BUREAU OF RECLAMATION

Lake Powell Pipeline Project
Appendix C-19: Visual Resources

U.S. Department of the Interior

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1 Introduction/Affected Environment

The term visual (or scenic) resources refers to the composite of basic terrain, geologic and hydrologic features, vegetative patterns, and built features that influence the visual appeal of a landscape. This appendix to the Draft Environmental Impact Statement identifies and describes the existing conditions associated with visual resources located within the Proposed Project study corridor and assesses the potential effects on these resources based on the construction, operation, and maintenance of the Lake Powell Pipeline (LPP). A discussion of cumulative effects is provided in Appendix C-25, Cumulative Effects.

1.1 Regulatory Framework

1.1.1 National Park Service Organic Act of 1916 (USC, title 16, sec. 1.)

- States that the purpose of establishing the National Park Service (NPS) is to ". . . conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

1.1.2 National Environmental Policy Act of 1969, as amended (42 USC § 4321 et seq.)

- National Environmental Policy Act of 1969 (NEPA) Section 101(b) states that ". . . it is the continuing responsibility of the Federal Government to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs and resources to the end that the Nation may—(2) assure for all Americans...esthetically…pleasing surroundings."
- Section 102(A) requires all agencies of the federal government to "utilize a systematic, interdisciplinary approach which will ensure the integrated use of...the environmental design arts in planning and in decision-making which may have an impact on man's environment."

The Council on Environmental Quality regulations for implementing NEPA identify aesthetic effects as a type of impact to be addressed in a review under NEPA and state that an EIS should include discussion of the design of the built environment (40 Code of Federal Regulations [CFR] § 1502.16, 1508.8). The regulations also require discussion of possible conflicts of a proposed action with the objectives of federal, regional, state, local, and tribal land-use plans and policies; federal land-use plans, in particular, typically include guidance for management of visual resources. The Council on Environmental Quality regulations do not include more specific direction about aesthetic impact issues to be considered or the means to evaluate aesthetic impacts.

1.1.3 Federal Land Policy and Management Act of 1976, as amended (43 USC § 1701 et seq.)

- Federal Land Policy and Management Act of 1976, Section 102(a)(8) declares that it is the policy of the United States that "the public lands be managed in a manner that will protect the quality of. . .scenic. . .values. . ."
- Section 103(c) identifies "natural scenic values" as one of the resources for which public land should be managed.
- Section 505(a) requires that "Each right-of-way shall contain terms and conditions which will. . .minimize damage to the scenic and esthetic values. . ."

The Bureau of Land Management (BLM) and the NPS have developed formal programs to inventory visual resources at a planning-level scale on the lands under their jurisdiction. The BLM's program also includes a framework to assess visual change in the landscape and to determine conformance with visual management objectives. Conformance with BLM RMPs allocations for visual resource management is presented in Tables 2.2-3, 2.2-4, 2.3-3, and 2.3-4 below. In contrast to the BLM, formal directions for managing visual resources on other federally managed lands, as well as tribal, private, state, and municipal lands within the visual resources study corridor have not been established.

1.2 Methodology

1.2.1 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 Proposed Project's standard geographic information system 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:

- Proposed Project features;
- BLM Visual Resource Management classes;
- Glen Canyon National Recreation Area (GCNRA) General Management Plan Management Zones;
- Relevant federal, state, and local management plans;
- Scenic byways and roads application reports and related corridor management plans;
- Existing recreation areas (e.g., campgrounds, trails) in Project Areas;
- Wilderness Areas (WAs) and Wilderness Study Areas (WSAs);
- Historic trails (HTs);
- Areas of Critical Environmental Concern;
- Land ownership—public (federal, state, municipal) versus private—and land jurisdiction information;
- Existing highways and roads; and
- Digital elevation models for the Project Area.

1.2.2 Assumptions

This report represents an assessment of the visual landscape on a general basis. Changes in the visual characteristics and visibility of the Proposed Project elements because of time of day and seasonal lighting changes, motion, or variable atmospheric conditions were not evaluated. It is 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 predicted for certain and future land use changes were not considered in the evaluation of potential Proposed Project effects on the visual setting. Effect determinations assumed that revegetation and restoration efforts follow the environmental protection and mitigation measures and are successful within 10 years of Proposed Project construction.

1.2.3 Area of Analysis

The area of analysis for visual resources are the viewsheds from sensitive viewing platforms (e.g., highways, residential areas, and developed recreation sites) within which Proposed Project features could be seen by casual observers for out to 5 miles of either side of the Proposed Project alignments and features. This distance was selected as it corresponds with the BLM's delineation of the foreground/middle ground visual distance zone and beyond which most developments are less or not noticeable. The areas of analysis for each alternative are shown on the Figure 1.2-1 and Figure 1.2-2. The temporal scope for this Proposed Project is the life of the project.

1.2.4 Effects Analysis Methodology

Effects on scenic or visual resources refer to the change in aesthetic values resulting from modifications to the landscape that create visual contrast. Effects were assessed in terms of visual character, visual elements and visual patterns—with respect to the anticipated magnitude of change in landscape character. Landscape character is the overall impression created by individual elements and overall patterns. Landscape character 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 contrast, magnitude of change in landscape character and the visibility of the proposed alignments were evaluated, considering the varying levels of visual sensitivity within the Project Area.

1.2.4.1 BLM Visual Resource Effect Assessment Methodology

Across the area of analysis, no matter the land ownership, the primary methodology for evaluating visual effects was based on the BLM visual resource management (VRM) system (BLM 1984*)*. The VRM system includes inventory of scenic values, establishment of management objectives for those values, and evaluation of proposed activities to determine the contrast they would create and their conformance with the management objectives. The VRM system was developed to minimize the visual effects of surface-disturbing activities and to maintain scenic values.

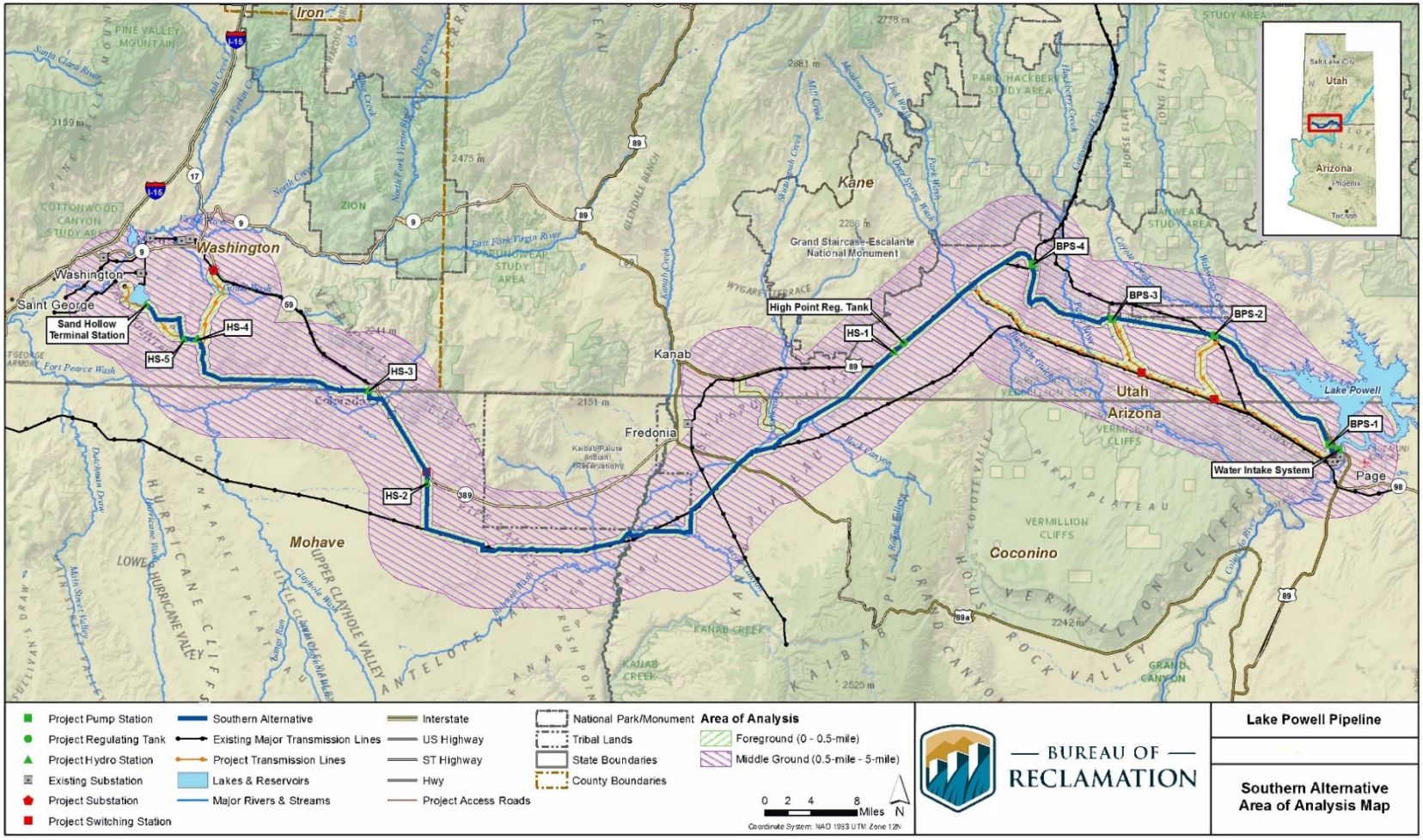


Figure 1.2-1 Southern Alternative Area of Analysis Map

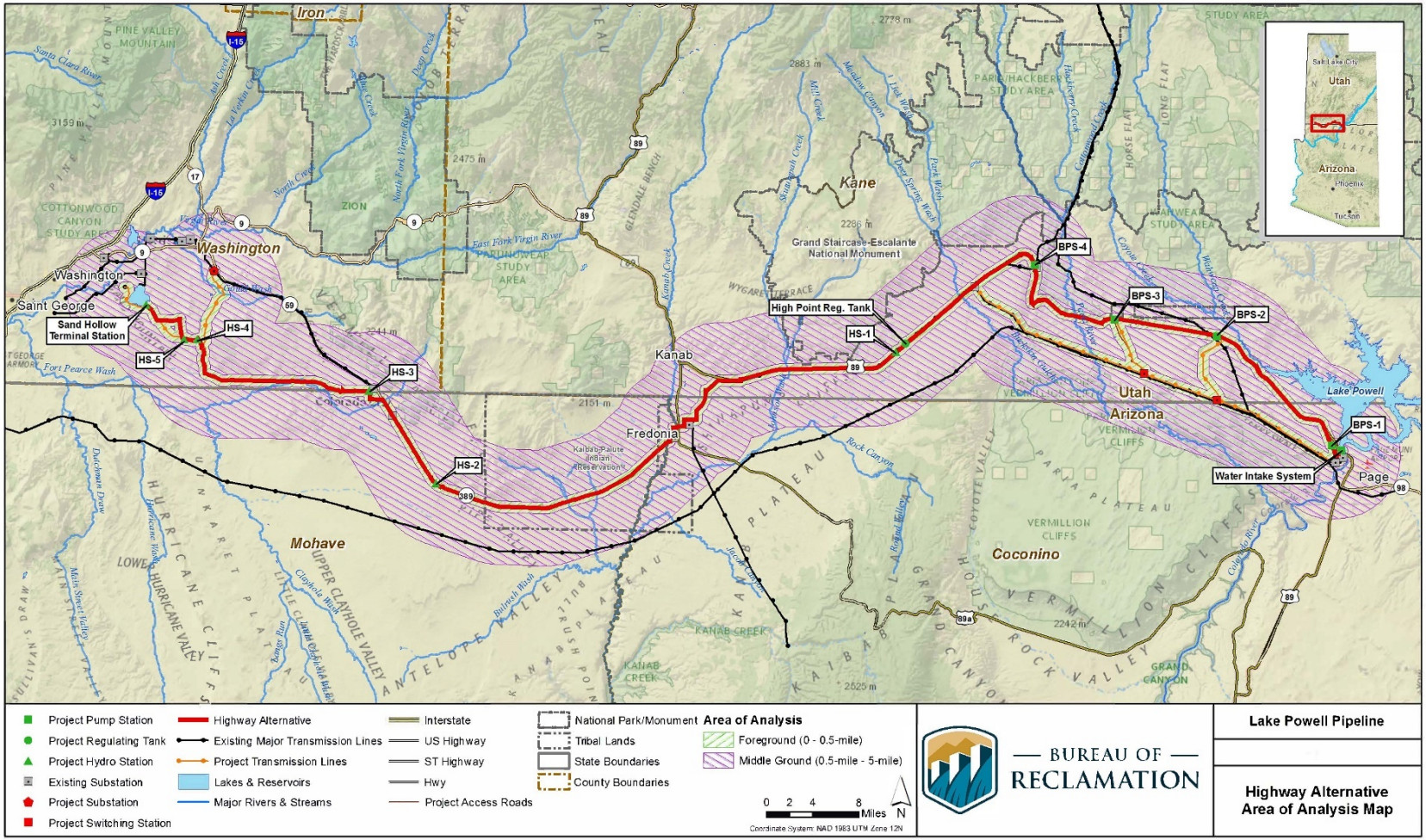


Figure 1.2-2 Highway Alternative Area of Analysis Map

Contrast Rating Analysis
The degree to which a project or activity affects the visual quality of a landscape mostly depends on the visual contrast it creates. BLM's Visual Resource Contrast Rating System (BLM 1986) was used to evaluate visual contrast between the Proposed Project and the existing landscape across both action alternatives no matter the land ownership. The contrast was measured by comparing the form, line, color, and texture of the Project components with those of the characteristic landscape. Levels of contrast are defined in Table 1.2-1. Visual effects were also evaluated in terms of effects over time. BLM's Contrast Rating System notes that short-term effects are those lasting for five years. However, for this analysis, short-term effects include those from construction to 10 years post-construction, while long-term effects are those that would exist for the life of the Proposed Project. Contrast Rating Forms are provided in Attachment A, Contrast Rating Forms.

Key Observation Points
Key observation points (KOPs) are the critical viewpoints from which contrast rating analysis was conducted. The Proposed Project was analyzed from the following:

- Most critical viewpoints (e.g., views from highways, recreation sites, and residences);
- Typical views encountered in representative landscapes, if not covered by critical viewpoints; and
- Any special project or landscape features such as wash crossings, pump station/hydro-station/substations, etc.

The KOPs included both "point" KOPs and "linear" KOPs. Point KOPs are stationary viewing points; linear KOPs are linear platforms, such as highway segments. The selection of KOPs was coordinated with the BLM and NPS staff. Linear and stationary KOPs were established in 32 locations and used for analysis. See Figures 1.2-3 and 1.2-4 for KOP locations.

Environmental Factors
KOP selections and contrast rating evaluations considered the following environmental factors:

- *Distance:* the contrast created by a project usually is less as viewing distance increases.
- *Angle of Observation:* the apparent size of a project is directly related to the angle between the viewer's line-of-sight and the slope upon which the project is to take place. As this angle nears 90 degrees (vertical and horizontal), the maximum area is viewable.
- *Length of Time the Project Is in View:* if the viewer has only a brief glimpse of the project, the contrast may not be of great concern. If, however, the project is subject to view for a long period, as from an overlook, the contrast may be very significant.
- *Relative Size or Scale:* the contrast created by the project is directly related to its size and scale as compared to the surroundings in which it is placed.
- *Recovery Time:* the amount of time required for successful revegetation should be considered. Recovery usually takes several years and goes through several phrases (e.g., bare ground to grasses, to shrubs, and to trees).
- *Spatial Relationships:* the spatial relationship within a landscape is a major factor in determining the degree of contrast.

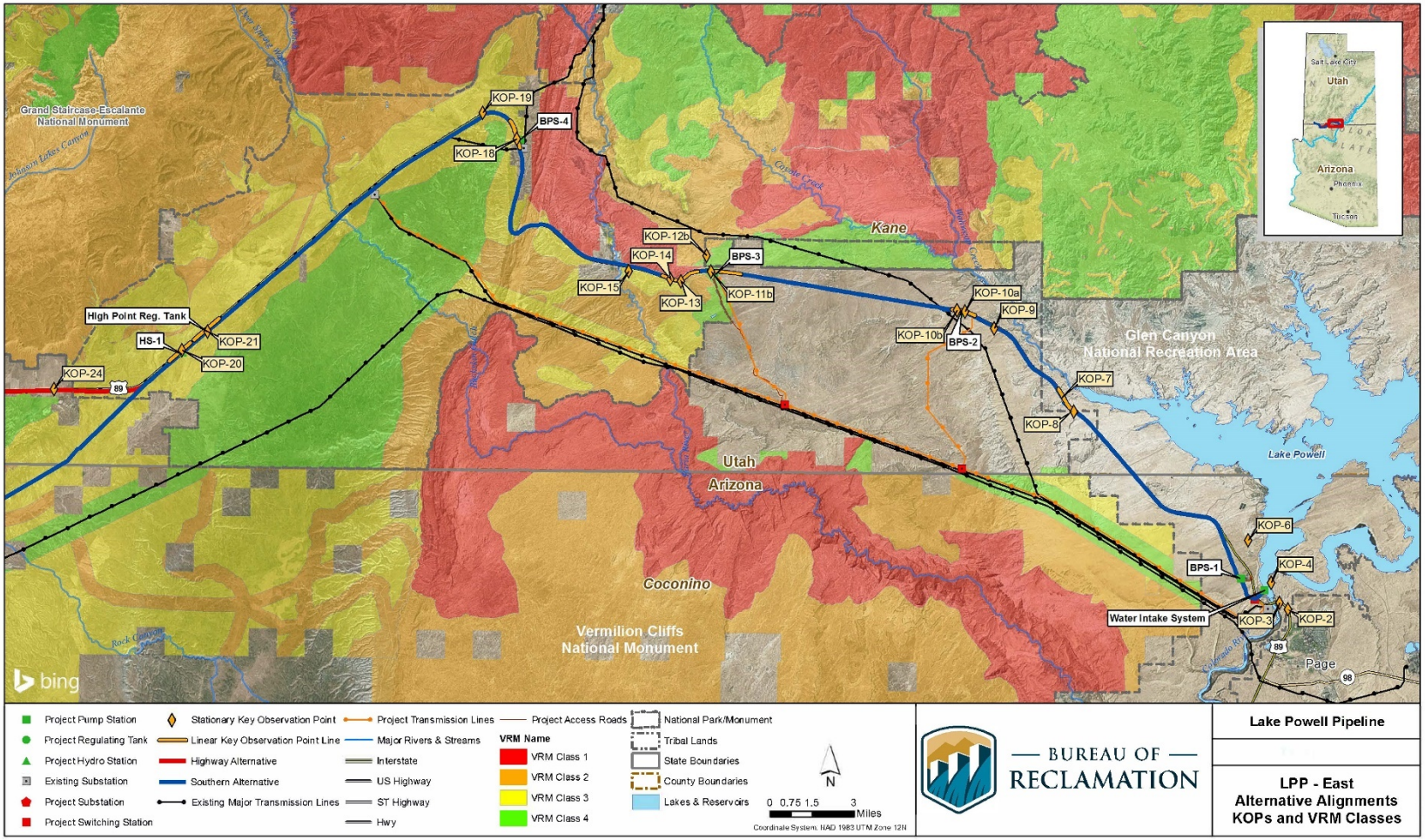


Figure 1.2-3 LPP – East Alternative Alignments KOPs and VRM Classes

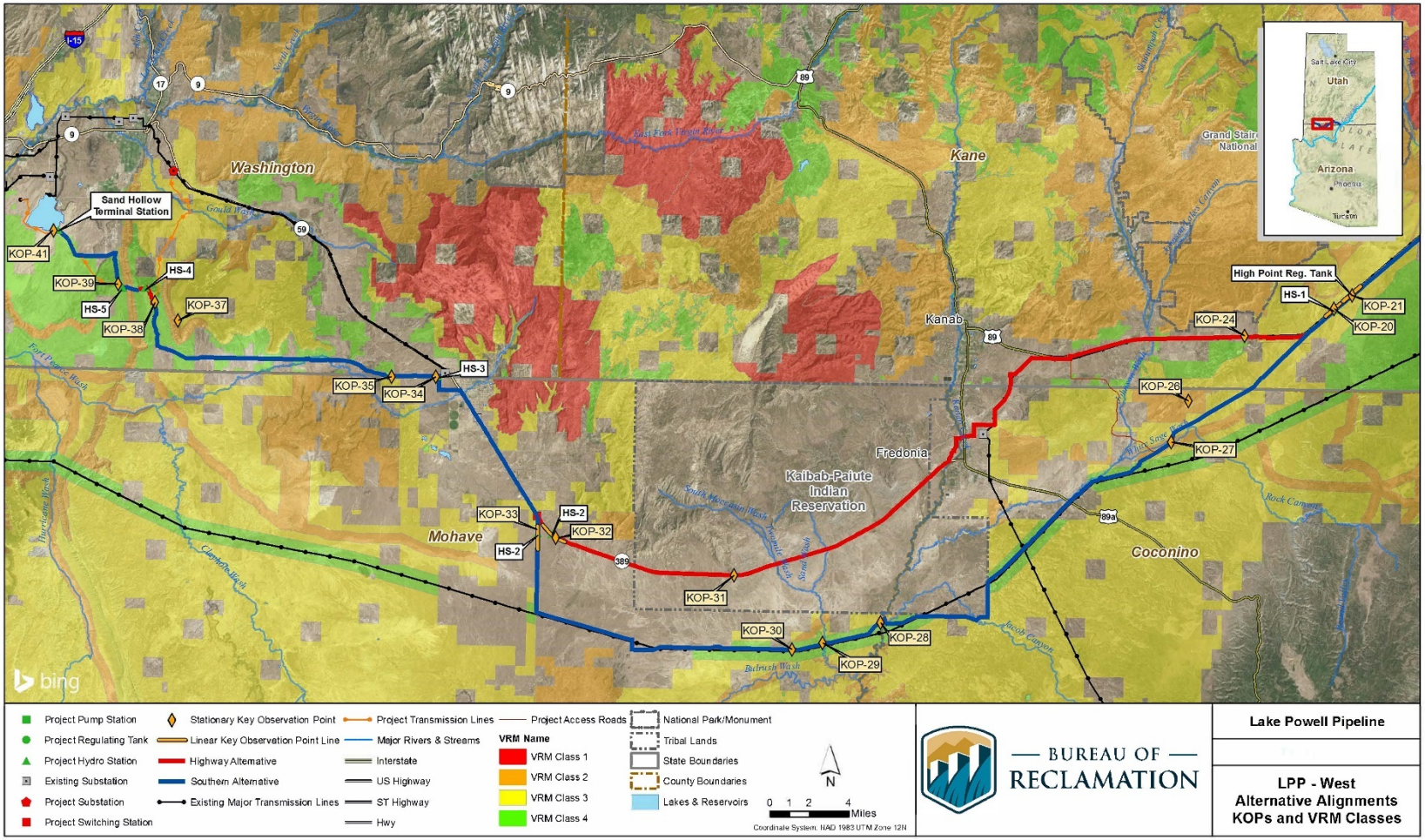


Figure 1.2-4 LPP – West Alternative Alignments KOPs and VRM Classes

Visualizations
Computer-generated visualizations of the Proposed Project components were prepared from 23 of the KOPs and depict visual conditions approximately five to 10 years after construction. The visualizations, along with corresponding contrast rating forms, are included in Attachment A, Contrast Rating Forms. The photo simulations (computer-generated visuals) were created by modeling existing and proposed conditions in a three-dimensional modeling program called 3DsMAX and composed in Adobe Photoshop. The existing and proposed landscape and site was modeled using information provided in computer-aided design or Google Earth. Using camera data from the site photos, digital cameras were recreated and aligned in the model with the existing conditions, followed by rendering the proposed conditions and composing the results into the site photography.

1.2.4.2 Visibility Analysis
Visibility analyses were performed using ArcView Spatial Analyst to identify the visibility of Proposed Project features. The visibility analyses identified where the Project components would be visible if no vegetation or structures were to screen them. These analyses, based on a "bald" landscape, reflect the worst-case scenario in determining how visible Proposed Project components are likely to be. Where vegetation is large enough to screen Proposed Project components from view, the visual effects would be minimized. The visibility analyses include the following:

- *Electric Transmission System Visibility Analysis* (Attachment B.1, Electric Transmission System Visibility Maps) shows the gradational visibility extending outwardly across the foreground and middle ground distance zones from the proposed substations and transmission lines.
- *Proposed Building Visibility Analysis* (Attachment B.2, Buildings Visibility Maps) shows the visibility extending outwardly from the buildings within a 5-mile radius.
- *Sensitive Linear KOPs Visibility Analysis* (Attachment B.3, Sensitive Linear KOPs Visibility Maps) which shows a gradational visibility of the project features in the foreground and middle ground distance zones of the scenic routes and HTs.

Gradational representations that show the relative degree (low to high) of Project component visibility was included for the electric transmission system alignments and linear KOP (scenic routes and HTs) analyses. The analyses for the proposed buildings graphically represent where the buildings would be seen or not seen out to 5 miles away.

NOTE: The visibility analysis in Attachment B.2, Buildings Visibility Maps, includes the visibility of the previously proposed 100-foot-high natural gas exhaust stacks on the booster pump stations (BPSs; in a different color). Those features are no longer part of the Proposed Project.

Distance Zones
Distance zones were used to differentiate the degree of detail that would be seen over varying distances. The distance zones were classified as foreground (0 feet to 0.5 mile) and middle ground (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 alignment's general level of visibility within each distance zone. Typically, people view foreground changes more critically than middle ground changes because people can perceive greater detail at closer range.

1.2.4.3 Change in Landscape Character

An analysis of visual dominance, scale, continuity, and contrast was used to determine the degree to which the Project components 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 Proposed 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/Magnitude of Change

Visual assessment units (VAUs) were determined by evaluating notable changes in the dominant terrain, vegetation and land use of the Project Area and resulted in the identification of 21 distinct VAUs. The VAUs and sensitive viewing platforms used for the analysis are shown on Figures 1.2-5 to 1.2-9. The magnitude of change in landscape character was based a comparison of post-project conditions with the existing landscape character of the VAUs. Results were based on the magnitude of change levels and definitions, as described in Table 1.2-1.

Table 1.2-1 Effect Thresholds for Magnitude of Change in Landscape Character and Level of Contrast from Sensitive Viewing Platforms

Level of Effect Key Crosswalk		Definitions
Contrast Rating Levels (8400-4 – Section D)	(Magnitude of Change Levels	
None	No Effect	There would be no change to the current landscape character as a result of Proposed Project construction, operation, or maintenance.
Not Applicable	Negligible	Project components would not be visible or perceived in the landscape. Landscape character would remain intact with no apparent change to existing visual elements (line, form, color, and texture) or pattern character (dominance, scale, diversity, and continuity).
Weak	Subtle	Project components would create weak contrast in the landscape and would be generally compatible with the visual setting when viewed from a sensitive viewing platform. Magnitude of change to existing landscape character would be subtle. Changes in visual pattern elements or pattern character would not attract attention and would be visually subordinate in the visual setting.
Moderate	Notable	Project components would create moderate contrast in the landscape and would be visually prominent within the visual setting when viewed from a sensitive viewing platform. Magnitude of change to existing landscape character would be notable. Changes in visual pattern elements or pattern character would attract attention
Strong	Substantial	Project components would create strong contrast in the landscape and would generally be incompatible with the visual setting when viewed from a sensitive viewing platform. Magnitude of change to existing landscape character would be substantial. Changes in visual pattern elements or pattern character would dominate the visual setting.

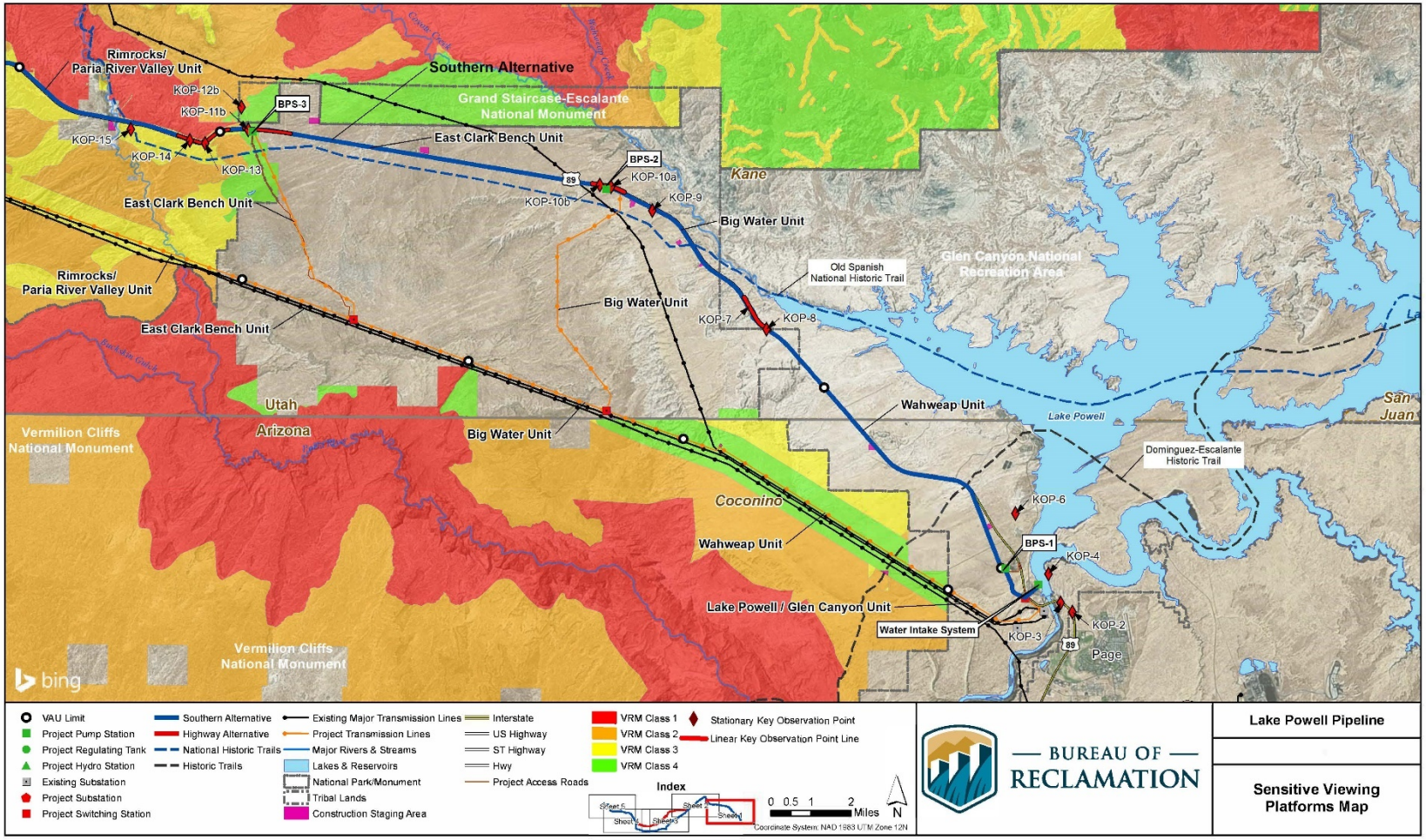


Figure 1.2-5 Sensitive Viewing Platform Map (sheet 1)

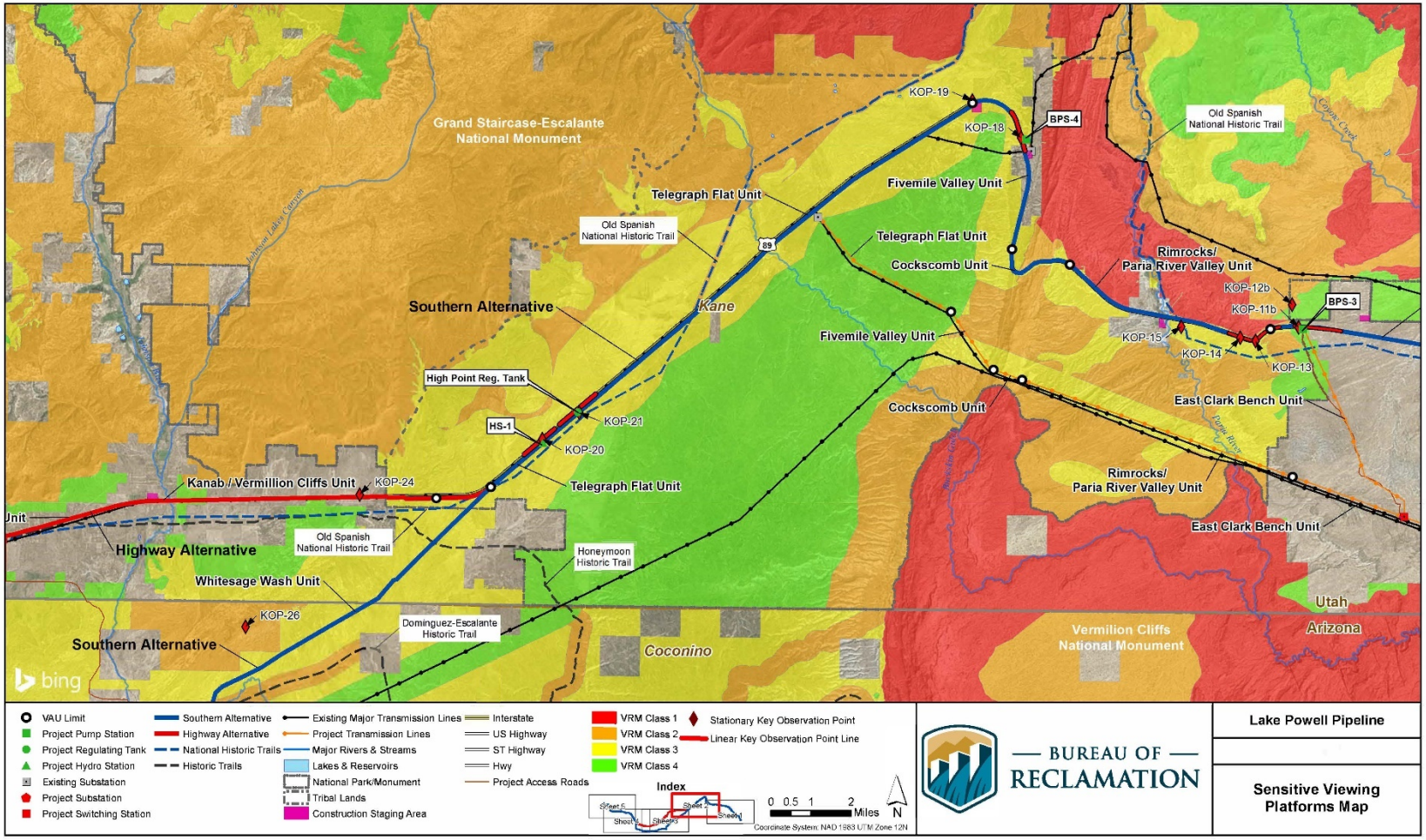


Figure 1.2-6 Sensitive Viewing Platform Map (sheet 2)

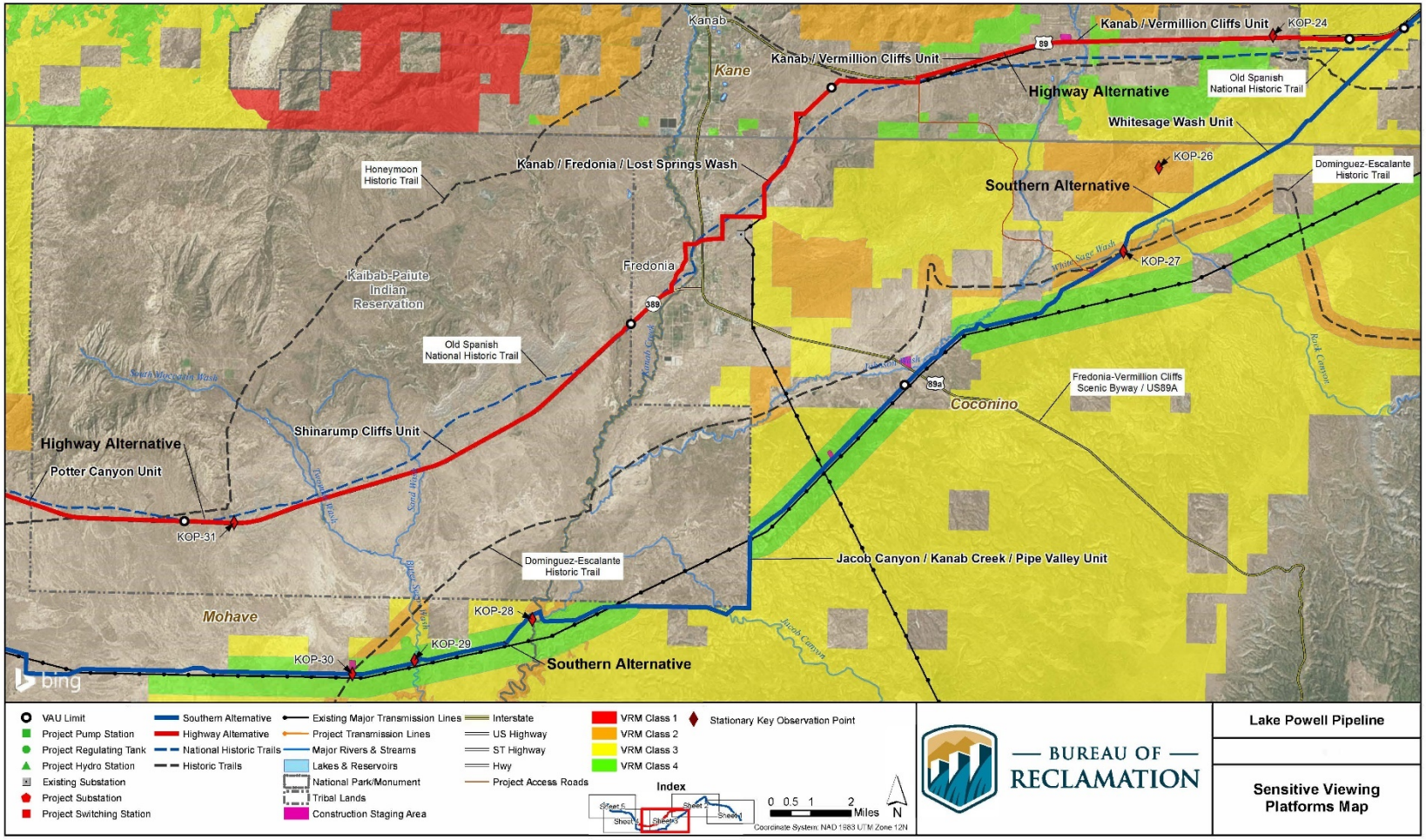


Figure 1.2-7 Sensitive Viewing Platform Map (sheet 3)

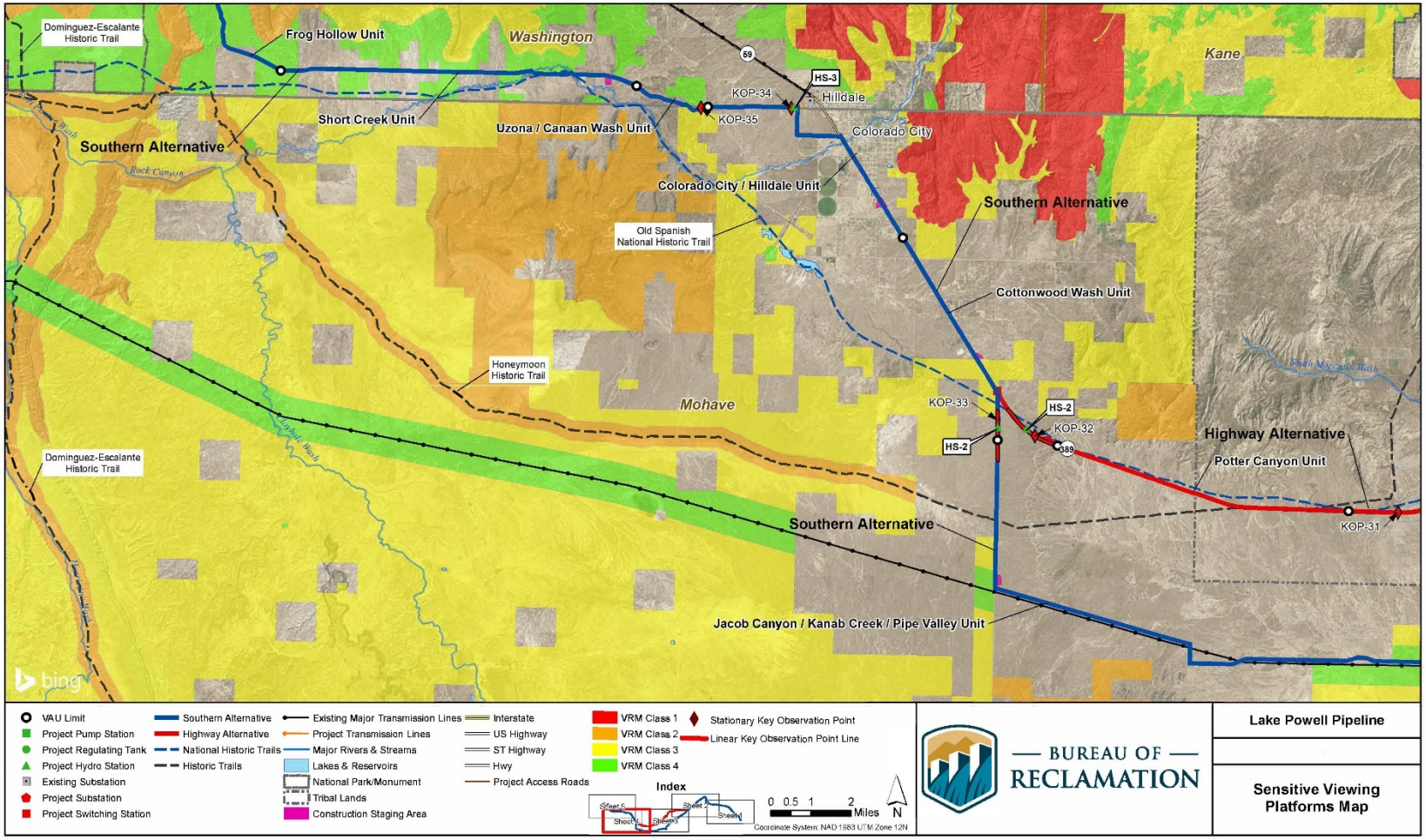


Figure 1.2-8 Sensitive Viewing Platform Map (sheet 4)

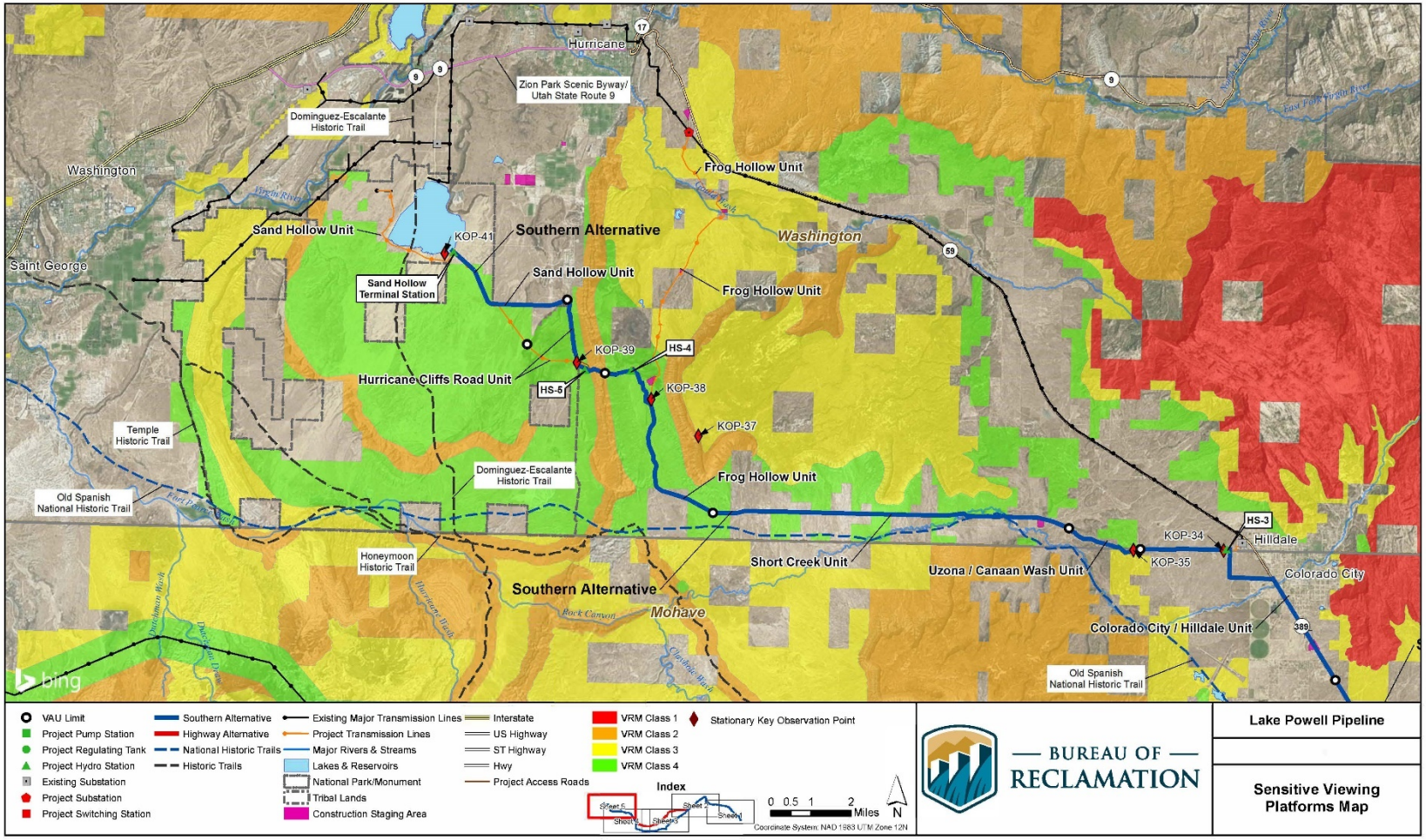


Figure 1.2-9 Sensitive Viewing Platform Map (sheet 5)

Each VAU was described in terms of its existing visual characteristics and the potential effects from Proposed Project construction. Each VAU was also evaluated by distance zone. Visibility of Proposed 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 alignments. 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 alignments would be constructed. In the visual resources effect analysis, potential effects 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.

1.2.4.4 Additional Agency Methodology

U.S. Forest Service Roads
Methodology concepts from the U.S. Department of Agriculture, Forest Service's *National Forest Management–Roads* manual were used to identify and evaluate landscape modification throughout the Proposed Project based on slope heights, visibility, angle, and duration of view (see Update of LPP Final Study Report 16 - Visual Resource [BLM 2020]). Principles from the manual were also used in development of mitigation measures to reduce potential visual effects.

Scenic Routes
The assessment of effects 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. Where Proposed Project components would be visible in the foreground and middle ground distance zones of designated scenic routes, the change in scenic quality from existing conditions to post-project conditions was evaluated based on vividness, intactness and unity—and on whether these characteristics would be maintained. Determinations regarding consistency with scenic route designations were based on whether a high level of visual quality and other intrinsic qualities required for designation would be maintained after Proposed Project construction.

The assessment of effects 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 alignments would be visible within foreground and middle ground 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 the effects from the Proposed Project would lower the scenic quality of the routes below the threshold for their designation.

1.3 Environmental Protection Measures

Environmental Protection Measures (EPMs) as outlined in the LPP Plan of Development (POD)are measures or procedures that are part of the Proposed Project and would be implemented as standard practice, including measures or procedures that could reduce or avoid adverse impacts (UDWRe 2020; provided in Appendix E, Plan of Development). EPMs would be applied regardless of landownership, except where the jurisdictional agency or landowner determines changes to the EPM(s) would ensure greater consistency with governing statutes, policies, or plans. Proper communication and coordination would occur with the jurisdictional agency, private landowner, etc., to ensure changes to EPMs are modified and applied appropriately.

The following EPMs from the POD apply to visual resources. Additional environmental protection measures related to revegetation and restoration of disturbed areas to reduce visual effects are described in the Appendix B of the POD, Sections B.1 and B.2.

B.11.1. Pumping stations, the water treatment facility, buried storage reservoir, hydroelectric generating stations, substations, transmission lines and towers, permanent fencing, permanent access roads, culvert ends, markers and other project facilities will utilize architectural details and be painted or constructed of colored block or colored materials to blend with the colors of the surrounding landscape, per BLM Manual 8400 – Visual Resources Management. Architectural details will be coordinated with BLM during final design and approved by the BLM as part of local building permit approvals. Site-specific paving and gravel may be needed and will be coordinated with the applicable agencies during final design. Visual Resources Management objectives in land use plans will be followed as applicable.

B.11.2. Lighting needed to conduct construction at night will be limited to the basic requirements to conduct the work. Lighting will be shielded and directed down towards the site and not into surrounding areas or onto roads. Lighting for night construction will be coordinated and approved by the BLM and other applicable agencies.

B.11.3. Nighttime lighting during project operations at the pumping stations, pressure reducing stations, regulating tanks, and electrical substations will either be manually controlled or programmed and used when occupied or when needed for safety and security. Lighting will be shielded and directed downwards and towards the facility site and will follow NPS night sky and International Dark Sky standards.

B.11.4. Rock cuts and other construction areas along the ROWs in sensitive visual areas or landscapes will be restored to blend with adjacent geological structure and may be painted or sprayed with an artificial desert varnish following construction completion and prior to revegetation to reduce the visual contrast. Application rates and color tint will be site-specific. Available artificial desert varnish materials used for visual resource impact mitigation purposes will be approved by the BLM prior to use.

B.11.5. Additional trees in juniper areas will be cleared to create uneven, natural appearing openings in vegetative cover adjacent to the pipeline alignment. Trees and shrubs will be feathered along the

edge of the ROW with selective thinning to create variations in density and create uneven edges. Slash piles will not be left in sensitive viewing areas.

B.11.6. Existing vegetation that screens pipeline alignments, flow-control facilities, parking lots and other features from key viewing areas will be retained if it does not impede construction activities.

B.11.7. Pitting and vertical mulching in sensitive locations may be used in coordination with the BLM to reduce contrast and visibility of the pipeline.

1.4 Existing Conditions

1.4.1 Regional Setting and Cultural Context

The Project Area is located in southwest Utah and northwest Arizona, within an elevation range of approximately 2,900 to 5,400 feet above mean sea level. The Proposed Project would begin near Glen Canyon Dam on the edge of Lake Powell in Page, Arizona, and generally follow U.S. Highway 89 to near Kanab, Utah. The Proposed Project would extend southwest through Arizona and then back into Utah to its termination near Sand Hollow Reservoir outside Hurricane, Utah.

The visual setting is influenced by the major landforms, geology, built environments, and vegetation communities found along the Proposed Project alignment. The Proposed Project would be located in the western side of the Colorado Plateau physiographic province, a 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.

Though the Project Area passes through or near several communities—the largest is Page, Arizona, with an approximate population of 17,000—much of it is in predominantly undeveloped landscapes, except for highways, roads, and utility lines. It also includes areas with high levels of cultural sensitivity to Native Americans. The Kaibab Indian Reservation (KIR) is crossed by the Highway Alternative and the Navajo Nation is within the middle ground of the eastern end of the Project Area.

Many recreational and tourist attractions in Arizona and Utah are in or in proximity to the Project Area, including Glen Canyon National Recreation Area, Grand Staircase-Escalante National Monument, Zion National Park, Paria Canyon–Vermilion Cliffs WA, Vermilion Cliffs National Monument, Pipe Spring National Monument, Kaibab National Forest, and Sand Hollow State Park. There are also several designated scenic routes, WAs and WSAs, other special designations and management areas, and HTs in the area of analysis.

Additional information about the biotic communities, cultural context, scenic routes, HTs, and special designations and management areas can be found in the LPP Final Study Report 16 – Visual Resources (UBWR 2016).

1.4.2 Existing Visual Character

In evaluating the Project Area, notable changes in the dominant terrain, vegetation, and land use resulted in the identification of 21 distinct VAUs within the Project Area, see Figures 1.4-1 to 1.4-5. The visual character of the Project Area is described by these units from east to west in Table 1.4-1.

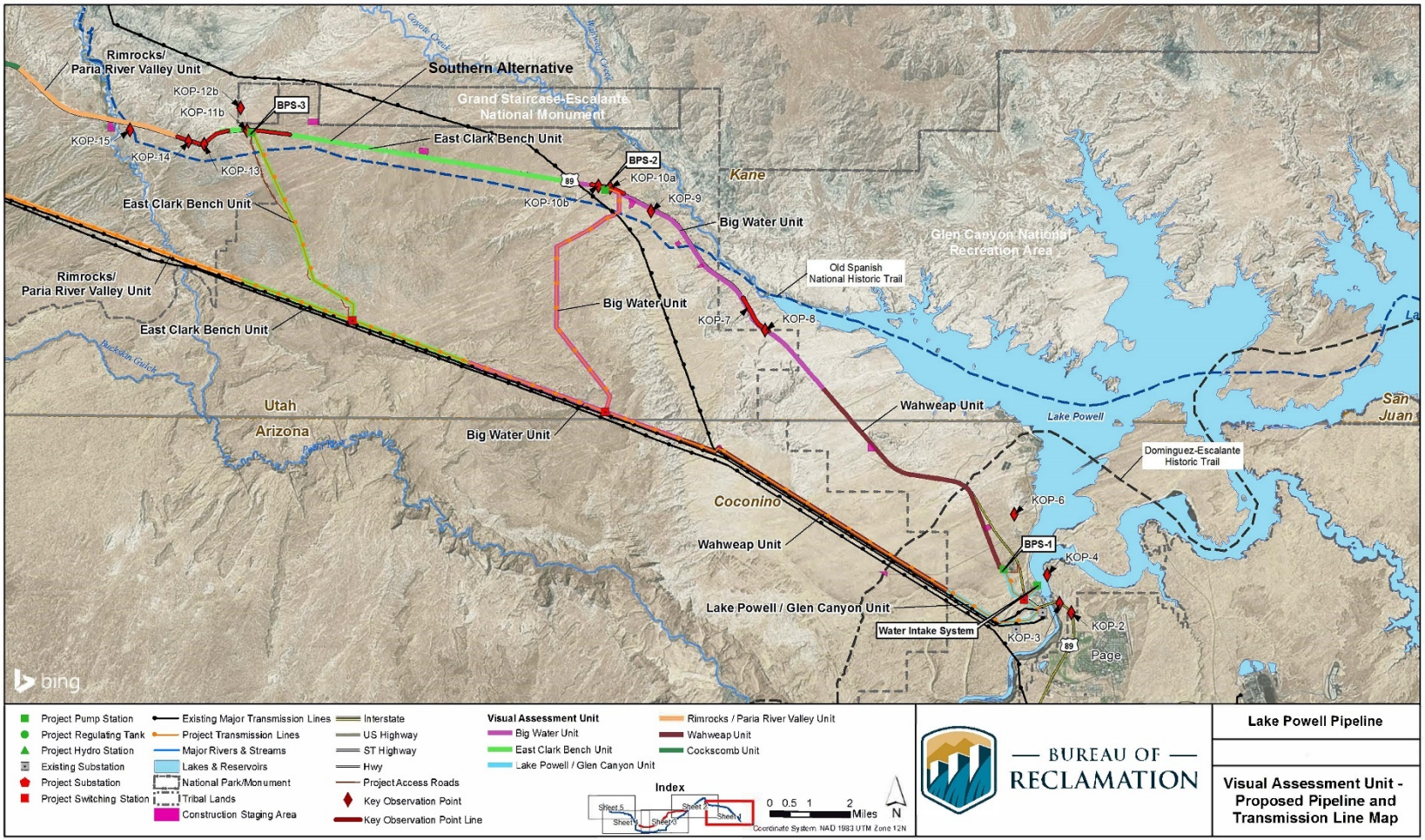


Figure 1.4-1 Visual Assessment Unit - Proposed Project and Transmission Line Map

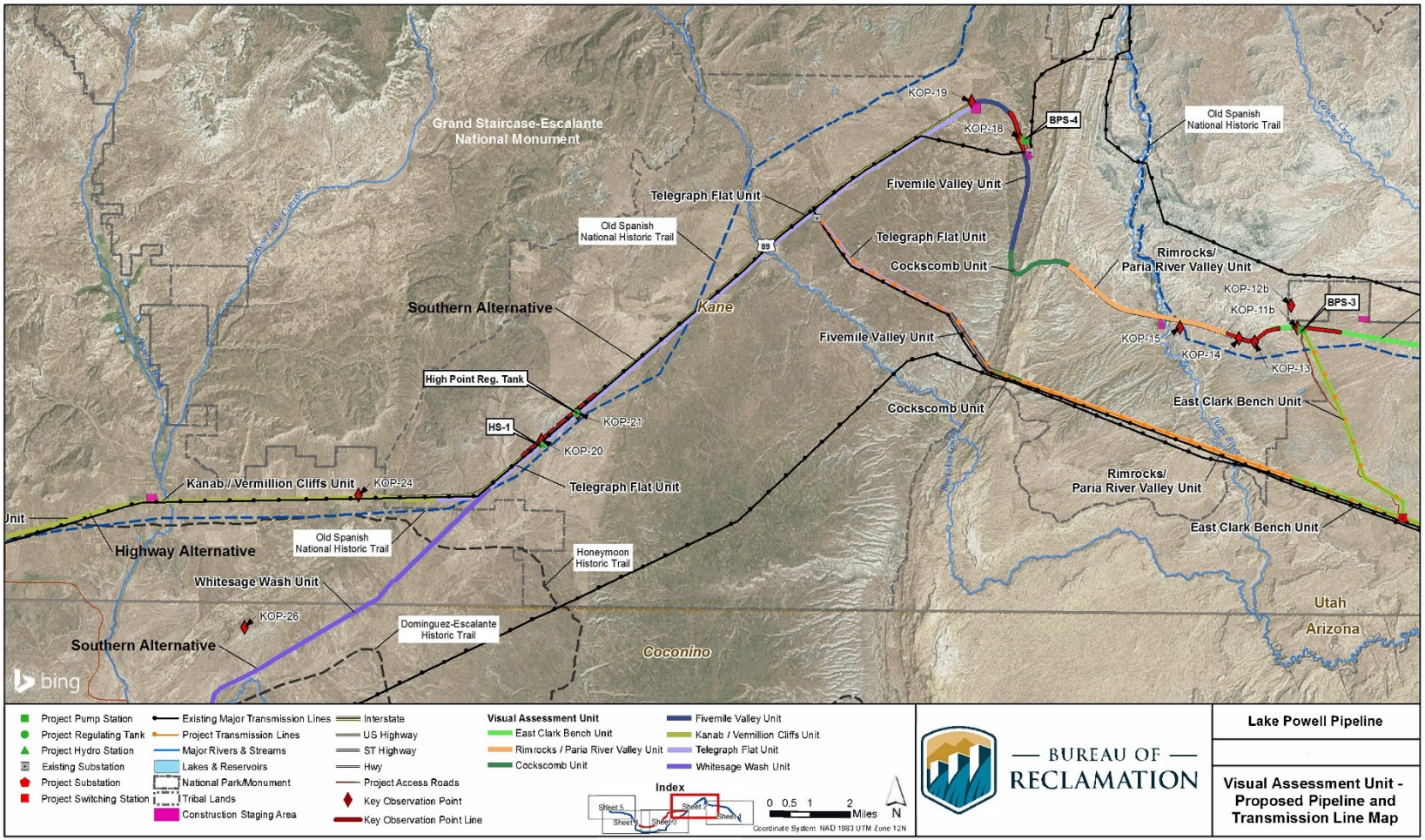


Figure 1.4-2 Visual Assessment Unit - Proposed Project and Transmission Line Map

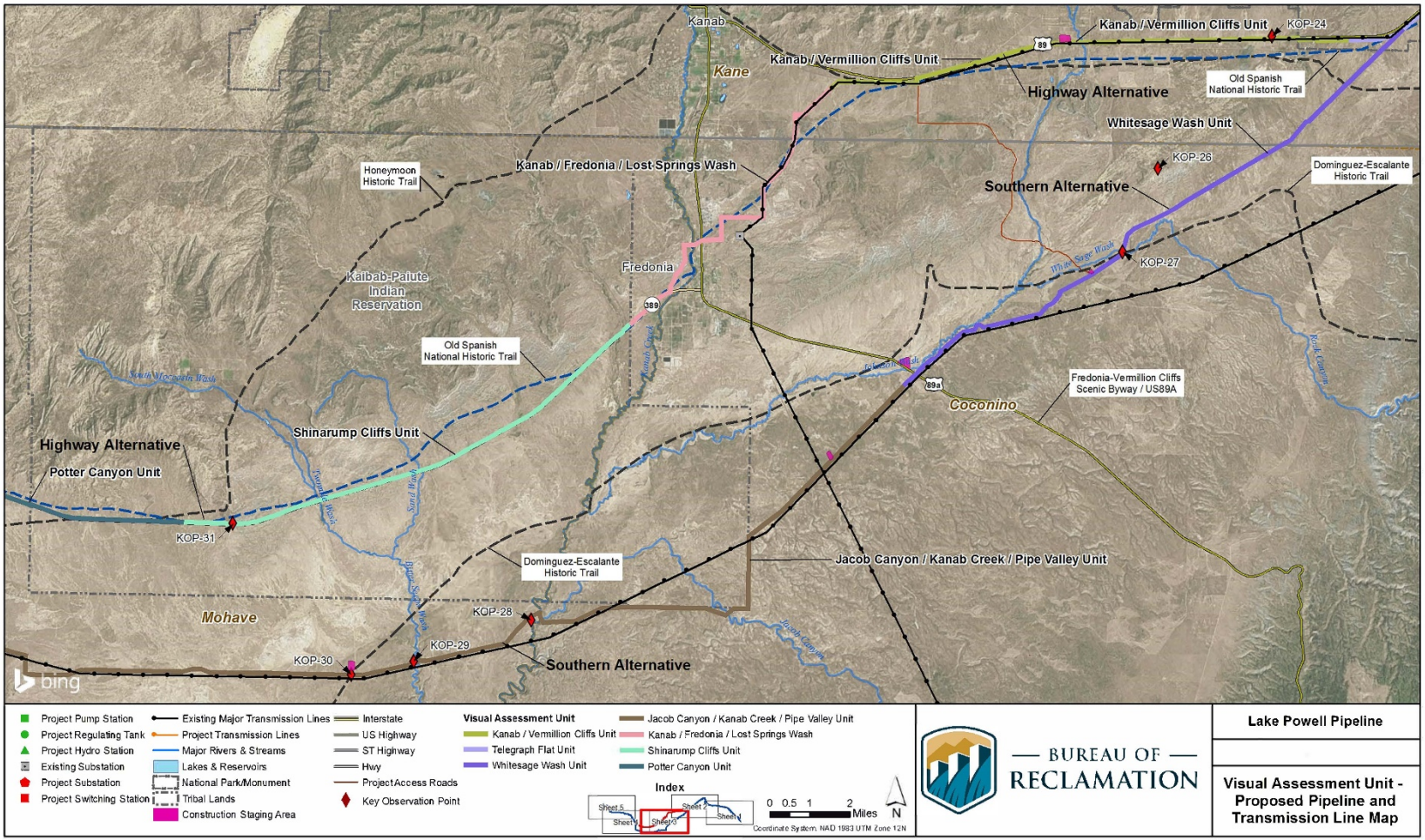


Figure 1.4-3 Visual Assessment Unit - Proposed Project and Transmission Line Map

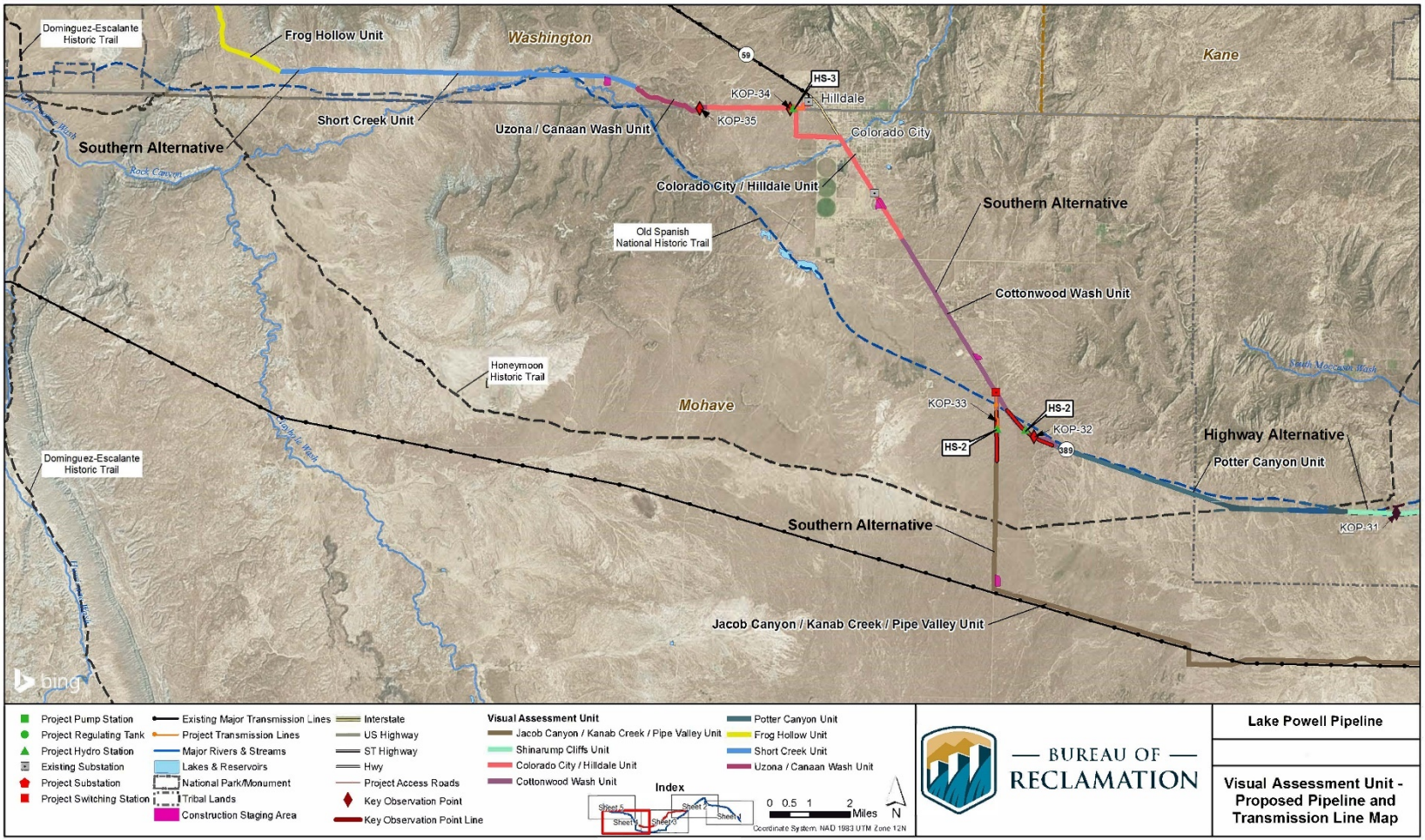


Figure 1.4-4 Visual Assessment Unit - Proposed Project and Transmission Line Map

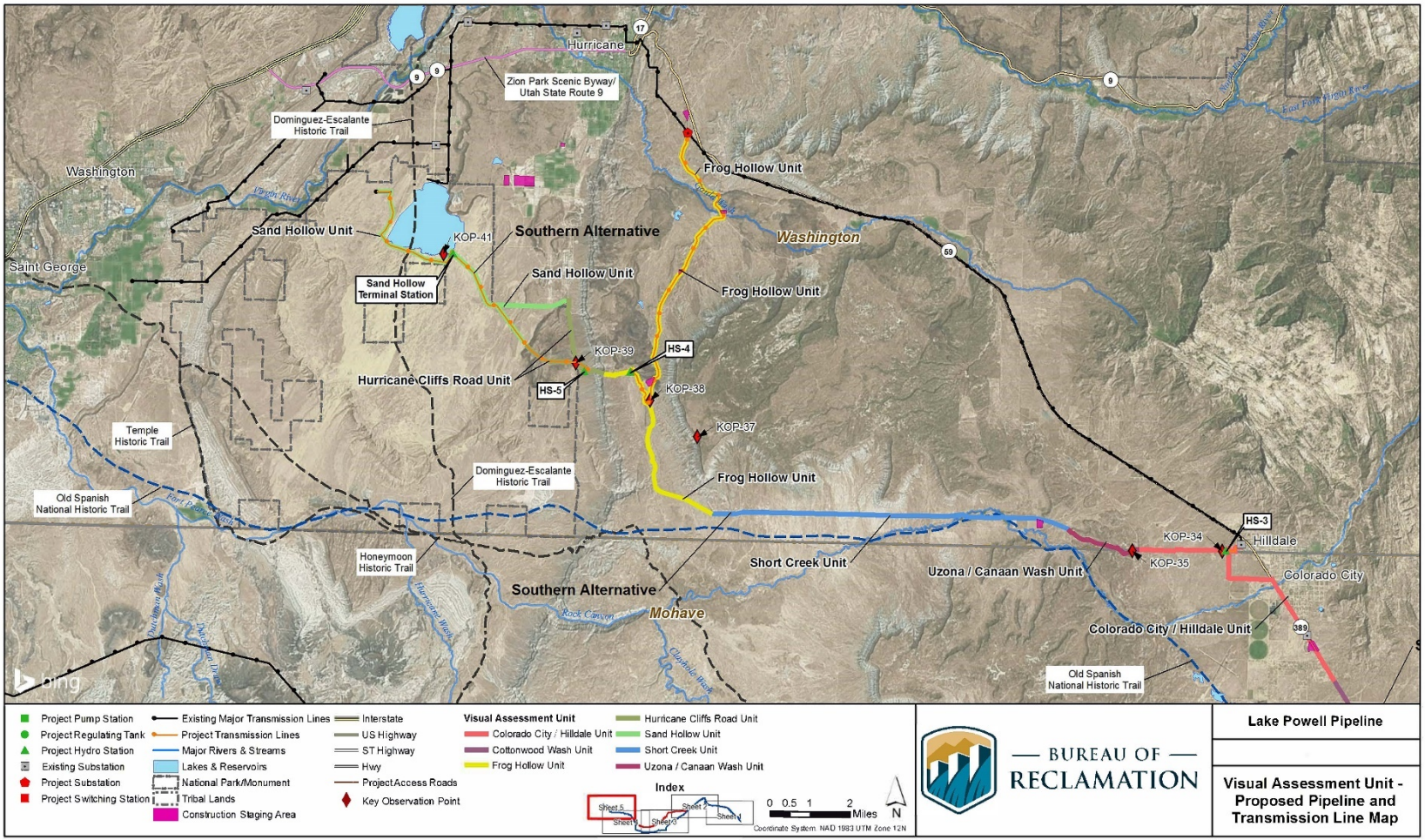


Figure 1.4-5 Visual Assessment Unit - Proposed Project and Transmission Line Map

Table 1.4-1 Visual Assessment Unit Descriptions

Visual Assessment Unit	Landform/Topography/Water	Vegetation	Other Features
1. Lake Powell/Glen Canyon (Arizona) *Both Alignments* 	• **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	• **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 middle ground; sparse to stippled • **Colors:** Greens and blue-grays; seasonal colors	• **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 (NPS and Reclamation), state (SITLA), 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 (Arizona /Utah) *Both Alignments* 	• **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, Ferry Swale	• **Representative Species:** Sage, snakeweed, blackbrush, prickly pear, Mormon tea, and grasses • **Height:** Low • **Texture/Pattern:** Medium in foreground; medium to fine in middle ground; stippled, sometimes dense • **Colors:** Greens and blue-grays; seasonal colors	• **Enclosure:** Weak to moderate • **Views:** Mostly panoramic • **Land Use:** Primarily open and undisturbed; minor rural development, utility corridor • **Ownership:** Mostly federal (NPS, BLM); also, state (SITLA), 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 (Utah) *Both Alignments* 	• **Form:** Rolling terrain; high cliffs to north, within 1.5 miles of alignment; medium-sized rock formations and cliffs to south in foreground and middle ground; 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	• **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	• **Enclosure:** Moderate to weak • **Views:** Panoramic views; expansive to east toward Lake Powell • **Land Use:** Primarily undeveloped; some rural development • **Ownership:** Primarily state (SITLA); federal (NPS, BLM), and private • **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

Table 1.4-1 Visual Assessment Unit Descriptions (continued)

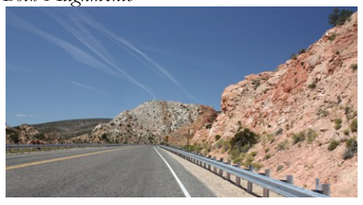
Visual Assessment Unit	Landform/Topography/Water	Vegetation	Other Features
4. East Clark Bench (Utah) *Both Alignments* 	• **Form:** Flat to slightly rolling terrain; high cliffs to north in background; flat to rolling terrain to south • **Line:** Horizontal, flowing; vertical in distant cliffs • **Color:** 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	• **Representative Species:** Sage, blackbrush, saltbush, Mormon tea, yucca, snakeweed, and high occurrence of grasses; scattered pinyon and juniper • **Height:** Low to medium • **Texture/Pattern:** Medium to dense grasses in foreground; stippled to south; relatively consistent • **Colors:** Greens and blue-grays; seasonal colors such as buff-colored grasses	• **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 (SITLA); also private and federal (BLM) • **Distinct Cultural Modifications:** Transmission lines, two rural residential developments, information/direction signs, utility poles, fences, and guardrails • **Adjacent Scenery:** Enhances overall visual quality • **Scarcity:** Common in the region
5. Rimrocks/Paria River Valley (Utah) *Both Alignments* 	• **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	• **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	• **Enclosure:** Moderate • **Views:** Primarily limited to foreground and middle ground • **Land Use:** Mostly undeveloped • **Ownership:** Primarily federal (BLM); 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
6. Cockscomb (Utah) *Both Alignments* 	• **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	• **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	• **Enclosure:** High to moderately high • **Views:** Primarily limited to foreground • **Land Use:** Mostly undeveloped • **Ownership:** Federal (BLM) • **Distinct Cultural Modifications:** Roadway and associated rock cut-faces • **Adjacent Scenery:** Greatly enhances overall visual quality • **Scarcity:** Distinctive in the region
7. Fivemile Valley (Utah) *Both Alignments* 	• **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	• **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	• **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) • **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

Table 1.4-1 Visual Assessment Unit Descriptions (continued)

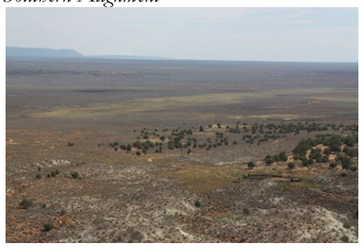
Visual Assessment Unit	Landform/Topography/Water	Vegetation	Other Features
8. Telegraph Flat (Utah) *Both Alignments* 	• **Form:** Gently rolling plains; Vermilion Cliffs in middle ground, 3 to 4 miles from alignment • **Line:** Horizontal, flowing; vertical and angled in cliffs • **Color:** Brown/beige, 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	• **Representative Species:** Sage, saltbush, snakeweed, rabbit brush, 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	• **Enclosure:** Weak • **Views:** Open, panoramic in all directions • **Land Use:** Mostly undeveloped • **Ownership:** Nearly all federal (BLM); 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
9. Kanab/Vermilion Cliffs (Utah) *Highway Alignment* 	• **Form:** Flat to rolling; Vermilion Cliffs immediately to north; Whites age 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, Whites age Wash, Crescent Butte, Thompson Point, Hells Bellows Wash and Seaman Wash	• **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	• **Enclosure:** Moderate, as Vermilion Cliffs shift within 0.5 to 1.0 mile of alignment • **Views:** Limited to middle ground to north; panoramic views to the south • **Land Use:** Rural fringe of Kanab • **Ownership:** Primarily private; also federal (BLM) • **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
10. White Sage Wash (Arizona / Utah) *Southern Alignment* 	• **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:** Whites age Wash, Johnson Wash, Shinarump Cliffs, Buckskin Mountain and Muggins Flat	• **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	• **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 ASLD • **Distinct Cultural Modifications:** Transmission lines and towers, OHV roads, fences, tanks, and other grazing-related features • **Adjacent Scenery:** Enhances overall visual quality • **Scarcity:** Common in the region

Table 1.4-1 Visual Assessment Unit Descriptions (continued)

Visual Assessment Unit	Landform/Topography/Water	Vegetation	Other Features
11. Kanab/Fredonia/Lost Springs Wash (Arizona/Utah) *Highway Alignment* 	• **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	• **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	• **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 ASLD; 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
12. Jacob Canyon/Kanab Creek/Pipe Valley (Arizona) *Southern Alignment* 	• **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	• **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 middle ground; 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	• **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 ASLD • **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
13. Shinarump Cliffs (Arizona) *Highway Alignment* 	• **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 Vermilion red • **Texture:** Fine to medium; coarse, striated cliff faces • **Distinct Natural Features Visible:** Shinarump Cliffs, Riggs Flat, Sandy Canyon Wash, Sand Wash and Two-mile Wash	• **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	• **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 middle ground by adjacent cliffs to north; expansive and panoramic views in other directions • **Land Use:** Mostly undeveloped • **Ownership:** Tribal • **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

Table 1.4-1 Visual Assessment Unit Descriptions (continued)

Visual Assessment Unit	Landform/Topography/Water	Vegetation	Other Features
14. Potter Canyon (Arizona) *Highway Alignment* 	• **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 vermilion red • **Texture:** Fine to medium; coarse, striated cliff faces • **Distinct Natural Features Visible:** Vermilion Cliffs, Potter Canyon, Pipe Valley and Cedar Ridge	• **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	• **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 middle ground by adjacent cliffs to north; expansive and panoramic views in other directions • **Land Use:** Mostly undeveloped • **Ownership:** Tribal, ASLD 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
15. Cottonwood Wash (Arizona) *Both Alignments* 	• **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 vermilion red • **Texture:** Generally fine; coarse, blocky, striated cliff faces • **Distinct Natural Features Visible:** Vermilion Cliffs, Cottonwood Wash and Cedar Ridge	• **Representative Species:** Sage, snakeweed, saltbush, rabbit brush 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	• **Enclosure:** Moderate to weak; Vermilion Cliffs 2 to 5 miles from alignment • **Views:** Limited to middle ground by cliffs to north and east; open and panoramic in other directions • **Land Use:** Mostly undeveloped and rural; some agricultural • **Ownership:** Mostly private; also ASLD 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
16. Colorado City/Hildale (Arizona) *Both Alignments* 	• **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 vermilion red • **Texture:** Generally fine; coarse, blocky, striated cliff faces • **Distinct Natural Features Visible:** Vermilion Cliffs, Cottonwood Point and Short Creek	• **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	• **Enclosure:** Moderate; Vermilion Cliffs within 1.0 mile of the alignment • **Views:** Limited to middle ground 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; also STILA • **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
17. Uzona-Canaan Wash (Arizona/ Utah) *Both Alignments* 	• **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 Canaan Gap to the west	• **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	• **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) and private • **Distinct Cultural Modifications:** Hiking and OHV trails; other ground disturbance • **Adjacent Scenery:** Greatly enhances overall visual quality • **Scarcity:** Common in the region

Table 1.4-1 Visual Assessment Unit Descriptions (continued)

Visual Assessment Unit	Landform/Topography/Water	Vegetation	Other Features
18. Short Creek (Utah) *Both Alignments* 	• **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)	• **Representative Species:** Sage, rabbit brush, 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	• **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 middle ground on east end; expansive and panoramic on west end • **Land Use:** Farming; ranching • **Ownership:** Federal (BLM), state (SITLA) 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
19. Frog Hollow (Utah) *Both Alignments* 	• **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	• **Representative Species:** Sage, rabbit brush, 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	• **Enclosure:** Varies; high to moderately low • **Views:** Varies; limited to expansive and panoramic • **Land Use:** Mostly undeveloped and recreational • **Ownership:** Mostly federal (BLM); private and state (SITLA) • **Distinct Cultural Modifications:** Ranch/educational facility (Olympus Academy); water catchment facility; several OHV roads • **Adjacent Scenery:** Greatly enhances overall visual quality • **Scarcity:** Distinctive, though somewhat similar to other areas in region
20. Hurricane Cliffs Road (Utah) *Both Alignments* 	• **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	• **Representative Species:** Creosote bush, Mormon tea, snakeweed, yucca, rabbit brush and grasses • **Height:** Low • **Texture/Pattern:** Medium in foreground and fine in background; even to stippled and gradated; sparse • **Colors:** Green; seasonal colors	• **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

Table 1.4-1 Visual Assessment Unit Descriptions (continued)

Visual Assessment Unit	Landform/Topography/Water	Vegetation	Other Features
21. Sand Hollow (Utah) *Both Alignments* 	• **Form:** Flat to rolling terrain with mesas, rock formations, sand dunes; unit include large reservoir • **Line:** Horizontal, sloped, rounded; 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	• **Representative Species:** Sage, rabbit brush and snakeweed; scattered to clustered creosote bush • **Height:** Low • **Texture/Pattern:** Medium in foreground; fine in background; even and stippled • **Colors:** Greens and grays; seasonal colors	• **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

Key:
ASLD = Arizona State Development Land
BLM = Bureau of Land Management
NPS = National Park Service
OHV = off-highway vehicle
Reclamation = Bureau of Reclamation
SITLA = Utah School Institutional Trust Lands

1.4.2.1 BLM Visual Resource Inventory

The identification and evaluation of visual resources on BLM-administered lands is documented in an office's visual resource inventory (VRI). This systematic process includes inventorying and analyzing these factors:

- *Scenic Quality Rating Analysis* – assessing and rating the intrinsic scenic quality of a particular tract of land.
- *Sensitivity Level Analysis* – measuring the public concern for the scenic quality of the tract.
- *Distance Zones* – classifying the distance from which the landscape is most commonly viewed.

These three factors are combined to determine VRI Classes which are used to inform land use and project planning efforts. The VRI Classes and contributing factors are shown on Figures 1.4-6 to 1.4-9 and detailed in Table 1.4-2. VRI data is available for BLM-managed lands in Grand Staircase-Escalante National Monument (GSENM)/Kanab Escalante Planning Area, St. George Field Office, and Arizona Strip Field Office/Vermilion Cliffs National Monument (VCNM).

Table 1.4-2 BLM Visual Resource Inventory Classes and Factors – Miles Crossed by Proposed Project Alignments

Alignments	Miles	Visual Resource Inventory Class				Visual Sensitivity Rating				Scenic Quality Rating				Visual Distance Zones			
		Class II	Class III	Class IV	N/A[a]	High	Moderate	Low	N/A[a]	A	B	C	N/A[a]	FM	BG	SS	N/A[a]
Both Alternatives	**88**	6	42	16	25	11	32	21	25	2	52	10	25	50	0	13	25
Highway Alternative	**46**	1	14	0	30	13	3	0	30	1	4	12	30	15	0	0	30
Southern Alternative	**52**	1	23	25	3	23	9	17	3	1	1	47	3	39	9	1	3
Transmission Lines[b]	**70**	16	16	9	29	15	14	12	29	3	31	7	29	31	4	6	29
Totals	**-**	**24**	**95**	**49**	**88**	**62**	**57**	**50**	**88**	**6**	**87**	**76**	**88**	**136**	**14**	**20**	**88**

Notes:
(a) Miles of BLM-managed lands where visual resource inventory data does not exist.
(b) Transmission line alignments are the same for both alternatives.
Key:
BG = Background (5-15 miles)
FM = Foreground/Middle ground (0-5 miles)
N/A = not applicable
SS = Seldom Seen (blocked from view or beyond 15 miles)

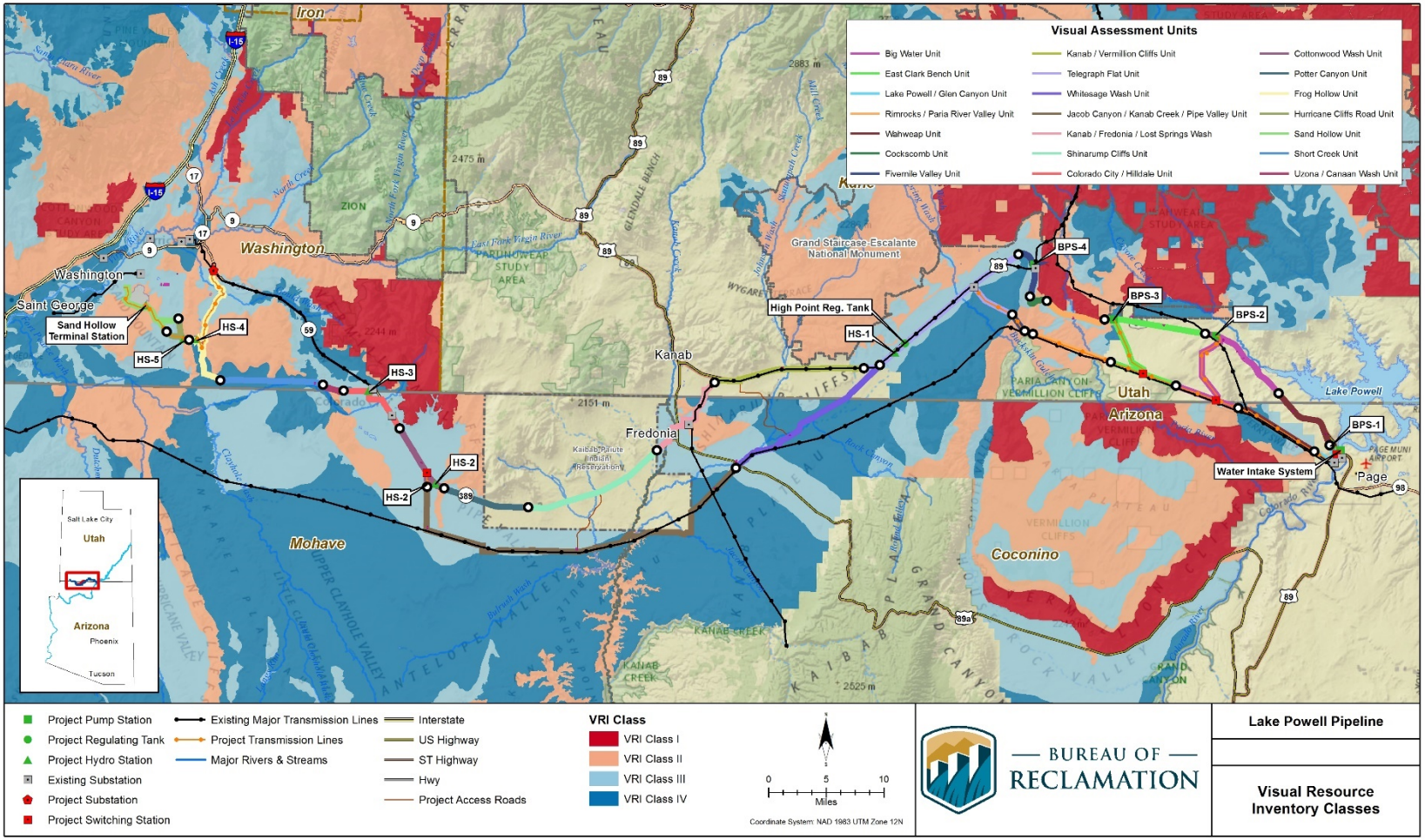


Figure 1.4-6 Visual Resource Inventory Classes

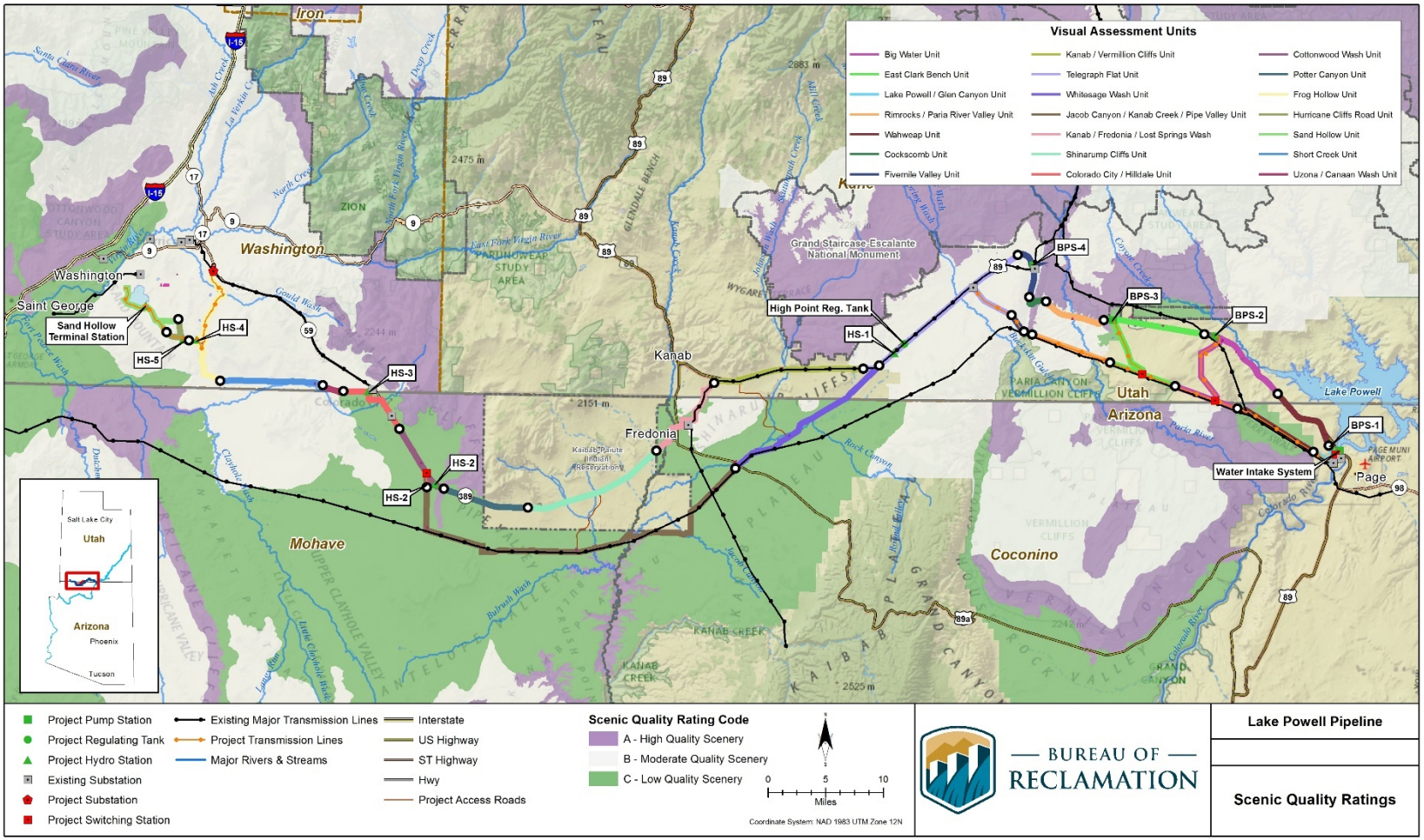


Figure 1.4-7 BLM Visual Resource Inventory Scenic Quality Ratings

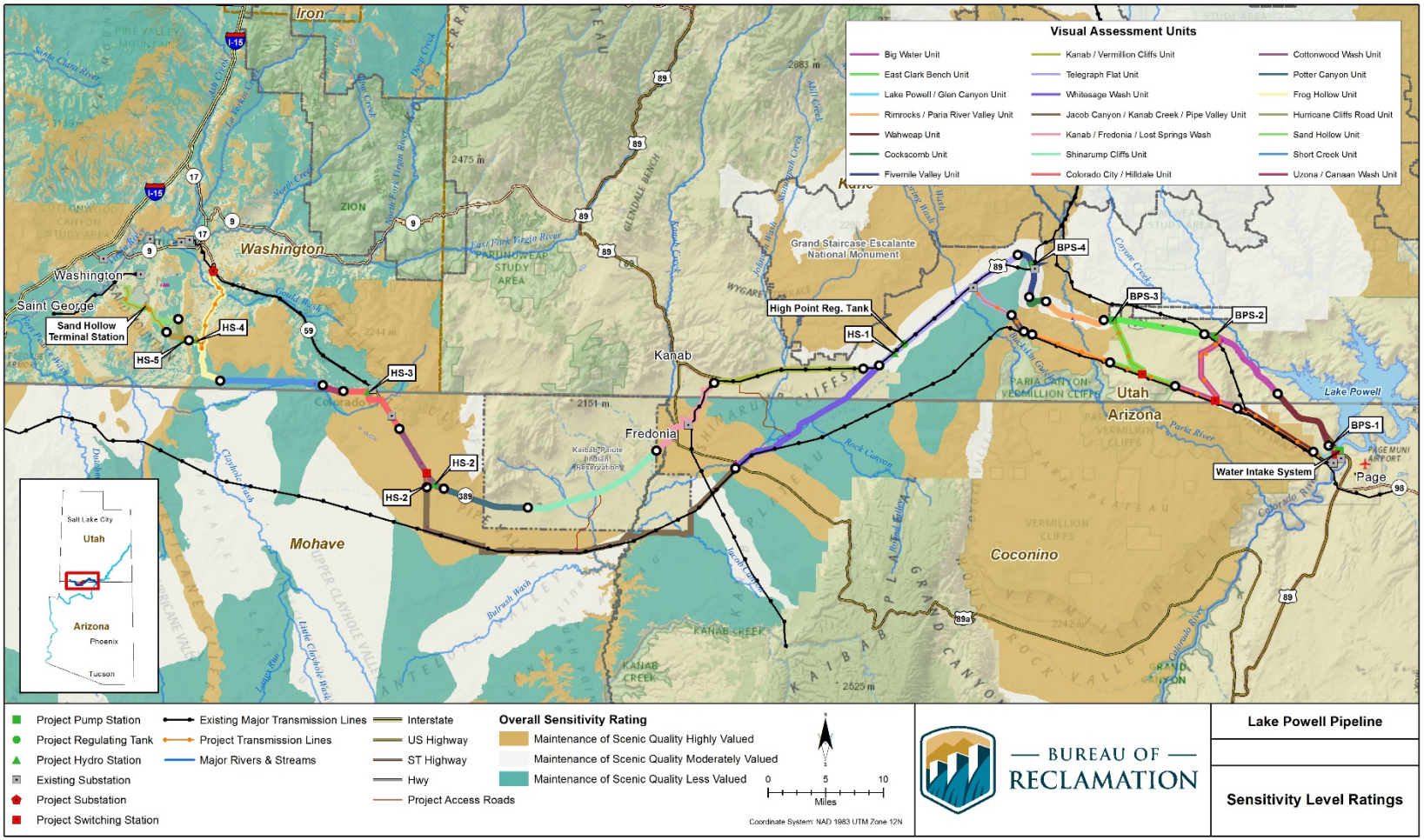


Figure 1.4-8 BLM Visual Resource Inventory Sensitivity Level Ratings

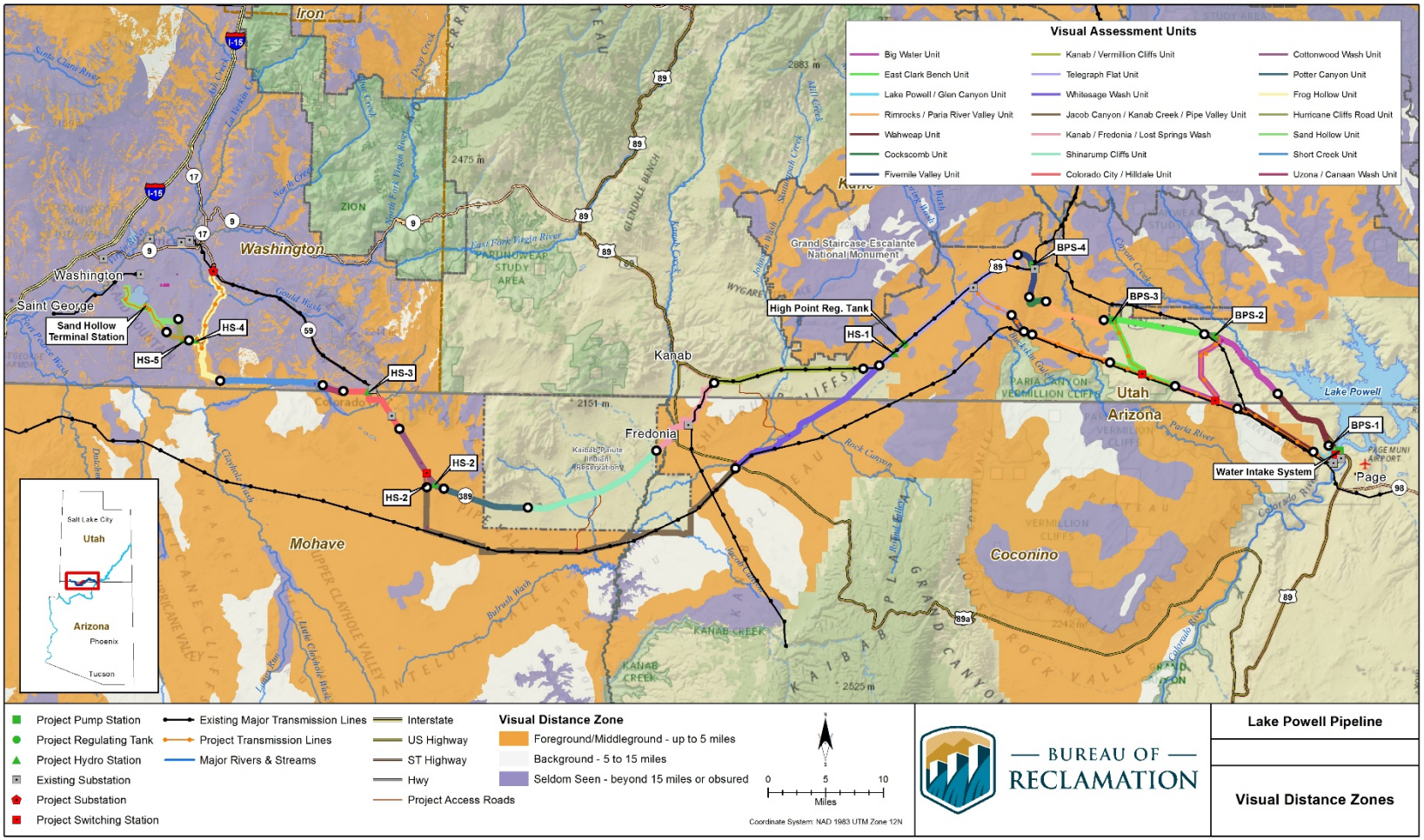


Figure 1.4-9 BLM Visual Resource Inventory Visual Distance Zones

Of the BLM-managed lands with VRIs, less than 10 miles of either pipeline alignment, and less than 20 miles of transmission lines, run through VRI Class II areas, those most valued for high quality scenery. The Southern Alternative would pass through 10 more miles of areas highly sensitive to change than the Highway Alternative. The Southern Alternative would pass through 35 more miles of area with low quality scenery than the Highway Alternative. Both Alternatives would be primarily within the Foreground/Middle Ground Zone, which extends out to 5 miles from commonly used viewing platforms, though the Southern Alternative would have 10 miles in the Background and Seldom Seen Zones while the Highway Alternative has none.

1.4.3 Visual Management Objectives

BLM and NPS have programs for evaluating existing visual resources and determining whether a proposed activity or project meets management objectives. These programs, along with specific objectives for the area of analysis, are described below.

1.4.3.1 BLM Visual Resource Management Objectives

In the VRM process, BLM 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 effects of activities on visual resources. The objectives, as described in the BLM VRM manual, are listed below. Figure 1.4-10 shows the VRM management classes. The miles of Proposed Project alignments and approximate percentage of each management class are noted in Table 1.4-3. Additional visual resource management direction for the BLM field offices is included in the of the Updated LPP Final Study Report 16 – Visual Resources (BLM 2020).

- 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 negligible 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.

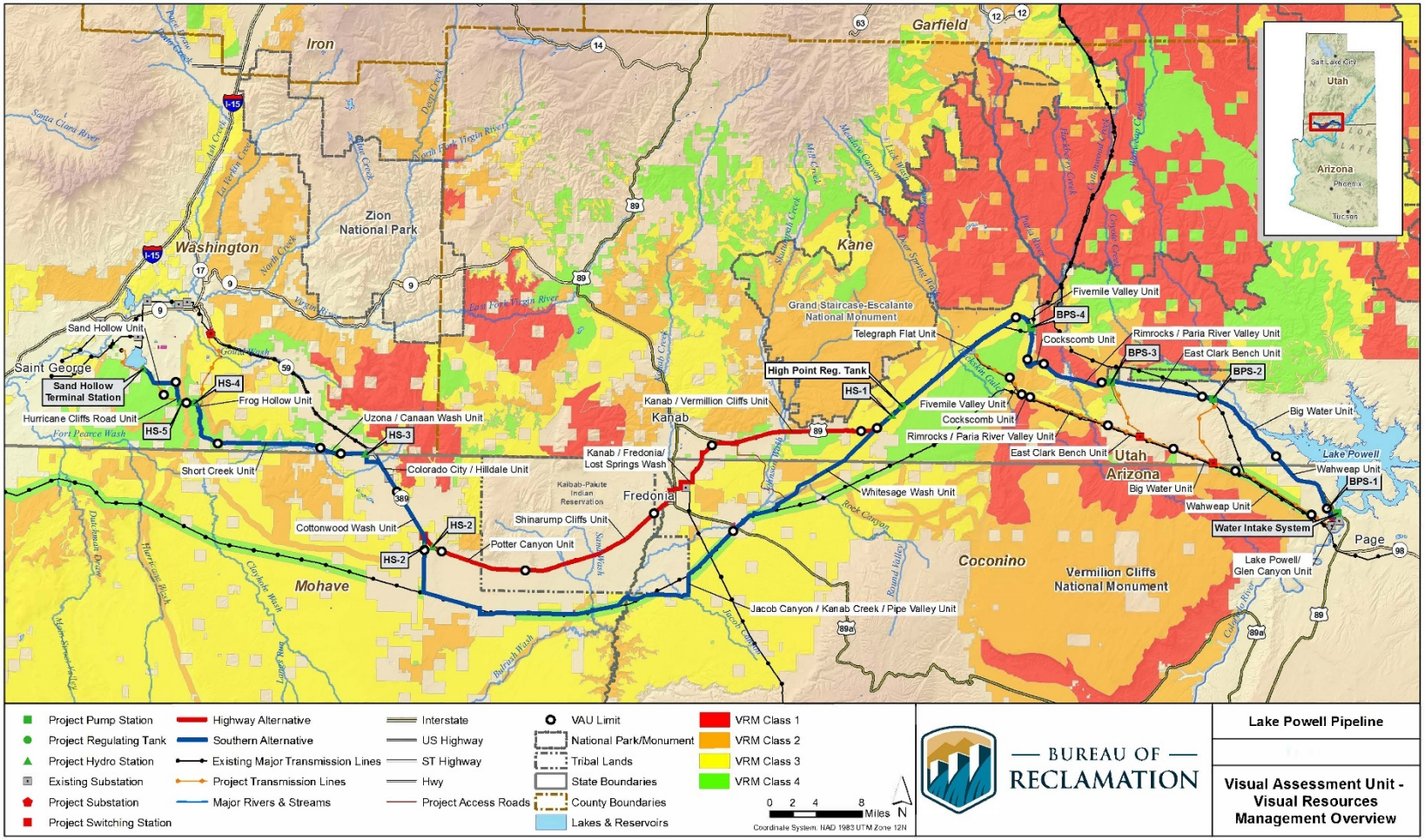


Figure 1.4-10 Visual Assessment Unit -Visual Resources Management Overview

Table 1.4-3 BLM Visual Resource Management Classes Crossed by Proposed Project Alignments[a]

VRM Class	Approximate Distance in Miles	Approximate Percentage of Total
Southern Alignment		
II	2.9	3
III	51.1	51
IV	46.3	46
Electric Transmission System Alignment Associated with the Southern Alignment		
II	0.4	1
III	14.0	35
IV	26.0	64
Highway Alignment		
II	0.4	1
III	49.3	76
IV	15.3	23
Electric Transmission System Alignment Associated with the Highway Alignment		
II	0.4	1
III	13.1	33
IV	26.0	66

Note:
(a) Calculations reflect only miles of Proposed Project alignments that cross BLM-managed lands.
Key:
VRM = visual resource management

Across BLM-managed lands, less than 5 percent of either alternative cross VRM Class II areas. The Southern Alternative crosses about 65 miles of VRM Class III areas and about 72 miles of VRM Class IV areas. The Highway Alternative crosses about 62 miles of VRM Class III areas and about 41 miles of VRM Class IV areas.

1.4.3.2 NPS Visual Resource Objectives

Glen Canyon National Recreation Area
The *National Park Service, Glen Canyon National Recreation Area and Rainbow Bridge National Monument Foundation Document* (NPS 2014) states that, "Glen Canyon National Recreation Area, located at the center of the Colorado Plateau, provides for public enjoyment through diverse land- and water-based recreational opportunities, and protects scenic, scientific, natural, and cultural resources on Lake Powell, the Colorado River, its tributaries, and surrounding lands."

The NPS does not have a specific management program for GCNRA visual resources. However, the GCNRA General Management Plan does identify management zones and objectives for those zone that apply to VRM (see Update of LPP Final Study Report 16 – Visual Resources [BLM 2020]).

The GCNRA Natural Zone includes the recreation area's outstanding scenic resources, relatively undisturbed areas isolated and remote from the activities of man, or areas bordering on places with established land-use practices complimentary to those of the Natural Zone. Maintenance of isolation and natural processes while allowing grazing activities is the management strategy. The GCNRA Natural Zone has similar management objectives to the BLM VRM Class I and II objectives.

The GCNRA Recreation and Resource Utilization Zone (RRU) consists of areas possessing somewhat less scenic value than the Natural Zone, greater susceptibility to the activities of man,

potential or actual mineral resources, or value for utility rights-of-way (ROWs) or development. The GCNRA RRU is characterized by maintenance of natural processes while allowing to the extent possible both mining and grazing as well as maintenance of natural processes, enhancement of fish and game populations, and consumption of renewable and non-renewable resources subject to protection of recreational values. The GCNRA RRU has similar management objectives to the BLM VRM Class III objectives.

The GCNRA Development Zone centers around the existing developed areas, in which provision of visitor services and maintenance of facilities is practiced. Relatively elaborate and permanent structures necessary to support recreational activities are appropriate in the GCNRA Development Zone. The area immediately surrounding Glen Canyon Dam as well as the associated utility structures are within the Development Zone. The GCNRA Development Zone has similar management objectives to the BLM VRM Class IV objectives.

Proposed Project features would be located on both GCNRA RRU and Development Zone areas. For consistency in assessing potential effects on the visual landscape, the visual resource analysis methodology outlined in this report was also used to assess effects on GCNRA.

Pipe Spring National Monument
The NPS does not have specific visual resource management program for Pipe Spring National Monument (PSNM). For consistency in assessing potential effects on the visual landscape, the visual resource analysis methodology outlined in this report was also used to assess effects on PSNM.

1.4.3.3 Arizona Scenic Routes
In Arizona, the Arizona Department of Transportation oversees the process of designation of scenic routes and works with a governor-appointed Parkways, Scenic, and Historic Roads Advisory Committee. Arizona's Fredonia–Vermilion Cliffs Scenic Road/U.S. Highway 89A 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. (See the Update of LPP Final Study Report 16 - Visual Resources [BLM 2020].)

2 Results/Environmental Consequences

Environmental consequences in terms of visual resource effects are defined as the change in aesthetic value resulting from the introduction of modifications to the landscape. For this assessment, effects on visual resources were evaluated in terms of their overall direct and indirect effects. The determination of conformance with the BLM management objectives is also addressed in this section.

Each of the VAUs was evaluated in terms of the anticipated magnitude of change in landscape character and the level of contrast of the Proposed Project alignment and associated surface facilities from sensitive viewing platforms shown on Figures 1.2-5 through 1.2-9. This analysis was based on the relative change in landscape character within the VAU and the change in the views from specific sensitive viewing platforms that would be created by the proposed alignment and surface facilities and disturbances. The magnitude of change for each VAU and each sensitive viewing platform was based on their visual dominance, scale, continuity, and level of contrast as categorized as none/no effect, negligible, weak/subtle, moderate/notable, or strong/substantial the pipeline alignment and proposed facilities in the foreground and middle ground distance zones The definition of the thresholds for each level of potential effect is provided in Table 1.2-1.

Per BLM's Visual Contrast Rating System, contrast-rating forms were prepared to assess potential visual effects of the pipeline alignments (refer to Attachment A, Contrast Rating Forms). The points at which the ratings were taken were determined through coordination with BLM representatives and correspond with the KOPs along the proposed alignment, regardless of jurisdiction. The selected KOPs are locations along a travel route or at a use area or a potential use area, where project components would be viewed by the casual observer. The KOPs are areas considered to have a high level of visual sensitivity with potential views of the project components within the foreground and middle ground distance zone of the sensitive viewing platforms. The rating forms assisted in revealing the elements and features in the proposed alignment that would cause the greatest effect on the existing visual conditions.

To support the contrast rating process and the evaluation of effects, visualizations of the pipeline and associated facilities were prepared from selected locations. The visualizations were generated to approximately depict the visual effects of the Proposed Project. The locations for the visualizations were determined through coordination with BLM and NPS representatives. The visualization sets illustrate existing conditions and conditions at five to 10 years after construction.

The effects also consider the visibility of the Proposed Project. The visibility analysis of the Southern Alignment identified all areas that would be seen within the foreground and middleground of the alignment. The pipeline alignments were also evaluated in terms of effects on visibility over time: short-term effects were defined as effects that would be seen immediately after construction to 10 years post-construction, and long-term effects would be those that persist for the life of the Proposed Project.

Figures 1.4-5 to 1.4-10 provide the locations of the VAUs and other sensitive viewing platforms and Table 1.4-1 provide detailed descriptions of the VAUs.

Table 2.1-1 Direct Effects of Proposed Project, Facilities and Electrical Transmission System Alignments

Visual Assessment Unit (VAU)	Direct Effects from Pipeline Alignments and Associated Facilities (Foreground/Middle Ground)	Direct Effects from Electric Transmission System Alignments (Foreground/Middle Ground)
1. Lake Powell/Glen Canyon  Southern Pipeline Alignment • Intake Pump Station • BPS-1 Electric Transmission System Alignment • Water Intake Transmission Line • BPS-1 Transmission Line • Glen Canyon to Buckskin Substation Transmission Line This VAU includes the following stationary/linear KOP and linear platforms: • Stationary KOPs: ▪ #2 Former McDonalds Parking Lot ▪ #3 Gravel Pullout near Bridge ▪ #4 Chains Day Use Area • Other Linear Platforms: ▪ Old Spanish NHT ▪ Dominguez-Escalante HT ▪ U.S. Highway 89 **Visual Effect Result:** The Proposed Project features would collectively create negligible to moderate long-term adverse visual effects in this VAU.	**Change in Landscape Character** • **Short-term** – Ground-disturbing activities associated with the Southern Alignment would remove a uniform band of low, sparse vegetation, expose lighter soils, and cut through occasional rock formations including clearing large rectangular shapes in the landscape for the staging areas (approximately 40 acres), Intake Pump Station and the BPS-1 facility sites. These effects would create a weak degree of change in the landscape character in the foreground and no apparent degree of change in the middle ground because of the sparse vegetation density and the presence of similar cultural modifications and areas of disturbance within the VAU. **Long-term** – The existing lines, forms, colors and visual patterns of the cultural modifications (i.e., existing transmission lines, substation, Glen Canyon Dam, and development associated with the city of Page) present within this VAU would diminish the visual prominence of the Southern Alignment including the Intake Pump Station, and BPS-1 facilities. The BPS-1 facility would be located near an existing ADOT maintenance facility and the lines and forms of this facility would be similar in scale and form to the existing structures at that facility. The Intake Pump Station would be located near the dam, Carl Hayden Visitor Center, and other developments in the area. However, the lines and forms of this facility would be more prominent when viewed from KOP #4. The Intake Pump Station structure would be visible from the Ferry Swale area and would result in a moderate, long-term change to the middle ground. In the long term, the pipeline would create a minor change in the foreground because it would repeat the elements and patterns common in the characteristic landscape. **Effects on Views from Sensitive Viewing Platforms** • **Stationary KOPs** – There would be unobstructed foreground views of the Intake Pump Station that would be located along the reservoir's shoreline from KOP #4 and the lake surface. This facility would begin to attract attention and be only somewhat compatible because the form and line of the project components would create a moderate contrast in the foreground of these viewing locations. BPS-1 would be located in the middle ground and would not be visually apparent. The existing ADOT maintenance facility would help to screen this facility from view from KOP #4 and the lake surface. The Intake Pump Station and BPS-1 facilities would be in the middle ground view from KOP #2 and KOP #3, as well as the Ferry Swale use area. There would be no apparent change in the landscape character when viewed from KOP #2 and #3 because the project components would not be visually evident. The Intake Pump Station construction area, ROW landscape scar, new administrative access routes, and staging areas would result in major short to long term changes in the foreground and middle ground from the Ferry Swale area, including the designated campground and the loop trails, during construction related activities and until restoration activities are completed. • **Other Linear Platforms** – Proposed project features would be visible intermittently in the middle ground from the Old Spanish NHT and Dominguez –Escalante HT. However, the project components would not be visually evident from these trails due to the distance and the prominence of existing cultural modifications within the VAU. The project components would create a subtle change in the foreground views from U.S. Highway 89 because they would repeat the visual elements and patterns associated with the cultural modifications found in the existing setting. The Southern Alignment would create a weak contrast when viewed in the foreground from U.S. Highway 89 and have a negligible effect on middle ground views.	**Change in Landscape Character** • **Short-term** – The clearing of the vegetation for the poles would be circular clearings at 750 feet spacing. There would be no new access roads needed for construction. This vegetation clearing would create a negligible change in the landscape character in the because of the small areas that would be cleared of vegetation. • **Long-term** – The landforms in the landscape would provide a backdrop that would reduce the visibility of the transmission lines. The transmission lines would be similar in form and scale to the existing Garkane Glen Canyon to Buckskin Transmission Line. The visual elements and patterns of the proposed Electric Transmission System Alignment would repeat those found in the existing landscape setting. In the long term, this alignment would create a minor degree of change in the landscape character in the foreground of the alignment and no apparent degree of change in the middle ground. **Effects on Views from Sensitive Viewing Platforms** • **Stationary KOPs** – The transmission lines and structures would be intermittently visible and sky-lined above the horizon in the foreground views from KOP #4. The effects to foreground views from this stationary KOP would be notable and the project components would be somewhat compatible with the visual setting. The transmission lines and structures would be visible from KOP #2 and KOP #3 at the middle ground distance but would not be discernible. The electrical substation located near the entrance to the Ferry Swale Area would be visible in the foreground views from the Ferry Swale campground and loop trail. This would create moderate changes to the visual setting. • **Other Linear Platforms** – Proposed project features would also be seen intermittently with landforms as a backdrop from U.S. Highway 89, the Old Spanish NHT and Dominguez –Escalante HT. The trails would not be present in the foreground of the project components. This alignment would result in a subtle change in the foreground views from U.S. Highway 89 and would not attract attention because of the weak contrast that the project components would create. The project components would not be visually evident in the middle ground views from these linear platforms because of the variety of landforms in the setting as well as the backdrops provided by the landforms, the distance from the platforms, and the presence of existing cultural modifications. There would be no apparent change in the characteristic landscape in the middle ground views created by the Electric Transmission System Alignment.

Table 2.1-1 Direct Effects of Proposed Project, Facilities and Electrical Transmission System Alignments (continued)

Visual Assessment Unit (VAU)	Direct Effects from Pipeline Alignments and Associated Facilities (Foreground/Middle Ground)	Direct Effects from Electric Transmission System Alignments (Foreground/Middle Ground)
2. Wahweap  Southern Pipeline Alignment Electric Transmission System Alignment • Glen Canyon to Buckskin Sub Transmission Line This VAU includes the following stationary/linear KOP and linear platforms: • Stationary KOPs: ▪ #6 Wahweap Overlook • Other Linear Platforms: ▪ Old Spanish NHT ▪ Dominguez-Escalante HT ▪ U.S. Highway 89 **Visual Effect Result:** The Proposed Project features would collectively create negligible to minor long-term adverse visual effects in this VAU.	**Change in Landscape Character** • **Short-term** – Ground-disturbing activities would remove a uniform band of low vegetation, expose lighter soils, and cut through occasional rock formations and washes. Uniform removal of vegetation and exposure of lighter-colored soil for the water pipeline and the approximately 34 acres of staging areas would attract attention in the foreground of the VAU in the short-term. This alignment would create a notable change in the foreground because of the introduction of new distinct, uniform lines and rectangles in the landscape that would be visually prominent. The Southern Alignment would create a subtle change in the middle ground because the Project components would be visually subordinate from viewed from this distance. • **Long–term** – The forms and lines of the proposed alignment would be consistent with forms and lines already present in the VAU. The pipeline alignment would pass over rolling landforms. The disturbance area created by the uniform pipeline corridor would be more visually prominent in the foreground and would draw attention from the natural setting, which would result in a minor change in the landscape character. In the middle ground, the project components would not be visually evident, creating a negligible degree of change in the characteristic landscape. **Effects on Views from Sensitive Viewing Platforms** • **Stationary KOPs** – The Proposed Project in the Wahweap VAU would be in the middle ground of the views from KOP #6. It would be somewhat similar to the disturbed area from the highway ROW corridor. The landscape scar it would create would result in a minor change in the setting. • **Other Linear Platforms** – Proposed project features would be intermittently visible in the middle ground of the Old Spanish NHT viewshed but would not be discernible due to the distance. The Proposed Project would cross the Dominguez-Escalante HT near milepost 553.5 on U.S. Highway 89 in Arizona. The pipeline disturbance from this trail would be consistent with the lines and form of U.S. Highway 89, which the Proposed Project would primarily parallel in this area. The effect on the views from the Dominguez-Escalante HT would be subtle in the foreground because the form and line of the Proposed Project would be consistent with the existing lines and form of the highway. Since the pipeline would parallel U.S. Highway 89 for the most part within this VAU, foreground views of the project components would be unobstructed and continuous. The effect on the foreground view from U.S. Highway 89 would be minor because the Proposed Project components would create a weak contrast in terms of form, color, and line. The Proposed Project components would have a negligible effect on views in the middle ground from the Old Spanish NHT and the Dominguez-Escalante HT because the pipeline would repeat elements and patterns common in the view from these linear platforms.	NOTE: There would be no new substations located within the VAU. **Change in Landscape Character** • **Short-term** – The clearing of the vegetation for the poles would be circular clearings at 750 feet spacing. There would be no new access roads needed for construction. Approximately 8 acres would also be cleared for a staging area. In the short-term, the Electric Transmission System Alignment would create a subtle change in the landscape character in the foreground and a negligible change in the middle ground because of the relatively small areas that would be cleared of vegetation. • **Long-term** – The pole structures would be the same as the existing Garkane Glen Canyon to Buckskin Transmission Line, which the proposed electric transmission alignment would parallel within this VAU. The presence of the existing transmission lines and structures within this VAU would diminish the visual prominence of the Electric Transmission Power Alignment. In the long term, this alignment would result in a minor change in the characteristic landscape because the Project components would create a weak level of contrast in terms of line, form, and texture in the foreground and would not be perceived in the middle ground. **Effects on Views from Sensitive Viewing Platforms** • **Stationary KOPs** – The proposed transmission line would be in the middle ground of the views from KOP #6 and would be intermittently visible with Paria Plateau providing a backdrop. The Proposed Project and related components would not be visually evident within the middle ground because of the distance away from the stationary platform that the alignment would be located. • **Other Linear Platforms** – Proposed Project features would also be seen intermittently from the middle ground of the Old Spanish Trail NHT and U.S. Highway 89. The Project components would not be visually evident from these two linear platforms due to the distance and their having prominent landforms as backdrops. The staging area would be adjacent to the Dominguez-Escalante HT and would create a moderate contrast in the short-term in the foreground of this portion of the trail. The proposed transmission line would cross the Dominguez-Escalante HT and the form and line of the Proposed Project would be consistent with the existing lines and form of the Garkane Glen Canyon to Buckskin Transmission Line. The effect on the views from this HT would be minor in the foreground because it would result in a weak level of contrast in terms of scale, line, and form. The Project components would have a negligible effect on views that would be located in the middle ground because it would repeat elements and patterns common in the view from this platform.

Table 2.1-1 Direct Effects of Proposed Project, Facilities and Electrical Transmission System Alignments (continued)

Visual Assessment Unit (VAU)	Direct Effects from Pipeline Alignments and Associated Facilities (Foreground/Middle Ground)	Direct Effects from Electric Transmission System Alignments (Foreground/Middle Ground)
3. Big Water  Southern Pipeline Alignment • BPS-2 Electric Transmission System Alignment • Glen Canyon to Buckskin Sub Transmission Line • BPS-2 Transmission Line This VAU includes the following stationary/linear KOP and linear platforms: • Stationary KOPs: ▪ #9 BLM GSENM Visitor Center • Linear KOPs: ▪ #7 U.S. Highway 89 at Blue Pool Wash ▪ #8 U.S. Highway 89/Larkspur Road Intersection ▪ #10 BPS-2 from U.S. Highway 89 • Other Linear Platforms: ▪ Old Spanish NHT ▪ U.S. Highway 89 **Visual Effect Result:** The Proposed Project features would collectively create negligible to major long-term adverse visual effects in this VAU.	**Change in Landscape Character** • **Short-term** – Ground-disturbing activities would remove a uniform band of low to medium height, stippled vegetation, expose lighter soils, and cut through occasional rock formations and washes. The disturbance area created by the pipeline corridor and the large rectangular BPS-2 building site and approximately 25 acres of staging areas (three) would be visually prominent in the foreground. The Project components would draw attention from the characteristic landscape in the short-term. Residential and commercial development (Big Water) are in this VAU so the forms and lines of the proposed alignment would be consistent with existing elements and patterns. Uniform removal of vegetation and exposure of lighter-colored soil would create a notable change in the short-term because of the distinct lines in the rolling terrain that would attract attention in the foreground. The proposed alignment would be drilled below a large rock formation west of Blue Pool Wash, which would avoid surface disturbance to the rock formation. In this rolling terrain, the water pipeline may be intermittently visible in the middle ground as the uniform line and exposed light-colored soils would be exposed on the sloped portions of landforms that are scattered throughout the landscape. This would result in a subtle change in the characteristics landscape in the middle ground in the short-term. • **Long-term** – The presence of the BPS-2 facility would create a major degree of change to the landscape by introducing an industrial facility into a remote rural area. The vertical lines and rectangular forms of BPS-2 would begin to dominate the landscape in the foreground. In the middle ground, the Project components would not be visually evident, creating a negligible degree of change in the characteristic landscape. **Effects on Views from Sensitive Viewing Platforms** • **Stationary KOPs** – Foreground views of the pipeline alignment from KOP #8 and KOP #9 would be consistent with the lines and form of U.S. Highway 89. In addition, foreground views from KOP #9 include unobstructed views of the cultural modifications associated with the community of Big Water. The effect on the foreground views from these two stationary KOPs would be subtle because Proposed Project components would create a weak contrast and be visually subordinate to the existing visual elements and patterns in the setting. Effects on views of the pipeline alignment from the top of the east edge of Studhorse Mesa (including existing trails on the mesa) and Skylight Arch would be moderate to major in the short-term as a result of construction-related activity within the foreground. Long-term, minor visual impacts would result in the foreground from the east side of Studhorse Mesa and Skylight Arch due to the ROW landscape scar, but these would be somewhat consistent with the adjacent land disturbance from the highway ROW corridor. • **Linear KOPs** – Foreground views of the pipeline ROW from KOP #7 would be consistent with the lines and form of U.S. Highway 89. The effect on the foreground views from this KOP would be weak contrast because the form and line of the Proposed Project would be consistent with the existing line and form of the highway. The Proposed Project components effect on the views from the KOP #10 would be a strong contrast because BPS-2 would be intermittently silhouetted against the skyline in both eastbound and westbound directions and would be visually dominant in the foreground. • **Other Linear Platforms** – The Proposed Project would cross the Old Spanish NHT near MP 6 on U.S. Highway 89 in Utah. Foreground views of BPS-2 from the trail would be unobstructed and visually prominent in the landscape. The effect on the views from the portion of the Old Spanish NHT within the VAU would be substantial because the form and line of the Proposed Project components would be a strong level of contrast. In addition, there would be two staging areas cleared of vegetation (approximately 13.5 and 4 acres) within the foreground of the NHT in the short-term. The proposed alignment would closely parallel each of the four linear viewing platforms in this VAU and would result in nearly continuous visibility of the pipeline along each platform.	**Change in Landscape Character** • **Short-term** – The clearing of the vegetation for the poles would be circular clearings at 750 feet spacing. There would be no new access roads needed for construction. The Electric Transmission System Alignment would create a negligible change in the landscape character in the foreground and in the middle ground because of the small areas that would be cleared of vegetation. • **Long-term** – The Electric Transmission System Alignment would continue to parallel the existing Garkane Glen Canyon to Buckskin Transmission Line. The existing lines, forms, and colors of the existing transmission lines and structures would diminish the visual prominence of the new alignment. The operation of the approximately 7-mile-long BPS-2 Transmission Line would introduce visual elements that are common in the characteristic landscape. In the long term, the change in the setting by the Electric Transmission System Alignment would be subtle in the foreground because the Proposed Project components would not attract attention. In the middle ground, change to the setting would be negligible because the Project components would not be visually evident with the scale of landform in the background. **Effects on Views from Sensitive Viewing Platforms** • **Stationary KOPs** – The two proposed transmission lines would be in the middle ground of the views from KOP #8 and KOP #9. The contrast created by the Proposed Project and related components when viewed from either of these stationary KOPs would be subtle because the components would be backdropped by landforms and intermittently visible in the middle ground. • **Linear KOPs** – The alignment would also be seen intermittently in the middle ground from KOP #7 and in the foreground and middle ground of KOP #10. The level of contrast created by the transmission lines and structures when viewed from these linear KOPs in the middle ground would be negligible because the Project components would backdrop by landforms and intermittently visible. The effects on the foreground views from KOP #10 would be subtle because of the weak level of contrast that would be created by this alignment in terms of form and line. • **Other Linear Platforms** – The proposed transmission line would cross the Old Spanish NHT and the form and line of the Proposed Project would be consistent with the existing lines and form of the existing Garkane Glen Canyon to Buckskin Transmission Line. The effect of the views from this NHT and U.S. Highway 89 would be subtle in the foreground because it would result in a weak level of contrast. Proposed Project features would also be seen intermittently in middle ground views from the Old Spanish NHT and U.S. Highway 89. The Proposed Project components would have a negligible effect on views that would be located in the middle ground because it would not be visually evident in the characteristic landscape.

Table 2.1-1 Direct Effects of Proposed Project, Facilities and Electrical Transmission System Alignments (continued)

Visual Assessment Unit (VAU)	Direct Effects from Pipeline Alignments and Associated Facilities (Foreground/Middle Ground)	Direct Effects from Electric Transmission System Alignments (Foreground/Middle Ground)
4. East Clark Bench  Southern Pipeline Alignment • BPS-3 Electric Transmission System Alignment • Glen Canyon to Buckskin Sub Transmission Line • BPS-3 Transmission Line This VAU includes the following stationary/linear KOP and linear platforms: • Stationary KOPs: ▪ 12b BPS-3 HP Regulation Tank1 from Cottonwood Road • Linear KOPs: ▪ #11b BPS-3 HP Regulation Tank1 from U.S. Highway 89 • Other Linear Platforms: ▪ Old Spanish NHT ▪ U.S. Highway 89 **Visual Effect Result:** The Proposed Project features would collectively create minor to major long-term adverse visual effects in this VAU.	**Change in Landscape Character** • **Short-term** – Ground-disturbing activities would remove a uniform band of low, scattered vegetation, expose lighter soils, and cut through occasional small washes. Uniform removal of vegetation and exposure of lighter-colored soil from the Proposed Project components including the approximately 47 acres of staging areas would introduce distinct lines and forms into the landscape during construction. The Proposed Project components would be visually subordinate in the setting and would result in subtle changes in the foreground and negligible changes in the middle ground of the VAU. • **Long-term** – The line and form of the Proposed Project disturbance would be consistent with the line and form of the existing highway that it would parallel. The vertical lines and rectangular forms of the BPS-3 would create a major change in the characteristic landscape and the facility would dominate the setting in the foreground. **Effects on Views from Sensitive Viewing Platforms** • **Stationary KOPs** – Middle ground views from KOP #12b would be unobstructed. The level of contrast that would be created by the Proposed Project and BPS-3 when viewed in the middle ground of KOP #12b would be major because the Proposed Project components would introduce elements not common in the landscape and would be visually prominent. • **Linear KOPs** – There would be unobstructed foreground views of BPS-3 and the pipeline ROW from KOP #11b. The Proposed Project components would visually dominate the landscape because of the strong contrast in terms of form and line that would be created by the BPS-3 facility. • **Other Linear Platforms** – The effect on the foreground views from the Old Spanish NHT within the VAU would create strong contrast in terms of form and texture that would be created by the BPS-3 facility. Within the middle ground, the Proposed Project and BPS-3 when viewed from either the Old Spanish NHT or U.S. Highway 89 would be visually subordinate to the existing elements and patterns in the characteristic landscape and would create weak contrast in the setting.	**Change in Landscape Character** • **Short-term** – The clearing of the vegetation for the poles would be circular clearings at 750 feet spacing. There would be no new access roads needed for construction. The Electric Transmission System Alignment would create a negligible change in the landscape character in the foreground and in the middle ground because of the very small area that would be cleared of vegetation. • **Long-term** – The Electric Transmission System Alignment would continue to parallel the existing Garkane Glen Canyon to Buckskin Transmission Line. The existing lines and forms of the existing transmission lines and structures would diminish the visual prominence of the alignment. The construction and operation of the approximately 6-mile-long BPS-3 Transmission Line would introduce visual elements that create moderate contrast. In the long term, the Proposed Project components would result in moderate change in the setting. **Effects on Views from Sensitive Viewing Platforms** • **Stationary KOPs** – The two proposed transmission lines would be in the middle ground of the views from KOP #12b. The level of contrast that would be created when viewed from this stationary KOP would be moderate. • **Linear KOPs** – The Electric Transmission System Alignment would also be seen intermittently in the foreground and middle ground from KOP #11b. The level of contrast that would be created by the transmission lines and structures when viewed from this linear KOP in the foreground would be moderate and in the middle ground would be minor because the components would be backdropped by landforms and intermittently visible. • **Other Linear Platforms** – The BPS-3 Transmission Line would cross the Old Spanish NHT. The form and line of the Proposed Project would be consistent with the existing lines and form of the Garkane Glen Canyon to Buckskin Transmission Line. The effect to the views from this NHT and U.S. Highway 89 would be moderate in the foreground because of the contrast created in terms of line, and form.

Table 2.1-1 Direct Effects of Proposed Project, Facilities and Electrical Transmission System Alignments (continued)

Visual Assessment Unit (VAU)	Direct Effects from Pipeline Alignments and Associated Facilities (Foreground/Middle Ground)	Direct Effects from Electric Transmission System Alignments (Foreground/Middle Ground)

5. Rimrocks/Paria River Valley
 
Southern Pipeline Alignment
Electric Transmission System Alignment
• Glen Canyon to Buckskin Sub Transmission Line
 	
This VAU includes the following stationary/linear KOP and linear platforms:
• Stationary KOPs:
  • #15 Paria Contact Station
• Linear KOPs:
  • #13 Toadstool Trailhead from U.S. Highway 89
  • #14 Toadstools Trailhead
• Other Linear Platforms:
  • Old Spanish NHT
  • U.S. Highway 89
 	
Visual Effect Result: The Proposed Project features would collectively create negligible to minor long-term adverse visual effects in this VAU.
	Change in Landscape Character
	• **Short-term** – Ground-disturbing activities would remove a uniform band of low to medium height, irregular, stippled vegetation, expose lighter soils, and cut through the Paria Riverbed and along 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 Highway 89 and would not attract attention. However, rock cuts and wash crossing in the Rimrocks area would create a minor degree of change because the distinct rock stratifications and shapes would be altered.
	• **Long-term** – The line and form of the Proposed Project disturbance would be consistent with the line and form of the existing highway that it parallels. The pipeline alignment would pass over undulating terrain and through areas of exposed soils from various natural and cultural modifications. The disturbance area created by the uniform pipeline corridor result in minor degree of change in the foreground.
	Effects on Views from Sensitive Viewing Platforms
	• **Stationary KOPs** – The Proposed Project would be in the foreground of the views from KOP #14 and KOP #15. At KOP #14, the trailhead is at lower elevation point and there would be unobstructed and continuous views of the Proposed Project in the foreground as it traverses down an extended grade. The Proposed Project components would create a weak level of contrast in terms of line, color and form when viewed from KOP #14. This alignment would be visible in the middle ground of both KOPs though more so for KOP #14. The Proposed Project components would create a negligible level of contrast when viewed from both the foreground and middle ground from KOP #15 because the line and form of the Proposed Project corridor would be visually subordinate in the setting.
	• **Linear KOPs** – Foreground views of the pipeline ROW from KOP #13 would have a minor effect because of the contrasts created in line, color and form due to the Proposed Project ROW.
	• **Other Linear Platforms** – The Proposed Project would cross the Old Spanish NHT near MP 21 on U.S. Highway 89 and go north along the Paria River. Views of the pipeline ROW from the trail to either side would be viewed intermittently in this area. The effect on the foreground views from the Old Spanish NHT would be subtle because the form and line of the Proposed Project would be consistent with the existing lines and form to other features in the characteristic landscape. The project components would not be visually evident in the middle ground views from the Old Spanish NHT and from U.S. Highway 89.
		NOTE: There would be no new substations located within the VAU.
		Change in Landscape Character
		• **Short-term** – The clearing of the vegetation for the poles would be circular clearings at 750 feet spacing. There would be no new access roads needed for construction. The Electric Transmission System Alignment would create a negligible change in the landscape character in the foreground and in the middle ground because of the very small area that would be cleared of vegetation.
		• **Long-term** – The existing lines, forms, and colors of the existing transmission lines and structures within this VAU would diminish the visual prominence of this electric transmission alignment. In the long term, the Electric Transmission System Alignment would not attract attention from the natural setting because of the subtle change in the characteristic landscape that would be created in the foreground and middle ground of the VAU.
		Effects on Views from Sensitive Viewing Platforms
		• **Stationary and Linear KOPs** – The proposed transmission line would be in the middle ground of the views from the two stationary KOPs and one linear KOP. The scale and spatial relationship of the transmission lines when viewed from any of these three KOPs would be a negligible change in the setting because the Proposed Project components would be backdropped by landforms, the level of contrast in terms of line and form would be weak and would not be discernible/visually evident within the middle ground. The BPS-3 Transmission Line would also be intermittently visible in the middle ground of the views from these three KOPs.
		• **Other Linear Platforms** – Proposed Project features would also be seen intermittently from the middle ground of the Old Spanish Trail NHT and U.S. Highway 89. The Proposed Project components would not be visually evident due to the distance and presence of the prominent landforms as backdrops within the VAU.

Table 2.1-1 Direct Effects of Proposed Project, Facilities and Electrical Transmission System Alignments (continued)

Visual Assessment Unit (VAU)	Direct Effects from Pipeline Alignments and Associated Facilities (Foreground/Middle Ground)	Direct Effects from Electric Transmission System Alignments (Foreground/Middle Ground)
6. Cockscomb  Southern Pipeline Alignment Electric Transmission System Alignment • Glen Canyon to Buckskin Sub Transmission Line This VAU includes the following linear platforms: • U.S. Highway 89 **Visual Effect Result:** The Proposed Project features would collectively create negligible to moderate long-term adverse visual effects in this VAU.	**Change in Landscape Character** • **Short-term/Long-term** – Ground-disturbing activities would remove a uniform band of mottled, low to medium height, irregularly spaced vegetation, expose lighter soils, and increase existing rock cut slopes alongside U.S. Highway 89. Although re-cutting the large rock cut slopes would result in greater landscape modification through The Cockscomb, the changes would be similar to the existing lines, forms, colors, and textures of the characteristic landscape. The Proposed Project would increase the perceived footprint of the highway corridor and result in a notable degree of change to the existing spatial enclosure from adjacent landforms because new cut slopes would be created that would lessen the degree of enclosure through the Cockscomb formation. 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 in the foreground of the VAU. In the middle ground, the Proposed Project components would be intermittently visible because of the screening provided by the existing landforms. The potential effect in the middle ground would not be visually evident. **Effects on Views from Sensitive Viewing Platforms** • **Other Linear Platforms** – The Proposed Project would be consistent with the lines and form of U.S. Highway 89, which the Proposed Project would parallel in this area. The effect on the foreground views from U.S. Highway 89 would be notable because the form and line of the Proposed Project would create a moderate level of contrast in the characteristic landscape. Middle ground views along U.S. Highway 89 of the Southern Alignment would be intermittent with a weak level of contrast.	NOTE: There would be no new substations located within the VAU. **Change in Landscape Character** • **Short-term** – The clearing of the vegetation for the poles would be circular clearings at 750 feet spacing. There would be no new access roads needed for construction. The Electric Transmission System Alignment would create a negligible change in the landscape character in the foreground and in the middle ground because of the very small area that would be cleared of vegetation. • **Long-term** –The lines, forms, and colors of the existing transmission lines and structures within this VAU would diminish the visual prominence of this Electric Transmission System Alignment. The proposed transmission line would skyline for a short distance as it would traverse across the top of The Cockscomb formation but would be backdropped for the majority of the distance within this VAU. In the long term, the Electric Transmission System Alignment would not attract attention from the natural setting because of the subtle change in the characteristic landscape that would be created in the foreground and middle ground of the VAU. **Effects on Views from Sensitive Viewing Platforms** • **Other Linear Platforms** – The Proposed Project components would have a negligible effect on views because the alignment would not be visually evident in the middle ground view from this linear platform with the presence of the prominent landforms as backdrops within the VAU.

Table 2.1-1 Direct Effects of Proposed Project, Facilities and Electrical Transmission System Alignments (continued)

Visual Assessment Unit (VAU)	Direct Effects from Pipeline Alignments and Associated Facilities (Foreground/Middle Ground)	Direct Effects from Electric Transmission System Alignments (Foreground/Middle Ground)
7. Fivemile Valley  Southern Pipeline Alignment • BPS-4 Electric Transmission System Alignment • Glen Canyon to Buckskin Sub Transmission Line • BPS-4 Transmission Line This VAU includes the following linear KOP and other linear platforms: • Linear KOPs: ▪ #18 BPS-4 from U.S. Highway 89 • Other Linear Platforms: ▪ Old Spanish NHT ▪ U.S. Highway 89 **Visual Effect Result:** The Proposed Project features would collectively create negligible to moderate long-term adverse visual effects in this VAU.	**Change in Landscape Character** • **Short-term** – Ground-disturbing activities would remove a uniform band of low to medium height, randomly spaced vegetation, expose lighter soils, and cut through occasional washes. The Proposed Project would also pass over rolling landforms, elevating the ground disturbance in some locations within a semi-enclosed valley. Uniform removal of vegetation (juniper, in particular) and exposure of lighter-colored soil by the pipeline and the approximately 18-acre staging area and a portion of a 48-acre staging area would create a notable change in the setting in the short-term in the foreground because of the introduction of distinct line, form, and color contrast into the landscape. • **Long-term** – The line and form of the Proposed Project would be consistent with the line and form of the existing highway it parallels. The pipeline ROW would include the BPS-4 facility on the east side of U.S. Highway 89, adjacent to the highway. There would be a moderate degree of change within the foreground of the VAU because the BPS-4 facility would be constructed between landforms with a backdrop of the Cockscomb Formation. The dispersed nature of the pinyon/juniper vegetation in this portion of the VAU would also help to reduce the visibility of the facility. **Effects on Views from Sensitive Viewing Platforms** • **Linear KOPs** –There would be foreground views of the pipeline ROW and facilities from KOP #18. The variety of landforms, dispersed vegetation of varying heights, color, and texture, and the backdrop of the Cockscombs Formation and Fivemile Mountains would help diminish the scale and contrast of the Proposed Project components. The Proposed Project components would attract attention in the characteristic landscape in the foreground because the contrast in form and line would create a moderate degree of contrast in the setting. When viewed from the middle ground of KOP #18, the Proposed Project components would be seen intermittently in the setting and would be visually subordinate. • **Other Linear Platforms** – Within the middle ground, the Proposed Project and BPS-4 when viewed from the Old Spanish NHT would not be visually evident in the characteristic landscape because of the variability of the landforms and vegetation, which would help to screen the Proposed Project components.	**Change in Landscape Character** • **Short-term** – The clearing of the vegetation for the poles would be circular clearings at 750 feet spacing. There would be no new access roads needed for construction. The Electric Transmission System Alignment would create a negligible change in the landscape character in the foreground and in the middle ground because of the very small area that would be cleared of vegetation. • **Long-term** – The 0.4-mile long 69 kV BPS-4 Transmission Line would not attract attention from the natural setting because it would be buried. The 230 kV Glen Canyon to Buckskin Sub Transmission Line would follow an existing powerline and would be intermittently skylined and backdropped within this VAU. In the long term, the Electric Transmission System Alignments would cause negligible to minor changes in the characteristic landscape in the foreground and middle ground of the VAU. **Effects on Views from Sensitive Viewing Platforms** • **Linear KOPs** – The 69 kV BPS-4 Transmission Line would not attract attention from the views from KOP #18 because this line would be buried. The 230 kV Glen Canyon to Buckskin Sub Transmission Line would have a negligible effect on views from KOP #18 because the alignment would not be visually evident in the middle ground view because of the background provided by the existing landforms. • **Other Linear Platforms** – The 69 kV BPS-4 Transmission Line would not attract attention from the views from the Old Spanish NHT or U.S. Highway 89 because the 0 69 kV line would be buried. The 230-kV line would have a negligible effect on views from the Old Spanish NHT or U.S. Highway 89 because the 230-kV line would not be visually evident in the middle ground view because of the prominent landforms as backdrops within the VAU.

Table 2.1-1 Direct Effects of Proposed Project, Facilities and Electrical Transmission System Alignments (continued)

Visual Assessment Unit (VAU)	Direct Effects from Pipeline Alignments and Associated Facilities (Foreground/Middle Ground)	Direct Effects from Electric Transmission System Alignments (Foreground/Middle Ground)

8. Telegraph Flat
 
Southern Pipeline Alignment
• High Point Regulating Tank
• HS-1
 	
Electric Transmission System Alignment
• Glen Canyon to Buckskin Sub Transmission Line
• HS-1 Transmission Line
 	
This VAU includes the following stationary/linear KOP and linear platforms:
• Stationary KOPs:
  • #19 Road to Paria Interpretive Site
• Linear KOPs:
  • #20 HS-1 from U.S. Highway 89
  • #21 High Point Regulation Tanks from Great Western Trailhead
• Other Linear Platforms:
  • Honeymoon HT
  • Old Spanish NHT
  • U.S. Highway 89
 	
Visual Effect Result: The Proposed Project features would collectively create negligible to moderate long-term adverse visual effects in this VAU.
	Change in Landscape Character
	
	• **Short-term** – Ground-disturbing activities associated with the pipeline would remove a uniform band of low to medium height vegetation, expose lighter soils, and cut through occasional washes. The Proposed Project would also pass over rolling landforms, elevating views of the ground disturbance in some locations. Uniform removal of vegetation and exposure of lighter-colored soils along with the relatively large cleared and graded areas for the 48-acre staging area, HS-1 and High Point Regulating Tank facilities would create moderate change in the foreground of the setting in the short-term because of the distinct line and color contrast into the landscape that would be created during construction.
	
	• **Long-term** – The line and form of the Proposed Project would be consistent with the line and form of the existing highway that it would parallel. There would be a notable degree of change within the foreground of the VAU because the HS-1 and High Point Regulating Tank facilities would introduce elements and patterns not common in the characteristic landscape and attract attention. The scattered pinyon/juniper vegetation and adjacent landforms in this portion of the VAU would help to reduce the visibility of the facilities and would result in a minor degree of change in the setting within the middle ground.
	
	Effects on Views from Sensitive Viewing Platforms
	
	• **Stationary KOPs** – There would be unobstructed foreground views of the Proposed Project from KOP #19 as well as foreground views of the Proposed Project and High Point Regulating Tank facilities from KOP #21. The Proposed Project would repeat the lines and form of the adjacent highway when viewed from KOP #19, which would result in a negligible change in the characteristic landscape in the long term. When viewed in the foreground from KOP #21, the High Point Regulation Tank facility would create minor contrast in terms of line and form in the characteristic landscape because the security fencing would begin to attract attention.
	
	• **Linear KOPs** – There would be foreground views of the Proposed Project and HS-1 facility from KOP #20. The effect on the views from this linear KOP would be notable because the form and line of the Proposed Project components would have a moderate level of contrast.
	
	• **Other Linear Platforms** – The Proposed Project would cross the Old Spanish NHT near MP 39.5 on U.S. Highway 89 in Utah. Foreground views of the HS-1 from the trail would be unobstructed and visually prominent in the landscape. The effect on the views from the portion of the Old Spanish NHT within the VAU would be minor because the form and line of the Proposed Project components would have a weak level of contrast.
		Change in Landscape Character
		
		• **Short-term** – The approximately 400-foot-long 69 kV HS-1 and 230 kV Glen Canyon to Buckskin Sub Transmission Lines would have the same lines, forms, and colors of the existing transmission lines and structures. The clearing of the vegetation for the poles would be circular clearings at 750 feet spacing. There would be no new access roads needed for construction. In the short-term, the Electric Transmission System Alignments would create a negligible change in the landscape character in the foreground and in the middle ground because of the very small area that would be cleared of vegetation.
		
		• **Long-term** – The construction of both transmission lines would introduce visual elements that exist in the characteristic landscape. In the long term, the Electric Transmission System Alignments would attract minor additional attention.
		
		• **Stationary KOPs** – Within the middle ground, the Glen Canyon to Buckskin Sub Transmission Lines when viewed from KOP #19 would not be visible. HS-1 Transmission Line would be visible from KOP #21 in the middle ground. The contrast that would be created by the 69 kV transmission line and structures when viewed from KOP #21 would be weak because this relatively short transmission line would be compatible with the other transmission structures and the scattered pinyon/juniper vegetation would help screen the proposed transmission line. KOP #21 would not be present in the foreground or middle ground of 230 kV Glen Canyon to Buckskin Sub Transmission Line.
		
		• **Linear KOPs** – The HS-1 Transmission Line would be visible from KOP #20 in the foreground. The contrast that would be created by the 69 kV line when viewed from this linear KOP would be weak because the Proposed Project components would be similar to other transmission structures and the vegetation would help reduce the visibility of the proposed structures.
		
		• **Other Linear Platforms** – The proposed 69 kV transmission line would be a subtle change in the foreground of the Old Spanish NHT and U.S. Highway 89 because of its relatively short span and the presence of an existing 69 kV line adjacent to the highway. In middle ground views from the Old Spanish NHT, Honeymoon HT, and U.S. Highway 89 would be intermittent and the 69 kV line would not be visually evident. The Glen Canyon to Buckskin Sub Transmission Line would be viewed within the middle ground from the Old Spanish NHT and the foreground and middle ground of U.S. Highway 89. The visibility of the 230 kV lines would be intermittently skylined and seen against a backdrop of the existing landforms along with the existing transmission lines and structures. The proposed 230 kV transmission line would create a weak contrast in the foreground of the U.S. Highway 89 and a negligible contrast when viewed in the middle ground from the Old Spanish NHT and U.S. Highway 89.

Table 2.1-1 Direct Effects of Proposed Project, Facilities and Electrical Transmission System Alignments (continued)

Visual Assessment Unit (VAU)	Direct Effects from Pipeline Alignments and Associated Facilities (Foreground/Middle Ground)	Direct Effects from Electric Transmission System Alignments (Foreground/Middle Ground)
9. Kanab/Vermilion Cliffs  Highway Pipeline Alignment This VAU includes the following stationary/ linear KOP and other linear platforms: • Stationary KOPs: ▪ #24 U.S. Highway 89 near Pioneer Gap • Other Linear Platforms: ▪ Dominguez-Escalante HT ▪ Honeymoon HT ▪ Old Spanish NHT ▪ U.S. Highway 89 **Visual Effect Result:** The Proposed Project features would collectively create negligible to minor long-term adverse visual effects in this VAU.	**Change in Landscape Character** • **Short-term** – 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. Uniform removal of vegetation and exposure of lighter-colored soils would create a notable change in the setting in the short-term in the foreground because of the distinct line and color contrast into the landscape that would be created during construction and until vegetation restoration could occur. The Proposed Project components would result in negligible changes in the middle ground of the VAU in the short-term. • **Long-term** – The line and form of the Proposed Project's disturbance would be consistent with the line and form of the existing highway and Johnson Canyon Road, which the pipeline would closely parallel. **Effects on Views from Sensitive Viewing Platforms** • **Stationary KOPs** – There would be unobstructed foreground views of the Proposed Project from KOP #24. The Proposed Project would repeat the lines and form of the adjacent highway/road when viewed from the stationary KOP, which would result in a negligible level of contrast in the characteristic landscape in the long term. • **Other Linear Platforms** – The Proposed Project along U.S. Highway 89 would mostly parallel the highway, the Honeymoon HT, and the Old Spanish NHT. The effect on the foreground views from the portions of the trails within the VAU of the larger water pipeline would be minor because the form and line of the Proposed Project components would create a weak contrast in the characteristic landscape. The effect on the middle ground views from the portion of the Honeymoon HT, and the Old Spanish NHT within the VAU would be minor because the form and line of the Proposed Project components would create a weak contrast in the characteristic landscape. The Honeymoon HT three times near MP 58 on U.S. Highway 89, which is adjacent to rural development near Kanab. The Proposed Project would be consistent with the elements and patterns in the setting. The effect of the views from this HT in the short- and long-term would be subtle in the foreground because it would result in a weak level of contrast and the Proposed Project components would not be discernible in the middle ground views from Honeymoon HT.	NOTE: There would be no proposed electric transmission alignments within this VAU for either the Southern or Highway Pipeline Alignments.

Table 2.1-1 Direct Effects of Proposed Project, Facilities and Electrical Transmission System Alignments (continued)

Visual Assessment Unit (VAU)	Direct Effects from Pipeline Alignments and Associated Facilities (Foreground/Middle Ground)	Direct Effects from Electric Transmission System Alignments (Foreground/Middle Ground)
10. White Sage Wash  Southern Pipeline Alignment This VAU includes the following stationary/ linear KOP and other linear platforms: • Stationary KOPs: ▪ #26 Shinarump Cliffs Overlook ▪ #27 Dominguez-Escalante and Honeymoon Crossing • Other Linear Platforms: ▪ Honeymoon HT ▪ Dominguez-Escalante HT ▪ Fredonia–Vermilion Cliffs Scenic Road/U.S. Highway 89A **Visual Effect Result:** The Proposed Project features would collectively create negligible to minor long-term adverse visual effects in this VAU.	**Change in Landscape Character** • **Short-term** – Ground-disturbing activities would remove a uniform band of dense sage-scrub and pinyon-juniper vegetation interspersed with large expanses of grasses, expose lighter soils, and cut through occasional washes. Uniform removal of vegetation and exposure of lighter-colored soil from the water pipeline and the approximately 34-acre staging area would create notable degree of change in the landscape in the short term in the foreground because of the introduction of distinct line and forms into the landscape. • **Long-term** – This portion of the Proposed 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, variety of dark soil color; and the height of the surrounding sage-scrub would diminish the degree of contrast with existing features. A segment of the pipeline would also parallel the existing Navajo-McCullough 500 kV Transmission Line. The new road and pipeline would create a minor change in the characteristic landscape and would not attract attention in the long- term in the foreground or middle ground of the VAU. **Effects on Views from Sensitive Viewing Platforms** • **Stationary KOP** – The Proposed Project components would be visible in the middle ground from KOP #26 and would create a weak level of contrast in the characteristic landscape. The Proposed Project components would not attract attention from KOP #26 due to its distance from this stationary platform, the variability of the terrain and soil color and the presence of paths/unpaved roads. The Proposed Project would also cross KOP #27 at an acute angle and would create a minor level of contrast in the foreground. • **Other Linear Platforms** – The Southern Alignment would cross the Honeymoon and the Dominguez-Escalante HTs in addition to the Fredonia–Vermilion Cliffs Scenic Road/U.S. Highway 89A linear platforms. The Navajo-McCullough 500 kV Transmission Line crosses the scenic road within 500 feet of the Southern Alignment and is a prominent feature in the landscape and attracts attention in the foreground of the scenic road. The Proposed Project would cross the scenic road at a right angle and would result in a weak level of contrast in the landscape in the foreground. The Dominguez-Escalante HT would parallel the proposed water pipeline for several miles and would create a negligible level of contrast in the landscape setting of the trail in the middle ground.	NOTE: There would be no proposed electric transmission alignments within this VAU.

Table 2.1-1 Direct Effects of Proposed Project, Facilities and Electrical Transmission System Alignments (continued)

Visual Assessment Unit (VAU)	Direct Effects from Pipeline Alignments and Associated Facilities (Foreground/Middle Ground)	Direct Effects from Electric Transmission System Alignments (Foreground/Middle Ground)
11. Kanab/Fredonia/Lost Springs Wash  Highway Pipeline Alignment This VAU includes the following: • Other Linear Platforms: ▪ Dominguez-Escalante HT ▪ Old Spanish Trail NHT ▪ Fredonia–Vermilion Cliffs Scenic Road/ U.S. Highway 89A **Visual Effect Result:** The Proposed Project features would collectively create negligible to minor long-term adverse visual effects in this VAU.	**Change in Landscape Character** • **Short –term/Long-term** – Ground-disturbing activities would remove a uniform band of low to medium height vegetation through this relatively flat terrain with patchy vegetation, expose lighter soils, and cut through occasional washes. Within this VAU there are scattered cultural modifications including transmission lines and structures, recreational trails, unpaved roads, and buildings associated with the fringe development associated with the communities of Fredonia and Kanab. The Proposed Project would introduce visually subordinate elements that are common and would create a subtle change in the characteristic landscape in the short and long term in the foreground of the VAU. **Effects on Views from Sensitive Viewing Platforms** • **Other Linear Platforms** – The Proposed Project components would cross U.S. Highway 89A just north of the town of Fredonia and the Old Spanish NHT just west of the town. The crossing of the highway and the trail would result in a weak level of contrast in the views from these linear platforms due to the existing cultural modifications in the surrounding area in the foreground. The Dominguez-Escalante HT would not be present in the foreground of this Alignment. This HT would be present in the middle ground of the Highway Alignment; however, the Proposed Project would not be visible.	• There would be no proposed electric transmission system alignments within this VAU.

Table 2.1-1 Direct Effects of Proposed Project, Facilities and Electrical Transmission System Alignments (continued)

Visual Assessment Unit (VAU)	Direct Effects from Pipeline Alignments and Associated Facilities (Foreground/Middle Ground)	Direct Effects from Electric Transmission System Alignments (Foreground/Middle Ground)
12. Jacob Canyon/Kanab Creek/ Pipe Valley  Southern Pipeline Alignment This VAU includes the following stationary/linear KOP and other linear platforms: • Stationary KOPs: ▪ #28 Kanab Creek (Kanab Creek ACEC) ▪ #29 Bitter Seeps Wash (Kanab Creek ACEC) • Linear KOPs: ▪ #30 Mount Trumbull Road • Other Linear Platforms: ▪ Dominguez-Escalante HT ▪ Honeymoon HT ▪ County Road 239 ▪ Mt. Trumbull Road **Visual Effect Result:** The Proposed Project features would collectively create negligible to minor long-term adverse visual effects in this VAU.	**Change in Landscape Character** • **Short-term/Long-term** – Ground-disturbing activities would remove a uniform band of predominately grasses interspersed with pinyon and juniper vegetation low to medium in height and density, expose lighter soils, and cut through several deeply incised wash formations. The Southern Alignment would also remove approximately 66 total acres of vegetation for the three staging areas within the VAU. The existing 500 kV Navajo McCullough transmission line is a dominating feature that attracts attention within the VAU. • The Southern Alignment would draw attention from the natural setting in the short- and long-term and would create a notable degree of change in the characteristic landscape in the foreground because of the introduction of distinct lines into the landscape. **Effects on Views from Sensitive Viewing Platforms** • **Stationary KOPs** – The existing 500 kV transmission line is in the foreground views of all three stationary KOPs. The Proposed Project components would create weak contrast within the foreground views of both KOP #28 and KOP #29 as the pipeline would cross the incised drainages of Kanab Creek and Bitter Seeps Wash. These effects would be noticeable. The level of contrast within the foreground of KOP #30 would be weak because the pipeline would be a subtle change in the characteristic landscape. • **Other Linear Platforms** – The pipeline would intersect the Dominguez-Escalante HT at an angle. The 500 kV transmission line are also present within the foreground views of this HT. The foreground view of the Southern Alignment from the Dominguez-Escalante HT would create a weak level of contrast and would be visually subordinate because the lines and form of the Proposed Project would be consistent with those of the existing transmission-line access road. Mt. Trumbull Road would be widened and improved as an access road for the Proposed Project. The characteristics of the improved road would be generally consistent with the line and form of the existing road. The degree of contrast when viewed in the foreground and middle ground from the Mt. Trumbull Road would be negligible and would not attract attention. The potential effect on the foreground views from the Honeymoon HT would be subtle and would also be visually subordinate since the lines and form of the Proposed Project would be similar to County Road 239, which the Southern Alignment would parallel in this location.	• There would be no proposed electric transmission alignments within this VAU.

Table 2.1-1 Direct Effects of Proposed Project, Facilities and Electrical Transmission System Alignments (continued)

Visual Assessment Unit (VAU)	Direct Effects from Pipeline Alignments and Associated Facilities (Foreground/Middle Ground)	Direct Effects from Electric Transmission System Alignments (Foreground/Middle Ground)
13. Shinarump Cliffs  Highway Pipeline Alignment This VAU includes the following stationary/ linear KOP and other linear platforms: • Stationary KOPs: ▪ #31 Kanab Paiute Tribal Headquarters • Other Linear Platforms: ▪ Dominguez-Escalante HT ▪ Honeymoon HT ▪ Old Spanish NHT ▪ SR-389 **Visual Effect Result:** The Proposed Project features would collectively create negligible to minor long-term adverse visual effects in this VAU.	**Change in Landscape Character** • **Short-term/Long-term** – Ground-disturbing activities would remove a uniform band of dense to patchy, low to medium height vegetation, expose lighter soils, and cut through a number of low rock formations in this rolling terrain. The line and form of the majority of the pipeline disturbance would be consistent with the line and form of SR-389, which it would closely parallel through the majority of this VAU. The change in the characteristic landscape in the foreground and middle ground of the VAU would be visually subordinate in the natural setting in the short or long term and would create a minor change. **Effects on Views from Sensitive Viewing Platforms** • **Stationary KOPs** – The Proposed Project components would create weak contrast within the foreground views of KOP #31 and would be consistent with the line and form of the existing highway that it would parallel. The pipeline would be adjacent to the parking area of the Kanab-Paiute Tribal Headquarters and there would be unobstructed views of the Proposed Project components. The effect on views from this KOP would be a weak change in the characteristic landscape because the Highway Alignment would be visually subordinate in the landscape. • **Other Linear Platforms** – The Proposed Project alignments, at varying distances, would parallel the Honeymoon HT, the Old Spanish NHT, and SR-389. Views from SR- 389 would be unobstructed in areas where the terrain is sloping. The pipeline would cross the Old Spanish NHT near MP 28.5 at an angle. This alignment would also closely parallel portions of the Old Spanish NHT and the Honeymoon HT since the trails align with SR-389 in places. The Highway Alignment would create a subtle change and would be visually subordinate in the foreground and undiscernible in the middle ground views from the Old Spanish NHT, Honeymoon HT, and SR-389 because the lines and form of the Proposed Project would be consistent with those of the existing highway. The Dominguez Escalante HT would not be present in the foreground. The potential effect on the views from this trail would be negligible because the water pipeline would not be visually evident in the middle ground.	• There would be no proposed electric transmission alignments within this VAU.

Table 2.1-1 Direct Effects of Proposed Project, Facilities and Electrical Transmission System Alignments (continued)

Visual Assessment Unit (VAU)	Direct Effects from Pipeline Alignments and Associated Facilities (Foreground/Middle Ground)	Direct Effects from Electric Transmission System Alignments (Foreground/Middle Ground)
14. Potter Canyon  Highway Pipeline Alignment This VAU includes the following stationary/linear KOP and linear platforms: • Other Linear Platforms: ▪ Honeymoon HT ▪ Old Spanish NHT ▪ SR-389 **Visual Effect Result:** The Proposed Project features would collectively create negligible to minor long-term adverse visual effects in this VAU.	**Change in Landscape Character** • **Short-term/Long-term** – Ground-disturbing activities would remove a uniform band of dense to patchy vegetation, expose lighter soils, and cut through a number of washes and low landforms in this rolling terrain. 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. The potential impacts in the foreground and middle ground of the VAU would create a weak change in the characteristic landscape. **Effects on Views from Sensitive Viewing Platforms** • **Other Linear Platforms** – The Proposed Project alignments, at varying distances, would parallel the Honeymoon HT, the Old Spanish NHT, and SR-389. The water pipeline would cross the Honeymoon NHT near MP 15 at an angle. This alignment would also parallel portions of the Old Spanish NHT and Honeymoon HT. Foreground views from SR-389 and those segments of the trails in proximity to the pipeline alignment would be unobstructed in areas where the terrain is sloping. The Highway Alignment would create minor change and would be visually subordinate in the foreground views from the Old Spanish NHT, Honeymoon HT, and SR-389 because the lines and form of the Proposed Project would be consistent with those of the existing highway and other linear features in the setting.	• There would be no proposed electric transmission alignments within this VAU.

Table 2.1-1 Direct Effects of Proposed Project, Facilities and Electrical Transmission System Alignments (continued)

Visual Assessment Unit (VAU)	Direct Effects from Pipeline Alignments and Associated Facilities (Foreground/Middle Ground)	Direct Effects from Electric Transmission System Alignments (Foreground/Middle Ground)
15. Cottonwood Wash  Southern Pipeline Alignment • HS-2 South Electric Transmission System • HS-2 [South] Transmission Line This VAU includes the following stationary/linear KOP and linear platforms: • Linear KOPs: ▪ #33 HS-2 South from County Road 239 • Other Linear Platforms: ▪ Old Spanish NHT ▪ SR-389 ▪ Honeymoon HT ▪ County Road 239 **Visual Effect Result:** The Proposed Project features would collectively create negligible to major long-term adverse visual effects in this VAU. Highway Alignment • HS-2 Hwy Electric Transmission System • HS-2 [Hwy] Transmission Line This VAU includes the following stationary/linear KOP and linear platforms: • Linear KOPs: ▪ #32 HS-2 Hwy from SR-389 • Other Linear Platforms: ▪ Old Spanish NHT ▪ SR-389 ▪ Honeymoon HT ▪ County Road 239 **Visual Effect Result:** The Proposed Project features would collectively create negligible to major long-term adverse visual effects in this VAU.	**Southern Alignment** **Change in Landscape Character** • **Short-term** – Ground-disturbing activities would remove a uniform band of low to medium height vegetation, expose lighter soils, and cut through occasional washes and low landforms. The proposed water pipeline would also pass over rolling landforms, elevating views of the ground disturbance in some locations. The Southern Alignment would also remove approximately 40 total acres of vegetation for the two staging areas within the VAU. Uniform removal of vegetation and exposure of lighter-colored soils along with the relatively large cleared and graded areas for the HS-2 South facilities and the staging areas would create a notable change in the short term because the removal of vegetation would attract attention in the foreground of the VAU. The change in the characteristic landscape in the middle ground of the VAU would be visually subordinate in the natural setting in the short term and would create a subtle change. • **Long-term** – The line and form of the Proposed Project would be consistent with the line and form of the existing highway that it would parallel through this VAU. There are few cultural modifications in this area. The Proposed Project components would introduce elements and patterns not common in the characteristic landscape thus creating a major degree of change in the foreground of the VAU. **Effects on Views from Sensitive Viewing Platforms** • **Linear KOPs** – The effect on the foreground views from KOP #32 and KOP #33 would be substantial because the form, texture, and line of the Proposed Project components would have a strong level of contrast. The hydro facility would begin to dominate this landscape within the foreground view of these linear KOPs. Within the middle ground, the level of contrast that would be created by the proposed water pipeline and HS-2 South when viewed from either KOP #32 or KOP#33 would be weak because the components would be visually subordinate in the characteristic landscape because of the adjacent landforms. • **Other Linear Platforms** – The Proposed Project would cross the Old Spanish NHT south of SR-389 near MP 8 in Arizona. Foreground views of the HS-2 South facility from the trail and County Road 239 would be unobstructed and visually prominent in the landscape. Views from SR-389 and County Road 239 would be unobstructed in areas where the terrain is sloping. The effect on the views from the portion of the Old Spanish NHT and the two highways would be substantial because the form and line of the Proposed Project components would have a strong level of contrast. The effects from the Southern Alignment on the middle ground views of SR-389, County Road 239, or the Old Spanish NHT would be subtle because the scale and level of contrast created by the Proposed Project components would be a subtle change in the characteristic landscape. **Highway Alignment** • For the Highway Alignment, HS-2 Highway facility would be located on the north side of SR-389 at approximately MP 9.5. The potential impacts in the VAU and from views from KOP #32, the Old Spanish NHT, and SR-389 (as noted for County Road 239) from the proposed water pipeline and HS-2 Hwy facility would be the same as the effects described in the Southern Alignment for the pipeline and HS-2 South.	**Change in Landscape Character** • **Short-term/Long-term** – In this VAU, the HS-2 South Transmission Line would have the same lines, forms, and colors of the existing 138 kV transmission lines and structures. The clearing of the vegetation for the poles would be circular clearings at 750 feet spacing. There would be no new access roads needed for construction. The construction and operation of the approximately 0.9-mile-long 34.5 kV transmission line would introduce visual elements that are common in the characteristic landscape. In the short and long term, the Electric Transmission System Alignment would not attract attention from the natural setting because of the subtle change that would be created by this relatively short segment of transmission line in the foreground. **Effects on Views from Sensitive Viewing Platforms** • **Linear KOPs** – The HS-2 South Transmission Line would be visible from KOP #33 in the foreground and middle ground. The level of contrast that would be created by the 34.5 kV transmission line and structures when viewed from this linear KOP in the foreground would be weak because it would introduce lines and forms common to the setting and negligible in the middle ground because it would not be visual evident. • **Other Linear Platforms** – The presence of the existing highway, unpaved roads, and transmission line in the setting are elements and patterns common in the setting that help reduce the effects of the short segment of 34.5 kV line. The proposed transmission line would cross over the Old Spanish NHT and would create a subtle change in the setting and a weak level of contrast in the foreground of the NHT. Foreground views from County 239 and SR-389 would be unobstructed, and the Proposed Project components would result in a weak level of contrast in the setting. In the middle ground, views from the Old Spanish NHT, Honeymoon HT, County 239, and SR-389 would be intermittent and the Proposed Project components would not be visually evident, which results in a negligible level of contrast. The Honeymoon Trail would not be present in the foreground distance zone of this alignment. **Highway Alignment** **Change in Landscape Character** • **Short-term/Long-term** – In this VAU, the HS-2 Highway Transmission Line would have the same lines, forms, and colors of the existing 138 kV transmission lines and structures. The clearing of the vegetation for the poles would be circular clearings at 750 feet spacing. There would be no new access roads needed for construction. The construction and operation of the approximately 0.6-mile-long 34.5 kV transmission line would introduce visual elements that are common in the characteristic landscape. In the short and long term, the Electric Transmission System Alignment would not attract attention from the natural setting because of the subtle change that would be created by this relatively short segment of transmission line in the foreground and a change not visually evident in the setting in the middle ground. **Effects on Views from Sensitive Viewing Platforms** • **Linear KOPs** – The HS-2 Highway Transmission Line would be visible from KOP #33 in the foreground and middle ground. A weak level of contrast would be created by the 34.5 kV transmission line and structures in the foreground because it would introduce lines and forms common to the setting. • **Other Linear Platforms** – The presence of the existing highway, unpaved roads, and transmission line in the setting are elements and patterns common in the setting that help reduce the effects of the short segment of 34.5 kV line. The proposed transmission line would cross over the Old Spanish NHT and would create a subtle change in the setting and a weak level of contrast in the foreground of the NHT. In foreground, views from County 239, and SR-389 would be unobstructed, and the Proposed Project components would result in a weak level of contrast that would be visual subordinate in the setting. In middle ground, views from the Old Spanish NHT, Honeymoon HT, County 239, and SR-389 would be intermittent and the Proposed Project components would not be visually evident, which results in a negligible level of contrast. The Honeymoon Trail would not be present in the foreground distance zone of this alignment.

Table 2.1-1 Direct Effects of Proposed Project, Facilities and Electrical Transmission System Alignments (continued)

Visual Assessment Unit (VAU)	Direct Effects from Pipeline Alignments and Associated Facilities (Foreground/Middle Ground)	Direct Effects from Electric Transmission System Alignments (Foreground/Middle Ground)
16. Colorado City/Hildale  Southern Pipeline Alignment • HS-3 Electric Transmission System Alignment • HS-3 Underground Transmission Line This VAU includes the following stationary/linear KOP and linear platforms: • Stationary KOPs: ▪ #34 HS-3 Hwy from Uzona Avenue • Other Linear Platforms: ▪ Old Spanish NHT ▪ SR-389 **Visual Effect Result:** The Proposed Project features would collectively create negligible to minor long-term adverse visual effects in this VAU.	**Change in Landscape Character** • **Short-term/Long-term** – Ground-disturbing activities would remove a uniform band of sage-scrub and pinyon/juniper vegetation, expose lighter soils, and cut through occasional washes and low landforms. The Southern Alignment would also remove approximately 57 total acres of vegetation for the two staging areas within the relatively flat to slightly rolling terrain. The lines and forms of the Proposed Project component would be similar the lines and forms of other cultural modifications in the existing landscape associated with the communities of Colorado City and Hildale. The removal of vegetation and the presence of the HS-3 facility would create a minor change in the setting in the short and long term because the Proposed Project components would create weak contrast in form, line, texture, and scale. **Effects on Views from Sensitive Viewing Platforms** • **Stationary KOP** – The Proposed Project components would introduce additional new horizontal lines and rectangular forms into the landscape, which would be similar to the lines and forms already present in cultural modifications. This alignment would create a weak level of contrast in the foreground views from KOP #34. • **Other Linear Platforms** – The Southern Alignment would parallel SR-389 for several miles before crossing the highway and heading west. The Proposed Project components would be readily visible from this linear platform but would be consistent with the features of the existing landscape and would result in a weak level of contrast in the foreground view from SR-389. When viewed in the middle ground from the Old Spanish NHT and SR-389, the Proposed Project components would not be visually evident.	**Change in Landscape Character** • **Short-term** – In this VAU, the HS-3 Underground Transmission Line would be buried for approximately 0.6 miles and would create a uniform band of disturbance from the removal of vegetation during construction. The construction of the approximately 0.6-mile-long 12.47 kV transmission line would introduce visual elements that are common in the setting in an area of rural development including paved roads, overhead transmission lines, and various buildings. • **Long-term** – The Electric Transmission System Alignment would not attract attention in the foreground or in the middle ground of the VAU because the 12.47 kV line would be buried. **Effects on Views from Sensitive Viewing Platforms** • **Stationary KOPs** – The Electric Transmission System Alignment would not attract attention in the foreground or in the middle ground of KOP #34 because the 12.47 kV line would be buried. • **Other Linear Platforms** – The Electric Transmission System Alignment would not attract attention in the foreground or in the middle ground of the Old Spanish NHT and SR-389 because the 12.47 kV line would be buried.

Table 2.1-1 Direct Effects of Proposed Project, Facilities and Electrical Transmission System Alignments (continued)

Visual Assessment Unit (VAU)	Direct Effects from Pipeline Alignments and Associated Facilities (Foreground/Middle Ground)	Direct Effects from Electric Transmission System Alignments (Foreground/Middle Ground)
17. Uzona-Canaan Wash  Southern Pipeline Alignment This VAU includes the following stationary/linear KOP and linear platforms: • Stationary KOPs: ▪ #35 Uzona Avenue/Canaan Wash • Other Linear Platforms: ▪ Old Spanish NHT **Visual Effect Result:** The Proposed Project features would collectively create negligible to minor long-term adverse visual effects in this VAU.	**Change in Landscape Character** • **Short-term** – Ground-disturbing activities would remove a uniform band of irregularly spaced sage-scrub and pinyon/juniper vegetation and cut through occasional rock formations and washes. Uniform removal of vegetation and landform modification for the pipeline would attract attention in the foreground of the VAU in the short-term. This alignment would create a notable change in the foreground because of the introduction of new distinct, uniform lines and rectangles in the landscape that would be visually prominent. The Southern Alignment would create a subtle change in the middle ground because the Proposed Project components would be visually subordinate from viewed from this distance. • **Long-term** – The forms and lines of the proposed alignment would be consistent with forms and lines already present in the VAU. The pipeline alignment would pass over rolling landforms. The disturbance area created by the uniform pipeline corridor would be more visually noticeable in the foreground, which would result in a minor change in the landscape character. **Effects on Views from Sensitive Viewing Platforms** • **Stationary KOP** – Views from KOP #35 are limited by the adjacent landforms. The Proposed Project components would be noticeable features in the landscape, even though they would be similar to the lines and forms of the existing dirt road that the pipeline would parallel, because of the spatial enclosure. This alignment would create a weak level of contrast in the foreground views from KOP #34. • **Other Linear Platforms** – The Proposed Project components would not be visible for the majority of the Old Spanish NHT within this VAU. When viewed in the middle ground from the Old Spanish NHT, the Proposed Project components would not be discernible in the setting because of the distance form this linear platform and the varied landforms and evergreen vegetation present.	• There would be no proposed electric transmission alignments within this VAU.
18. Short Creek  Southern Pipeline Alignment This VAU includes the following linear platforms: • Linear Platforms: ▪ Old Spanish NHT **Visual Effect Result:** The Proposed Project features would collectively create negligible long-term adverse visual effects in this VAU.	**Change in Landscape Character** • **Short-Term/Long-Term** – Ground-disturbing activities would remove a uniform band of low to medium height, patchy vegetation, cut through Short Creek, and expose lighter soils. The lines and forms of the project component including a 22-acre staging area would be consistent with the lines, texture, and forms of existing unpaved roads and other existing areas of disturbance in this relatively flat terrain. No apparent change in the setting in the short and long term would occur because the Proposed Project components would repeat form and line elements that are common in the characteristic landscape in the foreground and middle ground of the VAU. **Effects on Views from Sensitive Viewing Platforms** • **Linear Platforms** – The Southern Alignment would parallel the Old Spanish NHT for several miles before crossing the trail twice at an angle. The Proposed Project components would be readily visible from this linear platform but would be consistent with the features of the existing landscape and would result in a negligible level of contrast to the landscape character in the foreground and middle ground views.	• There would be no proposed electric transmission alignments within this VAU.

Table 2.1-1 Direct Effects of Proposed Project, Facilities and Electrical Transmission System Alignments (continued)

Visual Assessment Unit (VAU)	Direct Effects from Pipeline Alignments and Associated Facilities (Foreground/Middle Ground)	Direct Effects from Electric Transmission System Alignments (Foreground/Middle Ground)
19. Frog Hollow  Southern Pipeline Alignment • HS-4 Hydro Station Electric Transmission System Power Generating Alignment • HS-4Transmission Line • Point of Interconnection Substation This VAU includes the following stationary/linear KOPs and linear platforms: • Stationary KOPs: ▪ #37 Little Creek Overlook ▪ #38 HS-4 from Frog Hollow Road • Other Linear Platforms: ▪ Honeymoon HT ▪ Old Spanish NHT **Visual Effect Result:** The Proposed Project features would collectively create minor to major long-term adverse visual effects in this VAU.	**Change in Landscape Character** • **Short-term** – Ground-disturbing activities would remove a uniform band of dense, evenly spaced low to medium height vegetation, expose lighter soils, and cut through several washes and rock formations. The lines and forms of the Proposed Project components including a 21-acre staging area would be visually prominent in the foreground. The pipeline alignment for this option would traverse a mix of undisturbed land and dirt roads. In the foreground, the Proposed Project components would draw attention from the characteristic landscape in the short-term and would create substantial change in the setting. In this rolling terrain, the pipeline may be intermittently visible in the middle ground as the uniform line and exposed light-colored soils would be exposed on the sloped portions of landforms that are scattered throughout the landscape. This would result in a minor change in the characteristics landscape in the middle ground in the short-term. • **Long-term** – HS-4 would be located less than a mile from the western base of Little Creek Mountain and the facility's presence would create a substantial degree of change to the landscape by introducing an industrial facility into a remote undeveloped area. The vertical lines and rectangular forms of the HS-4 would begin to dominate the landscape in the foreground. **Effects on Views from Sensitive Viewing Platforms** • **Stationary KOPs** – Middle ground views from KOP #37 of the pipeline would be largely unobstructed while the views of HS-4 would be diminished by landform and distance. From KOP #38 the pipeline would be intermittently visible as it passes through landforms, but HS-4 would be obscured from view by landforms. The Proposed Project would result in a minor change in the characteristic landscape in the long term. HS-4 facility would create strong contrast in terms of line, texture, and form in the characteristic landscape because the facility would be visually incompatible in the setting. • **Other Linear Platforms** – The Honeymoon HT and Old Spanish NHT are also present in this VAU. From the middle ground views of these linear platforms, the lines and forms introduced by the Proposed Project would not be visually evident.	**Change in Landscape Character** • **Short-term** – The clearing of the vegetation for the poles would be circular clearings at 750 feet spacing. The Point of Interconnection Substation would clear approximately 0.2-acre and the three staging areas would clear 26 acres. The construction of the approximately 8 mile-long 69 kV transmission line and clearing for the proposed substation and stages areas would introduce weak contrast to the characteristic landscape. The Electric Transmission System Alignment would not attract attention from the setting because of the subtle change that would be created by this alignment in the foreground. • **Long-term –** Within the foreground of the VAU, there are no other existing transmission lines or substation. The HS-4 Transmission Line would attract attention, be visually obvious, and would create a notable change in the foreground of the setting. **Effects on Views from Sensitive Viewing Platforms** • **Stationary KOPs** – HS-4 Transmission Line would not be present within the foreground of KOP #37. Middle ground views of the Proposed Project components from KOP #37 would be unobstructed. The level of contrast in the characteristic landscape would be negligible from this platform on Little Creek Mountain. The proposed substation would not be visible from KOP #37. When viewed in the foreground from KOP #38, the HS-4 Transmission Line would attract attention, create moderate contrast in terms of line and form, and be visually prominent in the foreground of the setting. • **Other Linear Platforms** – The HS-4 Transmission Line would not be present within the foreground of the Honeymoon HT or the Old Spanish NHT. From the middle ground views of Honeymoon HT and Old Spanish NHT, the lines and forms introduced by the Proposed Project would not be visually evident.

Table 2.1-1 Direct Effects of Proposed Project, Facilities and Electrical Transmission System Alignments (continued)

Visual Assessment Unit (VAU)	Direct Effects from Pipeline Alignments and Associated Facilities (Foreground/Middle Ground)	Direct Effects from Electric Transmission System Alignments (Foreground/Middle Ground)
20. Hurricane Cliffs Road  Southern Pipeline Alignment • HS-5 Hydro Station Electric Transmission System Alignment • HS-5 Hydro Station This VAU includes the following stationary/linear KOPs and linear platforms: • Stationary KOPs: ▪ #39 Hurricane Cliffs Road – View to South • Other Linear Platforms: ▪ Old Spanish NHT ▪ Dominguez-Escalante HT ▪ Honeymoon HT **Visual Effect Result:** The Proposed Project features would collectively create minor to major long-term adverse visual effects in this VAU.	**Change in Landscape Character** • **Short-term –** The pipeline alignment associated with the Southern Alignment would be buried adjacent to an existing road heading north through the valley below Hurricane Cliffs. The lines and forms of the Proposed Project components including a 12-acre staging area and HS-5 Hydro Station would be visually prominent in the foreground. This alignment would draw attention in the setting and would create a notable change in the characteristic landscape in the short-term. The Southern Alignment would create a subtle change in the middle ground because the Proposed Project components would be visually subordinate when viewed from this distance. • **Long-term –** HS-5 would be located at the base of the Hurricane Cliffs next to Hurricane Cliffs Road. The facility's scale and size, along with the forms, lines, and texture it would add to this undeveloped landscape would create a substantial degree of change by introducing an industrial facility into a remote area. The vertical lines and rectangular forms of the HS-5 would dominate the landscape in the foreground. The pipeline would be tunneled behind the cliff face so as to only be visible once it surfaces prior to HS-5 and exits the facility to follow along the Hurricane Cliffs Road. The pipeline disturbance would create weak contrast to the landscape character. **Effects on Views from Sensitive Viewing Platforms** • **Stationary KOPs –** There would be unobstructed foreground views of the Southern Alignment facilities from KOP #39. When viewed in the foreground from KOP #39, the hydro station would create strong contrast in terms of line, texture, scale, and form in the characteristic landscape and the facility would be visually highly incompatible in the setting. • **Other Linear Platforms –** The Dominguez-Escalante HT, Honeymoon HT, and the Old Spanish NHT are also present in this VAU. From the middle ground views of the trail, the lines and forms introduced by the Proposed Project components would not be visually evident.	**Change in Landscape Character** • **Short-term** – For the Hurricane Cliffs Hydro Station to Hurricane West Transmission Line, the clearing of the vegetation for the poles would be circular clearings at 750 feet spacing. The Electric Transmission System Alternative would not attract attention from the setting because of the negligible change that would be created during construction by this alternative in the foreground. • **Long-term –** Within the foreground of the VAU, there are no other existing transmission lines. Portions of the proposed transmission lines would be skylined with no landform backdrop to help reduce the potential visual impacts. The elements created by the Hurricane Cliffs Hydrostation to Hurricane West Transmission Line would attract attention and would create a notable change in the foreground of the setting. Within the middle ground, this 10.9-mile-long electric power generating alternative would not attract attention, would create a subtle change in the landscape, and would be visually subordinate in the setting. **Effects on Views from Sensitive Viewing Platforms** • **Stationary KOPs** – When viewed in the foreground from KOP #39, the Hurricane Cliffs Hydrostation to Hurricane West Transmission Line would create strong contrast in terms of line and form and begin to dominate in the foreground views from the platform. Within the middle ground from KOP #39, the contrast of transmission line and structures would be subtle because the components would be visually subordinate in the setting. • **Other Linear Platforms** – This transmission line would not be present in the foreground of the Dominguez-Escalante HT, Honeymoon HT, or the Old Spanish NHT. From the middle ground views of these three trails, the lines and forms introduced by the Proposed Project components would not be visually evident.

Table 2.1-1 Direct Effects of Proposed Project, Facilities and Electrical Transmission System Alignments (continued)

Visual Assessment Unit (VAU)	Direct Effects from Pipeline Alignments and Associated Facilities (Foreground/Middle Ground)	Direct Effects from Electric Transmission System Alignments (Foreground/Middle Ground)
21. Sand Hollow  Southern Pipeline Alignment • Sand Hollow Hydro Station Electric Transmission System Alignment • Sand Hollow to Dixie Springs Transmission Line • HS-5 Hydro Station This VAU includes the following stationary/linear KOPs and linear platforms: • Stationary KOPs: ▪ #41 Sand Hollow State Park Campground • Other Linear Platforms: ▪ Dominguez-Escalante HT ▪ Honeymoon HT ▪ Old Spanish NHT ▪ Temple HT ▪ Zion Scenic Byway **Visual Effect Result:** The Proposed Project features would collectively create negligible to major long-term adverse visual effects in this VAU.	**Change in Landscape Character** • **Short-term** – Ground-disturbing activities would remove a uniform area of low, dense, evenly spaced vegetation, expose lighter soils, and cut through several washes and rock formations. The lines and forms of the Proposed Project components including two staging areas that would clear a total of approximately 110 acres would not draw attention and would create a subtle change from the characteristic landscape in the short-term because of the existing large areas of disturbance. The Southern Alignment would create a negligible change in the middle ground because the disturbance created by the construction of the Proposed Project components would not be visually evident viewed from this distance. • **Long-term** – The vertical lines and rectangular forms of the Sand Hollow Terminal Hydro Station would attract attention in the foreground. The degree of change within the foreground of the reservoir would be substantial. The hydro station would encompass approximately 6 acres. **Effects on Views from Sensitive Viewing Platforms** • **Stationary KOP** – From KOP #41 the forms and texture created by the hydro station would create strong contrast as viewed from the foreground and have a major effect on views. • **Other Linear Platforms** – The Dominguez-Escalante HT, Temple HT, and Old Spanish NHT are also present in this VAU. From the middle ground views of the Temple HT and Old Spanish NHT, the lines and forms introduced by the Proposed Project components would not be visually evident. The Proposed Project components would be approximately 1.0 mile from the Dominguez-Escalante HT and would create a weak contrast in the setting when viewed from this distance.	**Change in Landscape Character** • **Short-term** – The clearing of the vegetation for the transmission line poles would be circular clearings at 750 feet spacing. The construction of the approximately 4 mile-long 69 kV Sand Hollow to Sand Hollow West Transmission Line would introduce visual elements that are common in the characteristic landscape. The Electric Transmission System Alignment would not attract attention from the natural setting because of the negligible change that would be created by this Alignment in the foreground or middle ground. • **Long-term** – Within the foreground of the VAU, there are no existing transmission lines. The elements created by the transmission lines would attract attention and create a notable change in the foreground of the setting. **Effects on Views from Sensitive Viewing Platforms** • **Stationary KOP** – from KOP #41 the transmission line passes through the foreground and middle ground as it wraps from the hydro station past the campground and around the reservoir's south and west sides. The repetitious vertical lines of the poles create minor contrast. • **Other Linear Platforms** – None of the four trails would be present in the foreground of either 69 kV transmission lines. Both transmission lines would parallel the Dominguez-Escalante HT, while the other three trails would be perpendicular to the lines in the middle ground. The transmission lines would not be visually evident from the Old Spanish NHT, the Honeymoon HT, and Temple HT. From the middle ground views of the Dominguez-Escalante HT, the contrast that would be created by the 69 kV when viewed from the trail would be weak because the components would be visually subordinate in the setting. Zion Canyon Scenic Byway (Highway 9) would be almost three miles from the end of the northernmost end of the transmission line which would not be noticeable due to screening and distance.

Key:
ADOT = Arizona Department of Transportation
BPS = booster pump station
HT = historic trail
KOP = key observation point
MP = milepost
NHT = national historic trail
ROW = right of way
VAU = visual assessment unit

Table 2.1-1 provides descriptions of the effects on each VAU and the sensitive viewing platforms located within that VAU for the pipeline alignments as well as the electrical transmission alignments. 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 2.1-1, Visual Assessment Units Effect Table, also reflect differing degrees of contrast from multiple viewing platforms within the VAU.

This assessment of visual effects includes evaluation of the overall significance of effects on the visual landscape as well as an assessment of the effects of individual project components. Effects 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;
- Proposed Project feature construction or 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;
- Substantial 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-conformance with VRM objectives that would require an amendment to the relevant federal resource management plan to change the VRM class; and
- Nonconformance with other agencies' scenic management plans.

2.1 No Action Alternative

No effects to visual resources would occur from implementation of this alternative. The pipeline, associated facilities or electrical transmission lines would not be constructed and the existing landscape character and views from sensitive viewing platforms would not be altered, so visual resources would not be affected.

However, under this alternative, projects already planned by the Proponent would continue to occur. Disturbance, due to these projects, would vary in space and time. Most other impacts would be short-term and project-specific, but visual resources is often a longer-term effect. Effects to visual resources would be minimized through implementation of best standard industry management practices by the Proponent.

2.2 Southern Alternative

The large facilities (BPSs or hydrostations [HSs] and associated infrastructure) that would be constructed adjacent to roads and highways for the Southern Alternative would create moderate to strong contrast and result in notable to substantial changes in the landscape character. Those located in areas that are primarily undeveloped would create the greater magnitude of change. The transmission lines would create negligible to moderate contrast and result in negligible to notable changes in the landscape character depending on their location and proximity to other utility lines or

development. The pipeline disturbance would create negligible to weak contrast and result in negligible to subtle change in the landscape character across the Project Area if environmental protection and mitigation measures are successfully implemented. Across the Southern Alternative where the alignments cross federal lands, BLM VRM objectives and NPS Zone visual objectives would be met.

2.2.1 Effects of Southern Alternative

The following section notes the effects on visual resources as they occur in each VAU. Qualitative details of the short- and long-term effects created by the proposed features in each VAU from the stationary and linear KOPs and linear viewing platforms are provided in Table 2.1-1, Visual Assessment Units Effects Table, and the Update of LPP Final Study Report 16 – Visual Resources (BLM 2020). In this table, the disturbances from Proposed Project and associated facilities are addressed separately from proposed electric transmission system disturbances. Short-term effects include those from construction to 10 years post-construction, while long-term effects are those that would exist for the life of the Proposed Project. Effects on special designations, scenic routes, Indian reservations, and parks and monuments are detailed in the Update of LPP Final Study Report 16 – Visual Resources (BLM 2020). Table 2.2-1 catalogs the KOPs by name and number and provides the corresponding VAU.

Table 2.2-2 summarizes the long-term effects on the landscape character and views from the sensitive viewing platforms for each VAU associated with the Southern Alternative. The substantial adverse effects on visual resources would primarily be associated with the large facilities (BPSs and HSs and associated infrastructure) that would be constructed, most of which would be adjacent to roads and highways. Successful implementation of environmental protection and mitigation measures would result in subtle adverse visual effects for the pipeline alignment. The electrical transmission system (ETS) features would result in negligible to notable adverse effects depending on whether they are aligned with existing infrastructure or are skylined.

2.2.1.1 Long-term Effects on Landscape Character from the Southern Alternative

This section summarizes the long-term effects in the foreground and middle ground distance zones from the Southern Alternative pipeline alignment and facilities. The direct, long-term effects for the magnitude of change in the landscape character in the foreground and middle ground for each VAU are detailed in Table 4-2 of the Update of LPP Final Study Report 16 – Visual Resources (BLM 2020).

Pipeline and Associated Facilities Long-term Effects on Landscape Character

The Proposed Project and related facilities would introduce vertical lines and rectangular forms that would contrast with the lines and forms of the natural settings that would exist for the life of the Southern Alternative.

The existing visual elements and patterns of the cultural modifications (i.e., existing transmission lines, substation, Glen Canyon Dam, and development associated with the city of Page) present within VAU 1 would diminish the visual prominence of the Intake Pump Station and BPS-1 facilities. The BPS-1 facility would be located near an existing Arizona Department of Transportation maintenance facility and the lines and forms of this facility would be similar in scale and form to the existing structures at that facility. Views of BPS-4 associated with the Proposed Project 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, 6, 7, and 8 from the Proposed

Project and related facilities would be notable. Although the Southern Alternative would add distinct vertical lines and forms to the landscape, they would be similar to lines and forms of the adjacent cultural modifications.

Table 2.2-1 KOPs and VAUs for the Southern Alternative

KOP No.	Name	Corresponding VAU Number and Name
2	Former McDonalds Parking Lot	1- Lake Powell/Glen Canyon Unit
3	Pullout near Bridge	1- Lake Powell/Glen Canyon Unit
4	Chains Day Use Area	1- Lake Powell/Glen Canyon Unit
6	Wahweap Overlook	2- Wahweap Unit
7 - linear	Blue Pool Mesa and Wash	3- Big Water Unit
8 - linear	U.S. Highway 89/Larkspur Road Intersection	3- Big Water Unit
9	GSENM Big Water Visitor Center	3- Big Water Unit
10a/b - linear	Booster Pump Station-2 - U.S. Highway 89 EB/WB	3- Big Water Unit
11b - linear	Booster Pump Station-3 - U.S. Highway	4- East Clark Bench Unit
12b	Booster Pump Station-3 - Cottonwood Road	4- East Clark Bench Unit
13 - linear	U.S. Highway 89 near Toadstools Trailhead	5- Rimrocks/Paria River Valley Unit
14 - linear	Toadstools Trailhead	5- Rimrocks/Paria River Valley Unit
15	Paria Contact Station	5- Rimrocks/Paria River Valley Unit
18 - linear	Booster Pump Station -4 U.S. Highway 89	7- Fivemile Valley Unit
19	Road to Paria Interpretive Site	7- Fivemile Valley Unit
20 - linear	Hydro Station 1 U.S. Highway	8- Telegraph Flat Unit
21	High Point Regulation Tank - Great Western Trailhead	8- Telegraph Flat Unit
24 - linear	U.S. Highway near Pioneer Gap	9- Kanab/Vermilion Cliffs Unit
26	Shinarump Cliffs Overlook	10- Whites age Wash Unit
27	Dominguez-Escalante Trail Crossing	10- Whites age Wash Unit
28	Kanab Creek ACEC	12- Jacob Canyon/Kanab Creek/Pipe Valley Unit
29	Bitter Seeps Wash (Kanab Creek ACEC)	12- Jacob Canyon/Kanab Creek/Pipe Valley Unit
30 - linear	Mount Trumbull Road (Antelope Valley Road)	12- Jacob Canyon/Kanab Creek/Pipe Valley Unit
33 - linear	Hydrostation 2 South - Yellowstone Road	14- Cottonwood Wash Unit
34 - linear	Hydrostation 3 - Uzona Avenue	15- Colorado City/Hilldale Unit
35 - linear	Uzona Avenue/Canaan Wash	16- Uzona/Canaan Wash Unit
37	Little Creek Overlook	18- Frog Hollow Unit
38 - linear	Hydrostation 4 - Frog Hollow Road	18- Frog Hollow Unit
39 - linear	Hurricane Cliffs Road	19- Hurricane Cliffs Road Unit
41 - linear	Sand Hollow Terminal Station - Sand Hollow State Park	19- Hurricane Cliffs Road Unit

Key:
ACEC = Area of Critical Environmental Concern
EB = eastbound
KOP = key observation point
GSENM = Grand Staircase-Escalante National Monument
VAU = visual assessment unit
WB = westbound

Table 2.2-2 Long-term Effects by VAUs for the Southern Alternative

VAU No.	VAU	Long-term Effects
1	Lake Powell/Glen Canyon	Negligible to Notable
2	Wahweap	Negligible to Subtle
3	Big Water	Negligible to Substantial
4	East Clark Bench	Subtle to Substantial
5	Rimrocks/Paria River Valley	Negligible to Subtle
6	Cockscomb	Negligible to Notable
7	Fivemile Valley	Negligible to Notable
8	Telegraph Flat	Negligible to Notable
10	White Sage Wash[a]	Negligible to Subtle
12	Jacob Canyon/Kanab Creek/Pipe Valley[a]	Negligible to Subtle
15	Cottonwood Wash	Negligible to Substantial
16	Colorado City/Hildale	Negligible to Subtle
17	Uzona-Canaan Wash	Negligible to Subtle
18	Short Creek	Negligible
19	Frog Hollow	Subtle to Substantial
20	Hurricane Cliffs Road	Subtle to Substantial
21	Sand Hollow	Negligible to Substantial

Note:
(a)These units are in segments of Southern Alternative do not overlap the Highway Alignment.
Key:
VAU = visual assessment unit

HS 1 in VAU 8 would create a moderate degree of contrast because the distinct lines and bold, rectangular forms of the facility. The HS-2 in VAU 15 and the Sand Hollow HS in VAU 21 would contrast to a moderate degree with the existing landscape and would attract attention in the foreground of the respective VAUs. The Proposed Project alignment would pass over rolling landforms and/or rock formations in VAUs 2, 5, 6, 12, and 17. The disturbance area created by the uniform pipeline alignment would be more visually prominent in the foreground and would draw attention from the natural setting, which would result in a notable change in the landscape character.

A substantial magnitude of change would occur in VAUs 3, 15, 19, 20, and 21, and would reflect high degrees of contrast created by multiple facilities. The presence of the BPS-2 facility in VAU 3 would create a substantial degree of change to the landscape by introducing an industrial facility into a remote rural area. The vertical lines and rectangular forms of this facility would begin to dominate the landscape in the foreground. In VAU 19, HS-4 would be located near Frog Hollow Road and the facility's presence would create a degree of change to the landscape by introducing an industrial facility into a remote rural area. The vertical lines and rectangular forms of HS-4 would begin to dominate the landscape in the foreground. The magnitude of change to VAU 20, the Hurricane Cliffs Road unit, with HS-5, would contrast with the existing landscape strongly in line, texture and form, would alter the landscape substantially and would begin to dominate the landscape.

Electrical Transmission System Long-term Effects on Landscape Character
The direct, long-term effects for the magnitude of change in the landscape character in the foreground and middle ground for each VAU is detailed in Table 4-2 of the Update of LPP Final Study Report 16 – Visual Resources (BLM 2020).

The ETS alignments would introduce vertical and horizontal lines and rectangular forms that would change to varying degrees the characteristic landscape and would be in operation for the life of the Proposed Project. Negligible to subtle direct long-term effects on the landscape character would occur in VAUs 1, 2, 3, 4, 5, 6, 7, 8, 15, and 16 in the foreground and in the middle ground. Because the lines and forms of the ETS alignments would be similar to those of the existing elements and patterns in the landscape, the degree of contrast would be weak or not visually evident and would not generally attract attention. The existing visual elements and patterns of the cultural modifications, most notably the presence of various types of transmission lines and poles would help to diminish the visual prominence and the lines and forms of the project components because the ETS alignments would be similar in scale and form to these existing transmission lines.

The magnitude of change to VAUs 19, 20, and 21 from proposed transmission related facilities would be notable in the foreground. The ETS alignments would add distinct vertical lines and forms to the landscape, because there are no other transmission lines or substations. The elements from this electric transmission alignment would attract attention, be visually prominent, and would create a notable change in the foreground of the setting in these three VAUs. Within the middle ground, this electric transmission alignment would not attract attention and would have negligible to negligible direct long-term effects because the components would not be visually evident.

2.2.1.2 Effects on Views from Sensitive Viewing Platforms from the Southern Alternative

Pipeline and Associated Facilities Effects on Views from Sensitive Viewing Platforms
The effects in the foreground and middle ground distance zones from sensitive viewing platforms in the Southern Alternative are summarized in this section. Viewing platforms within the VAUs include stationary and linear KOPs, HTs, and existing roads. These platforms represent visually sensitive locations from which the casual observer experiences the scenic landscapes within the Project Area. The degree of change to the views from the platforms within each VAU varies based on the level of contrast that would be perceived from each platform. The amount of contrast perceived would also be directly correlated to the distance between the Proposed Project and the viewing platform. Viewing platforms occur in both the foreground and middle ground of the Southern Alternative.

There would be negligible levels of contrast when viewed from many of the platforms, primarily in the middle ground distance zone. The Southern Alternative would not be visually evident when viewed from the middle ground at 48 of the platforms and at five platforms from the foreground (KOP 19 in VAU 8, KOP 36 and the Old Spanish National Historic Trail [NHT] in VAU 18, and the Old Spanish NHT and Honeymoon HT in VAU 19).

There would be weak degrees of contrast created by the Proposed Project and associated facilities when viewed from 22 of the platforms in the foreground in 10 VAUs and 24 of the platforms in the middle ground in 10 VAUs. The Southern Alternative when viewed from these platforms would not attract attention and would be generally compatible with the setting.

The levels of contrast when viewed in the foreground from 11 platforms in nine VAUs (1, 4, 6, and 8) would be moderate and the Southern Alternative would attract attention when viewed from these platforms. The proposed facilities would create a moderate degree of contrast in the foreground views from KOPs 4 in VAU 1 and the Old Spanish NHT in VAU 4.

The proposed BPS-3 facility when viewed from the middle ground of KOP 12b would create a strong degree of contrast in terms of form and texture not common the landscape.

Eight of the viewing platforms in six different VAUs would be subject to a strong level of contrast and substantial degree of change to the views. The Proposed Project facilities would begin to dominate the foreground views from KOP 10, Old Spanish NHT, and U.S. Highway 89 in VAU 3, U.S. Highway 89 in VAU 4, KOP 30 and Old Spanish NHT in VAU 8, KOP 25 in VAU 9, KOP 28 in VAU 19, and KOP 40 in VAU 20. In addition, HS-2 South would create a strong level of contrast in each of the five platforms in VAU 15.

When viewed in the foreground from KOP 39 in VAU 20, HS-5 would create strong contrast in terms of form, line, texture, and scale in the characteristic landscape and the facilities would dominate the setting. The Sand Hollow Terminal Station in VAU 21 would create strong contrast in form and texture when viewed in the foreground.

Electrical Transmission System Effects on Views from Sensitive Viewing Platforms
The direct effects in the foreground and middle ground distance zones from sensitive viewing platforms in the ETS alignments detailed in Table 4-2 of the Update of LPP Final Study Report 16 – Visual Resources and are summarized in this section (BLM 2020). Viewing platforms occur in both the foreground and middle ground of the ETS alignments. There would be negligible to subtle levels of contrast when viewed from many of the platforms, in both the foreground and middle ground distance zones. The ETS alignments would not be visually evident or attract attention in the setting when viewed at 17 sensitive viewing platforms from the foreground and 52 platforms in the middle ground. The ETS alignments when viewed from these platforms would not attract attention and would be generally compatible with the setting.

The level of contrast when viewed in the foreground from three platforms in two VAUs (1 and 19) would be moderate and the ETS alignments would attract attention when viewed from these platforms. The transmission lines and structures would be intermittently visible and sky-lined above the horizon in the foreground views from KOP 4 and 5 in VAU 1. The effects to foreground views from these two stationary KOPs would be notable and the project components would be somewhat compatible with the visual setting. When viewed in the foreground from KOP 38 in VAU 19, the ETS alignments would attract attention, create moderate contrast in terms of line and form, and be visually prominent in the foreground of the setting. In the foreground from these three stationary viewing platforms, the ETS alignments would have a notable, direct, long-term effect.

2.2.1.3 Effects on Scenic Roads and Byways

Fredonia-Vermilion Cliffs Scenic Road/U.S. Highway 89A
The Southern Alternative would cross the Fredonia-Vermilion Cliffs Scenic Road once. The project components would introduce new, distinct horizontal lines and form that would parallel the existing Navajo-McCullough transmission line corridor in VAU 10. The new horizontal lines and form would, however, be consistent with the lines and form of the existing transmission line access road. Although the Southern Alternative 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 effect on the intactness of the unit. The original assessment determined that utility poles, the Navajo-McCullough 500-kilovolt (kV) Transmission Line, and other linear cultural modifications were "somewhat distracting to the integrity of the unit." The Proposed 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.

The ETS alignments would be greater than five miles away; therefore, would have no potential effects to the Fredonia-Vermilion Cliffs Scenic Road/ U.S. Highway 89A.

Zion Park Scenic Byway/State Route 9
The pipeline alignment would be almost five miles from the Zion Park Scenic Byway at the nearest point and the 69-kV Transmission Line would be almost 3 miles away. These features would not be visible due to distance and topographic screening; therefore, they would not lower the scenic quality or integrity of the Zion Scenic Byway overall or have any direct effects on it.

2.2.1.4 Effects on Historic Trails
Effects on HTs are discussed based on the currently available trail alignment data.

Old Spanish NHT
The Southern Alternative would cross the Armijo Route of the Old Spanish NHT a total of six times and twice in VAU 18. The Proposed Project generally follows the NHT through 15 VAUs, including VAUs 1, 2, 3, 4, 5, 7, 8, 9, 15, 16, 17, 18, 19, 20, and 21. The magnitude of potential effect on foreground views from the NHT would range from negligible to substantial. The Southern Alternative would attract attention, create strong contrast, and would begin to dominate the landscape in the foreground of the NHT near the BPS-2, BPS-4, and HS-2 South facilities in VAUs 3 and 15, respectively. When the Southern Alternative is viewed in the middle ground of the Old Spanish NHT, it would be either subtle or negligible in terms of the magnitude of effect on the view from the trail.

The level of contrast that would be created by the ETS alignments would be weak in the foreground for portions of the Old Spanish NHT in VAUs 3, 4, and 15 and negligible in the middle ground in VAUs 1, 2, 3, 4, 5, 6, 7, 8, 19, 20, and 21. The ETS alignments would have negligible to subtle direct short- and long-term effects in the middle ground and foreground, respectively, from views from this NHT.

Dominguez-Escalante Historic Trail
The Southern Alternative would cross the Dominguez-Escalante HT three times, in VAUs 2, 10, and 12. The magnitude of potential effects on the foreground views of the HT in these VAUs would be subtle because the project components would create a weak contrast. The HT is present within the middle ground of six VAUs, including VAUs 1, 2, 10, 12, 20, and 21. The Southern Alternative would create subtle or no apparent change because the lines and forms of the project components would result in a weak to negligible degree of contrast when viewed in the middle ground of the Dominguez-Escalante HT.

The level of contrast that would be created by the ETS alignments would be weak in the foreground for portions of the Dominguez-Escalante HT in VAUs 2 and 21and negligible in the middle ground in VAUs 1, 2, and 20. The ETS alignments would have negligible to subtle, direct short- and long-term effects in the middle ground and foreground, respectively, from views from this HT.

Honeymoon Historic Trail
The Southern Alternative would cross the Honeymoon HT once in VAU 10. The project components would be viewed from the foreground of this HT from VAUs 9, 10, 12, and 19 and from the middle ground of seven VAUs, including VAUs 1, 8, 9, 10, 12, 19, and 20. The potential changes to the characteristic landscape when viewed in the foreground or middle ground of this HT would be subtle or would create no apparent change because the lines and forms of the Proposed Project would create a weak to negligible degree of contrast.

The level of contrast that would be created by the ETS alignments would negligible in the middle ground for portions of the Honeymoon HT in VAUs 1, 15, 19, 20, and 21. The ETS alignments would have negligible, direct short- and long-term effects in the middle ground from views from the Honeymoon HT.

Temple Historic Trail
The Southern Alternative would be present within the middle ground view of the Temple HT in VAU 21. The magnitude of change for this VAUs ranges from negligible to notable. The HS-4 facility would be located approximately 3.5 miles from the trail and would create a subtle change from this distance.

The level of contrast that would be created by the ETS alignments would negligible in the middle ground for portion of the Temple HT in VAU 21. The ETS alignments would have negligible, direct short- and long-term effects in the middle ground from views from the Temple HT.

2.2.1.5 Effects on Areas of Critical Environmental Concern
Six areas of critical environmental concern are located in the vicinity of the Proposed Project. The Kanab Creek Area of Critical Environmental Concern (ACEC), in the Arizona Strip Field Office District, is the only area of critical environmental concern that the Southern Alternative would directly cross. According to the Arizona Strip Field Office Resource Management Plan (RMP), the ACEC is designated for the protection of various resources, including scenic resources. The Southern Alternative would cross this ACEC twice, first at Kanab Creek and then at Bitter Seeps Wash. The Southern Alternative would create a subtle, long-term, direct effect on the ACEC because of the landscape modification that would be created across the incised drainages of the Kanab Creek and Bitter Seeps Wash. Approximately 4.1 miles of the Proposed Project alignment may be visible from the foreground of the ACEC and about 3.2 miles from the middle ground based on the bare-earth visibility analysis. Away from the wash crossings, the Southern Alternative would create subtle, short- and long-term, direct effects on foreground views because of the subtle landscape modification and weak level of contrast that would be created by the project components. In the middle ground views of the Southern Alternative would be negligible because the magnitude of change to the landscape and the level of contrast would be negligible.

Johnson Spring Area of Critical Environmental Concern would be located within the foreground of the Southern Alternative. Approximately 2.4 miles of the Proposed Project alignment may be visible from the foreground of Johnson Spring Area of Critical Environmental Concern and approximately 8.7 miles in the middle ground views. The Southern Alternative would have a subtle to negligible direct, short- and long-term effects in the foreground and middle ground views from the Johnson Spring Area of Critical Environmental Concern because of the subtle to negligible change in landscape character and weak to negligible degree of contrast created by the project components.

The Canaan Mountain, Lone Butte, Moonshine Ridge, and Shinarump Areas of Critical Environmental Concern are located within the middle ground distance zone from the Southern Alternative. Effects from the Southern Alternative would be negligible, direct, short- and long-term in the middle ground views from these areas of critical environmental concern because of the negligible change in both the landscape character and degree of contrast created by the project components from this distance zone.

The ETS alignments would be greater than 5 miles away from the six areas of critical environmental concern within the area of analysis; therefore, there would be no potential effects on the areas of critical environmental concern with scenic resource values.

2.2.1.6 Effects on Wilderness Areas and Wilderness Study Areas

There are three wilderness areas (Canaan Mountain, Cottonwood Point, and Paria Canyon-Vermilion Cliffs), and four WSAs (Canaan Mountain, Cockscomb, Paria-Hackberry, and Wahweap) within the vicinity of the Southern Alternative but project components would not physically cross any of these areas. The Cockscomb WSA would be the only unit within the foreground of the Southern Alternative. Approximately 8 miles of the Southern Alternative including the BPS-3 and BPS-4 facilities may be visible within a portion of the foreground distance zone from the Cockscomb WSA based on the bare-earth visibility analysis. Within the foreground, BPS-3 may be visible from about 95 acres within the Cockscomb WSA and BPS-4 may be visible from about 170 acres within this WSA. The noise, dust, and traffic associated with construction of the facilities may have an effect on a portion of this WSA closest to the Southern Alternative. The dispersed nature of the pinyon/juniper vegetation in this portion of the Project Area would help to reduce the visibility of the facilities from views from the Cockscomb WSA. Portions of the Southern Alternative may be visible in the middle ground of this WSA, but the project components would not be visually evident because of the distance and dispersed pinyon/juniper vegetation and would therefore have a negligible effect on the middle ground views from the Cockscomb WSA.

The project components would be located within the middle ground views from the three WAs and the remaining three WSAs. The potential effects on views from these areas, however, would be negligible because the changes from the Southern Alternative would be similar in line, form, color, and texture to the existing cultural modifications in the visual resource area of analysis. The Southern Alternative would have no apparent change to middle ground views from these WAs and WSAs from which the Southern Alternative would be visible. The potential effect on middle ground views from these WAs and WSAs from the Southern Alternative would be negligible.

There are five WAs (Canaan Mountain, Cottonwood Canyon, Cottonwood Point, Cottonwood Forest, and Paria Canyon-Vermilion Cliffs), and three WSAs (Cockscomb, Paria-Hackberry, and Wahweap) within the vicinity of the ETS alignments. The project components would not physically cross any of these areas nor be located within the foreground of any of the WAs or WSAs with the exception of small portion of the Paria Canyon-Vermilion Cliffs WA and the Cockscomb WSA. Approximately 6 miles of the ETS alignments would be within a portion of the foreground distance zone of the Paria Canyon-Vermilion Cliffs WA and approximately 0.1 mile within a portion of the foreground of the Cockscomb WSA. The noise, dust, and traffic associated with construction of the facilities may have an effect on a small portion of the WA and WSA closest to the ETS alignments. Effects from the ETS alignments overall would be subtle in the foreground views because of the subtle change in the landscape character and a weak degree of contrast created by the project components.

The project components would be located within the middle ground views from all five of the WAs and the three WSAs. The potential effects on views from these areas, however, would be negligible because the changes from the ETS alignments would be similar in line, form, color, and texture to the existing cultural modifications in the visual resource area of analysis. The ETS alignments would have no apparent change to middle ground views from these WAs and WSAs from which the ETS alignments would be visible. The potential effects on middle ground views from these WAs and WSAs from the ETS alignments would be negligible.

2.2.1.7 Effects on National Monuments

Grand Staircase-Escalante National Monument
The proposed water pipeline and BPS-3 at the nearest would be approximately 0.15 miles from the GSENM boundary near Cottonwood Canyon Road but in most other locations the Proposed Project features would be 1 mile or farther away. The adverse effect on views along the Cottonwood Road that is in the foreground view from BPS-3 would be substantial as those features create strong contrast which alters the landscape character. BPS-4, High Point Regulation Tank, and HS-1 are all more than 2 miles from the GSENM boundary and most commonly used viewing platforms within the GSENM. Views from GSENM toward those facilities would be negligibly or subtly affected because of the distance and landform screening.

The BPS-3 Transmission Line would be in the foreground and middle ground views from along Cottonwood Road in GSENM. It would create moderate contrast and thus adversely affect the visual resources in that location. The 230 kV Glen Canyon to Buckskin Transmission Line, which would parallel and existing transmission line, would be in the middle ground approximately 3 miles or farther away from the GSENM boundary. At that distance it would be visible but unlikely to attract attention. It would also be partially screened by landform and vegetation reducing visibility. For these reasons it would at most cause minor adverse effects on views from GSENM.

Vermilion Cliffs National Monument
The LPP at its closest point would be approximately 1.7 miles from the VCNM boundary and BPS-1 and BPS-2 approximately 1.8 miles and 5.8 miles, respectively. From that middle ground distance, views of the project components from the VCNM would not be visually evident. The magnitude of effects on the views from the VCNM would be negligible because the Southern Alternative would not be discernible and there would be no apparent change to the setting.

Approximately 12.4 miles of the ETS alignments would be within a portion of the foreground distance zone of VCNM. Effects from the ETS alignments overall would be minor, direct, short- and long-term effects in the foreground views because of the subtle change in the landscape character and a weak degree of contrast created by the project components. The ETS alignments would have no apparent change to middle ground views from VCNM from which the ETS alignments would be visible. The potential effects on middle ground views from VCNM from the ETS alignments would be negligible, direct, short- and long-term effects.

Pipe Spring National Monument
The Southern Alternative would be approximately 4 miles from PSNM. From that middle ground distance, views of the project components from PSNM would not be visually evident. The magnitude of effects on the views from PSNM would be negligible because the Southern Alternative would not be discernible and there would be no apparent change to the setting.

The ETS alignments would be greater than 5 miles away from the PSNM; therefore, there would be no potential effects on PSNM.

2.2.1.8 Effects on Sand Hollow State Park
The vertical lines and rectangular forms of the project components would attract attention and would create a strong, direct long-term effect on the foreground views of campground users, boaters, and/or informal Sand Hollow Reservoir recreationists when they are in the southeastern portion of the state park.

The approximately 4-mile-long 69 kV Sand Hollow Transmission Line component of the ETS alignments would be located along the south and west side of Sand Hollow State Park. The presence of the 69 kV Sand Hollow Transmission Line would attract attention and create a notable change in the foreground of the setting from the park from the south side of the reservoir and from the Sandpit Campground. This transmission line would create negligible to notable, long-term effects from the Sand Hollow State Park depending on the viewing location.

2.2.1.9 Effects on Kaibab Indian Reservation
Foreground views from the KIR would be limited to approximately 8 miles of the Southern Alternative. The magnitude of change in the landscape would be notable and would attract attention. The Southern Alternative would result in a notable effect on the foreground of the KIR. From that middle ground distance, views of the project components would not be visually evident. The magnitude of effects on the views would be negligible because the Southern Alternative would not be discernible and there would be no apparent change to the setting.

The Southern Paiute Advisory Committee (SPAC), based on discussions with the Kaibab Band of Paiute Indians Tribal Council, identified numerous culturally important resources within the Project Area (SPAC 2012). While it is understood that there may be other important resources, this analysis will consider the potential effects from a visual resource aspect to 17 culturally important resources discussed by the advisory committee. The locations of these 17 resources are general in nature; therefore, the analysis of the potential effect on the landscape character will be consistent with the overall magnitude of changes with the given foreground and middle ground of the VAU's setting. Of the 17, four may be within the foreground of the Southern Alternative and the remaining 13 within the middle ground from the project components. The four culturally important resources within the foreground of the Southern Alternative would generally be located in VAUs 9 and 12. Depending on visibility, the project components would range from subordinate to prominent features in the setting and would create subtle to notable degrees of change in the characteristic landscape in the foreground. Therefore, the effects on the characteristic landscape of the four culturally important resources within the foreground of the Southern Alternative would range from subtle to notable, direct, short- and long-term effects.

The 13 culturally important resources in the middle ground of the Southern Alternative are generally located within VAU 12. The Southern Alternative may not be visible from one of the 13 culturally important resources based on the bare-earth visibility analysis assessed from the centerline of the Proposed Project. In the middle ground, the Southern Alternative would create a negligible effect to the setting in the short- and long-term to the remaining 12 culturally important resources because the project components would not be visually evident or perceived in the characteristic landscape.

The ETS alignments would be greater than 5 miles away from the KIR and any known culturally important resources; therefore, there would be no potential effects on the KIR.

2.2.1.10 Effects on Navajo Indian Reservation

A portion of the Navajo Nation, just south and east of Page, would be within the middle ground of the Southern Alternative. The majority of the Proposed Project components would not be visible based on the bare-earth visual analysis. Where the Southern Alternative would be visible, the existing lines, forms and colors and visual patterns of the existing cultural modifications would diminish the visual prominence of the Southern Alternative including the Intake Pump Station, and BPS-1 facilities. The Southern Alternative would create a negligible, direct short- and long-term effect when the middle ground of the Navajo Nation because it would there would be no apparent change in the characteristic landscape.

A portion of the Navajo Nation, just south and east of Page, would be within the middle ground of the ETS alignments. Where the ETS alignments would be visible, the existing lines, forms, colors, and visual patterns of the existing cultural modifications would diminish the visual prominence of the ETS alignments. The ETS alignments would create a negligible, direct short- and long-term effect when the middle ground of the Navajo Nation because there would be no apparent change in the characteristic landscape.

2.2.1.11 Conformance with BLM VRM Objectives – Southern Alternative

The BLM has measurable standards for managing the visual resources of BLM-managed lands. Management classes with established objectives have been identified for visual resources in the area of analysis as part of the RMP process. The BLM's Visual Resource Contrast System (BLM 1986) was used to evaluate the visual contrast between the Southern Alternative and the existing landscape. The contrast rating evaluations were conducted from KOPs within the visual resources area of analysis. With successful implementation of environmental protection and mitigation measures, the VRM class objectives would be met in all VAUs. Table 2.2-3 notes the KOPs, VRM Class Objectives, the most impactful results of Contrast Rating Analyses for each KOP (see Attachment A, Contrast Rating Forms), and whether VRM objectives would be met in each location. Table 2.2-4 notes the VAUs, long term effects, VRM Class Objectives and whether VRM objectives would be met within each VAU.

Table 2.2-3 Southern Alternative KOPs and Conformance with Visual Resource Management Class Objectives

KOP No. and Name/Associated Alignment	VRM Class	Contrast Rating	Conformance
11b – Linear - U.S. Highway 89 - BPS-3			
Proposed Water Pipeline Alignment	IV	Strong	Meets
Proposed Electric Transmission System Alignment	IV	Moderate	Meets
12b – BPS-3 from Cottonwood Road			
Proposed Water Pipeline Alignment	IV	Strong	Meets
Proposed Electric Transmission System Alignment	IV	Moderate	Meets
13 – Linear - U.S. Highway 89 near Toadstools Trailhead			
Proposed Water Pipeline Alignment	III	Weak	Meets
14 – Linear - Toadstools Trailhead			
Proposed Water Pipeline Alignment	III	Weak	Meets
15 – Paria Contact Station			
Proposed Water Pipeline Alignment	III	Weak	Meets
18 – Linear- U.S. Highway 89 - BPS-4			
Proposed Water Pipeline Alignment	III	Weak	Meets
19 – Road to Paria Interpretive Site			
Proposed Water Pipeline Alignment	III	Weak	Meets
20 – Linear – U.S. Highway 89 - HS-1			
Proposed Water Pipeline Alignment	III	Moderate	Meets
Proposed Electric Transmission System Alignment	III	Moderate	Meets
21 – Linear - High Point Regulation Tank 2 - Great Western Trailhead			
Proposed Water Pipeline Alignment	III	Weak	Meets
Proposed Electric Transmission System Alignment	III	Weak	Meets
26 – Shinarump Cliffs Overlook			
Proposed Water Pipeline Alignment	III	Weak	Meets
27 – Dominguez-Escalante and Honeymoon Trails Crossing			
Proposed Water Pipeline Alignment	III	Weak	Meets
28 – Kanab Creek ACEC			
Proposed Water Pipeline Alignment	III or IV	Weak	Meets
29 – Bitter Seeps Wash (Kanab Creek ACEC)			
Proposed Water Pipeline Alignment	IV	Weak	Meets
30 – Mount Trumbull Road (Antelope Valley Road)			
Proposed Water Pipeline Alignment	IV	Weak	Meets
35 – Linear - Uzona Avenue/Canaan Wash			
Proposed Water Pipeline Alignment	III	Weak	Meets
37 – Little Creek Overlook			
Proposed Water Pipeline Alignment	IV	Weak	Meets
Proposed Electric Transmission System Alignment	IV	None	Meets
38 – Linear - HS-4 from Frog Hollow Road			
Proposed Water Pipeline Alignment	IV	Strong	Meets
Proposed Electric Transmission System Alignment	IV	Moderate	Meets
39 – Linear – HS-5 - Hurricane Cliffs Road			
Proposed Water Pipeline Alignment	IV	Strong	Meets
Proposed Electric Transmission System Alignment	IV	Moderate	Meets
41 – Linear - Sand Hollow State Park Campground and Reservoir			
Proposed Water Pipeline Alignment	IV	Weak	Meets
Proposed Electric Transmission System Alignment	IV	Strong	Meets

Table 2.2-4 Long-term Effects and Conformance with BLM VRM Objectives by Southern Alternative VAUs

VAU No.	VAU	Long-term Effects	VRM Classes	VRM Conformance
2	Wahweap	Negligible to Subtle	IV	Meets
3	Big Water	Negligible to Substantial	IV	Meets
4	East Clark Bench	Subtle to Substantial	III, IV	Meets
5	Rimrocks/Paria River Valley	Negligible to Subtle	III	Meets
6	Cockscomb	Negligible to Notable	III	Meets
7	Fivemile Valley	Negligible to Notable	II[(a)], III	Meets
8	Telegraph Flat	Negligible to Notable	III, IV	Meets
10	White Sage Wash	Negligible to Subtle	II, III, IV	Meets
12	Jacob Canyon/Kanab Creek/Pipe Valley	Negligible to Subtle	III, IV	Meets
15	Cottonwood Wash	Negligible to Substantial	III	Meets
16	Colorado City/Hildale	Negligible to Subtle	III	Meets
17	Uzona-Canaan Wash	Negligible to Subtle	III, IV	Meets
18	Short Creek	Negligible	IV	Meets
19	Frog Hollow	Subtle to Substantial	IV	Meets
20	Hurricane Cliffs Road	Subtle to Substantial	II[(b)], IV	Meets
21	Sand Hollow	Negligible to Substantial	IV	Meets

Notes:
(a) A sliver of VRM II is crossed by the transmission line that parallels an existing line on the slopes of Five Mile Mountain.
(b) The VRM II is on the face of Hurricane Cliffs where the pipeline is tunneled behind it and objectives are met.
Key:
VAU = visual assessment unit
VRM = visual resource management

2.2.1.12 Conformance with GCNRA Visual Objectives – Southern Alternative

The GCNRA Recreation and Resource Utilization Zone consists of areas with greater susceptibility to the activities of man, potential or actual mineral resources, or value for utility ROWs or development. It has similar management objectives to the BLM VRM Class III objectives which was used as a proxy to determine conformance with GCNRA visual objectives. The GCNRA Development Zone centers around the existing developed areas, in which provision of visitor services and maintenance of facilities is practiced. The GCNRA Development Zone has similar management objectives to the BLM VRM Class IV objectives which was used as a proxy also. Table 2.2-5 notes the KOPs, proxy VRM Class Objectives, the most impactful results of Contrast Rating Analyses for each KOP (see Attachment A, Contrast Rating Forms), and whether visual objectives would be met in each location. Table 2.2-6 notes the VAUs, long term effects, proxy VRM Class Objectives and whether visual objectives would be met within each VAU.

Table 2.2-5 Southern Alternative KOPs and Conformance with GCNRA Zones Visual Objectives

KOP No. and Name/Associated Alignment	Proxy VRM Class	Contrast Rating	Conformance
2 – Former McDonalds Parking Lot			
Proposed Intake	IV	Weak	Meets
Proposed Water Pipeline Alignment	III, IV	None	Meets
Proposed BPS-1	III	Weak	Meets
Proposed Electric Transmission System Alignment	III	Weak	Meets
3 – Pullout near Bridge			
Proposed Intake	IV	Weak	Meets
Proposed Water Pipeline Alignment	III, IV	None	Meets
Proposed BPS-1	III	Weak	Meets
Proposed Electric Transmission System Alignment	III	Weak	Meets
4 – Chains Day Use Area			
Proposed Intake	IV	Moderate	Meets
Proposed Water Pipeline Alignment	III	Weak	Meets
Proposed BPS-1	III	None	Meets
Proposed Electric Transmission System Alignment	III	Weak	Meets
6 – Wahweap Overlook			
Proposed Water Pipeline Alignment	III	Weak	Meets
Proposed BPS-1	III	Weak	Meets
Proposed Electric Transmission System Alignment	III	Weak	Meets
7 Linear – Blue Pool Mesa			
Proposed Water Pipeline Alignment	III	Weak	Meets
8 Linear – U.S. Highway 89/Larkspur Road			
Proposed Water Pipeline Alignment	III	Weak	Meets

Key:
GCNRA = Glen Canyon National Recreation Area
KOP = Key Observation Point
VRM = visual resource management

Table 2.2-6 Long-term Effects and Conformance with GCNRA Zones Visual Objectives by Southern Alternative VAUs

VAU No.	VAU	Long-term Effects	Proxy VRM Class	Conformance
1	Lake Powell/Glen Canyon	Negligible to Notable	III, IV	Meets
2	Wahweap	Negligible to Subtle	III	Meets
3	Big Water	Negligible to Substantial[(a)]	III	Meets[(a)]

Note:
(a) The substantial effect in this VAU is associated with BPS-2 along U.S. Highway 89, which is about 3 miles from the GCNRA boundary. From that viewing distance the effects would subtle.
Key:
GCNRA = Glen Canyon National Recreation Area
KOP = Key Observation Point
VAU = visual assessment unit
VRM = visual resource management

2.2.1.13 Resource Management Plan Amendment

In the portion of the Project Area where the Arizona Strip Field Office Resource Management Plan Amendment (RMPA) is being considered, the VRI documented that the area is of high-quality scenery where maintaining the scenic quality is highly valued but that is in an area that is seldom seen by the general public. If environmental protection and mitigation measures are successfully implemented, the Proposed Project features (pipeline alignment) would create weak contrast in the long term resulting in subtle changes to the existing landscape character in a location where visitation by the general public is low.

Sub-alternative 1

Under RMPA Sub-alternative 1, new land use authorizations could be allowed in the ACEC even when another reasonable alternative exists. However, the proposed amendment to Decision No. MA-LR-06 would still require mitigation for effects on visual resources from new land use authorizations (determined during site-specific project planning). The proposed amendment to Decision No. LA-VR-01 would add new language to provide clarification that where a designated utility corridor overlaps an area of critical environmental concern, the VRM class is Class IV. Thus, the proposed amendment to Decision No. LA-VR-01 would provide for substantial changes in the landscape characteristics within the utility corridor located within the ACEC, increasing the likelihood of adverse effects to the ACEC visual values.

Sub-alternative 2

Under RMPA Sub-alternative 2, the ACEC would be reduced, and the VRM class of the excluded area (905 acres) would be reclassified as Class III. The change in management objectives from Class II to Class III allows partial (rather than full) retention of the existing character of the landscape and provides for a moderate level of change to the characteristic landscape (versus a low level of change under VRM Class II). Under Class III, changes should repeat (versus "must" repeat in Class II) the basic elements found in the predominant natural features of the landscape, management activities may attract the attention of the casual observer. Sub-alternative 2 would allow for moderate changes to the landscape character that could attract attention on those 905 acres excluded from the ACEC.

Sub-alternative 3

Under RMPA Sub-alternative 3, effects would be similar to Sub-alternative 1. In addition, in Sub-alternative 3, the utility corridor would no longer be an avoidance area for new land use authorizations, increasing the likelihood of adverse effects to visual resources, however, mitigation would be required to address any effects identified in site specific analysis. The utility corridor expansion areas would change from either VRM Class II (areas in the ACEC) or Class III (areas outside of the ACEC) to VRM Class IV, and the area where the utility corridor is removed would be VRM Class II in the ACEC and would change from VRM Class IV to Class III outside of the ACEC. The summary of changes by VRM class would be as follows:

Class II – net increase of 175.5 acres;
Class III – net increase of 142.4 acres; and
Class IV – net decrease of 317.9 acres.

Class IV would allow substantial changes to existing visual resources because VRM Class IV is intended to provide for management activities that require substantial modifications of the existing character of the landscape. Class II or Class III would allow for less change to the existing characteristic landscape because the objective of Class II is to retain the existing character, while the objective of Class III is to partially retain the existing character.

2.2.2 Mitigation Measures

Minor changes to the EPMs should be implemented to meet agency-specific goals and objectives for management of visual resources In addition to the environmental protection measures noted in Section 1.3, above, the following mitigation measures are needed to protect visual resources and have been considered for the visual resource effects analysis:

2.2.2.1 General

- Design, construction, and monitoring of the Proposed Project would meet and/or exceed respective visual resource objectives.
- Visual effect design and mitigation goals, objectives, and activities would be discussed with equipment operators before construction activities begin.

2.2.2.2 Restoration and Revegetation

- Restoration of all disturbed areas to match existing and characteristic landforms would be performed. This includes rounding cut slopes along maintenance roads, pipeline alignments, and streambanks/washes to blend with surrounding natural contours. Restored slopes exceeding 6:1 would be stabilized using erosion control materials and techniques.
- Pitting to reduce contrast and visibility of the pipeline alignment and discourage vehicular access along the disturbed areas should be used.

2.2.2.3 Siting

- Transmission lines would be aligned as close to existing transmission lines as feasible and use existing access roads for construction and maintenance. When transmission lines exist along highway/roads, new lines would be located on the same side.
- Pipeline would be aligned with existing roads and around landforms to avoid unnecessary disturbance.
- Where possible, Proposed Project features would be sited in areas of existing disturbance to reduce vegetation clearing and new ground disturbance.

2.2.2.4 Earthwork

- Design and location of structures and roads would minimize and balance cuts and fills. Excessive cut/fill activities would be avoided, and excess fill material would not be not disposed of downslope. Reducing cut and fill has numerous visual benefits, including fewer fill piles, retention of existing landform and vegetation, less invasive weeds, reduced color contrasts with disturbed soils, and reduced visual disturbance from erosion.
- All slope design would be naturalistic, using contour grading and slope rounding for all tops, bottoms, mid slopes, and sides of new grading that join the existing slopes and landforms. Final color of new slopes would blend with adjacent slopes. Salvage and reuse of native rock and boulders, and preservation of natural outcrops would establish new features that blend with existing rock and boulder features in the surrounding natural landscape. Contour grading would be incorporated into all facility grading plans using contour lines to indicate all grading, slope rounding and aesthetic mounding for the ground plane and slopes using rounded slope designs at the top and bottom of slopes.
- Contouring to rough texture would trap seed and discourage off-road travel, thereby reducing associated visual effects.

- Sculpt and shape natural or previously excavated bedrock landforms when excavation of these landforms is required. Integrate percent backslope, benches, and vertical variations into final landform that repeats the natural shapes, forms, textures, and lines of the surrounding landscape. Integrate and transition the earthen landform into the excavated bedrock landform. Sculpted rock face angles, bench formations, and backslopes would adhere to the natural bedding planes of the natural bedrock geology. Half-case drill traces from pre-split blasting are not to remain evident in the final rock face.
- Constructed berms would be shaped to mimic the lines, forms, and textures of the existing landscape. Berms would not be constructed solely as screening features because they often attract additional or more attention than what they are meant to disguise.

2.2.2.5 Roads

- For road construction, excess fill would be used to fill uphill side swales to reduce slope interruption that would appear unnatural and to reduce fill piles. Road cut slopes would be rounded, and the cut/fill pitch would be varied to reduce contrasts in form and line. The slope would be varied to preserve specimen trees and nonhazardous rock outcroppings.
- Final width of access roads would be only what is necessary to provide access post-construction.
- Installation of gravel and pavement would be avoided where possible to reduce color and texture contrasts with the existing landscape. Temporary but necessary gravel and other surface treatments would be removed once no longer needed.
- New roads created to access Proposed Project features that do not require regular maintenance (i.e., transmission tower sites) would be revegetated but not restored to original contours, in the event that emergency access is needed to a tower location or for periodic inspection and maintenance activities.
- Culvert ends would be painted or coated to reduce color contrasts with existing landscape.
- Access roads would be sited around trees and thick stands of vegetation to the degree possible.

2.2.2.6 Facilities/Signs

- Grouped structures would be the same color to reduce visual complexity and color contrast.
- Sign clutter would be avoided by only installing those signs and markers that are required for safety and identification. Reverse sides of signs and mounts would be painted or coated to reduce contrast, glint and visibility. ROW markers would be only as tall as necessary to be seen and those along roads would be installed parallel to travel on road. No reflective or yellow or white signs/markers would be used.

2.2.2.7 Electrical Transmission

- Transmission lines would be co-located with existing utility corridors and access roads whenever possible. Substations would be co-located or upgraded to increase capacity wherever possible.
- The style, type, and color of transmission line towers and poles would be selected to best blend with the characteristic landscape and reduce contrast and visibility. Custom colored towers and poles may be specified in sensitive viewsheds.
- Use non-specular wire and finish components throughout Proposed Project.
- Avoid siting transmission lines on skylines unless no other options exist.

2.3 Highway Alternative

The Highway and Southern Alternatives share pipeline alignments except the segments from Telegraph Flat past the KIR. The effects to the shared alignments would be the same; and as with the Southern Alternative, the Highway Alternative would result in notable to substantial adverse effects on visual resources associated with the large facilities (BPSs or HSs and associated infrastructure) that would be constructed adjacent to roads and highways. Those located in areas that are primarily undeveloped would create the greater magnitude of effect. The transmission lines create negligible to notable adverse effects depending on their location and proximity to other utility lines or development. The pipeline disturbance would result in negligible to subtle adverse effects across the Project Area if environmental protection and mitigation measures are successfully implemented, and it would create less overall change in landscape character compared to the Southern Alternative because more of the pipeline would parallel already disturbed highway alignments. Across the Highway Alternative where the alignments cross federal lands, BLM VRM objectives and NPS Zone visual objectives would be met.

2.3.1 Effects of Highway Alternative

This section addresses effects on visual resources for the Highway Alternative and the determinations for conformance with management objectives. The following subsections qualitatively describe the potential effects on the VAUs and views from sensitive viewing platforms from the proposed Highway Alternative. Many of the VAUs in this alternative are the same as those in the Southern Alternative and are not listed again.

Table 2.3-1 catalogs the KOPs and associated visualizations by name and number for those associated only with the Highway Alternative; and provides the VAU in which each visualization was located. Table 2.3-2 summarizes the long-term effects on the landscape character and to the views for each VAU associated only with the Highway Alternative. As with the Southern Alternative, the substantial adverse effects on visual resources would primarily be associated with the large facilities (BPSs and HSs and associated infrastructure) that would be constructed, most of which would be adjacent to roads and highways. Successful implementation of protection and mitigation measures would result in subtle adverse visual effects for the pipeline alignment. The ETS features would result in negligible to notable adverse effects depending on whether they are aligned with existing infrastructure or are sky lined.

Table 2.3-1 KOPs, Visualizations and VAUs Only Associated with Highway Alternative

KOP No.	KOP Name	Corresponding VAU Number
24	Linear – U.S. Highway 89 – Pioneer Gap	9 – Kanab/Vermilion Cliffs Unit
31	Kaibab Paiute Tribal Headquarters	13 – Potter Canyon Unit
32	Linear - Hydro Station 2 Westbound from State Route 389	15 – Colorado City/Hilldale Unit

Key:
KOP = key observation point
VAU = visual assessment unit

Table 2.3-2 Long-term Effects by VAUs Associated Only with Highway Alternative

VAU No.	VAU	Long-term Effects
9	Kanab/Vermilion Cliffs	Negligible to Subtle
11	Kanab/Fredonia/Lost Springs Wash	Negligible to Subtle
13	Shinarump Cliffs	Negligible to Subtle
14	Potter Canyon	Negligible to Subtle
15	Cottonwood Wash	Negligible to Substantial

Key:
VAU = visual assessment unit

2.3.1.1 Short-term Effects on Landscape Character from the Highway Alternative

Short-term effects for those VAUs where the Highway and Southern Alternatives overlap are discussed in Section 2.2.1, above.

Like the Southern Alternative, ground-disturbing activities associated with construction of the pipeline would remove a band of existing vegetation approximately 120 feet wide. The clearing of sage-scrub vegetation for HS-2 Highway would create large rectangular shapes in the characteristic landscape. Two staging areas approximately 23 acres and 30 acres in size would be constructed in VAU 9, which would 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 over time.

The degree of contrast with existing vegetation that would be created by the Proposed Project would depend primarily on the height, texture/pattern, or color of the vegetation. The height of the vegetation is generally low to medium in the five Highway Alternative VAUs and the vegetative texture/pattern is generally dense and/or even. The taller vegetation would help reduce contrast but the dense, even texture would result in vegetation removal being more noticeable.

The color of the existing vegetation would also influence the degree of contrast that the Proposed Project and related Project Areas of disturbance would create. Color contrast would be increased in areas with stippled to patchy pinyon/juniper vegetation, which is found in varying densities in all VAUs. The irregular patterns of dark green vegetation in these landscapes contrast with the surrounding desert scrub vegetation. If bands of the dark green vegetation are 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 landforms throughout the area of analysis by exposing lighter soils, which would contrast with the adjacent soils and vegetation. Effects on rock formations would occur in all Highway Alternative VAUs but would be most notable in VAU 11 as the Proposed Project would cross the Shinarump Cliffs and Kanab Creek and in VAU 15 across Cedar Ridge and Cottonwood Wash. These effects would range from a subtle to notable change in the characteristic landscape in the short-term. In addition, the level of change 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.

Existing cultural modifications within the VAUs would also affect the amount of contrast that the Proposed Project and related Project components area of disturbance would create. The existing

cultural modifications Highway Alternative VAUs consist of residential, commercial, and visitor/recreation infrastructure associated with Fredonia, Kanab, the Kaibab Band of Paiute Indians Tribal Headquarters, and PSNM visitor center. The Proposed Project and related project components' area of disturbance would also parallel existing roads and/or pipeline alignments throughout much of the area of analysis. 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 weak degree of change in the setting with the cultural modifications in these areas. The Highway Alternative would generally parallel existing linear disturbances (e.g., roads, pipeline) through the five Highway Alternative VAUs.

The magnitude of change in the setting in the foreground in the short-term would be subtle in VAUs 11, 13, and 14 because the ground disturbance during construction would not attract attention. The magnitude of change in the foreground for VAU 9 and 15 would be notable in the short-term and would attract attention because of the disturbance associated with the large areas of clearance for the staging areas and the HS-2 Highway facilities.

2.3.1.2 Long-term Effects on Landscape Character from the Highway Alternative

Long-term effects for those VAUs where the Highway and Southern Alternatives overlap are discussed in Section 2.2.1.1, above.

A subtle magnitude of change would occur in VAUs 9, 11, 13, and 14. Because the lines and forms of the pipeline would be similar to those of the existing landscape, the degree of contrast would be weak and would not attract attention. The existing visual elements and patterns of the cultural modifications (i.e., existing transmission lines, highway, and development associated with the communities of Kanab and Fredonia) present within this VAU would diminish the visual prominence of the pipeline. The magnitude of change to VAUs 15 from HS-2 Highway would be substantial in the foreground because it would add strong contrast in form and texture.

2.3.1.3 Effects on Views from Sensitive Viewing Platforms from the Highway Alternative

Effects on view from sensitive viewing platforms for those VAUs where the Highway and Southern Alternatives overlap are discussed in Section 2.2.1.2, above.

The Highway Alternative would not be visually evident when viewed from the middle ground from KOPs 24 and 25 in VAU 9, KOP 31 in VAU 13, from the Dominguez-Escalante HT in VAU 13, from the Old Spanish NHT in VAUs 11, 13, and 14, Honeymoon HT in VAUs 13 and 14, Highway 389 in VAUs 13 and 14, and the Fredonia-Vermilion Cliffs Scenic Road/U.S. Highway 89A in VAU 11.

There would be a subtle or weak degree of contrast created by the pipeline and associated facilities when viewed from KOP 31 in VAU 13, the Old Spanish NHT in VAUs 9, 11, 13, and 14, Honeymoon HT in VAUs 9, 13, and 14, U.S. Highway 89A in VAU 9, Fredonia-Vermilion Cliffs Scenic Road/ U.S. Highway 89A in VAU 11, and SR-389 in VAUs 13 and 14 in the foreground. The Highway Alternative would also have a subtle magnitude of change and weak contrast in middle ground from the Old Spanish NHT, Honeymoon HT, and U.S. Highway 89A in VAU 9 and each of the five platforms in VAU 1 in VAU 9 and each of the five platforms in VAU 15. The Highway Alternative when viewed from these platforms would not attract attention and would be generally compatible with the setting.

Seven of the viewing platforms would be subject to a strong level of contrast and substantial degree of change to the views. The Proposed Project facilities would begin to dominate the foreground views from the Old Spanish NHT in VAU 9, and KOPs 32 and 33, the Old Spanish NHT, U.S. Highway 89, and County 239 in VAU 15. The HS-2 South would create a strong level of contrast in VAU 15.

2.3.1.4 Effects on Scenic Roads and Byways

Effects on scenic roads and byways for those VAUs where the Highway and Southern Alternatives overlap are discussed in Section 2.2.1.3, above.

Fredonia-Vermilion Cliffs Scenic Road/U.S. Highway 89A

The Highway Alternative would be in the middle ground of the Fredonia-Vermilion Cliffs Scenic Road/U.S. Highway 89A. The cultural modifications associated with the town of Fredonia would diminish the visual prominence of the Proposed Project. The landscape character would remain intact with no apparent change. The Highway Alternative would create a negligible level of contrast and there would be no effect on the designated scenic road.

Zion Park Scenic Byway/State Route 9

Effects to the Zion Park Scenic Byway would be the same as those described in Section 2.2.1.3, above.

2.3.1.5 Effects on Historic Trails

Effects on HTs for those VAUs where the Highway and Southern Alternatives overlap are discussed in Section 2.2.1.4, above.

Old Spanish NHT

The Highway Alternative would cross the Armijo Route of the Old Spanish NHT a total of 12 times; eight times alone in VAU 11. This Alternative would parallel the Old Spanish NHT within the foreground of the trail for approximately 38.7 miles and the middle ground for about 4.4 miles. The magnitude of potential effects on foreground views from the Old Spanish NHT would range from subtle in VAU 9, 11, 13, and 14 because it would be consistent with the existing linear form of U.S. Highway 89A and SR-389 to substantial in VAU 15. The Highway Alternative would attract attention, create strong contrast, and would begin to dominate the landscape in the foreground of the NHT near the HS-2 South facilities in VAU 15. When the Highway Alternative is viewed in the middle ground of the Old Spanish NHT, the magnitude of direct effects would be either subtle or negligible in the long term.

Dominguez-Escalante Historic Trail

The Highway Alternative would not present in the foreground of the Dominguez-Escalante HT of VAUs 9, 11, and 13. When this Alternative is viewed in the middle ground of the Dominguez-Escalante HT in VAUs 9 and 13, the magnitude of direct effects would be negligible. The project components would be in the middle ground of this HT but would not be visible from the Dominguez-Escalante HT in VAU 11 based on the bare-earth visibility analysis.

Honeymoon Historic Trail

The Highway Alternative would be viewed from the foreground and from the middle ground of the Honeymoon HT from VAUs 9, 13, and 14. This alternative would cross the trail in two locations, once in VAU 9 and once in VAU 14. Approximately 16 miles of the HT would be within the

foreground of the Proposed Project with unobstructed visibility. The potential changes to the characteristic landscape when viewed in the foreground or middle ground of this HT would be subtle because the lines and forms of the project components would be consistent with the existing linear form of U.S. Highway 89A and SR-389 in VAUs 9, 13, and 14.

Temple Historic Trail
Effects to the Temple HT would be the same as those described in Section 2.2.1.4, above.

2.3.1.6 Effects on Areas of Critical Environmental Concern
Effects on areas of critical environmental concern for those VAUs where the Highway and Southern Alternatives overlap are discussed in Section 2.2.1.5, above.

Five areas of critical environmental concern (Shinarump, Johnson Spring, Kanab Creek, Moonshine Ridge, and Lone Butte) that have scenic resources identified as a resource relevant to the area of critical environmental concern are located within the foreground and/or middle ground of the Highway Alternative. None of these five areas of critical environmental concern would be crossed by the Proposed Project. Less than 1 mile of the Proposed Project alignment would cross the foreground of the Shinarump Area of Critical Environmental Concern but would not be visible according to the bare-earth visibility analysis. Almost 7 miles of the Highway Alternative may be visible within the middle ground from the Shinarump Area of Critical Environmental Concern. The remaining four areas of critical environmental concern (Johnson Spring, Kanab Creek, Moonshine Ridge, and Lone Butte) would only be potentially visible within the middle ground.

Approximately 6 miles of the Highway Alternative may be visible in the middle ground from Johnson Spring, 3 miles from Kanab Creek, 4.5 miles from Moonshine Ridge, and 6.5 miles from Lone Butte. This alternative would create negligible effects on middle ground views because of the weak level of contrast that would be created by the project components.

2.3.1.7 Effects on Wilderness Areas and Wilderness Study Areas
Effects on WAs and WSAs for those VAUs where the Highway and Southern Alternatives overlap are discussed in Section 2.2.1.6, above.

The Cottonwood Canyon WA would be within the area of analysis of the Highway Alternative; the Proposed Project components would not physically cross any of these areas nor cross within the foreground of this WA. Approximately 1.3 miles of the Highway Alternative including the HS-2 (Hwy) facility may be visible within a portion of the middle ground distance zone from the Cottonwood Canyon WA based on the bare-earth visibility analysis. The potential effects on views from this WA, however, would be negligible because the changes from the Highway Alternative would be similar in line, form, color, and texture to the existing cultural modifications. The Highway Alternative would have no apparent change to middle ground views from the Cottonwood Canyon WA from which the project components may be visible. The potential effect on middle ground views from the Cottonwood Canyon WA of the Highway Alternative would be negligible.

2.3.1.8 Effects on National Monuments
Effects on national monument for those VAUs where the Highway and Southern Alternatives overlap are discussed in Section 2.2.1.7, above.

Grand Staircase-Escalante National Monument
Where the Highway Alternative veers away from the Southern Alternative on Telegraph Flat, it would follow U.S. Highway 89 and be within the foreground at 0.25 miles of the GSENM boundary at the nearest. The pipeline alignment would be visible from a middle ground distance of about 1.5 miles from Flag Point, a popular recreational destination. The adverse effects to views from GSENM would be negligible to subtle because of the distances, the pipeline alignment following the highway and the disturbances being mostly unnoticeable if implemented environmental protection and mitigation measures are successful.

Vermilion Cliffs National Monument
Where the Highway Alternative veers away from the Southern Alternative on Telegraph Flat, it would be at it nearest, about 12 miles from the VCNM; therefore, there would be no effect on this Monument.

Pipe Spring National Monument
Approximately 0.5 miles of the Highway Alternative may be visible in the foreground from the PSNM and about 1.6 miles in the middle ground views from the Monument. From that foreground and middle ground distances, the potential effects on the views from the PSNM would be consistent with the existing linear form of SR-389 and would range from negligible to subtle, direct long-term effects.

2.3.1.9 Effects on Sand Hollow State Park
The Highway Alternative would have the same effects to Sand Hollow State Park as the Southern Alternative as noted in Section 2.1.1.8, above.

2.3.1.10 Effects on Kaibab Indian Reservation
Foreground views from the KIR would be limited to approximately 16 miles of the Highway Alternative. The lines and form of the pipeline disturbance would be similar to the lines and forms of the existing highway and other unpaved roads in the vicinity. The Proposed Project components would create a subtle degree of change in the setting and would be visually subordinate to other elements in the setting. The Highway Alternative would result in a subtle, direct short-term and long-term effect in the foreground of the KIR. From that middle ground distance from the KIR, views of the project components would not be visually evident. The magnitude of effects on the views from the KIR would be negligible because the Highway Alternative would not be discernible and there would be no apparent change to the setting.

As previously mentioned, the SPAC discussions with the Kaibab Band of Paiute Indians Tribal Council identified 17 culturally important resources within the area of analysis for visual resources. Of the 17, 11 may be within the foreground of the Highway Alternative, four within the middle ground, and two in the background from the project components. The 11 culturally important resources within the foreground of the Highway Alternative would generally be located in VAUs 9, 11, and 13. Depending on visibility, the Proposed Project components would range from subordinate to visually prominent features in the setting and would create subtle to notable degrees of change in the characteristic landscape in the foreground. Therefore, the effects on the characteristic landscape of the 11 culturally important resources within the foreground of the Highway Alternative would range from subtle to notable, direct, short- and long-term effects.

The four culturally important resources in the middle ground of the Highway Alternative are generally located within VAUs 13 and 14. In the middle ground, the Southern Alternative would create a negligible effect on the setting in the short- and long-term to the remaining four culturally important resources because the project components would not be visually evident or perceived in the characteristic landscape.

The remaining two cultural important resources would appear to be more than 5 miles away from the Highway Alternative. It would not be likely that the Proposed Project would be visually discernible from that distance during construction or operation. Therefore, the landscape character would remain intact with no apparent change to the setting as viewed from these two resources.

2.3.1.11 Effects on Navajo Indian Reservation

The Highway Alternative would be the same as those for the Southern Alternative as detailed in Section 2.2.1.10, above.

2.3.1.12 Conformance with BLM VRM Objectives

Conformance with BLM VRM Objectives for those VAUs where the Highway and Southern Alternatives overlap are discussed in Section 2.2.1.11, above. Where the Highway Alternative passes through other BLM-managed lands project components create negligible to subtle contrast thus meeting the VRM III or IV objectives. See Tables 2.3-3 and 2.3-4 for specifics.

Table 2.3-3 Highway Alternative KOP and Conformance with Visual Resource Management Class Objectives

KOP No. and Name/Associated Alignment	VRM Class	Contrast Rating	Conformance
24 - Linear – U.S. Highway 89			
Proposed Water Pipeline Alignment	III	Weak	Meets

Key:
KOP = key observation point
VRM = visual resource management

Table 2.3-4 Long-term Effects and Conformance with BLM VRM Objectives by VAUs Only Associated with Highway Alternative

No.	Visual Assessment Unit/Sensitive Viewing Platform	Long-term Effects	VRM Class	VRM Conformance
9	Kanab/Vermilion Cliffs	Negligible to Subtle	III, IV	Meets
11	Kanab/Fredonia/Lost Springs Wash	Negligible	III	Meets

Key:
VRM = visual resource management

2.3.1.13 Conformance with GCNRA Visual Objectives – Southern Alternative

Conformance with GCNRA visual objectives are the same as described in Section 2.2.1.12, above.

2.3.2 Mitigation Measures

The mitigation measures listed in Section 2.2.2, above, would be applied to this alternative as well.

2.4 Comparative Analysis of Alternatives

On BLM-managed lands and SITLA lands the visual effects would range from negligible to substantial in both action alternatives. The substantial effects would be associated with the large booster pump station and hydro station facilities constructed along the pipeline that would create strong contrast to the existing landscape character. On Tribal-managed lands negligible to subtle visual effects would be associated with the pipeline alignment in the Highway Alternative which would create weak contrast; the Southern Alternative would not cross Tribal-managed lands. On NPS-managed lands in GCNRA, the visual effects associated with the Southern Alternative would range from negligible to notable, with the notable effects being associated with the large facilities which create moderate contrast. And at PSNM the visual effects would be negligible to subtle associated with the disturbances associated with the pipeline alignment in the Highway Alternative. For Reclamation, notable visual effects would result from the construction of the Intake Pump Station and associated facilities which would create moderate contrast, whereas Reclamation does not manage any lands associated with the Highway Alternative. Only in short segments, Arizona State Development Lands are crossed by the pipeline and a transmission line that parallels an existing one, thus creating weak contrast and resulting in negligible to subtle visual effects. On private lands the large facilities would be located adjacent to existing infrastructure or screened by landform and vegetation, resulting in notable visual effects from the moderate contrast created. For both alternatives, several of the BPSs and HS facilities create the strong contrast which results in substantial magnitudes of change to visual resource compared to the pipeline alignments and transmission lines. See Table 2.4-1 for a summary of the contrast created by the station facilities, and Table 2.4-2 for a comparison of the magnitude of change across land status/ownership by alternative.

Table 2.4-1 Summary of Visual Effects created by Station Facilities

Facility	Acreage of Permanent ROW	Land Status / Ownership	BLM VRM Class/GCNRA Zone	Contrast Created	Conformances with Visual Objectives
Water Intake	26.92	Reclamation	Class 4(a)	Moderate	Meets
BPS-1	16.12	NPS	Class 3(a)	Moderate	Meets
BPS-2	6.45	State	N/A	Strong	N/A
BPS-3	6.71	BLM	Class 4	Strong	Meets
BPS-4	12.42	Private	N/A	Moderate	N/A
High Point Regulating Tank	5.15	BLM	Class 3	Weak	Meets
HS-1	10.34	BLM	Class 3	Moderate	Meets
HS-2 HWY & So ALT(b)	7.62	Private	N/A	Strong	N/A
HS-3	14.46	Private	N/A	Moderate	N/A
HS-4	4.42	BLM	Class 4	Strong	N/A
HS-5	24.61	BLM	Class 4	Strong	N/A
HS-6 (Sand Hollow Station)	10.60	Private/State	N/A	Strong	N/A

(a) BLM VRM Classes were used as proxies for GCNRA Zone visual objectives.
(b) HS-2 is the only facility in different locations by alterative.

Table 2.4-2 Summary of Visual Effects from Each Alternative by Land Status/Ownership

Alternative	BLM	Tribe	NPS	Reclamation	SITLA	ASDL	Private
No Action	None	None	None	None	None	None	None
Southern Alt. & RMPA Sub-alternative 1	Negligible to Substantial	None	Negligible to Notable	Notable	Negligible to Substantial	Negligible to Subtle	Negligible to Notable
Southern Alt. & RMPA Sub-alternative 2	Negligible to Substantial	None	Negligible to Notable	Notable	Negligible to Substantial	Negligible to Subtle	Negligible to Notable
Southern Alt. & RMPA Sub-alternative 3	Negligible to Substantial	None	Negligible to Notable	Notable	Negligible to Substantial	Negligible to Subtle	Negligible to Notable
Highway Alternative	Negligible to Substantial	Negligible to Subtle	Negligible to Notable	Notable	Negligible to Substantial	Negligible to Subtle	Negligible to Notable

Key:
ASDL = Arizona State Development Land
Tribe = Kaibab Band of Paiute Indians
BLM = Bureau of Land Management
NPS = National Park Service
Reclamation = Bureau of Reclamation
RMPA = Arizona Strip Field Office Resource Management Plan Amendment
SITLA = Utah School Institutional Trust Lands

By following existing linear infrastructure and passing through more developed areas, the Highway Alternative would create less contrast and be less noticeable by blending with developed landscape characteristics, and thus result in less adverse effects to visual resources than the Southern Alternative.

The primary difference in the action alternatives across all ownership is that from where the alignments diverge until they rejoin (from Telegraph Flat to the western boundary of the KIR), approximately 31 miles of the Southern Alternative would go through primarily undeveloped areas with natural landscape characteristics whereas the Highway Alternative would go through only about 15 miles of primarily undeveloped areas. The Highway Alternative would follow approximately 38 more miles of paved roads or highways. The divergent segment of the Southern Alternative would pass through primarily undeveloped landscape for approximately 14 miles in two locations (from U.S. Highway 89 through White Sage to the Navajo-McCullough 500 kV transmission line corridor and by the southeastern boundary of KIR). It would follow existing dirt roads for approximately six more miles also near the southeastern boundary of KIR and along Yellowstone Road. The remaining length of the divergent segment of the Southern Alternative (almost 30 miles) would run parallel to or within a half mile of Navajo-McCullough 500 kV transmission line. All of the divergent segments of the Highway Alternative would either align with, be parallel to, or be within a half mile of paved highways and streets, dirt roads, powerlines of a variety of sizes, and/or residential and commercial development. From the point of divergence to reconnection, the Highway Alternative would follow existing linear infrastructure and pass through more developed areas than the Southern Alternative, therefore the Highway Alignment would create less contrast and be less noticeable by blending with culturally-modified landscape characteristics, and thus result in less adverse effects on

visual resources than the Southern Alternative. The Highway Alternative would create less visual contrast in an area seen by far more viewers along U.S. Highway 89 and SR-389 and in Fredonia compared to the Southern Alternative which would create more visual contrast in areas seen by far fewer viewers. For both action alternatives, visual resource management objectives range from Class II to IV on BLM lands and NPS visual objectives for the GCNRA RRU and Development Zone would be met if environmental protection and mitigation measures are successfully implemented.

Details of these differences in Alternative by project feature mileages across land ownership is included in Tables 2.4-3 and 2.4-4.

Table 2.4-3 Miles of Southern Alternative Adjacent to Development by Land Status/Ownership

Southern ALT	Land Status/Ownership						TOTAL
	BLM	BOR	NPS	Tribe	State	Private	Miles
PIPELINE							
Total Miles of pipeline	71.9	0.2	10.5	0.0	25.2	32.6	**140.5**
Miles pipeline adjacent to highways/paved roads[a]	27.3	0.0	7.6	0.0	13.0	13.2	**61.1**
Miles pipeline adjacent to dirt roads	8.5	0.2	2.9	0.0	0.1	10.2	**21.9**
Miles pipeline adjacent to existing transmission lines[b]	13.8	0.0	0.0	0.0	8.2	4.1	**26.1**
Miles of pipeline that pass through primarily undeveloped areas (not included in previous criteria)	22.3	0.0	0.0	0.0	4.0	5.2	**31.5**
TRANSMISSION LINES							
Total miles of transmission lines	35.2	0.7	3.7	0.0	24.2	6.3	**70.0**
Miles transmission lines adjacent to existing transmission lines	22.1	0.3	2.3	0.0	18.0	2.2	**44.9**

Notes:
(a) Highways and paved roads supersede proximity to transmission lines.
(b) Transmission lines supersede proximity to dirt roads.
Key:
Tribe = Kaibab Band of Paiute Indians

Table 2.4-4 Miles of Highway Alternative adjacent to development by land status/ownership

Highway Alternative	Land Status/Ownership						TOTAL Miles
	BLM	BOR	NPS	Tribe	State	Private	
PIPELINE							
Total Miles of pipeline	43.0	0.2		10.5	16.4	21.0	42.9	**134.2**
Miles pipeline adjacent to highways/paved roads(a)	30.9	0.0		7.6	16.4	16.1	27.6	98.8
Miles pipeline adjacent to dirt roads	4.4	0.2		2.9	0.0	0.7	6.6	14.9
Miles pipeline adjacent to existing transmission lines(b)	0.5	0.0		0.0	0.0	2.3	3.2	6.0
Miles of pipeline that pass through primarily undeveloped areas (not included in previous criteria)	7.2	0.0		0.0	0.0	1.9	5.5	14.5
TRANSMISSION LINES							
Total miles of transmission lines	34.5	0.7		3.7	0.0	24.2	6.0	69.1
Miles transmission lines adjacent to existing transmission lines	22.1	0.3		2.3	0.0	18.0	2.2	44.9

Notes:
(a) Highways and paved roads supersede proximity to transmission lines.
(b) Transmission lines supersede proximity to dirt roads.
Key:
Tribe = Kaibab Band of Paiute Indians

3 References

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4 List of Attachments

Attachment A – Contrast Rating Forms

Attachment B – Visibility Analyses

5 Glossary

Characteristic Landscape. The established landscape within an area being viewed that has traits, features, and qualities that characterize it as an agricultural, urban, or industrial setting; or a primarily natural environment; or a combination of these types.

Contrast Rating. A method of analyzing the potential visual effects of proposed management activities.

Key Observation Point. A viewing location on a travel route, or at a use area or a potential use area, that is representative of a visually sensitive area where potential changes in the landscape setting (line, form, color, or texture) would be most visible.

a. *stationary KOP*: a KOP where the users associated with the KOP remain for a short- or long-term duration within a localized proximity (e.g., residence, neighborhood, campground, scenic overlook).
b. *linear KOP*: a KOP where the users are moving in a linear direction over a given distance (e.g., roads, trails, railroads, navigable rivers). The KOP is analyzed over the entire length as a single KOP.

Distance Zones. A subdivision of the landscape as viewed from an observer position. The subdivisions (zones) include foreground/middle-ground, background, and seldom seen.

a. *foreground/middle-ground distance zone*: the area visible from a travel route, use area, or other observation point to a distance of 3 to 5 miles.
b. *background distance zone*: the visible area of a landscape that lies beyond the foreground/middle-ground distance zone, usually from a minimum of 3 to 5 miles to a maximum of about 15 miles from a travel route, use area, or other observer point.
c. *seldom seen distance zone*: portions of the landscape that are generally not visible from key observation points or portions that are visible but from more than 15 miles away.

Scale. The proportionate size relationship between an object and the surroundings in which the object is placed.

Viewing Platform. A location where the public commonly views the landscape. The location is used when determining the distance zones of a visual resource inventory and may include segments of roads, trails, floatable rivers, overlooks, and population centers. The data depicting these elements may be points, lines, or polygons.

Viewshed. The total landscape seen or potentially seen from a point, or from all or a logical part of a travel route, use area, or water body.

Visibility. The ability to visually discern an object in the landscape; also, the distance an individual can see as determined by light, atmospheric, and weather conditions.

Visual Impact/Effect. Any introduction or reduction of modifications to the landscape that negatively or positively affects the visual character or quality of a landscape based on the basic elements of form, line, color, and texture.

Visual or Scenic Quality. A measure of the intrinsic beauty of landforms, water bodies, or vegetation in the landscape, as well as any visible human additions or alterations to the landscape.

Visual Resource. Any object (natural and built, moving and stationary) or feature, such as a landform or water body, that is visible on a landscape.

Visual Sensitivity. Public concern for the maintenance of scenic quality in a particular landscape setting.

Visualization. A pictorial representation of a proposed project in its landscape setting, as it would be seen from a specified viewpoint, and used to visualize the project before it is built, typically in order to determine its potential visual contrasts and associated visual impacts.

6 Acronyms

ACEC	Kanab Creek Area of Critical Environmental Concern
BLM	Bureau of Land Management
BPS	booster pump station
CFR	Code of Federal Regulations
ETS	electrical transmission system
GCNRA	Glen Canyon National Recreation Area
GSENM	Grand Staircase-Escalante National Monument
HS	hydrostation
HT	historic trail
KIR	Kaibab Indian Reservation
KOP	key observation point
kV	kilovolt
LPP	Lake Powell Pipeline

NEPA	National Environmental Policy Act of 1969
NHT	National Historic Trail
NPS	National Park Service
PSNM	Pipe Spring National Monument
ROW	right-of-way
RMP	Arizona Strip Field Office Resource Management Plan
RMPA	Arizona Strip Field Office Resource Management Plan Amendment
RRU	Recreation and Resource Utilization Zone
SPAC	Southern Paiute Advisory Committee
VAU	visual assessment unit
VCNM	Vermilion Cliffs National Monument
VRI	visual resource inventory
VRM	visual resource management
WA	wilderness area
WSA	wilderness study area

7 Consultation and Coordination

The following agency representatives were consulted during preparation of this appendix:

National Park Service, Glen Canyon

National Scenic and Historic Trails Interdisciplinary Team member

Attachment A:
Contrast Rating Forms

Attachment B:
Visibility Analyses