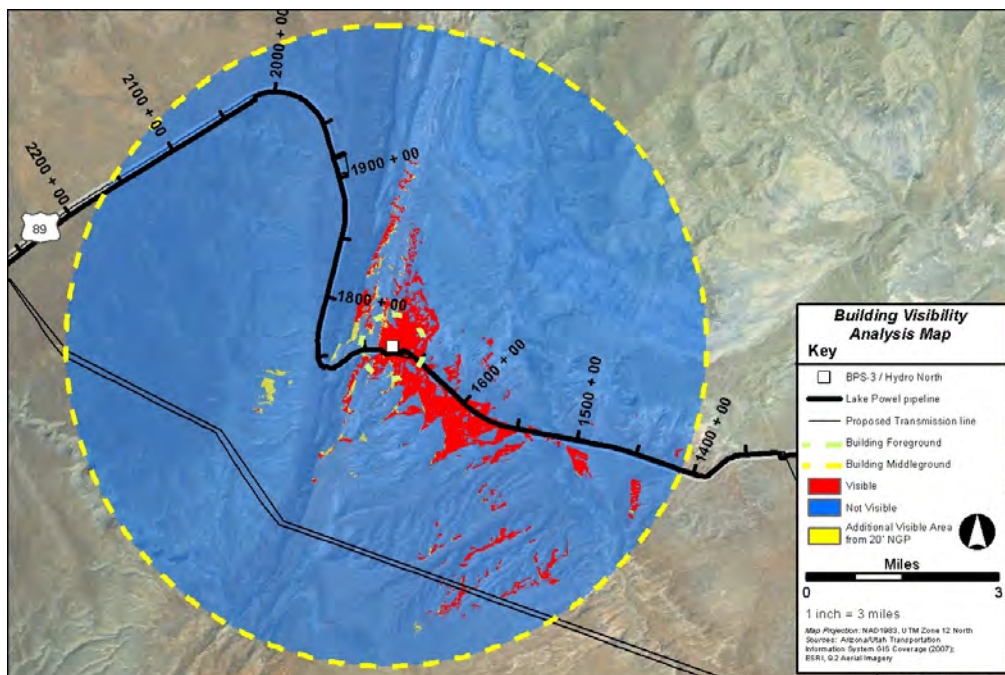
Visibility from Building at
BPS-2 Facility



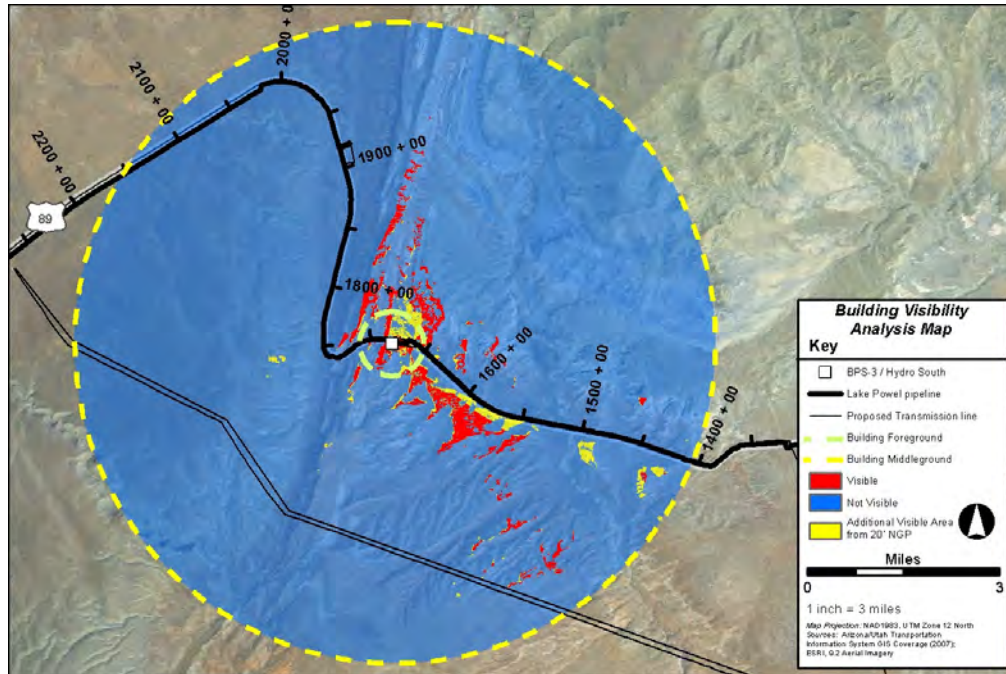
Visibility from Building at
BPS-3 near Cottonwood Road Option A



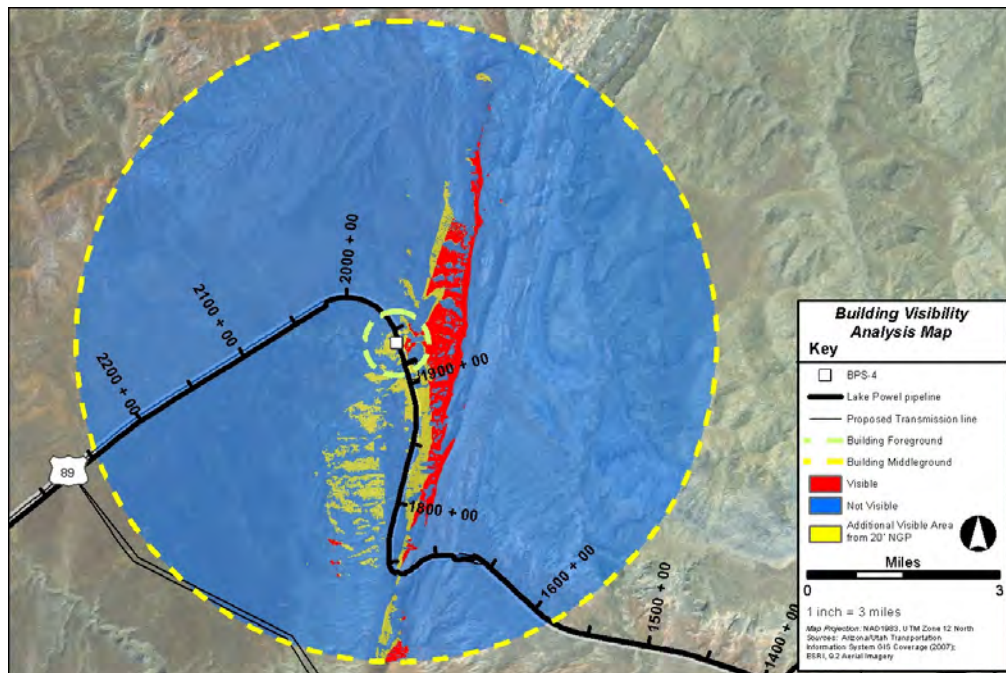
Visibility from Building at
BPS-3 near Cottonwood Road Option B



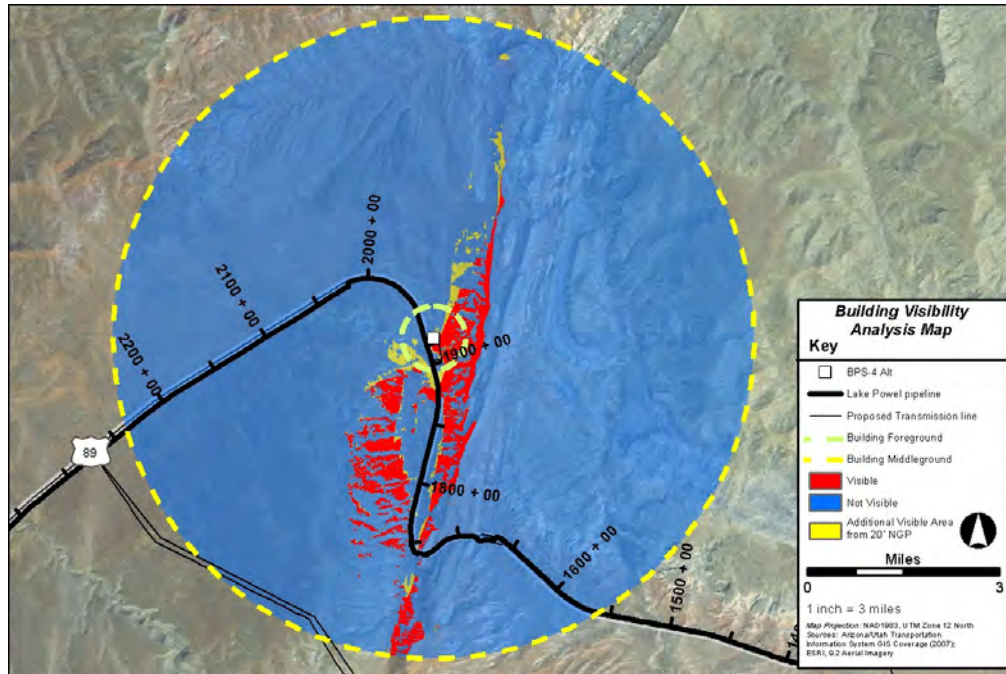
Visibility from Building at
BPS-3 / Hydro WCH-1 Facility (North)



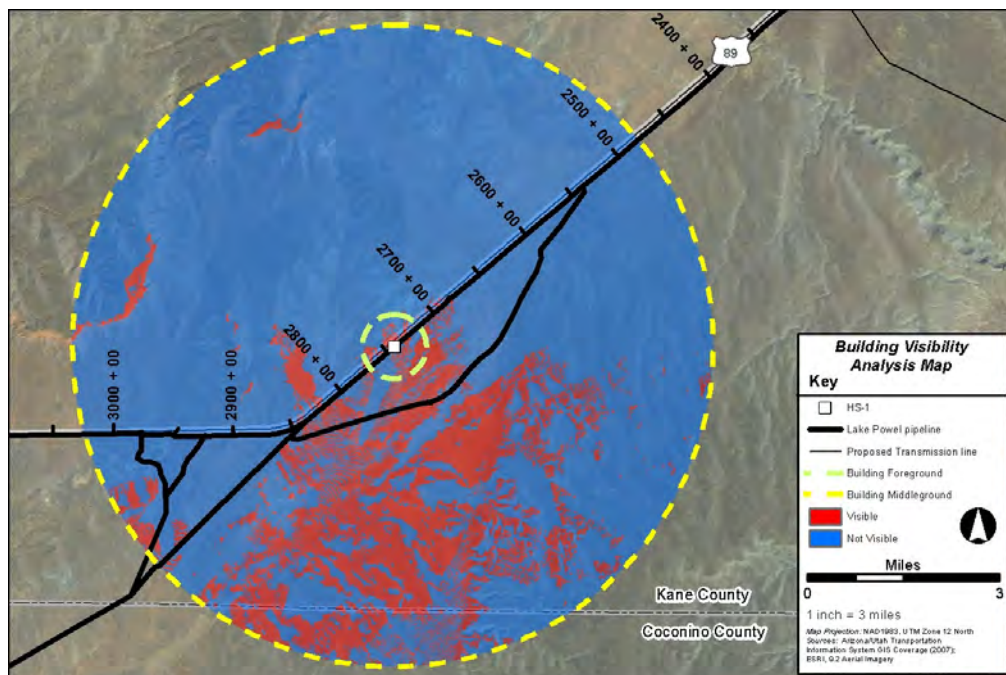
Visibility from Building at
BPS-3 /Hydro WCH-1 Facility (South)



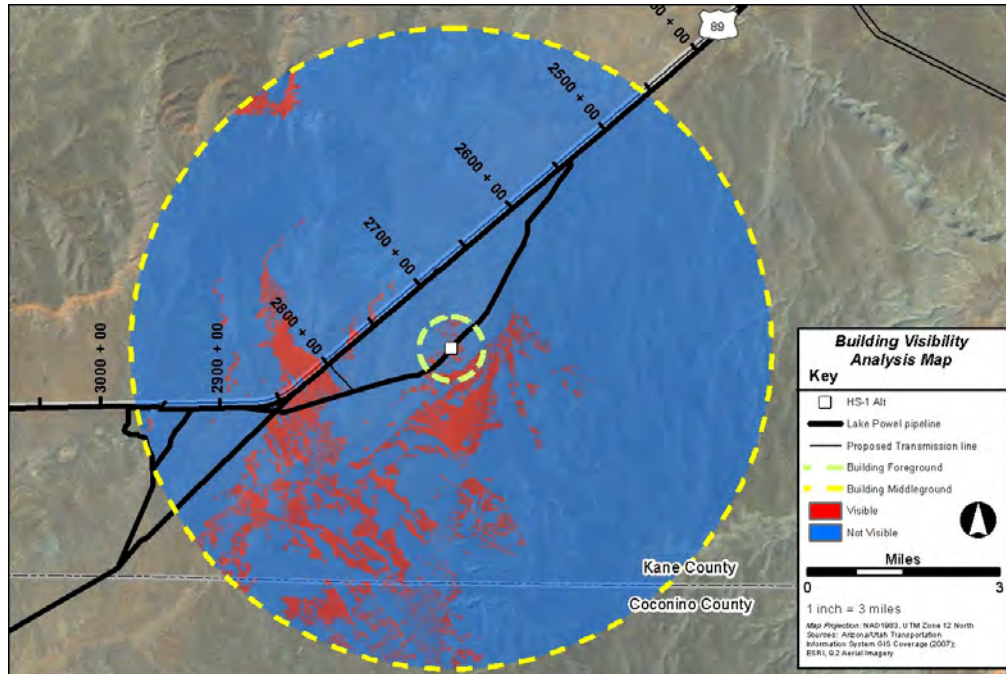
Visibility from Building at
BPS-4 Facility



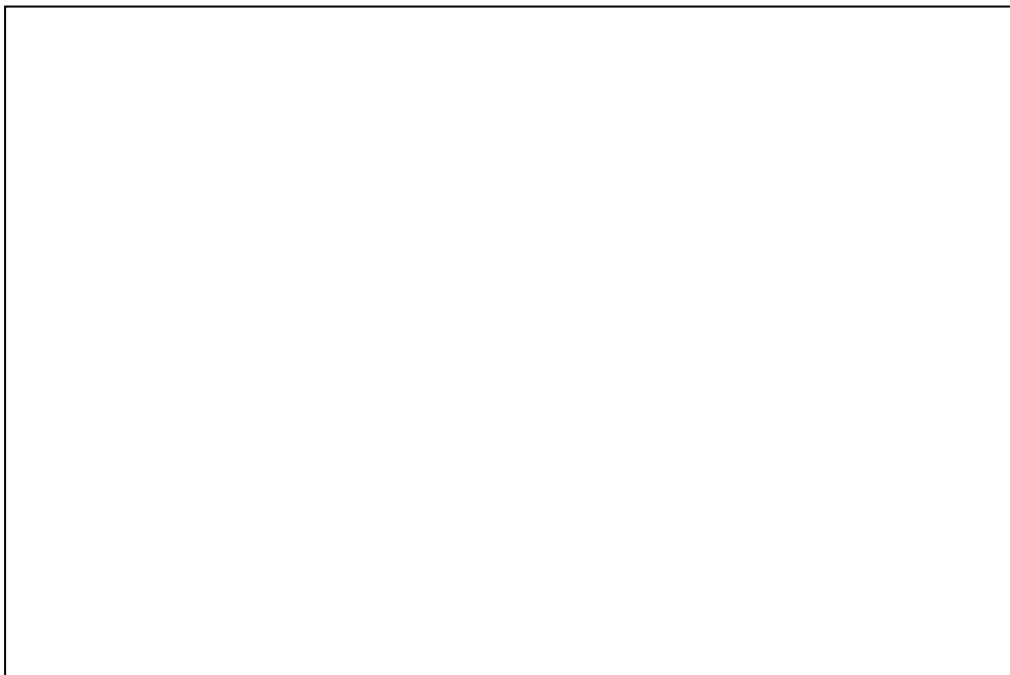
Visibility from Building at
BPS-4 Alternative



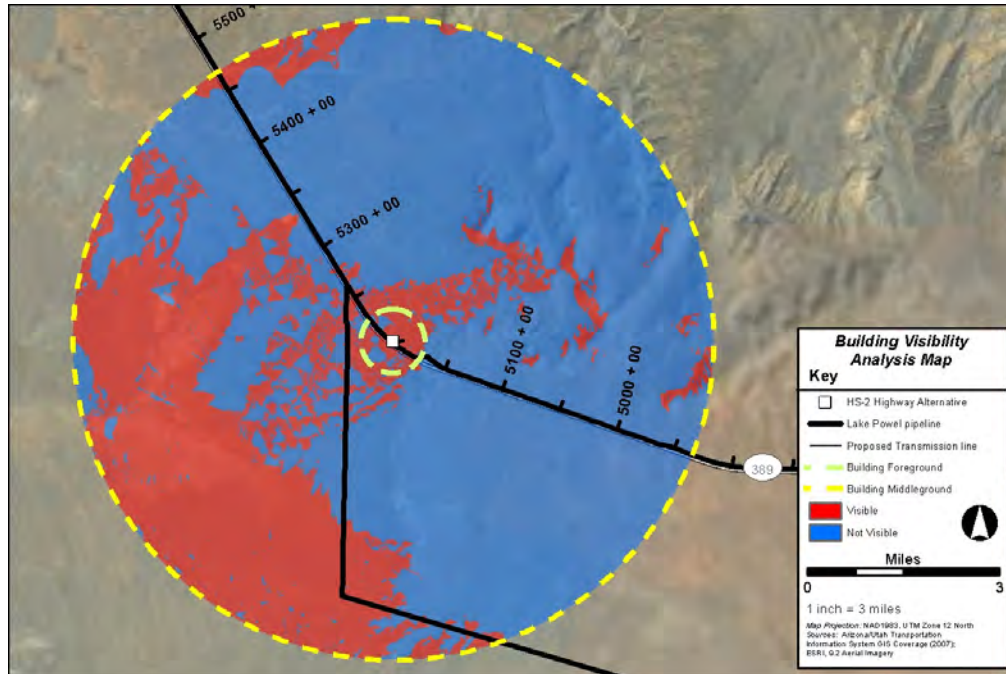
Visibility from Building at
HS-1 Facility



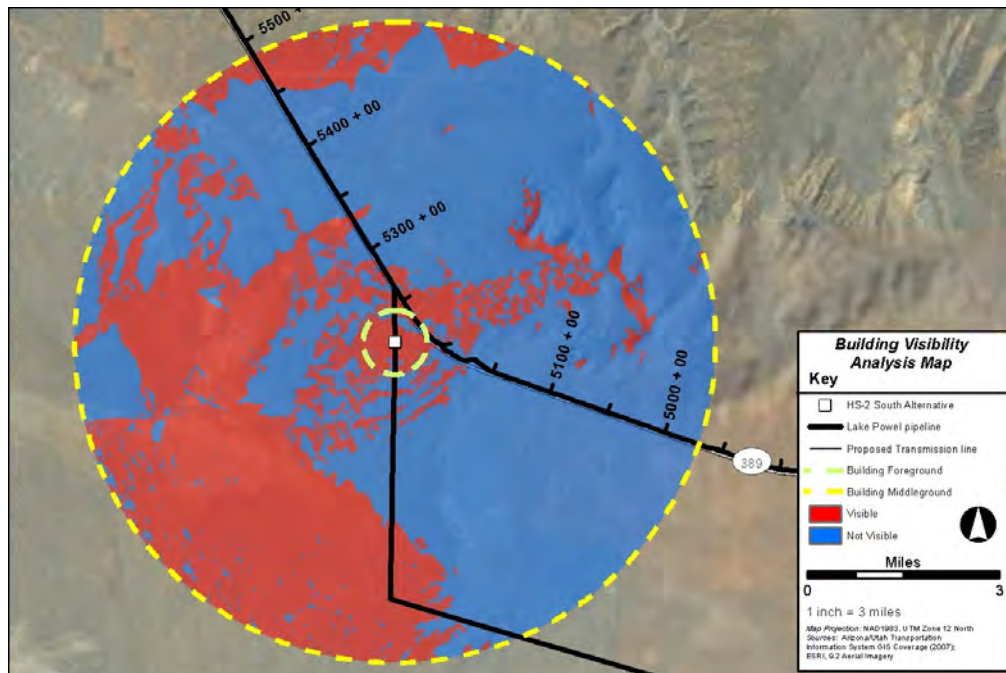
**Visibility from Building at
HS-1 Alternative**



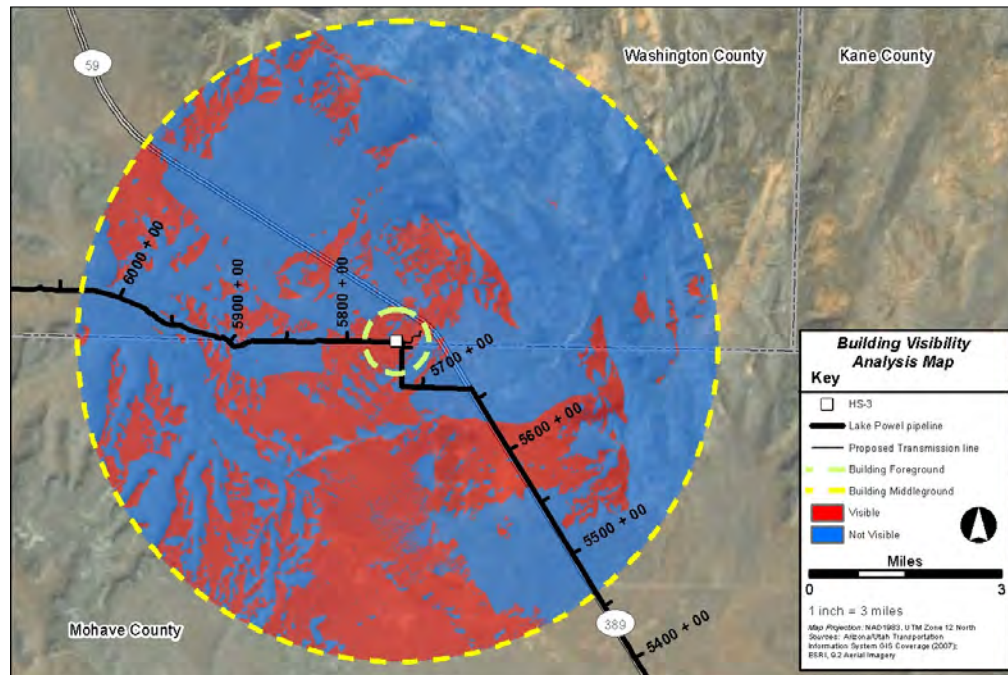
**Visibility from Building at
Cedar Valley WTP**
(Map to be completed when facility information is available.)



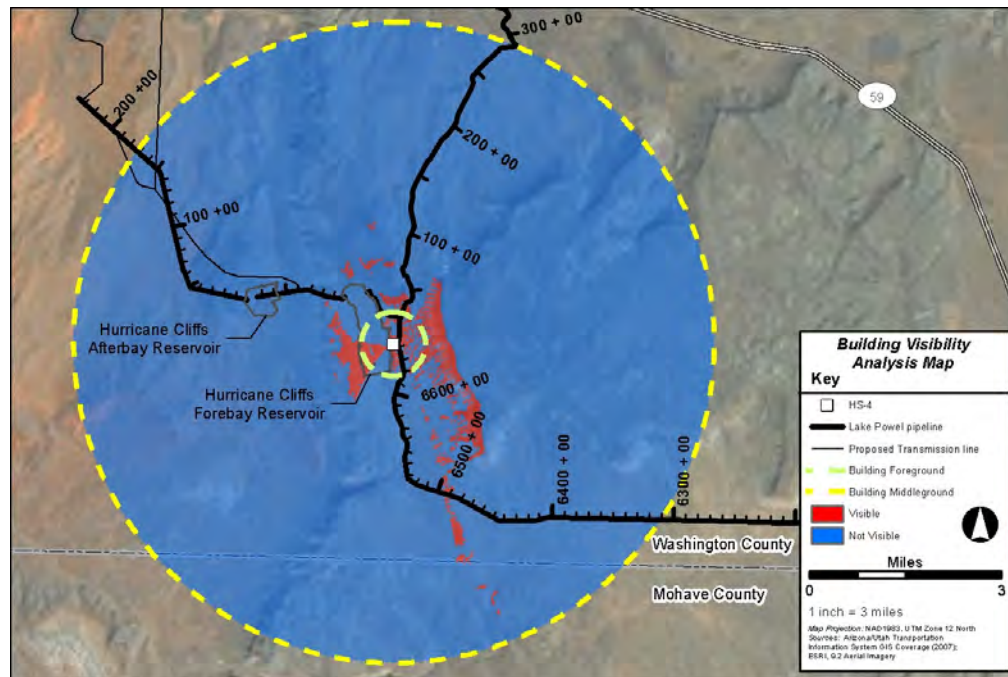
Visibility from Building at
HS-2 (Highway) Facility



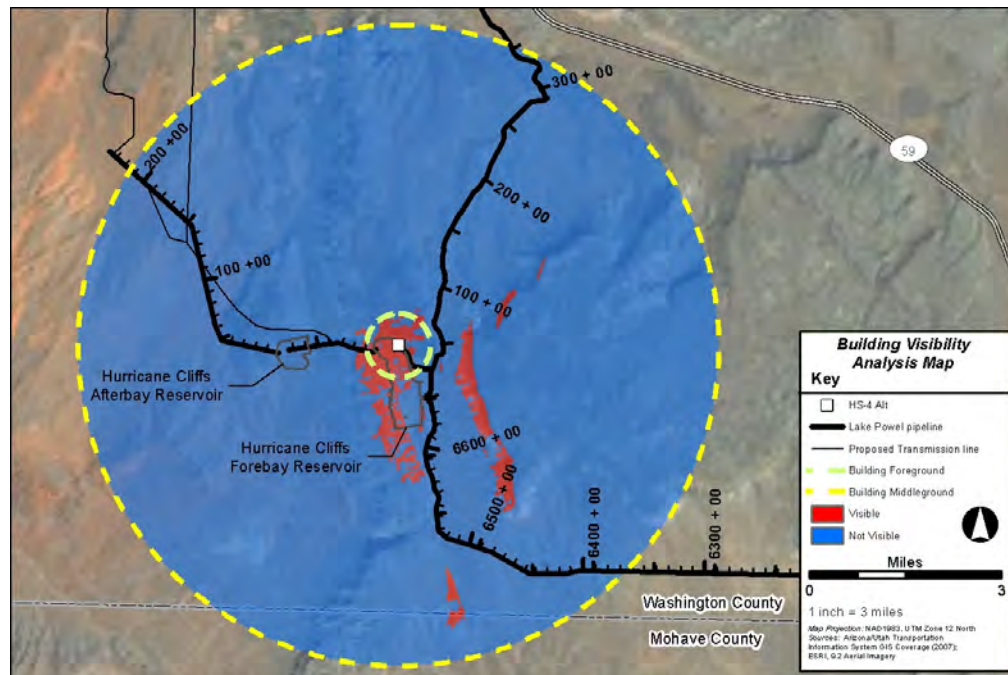
Visibility from Building at
HS-2 (South) Facility



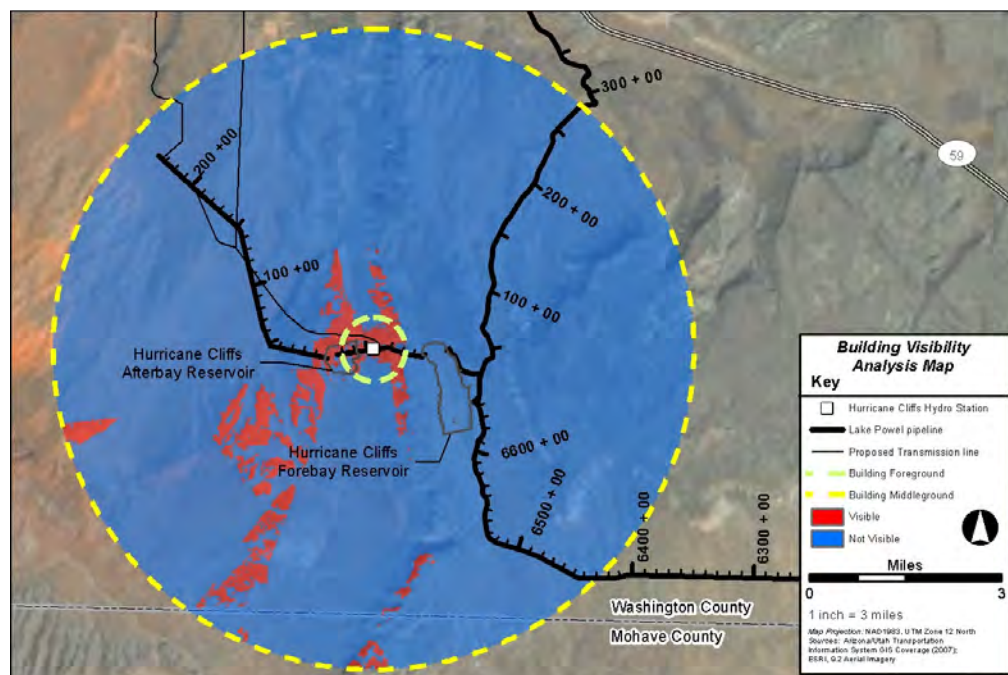
Visibility from Building at
HS-3 Facility



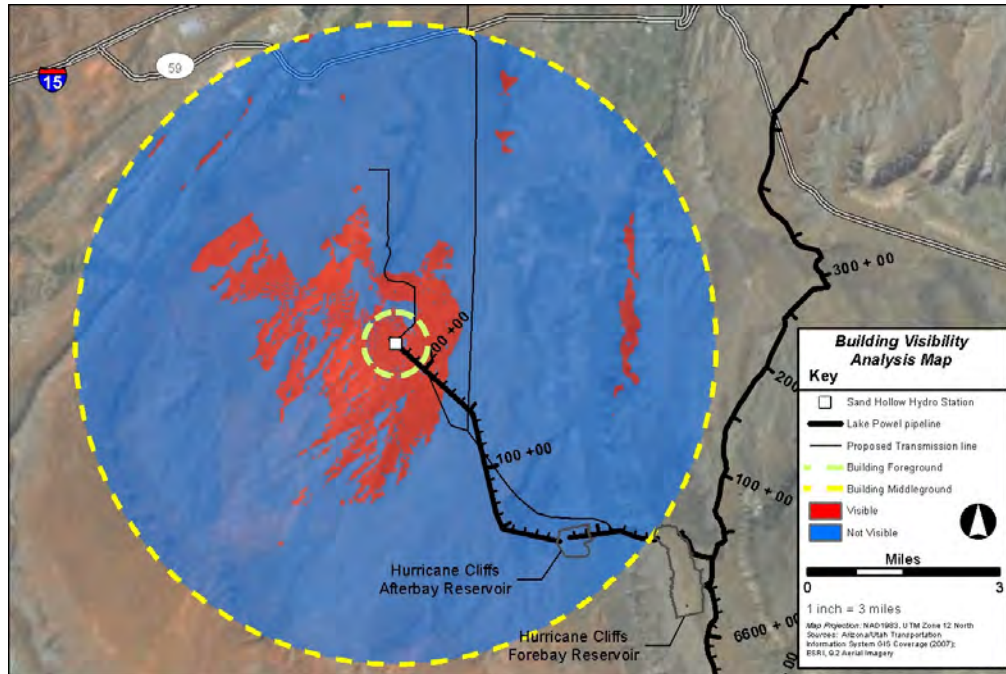
Visibility from Building at
HS-4 Facility



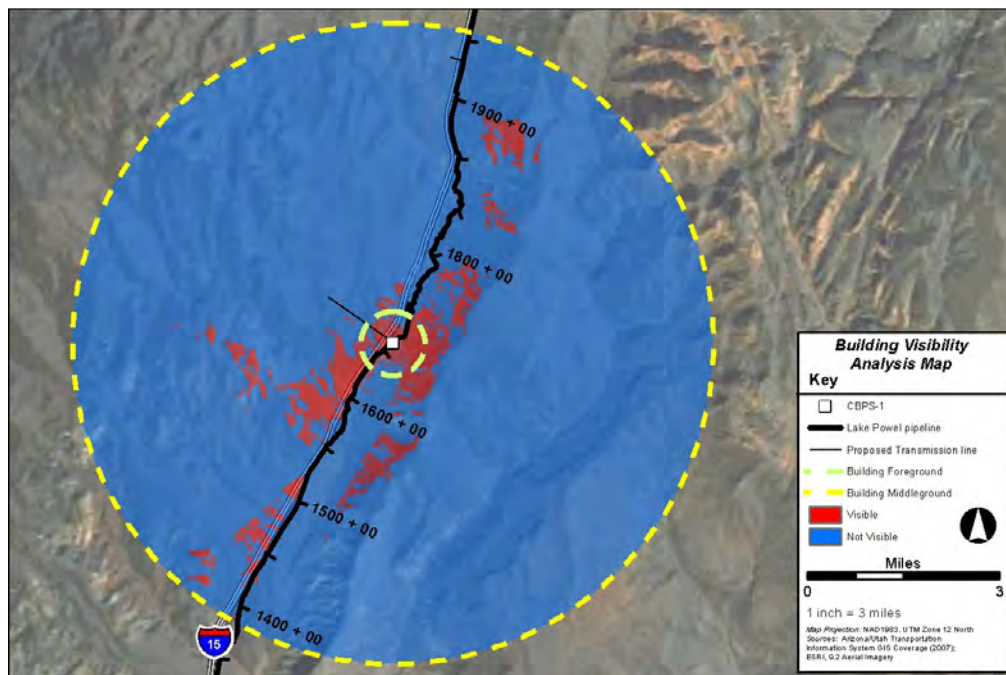
Visibility from Building at
HS-4 Small Forebay Reservoir Option Facility



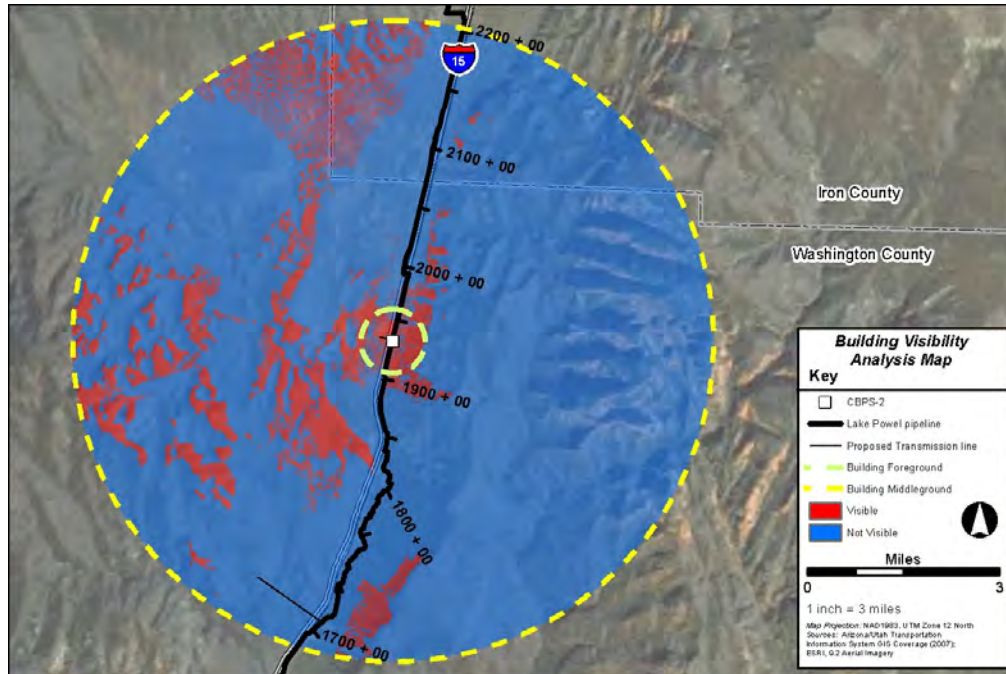
Visibility from Building at
Hurricane Cliffs Hydro Station Facility



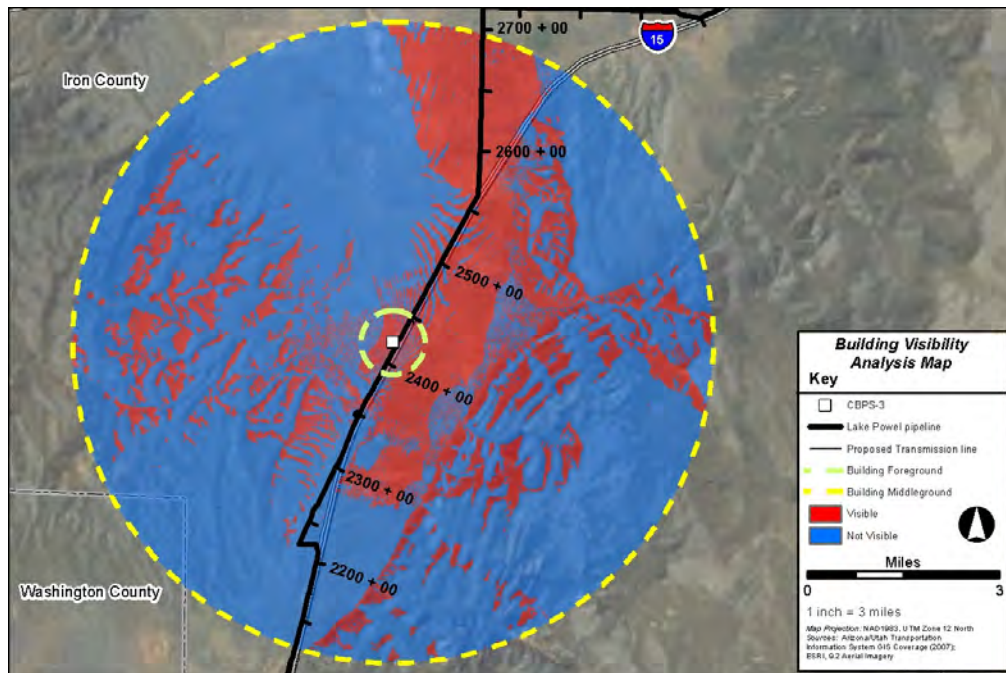
Visibility from Building at
Sand Hollow Hydro Station Facility



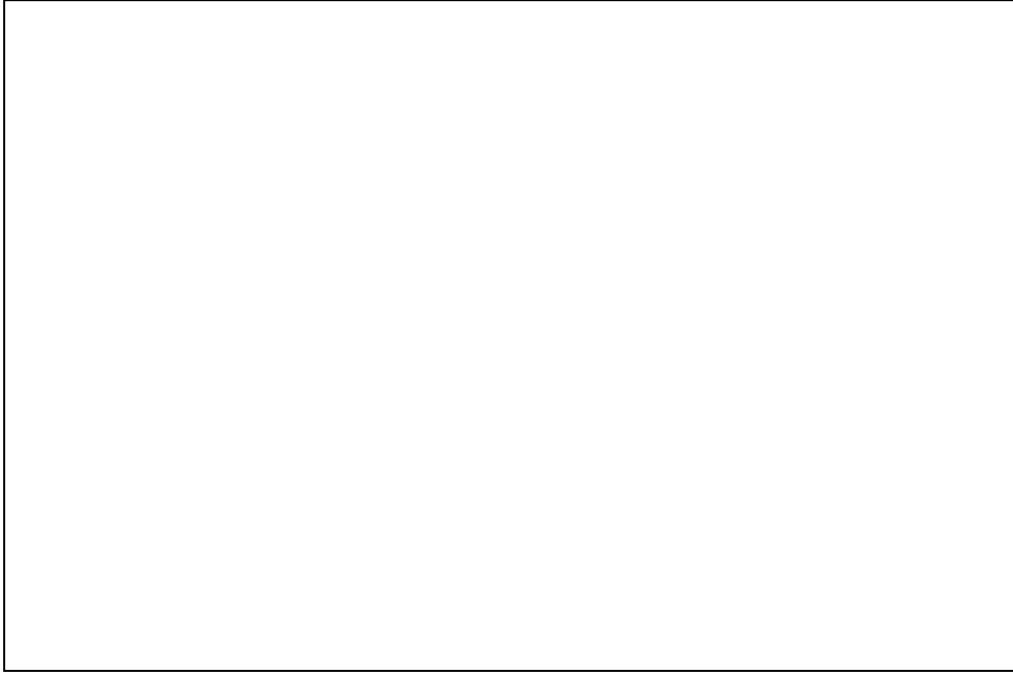
Visibility from Building at
CVBPS-1 Facility



Visibility from Building at
CVBPS-2 Facility



Visibility from Building at
CVBPS-3



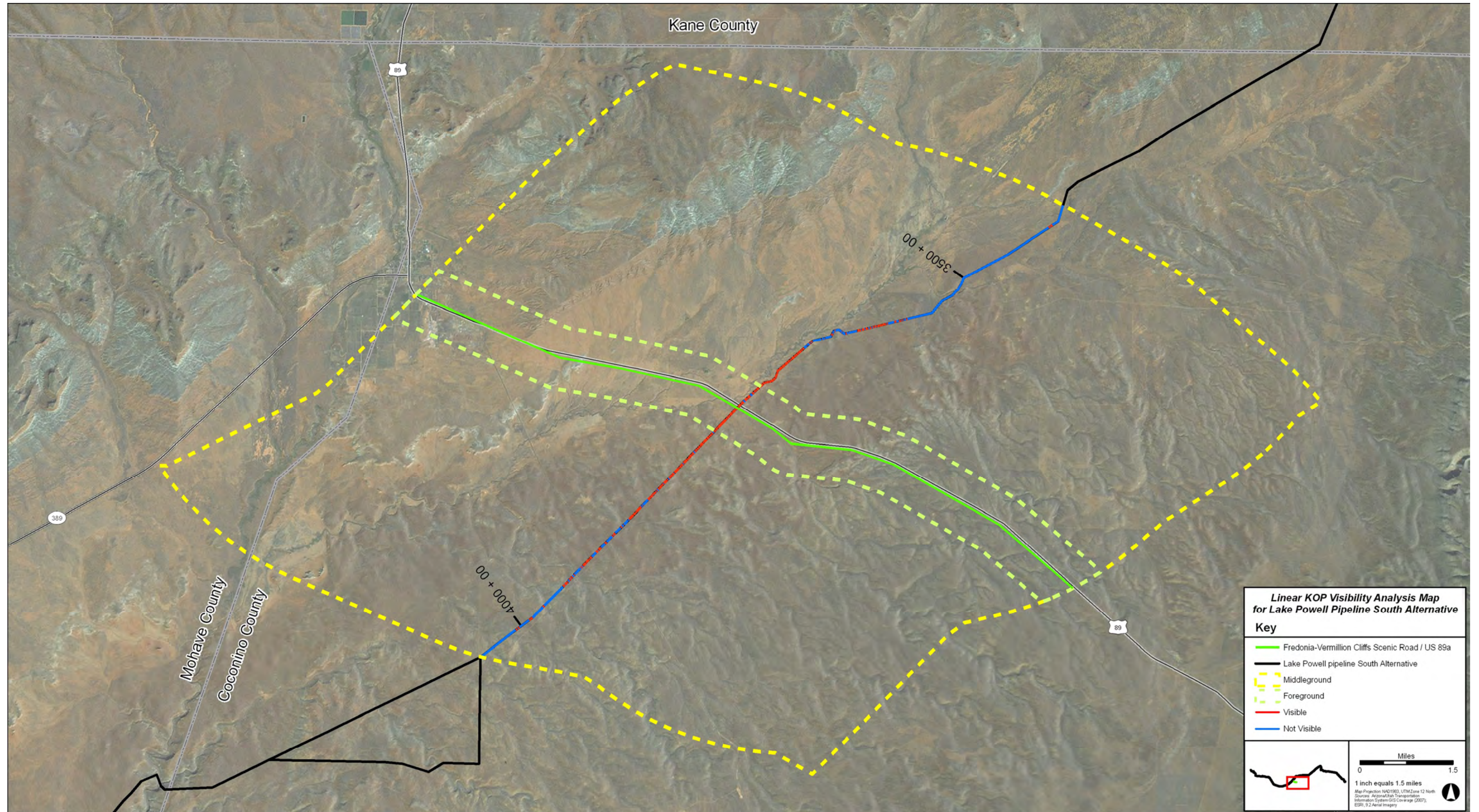
**Visibility from Building at
Cane County WTP**

(Map to be completed when facility information is available.)

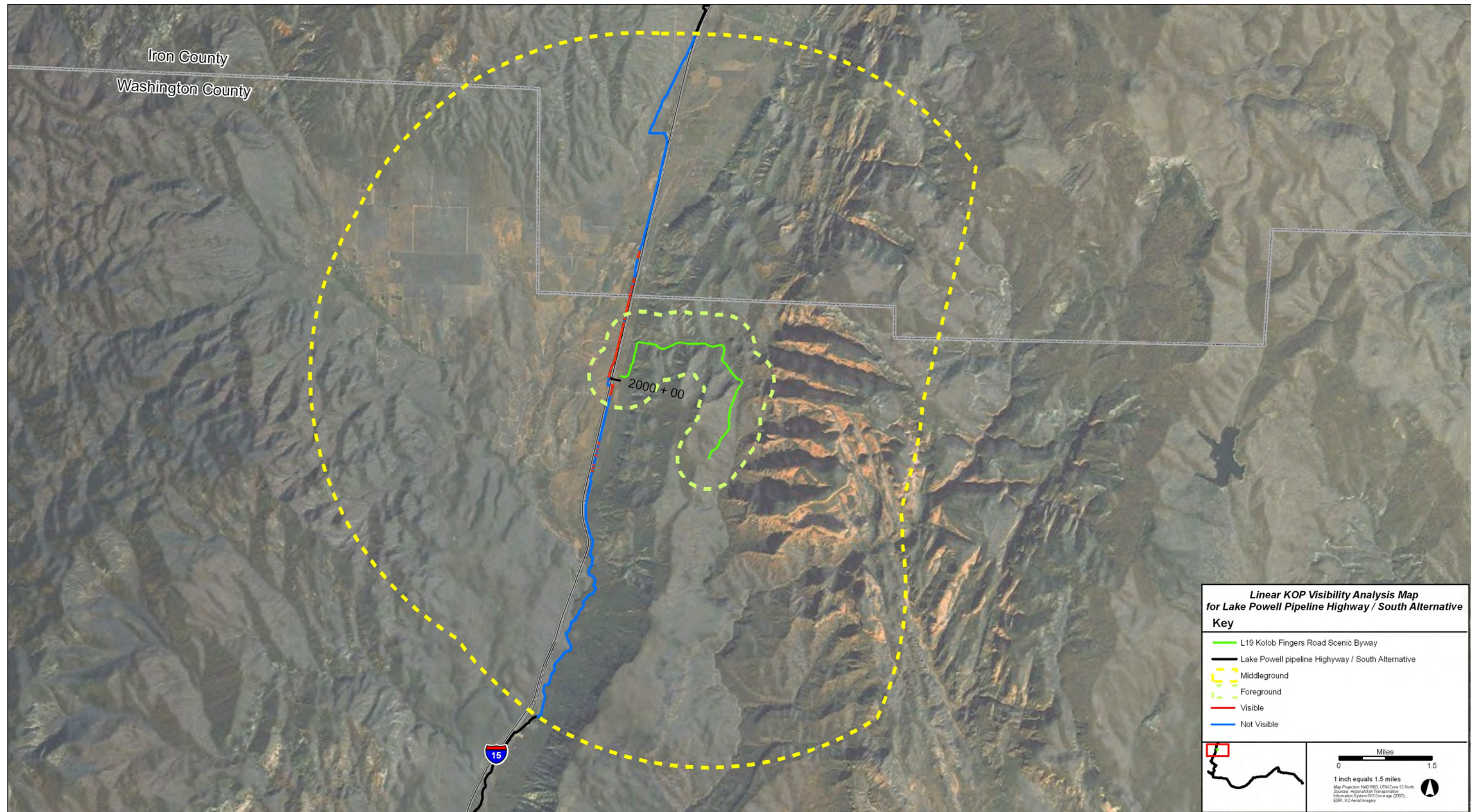
Appendix E
Proposed Building Visibility Analysis Maps

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Appendix F
Linear KOP Visibility Analysis Maps



Visibility of Project from
Fredonia – Vermillion Cliffs Scenic Road / US 89A



Visibility of Project from
Kolob Fingers Road Scenic Byway

Appendix F
Linear KOP Visibility Analysis Maps

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