Scenery Resources Specialist Report

Chavez Ranch Road Project

Red Rock Ranger District
Coconino National Forest
Coconino County, Arizona
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PROPOSED ACTION

Project Location

The project area is within the Red Rock Ranger District of the U.S. Department of Agriculture, Forest Service (Forest Service), Coconino National Forest (COF), approximately 1.5 miles south of Sedona (west-side), approximately 2.5 miles southwest of Sedona (uptown), and approximately 0.75 mile west of the Village of Oak Creek, Arizona. A portion of the project area lies along Oak Creek in Sections 23, 24, 25, and 26, Township 17 North, Range 5 East, Yavapai County, Arizona. Figure 1 shows Chavez Ranch Road in its current state. A portion of the road is paved (see Figure 1), and the remainder of the road is currently unpaved gravel/dirt. Figure 2 depicts the general location and segments of the proposed project on COF lands. The currently planned road improvements on COF lands include an approximately 3,146-foot-long stretch of Chavez Ranch Road presented as Segments 1 and 2, and an approximately 208-foot-long section of Hilltop Road presented as Segment 3. These roads are connected by a stretch of Chavez Ranch Road that runs through private property. The Applicant has gained easement from private property landowners along this segment. The project area can be found on the U.S. Geological Survey Sedona, Arizona, 7.5-minute quadrangle (2006, revised by the Forest Service).

Figure 1. Chavez Ranch Road winding down toward private land and homes along Oak Creek.

Proposed Action

Mr. Paul Hoffenberg, the Applicant, in compliance with Forest Service regulations, has requested to obtain a Special Use Permit (SUP) from the COF for a roadway easement for the improvement of Chavez Ranch Road and Hilltop Road. The COF is analyzing a proposal from the Applicant, to pave an approximately 3,146-foot-long stretch of Chavez Ranch Road and an approximately 208-foot-long stretch of Hilltop Road. Chavez Ranch Road is designated Forest Service Road 788 from just east of the Cathedral Vista Subdivision to the Rancho Chavez Subdivision.

The total area for which the SUP is requested is approximately 4.57 acres for activities related to road surfacing and associated safety features for these improvements that are proposed on COF land. Yavapai County currently maintains Chavez Ranch Road and would continue to maintain the road if improvements are completed.
Figure 2. Chavez Ranch Road proposed project area overview.
The Chavez Ranch Road improvements project proposes to grade, insert drainage features, widen, and pave the road surface of the existing dirt and partially paved Chavez Ranch Road in compliance with Yavapai County regulations. Construction duration would be approximately 3 months. Construction would begin with clearing the construction limits. The road section and ditches would be built together with the drainage culverts. Drainage feature installation would be based on the Drainage Design Manual for Yavapai County (Yavapai County Flood Control District [YCFC District] 2015)—herein called the Yavapai County Standards. The final road grading would create the surface on which the pavement section would be applied. The Proposed Action consists of three segments as follows.

**Segment 1**

Segment 1 (Figure 3), beginning at the east end of the Cathedral Vista Subdivision and continuing approximately 2,501 linear feet to the intersection with Chavez Crossing Road, would be paved and widened to 24 feet with 4-foot-wide shoulders (for a total of 3.27 acres), and drainage features (culverts and riprap) would be placed at two locations (see Figure 3). Improvements to Segment 1 follow the existing road corridor and footprint to the maximum extent possible.

The Segment 1 drainage design proposes a 4-foot-wide × 3-foot-high × 40-foot-long box culvert with headwalls and red rock riprap to minimize erosion, and a 24-inch-diameter × 40-foot-long corrugated metal pipe with a headwall upstream and flared end section with red rock riprap to minimize erosion on the downstream end. Riprap would be designed to Drainage Design Manual for Yavapai County (YCFC District 2015) requirements to minimize erosion and would measure 12 inches and 9 inches at these two drainage structures on Segment 1. Both cuts and fills, varying from 0 to 10 feet, would be required to build the road section and drainage facilities per Yavapai County Standards. The proposed road right-of-way (ROW) includes the roadway, shoulders, cut-and-fill slopes, and drainage facilities. It is designed using a variable-width ROW that accommodates site conditions and infrastructure. The ROW is generally 50 feet wide with some wider areas, including drainage features and culvert areas, with an approximately 80-foot-wide ROW and a short segment with steep slopes that requires an approximately 60- to 70-foot-wide ROW.

Improvements to Segment 1 would result in a roadway corridor that follows the existing roadway footprint. The current road width of Segment 1 varies from 18 to 24 feet with no shoulders and steep ditches, grades vary from 1 to 12 percent, and the road surface is unpaved dirt. Proposed road grades would vary from 1 to 10 percent (also designed to Yavapai County Standards) and would follow the existing road grade with few deviations. Other improvements would include signage, marked pedestrian/bicycle/equestrian crossings at three areas where COF trails (Ramshead, Ridge, and Secret Slickrock Trails) cross the road (Figure 4). Two parallel parking spots and an interpretive sign would be located at the Ramshead Trail crossing. A stop sign would be installed at the junction of Segment 1 and 2.

**Segment 2**

Segment 2 (see Figure 3), beginning before the intersection of Chavez Crossing Road (Figure 5) and continuing approximately 645 linear feet to the COF boundary with the Rancho Chavez Subdivision (for a total area of 0.82 acre), would be paved and widened to 24 feet with curb and gutter and a 2-foot-wide shoulder on the upslope (north) side of the road. The downslope (south) side of the road would have a 4-foot-wide shoulder in areas where there are retaining walls and guardrails. The intersection of Chavez Ranch Road and Chavez Crossing Road would be moved approximately 80 feet to the north of the existing intersection with a new segment of road, approximately 150 feet in length, constructed to connect to the existing road corridor. Improvements to Segment 2 would result in a roadway corridor that generally follows the existing roadway footprint (with the exception of the new intersection segment connecting Segments 1 and 2). The current road width of Segment 2 varies from 15 to 26 feet at the hairpin curve with no shoulders and steep ditches, grades vary from 1 to 14 percent, and the road surface
is improved with millings. Proposed road grades would vary from 2 to 14 percent (designed to Yavapai County Standards) and would follow the existing road grade with few deviations.

Approximately 350 feet from the new intersection, a mechanically stabilizing retaining wall composed of Keystone® block would be installed on the downslope side of the project corridor to reinforce the roadway. The wall would extend approximately 190 feet and would be stained to match the natural surrounding soil and rock color. The wall would generally vary from 10 to 12 feet in height with a maximum height of 19.3 feet. The fill behind the wall would be 8 feet at a 2:1 slope. Approximately 525 feet of self-weathering guardrail would be installed along the downslope edge of the proposed road, beginning 125 feet from the intersection of Segments 1 and 2 and continuing for the remainder of Segment 2. Segment 2 drainage design would collect stormwater surface flow into a 3 × 4–foot catch basin and direct it through a storm drain system to private property owned by the Applicant. The segment includes cut-and-fill slopes, varying from 5 to 35 feet that would be built per Yavapai County Standards. The largest cut slope (25 feet high) would be located on the east side of Segment 2, approximately 200 feet from the new intersection. Generally, the fill slopes on the west and south side of the road would be approximately 5 to 10 feet high. The last 50 feet of Segment 2 includes a 35-foot-high fill slope on the south side of the road that would be composed of reddish/tan soil to match the surrounding substrate.

Proposed signage in this segment includes a stop sign at the junction of Segment 1 and 2 and street signs to increase vehicular safety at major turn areas (including the hairpin curve) with recommended speed limits.

As a result of the relocated intersection with Chavez Crossing Road, approximately 250 feet of Chavez Ranch Road would no longer be needed for travel and would be decommissioned. Decommissioning would include removal of pavement, landscape recontouring to minimize erosion, and revegetation with a native seed mix as approved by the Forest Service.

The Chavez Crossing Road entrance road gate would be moved approximately 450 feet north of its current location, closer to the current intersection with Chavez Ranch Road. A small informal parking area (approximately 5 vehicles) to accommodate trail access would also be moved to the location of the current road intersection (see Figure 5) and paved and defined with boulders or other barriers.
Figure 3. Chavez Ranch Road Segment 1 and 2 proposed road design.
Figure 4. Trail crossing Segment 1 of the proposed project.

Figure 5. Chavez Ranch Road intersection and beginning of Segment 2 of the proposed project.

**Segment 3**

Segment 3 (Figure 6) is a 208-foot-long portion of Hilltop Road between two private parcels owned by the Applicant. This segment would be paved and widened to 24 feet with 4-foot-wide shoulders (for a total of 0.48 acre), and drainage features would be installed where necessary. The current road width of Segment 3 varies from 8 to 14 feet with no shoulders, grades vary from 14 to 16 percent, and the existing road surface is unpaved dirt.

Improvements to Segment 3 would result in a roadway corridor that follows the existing roadway footprint. The proposed road grade would be 11.75 percent. Rock-lined roadside ditches in Segment 3 would be composed of red rock to match the surrounding substrate. Street signs to increase vehicular safety would be installed at major turn areas with recommended speed limits.
Figure 6. Chavez Ranch Road Segment 3 proposed road design.
Forest Plan Direction

Management of the Coconino National Forest is guided by the Coconino National Forest Land and Resource Management Plan (LRMP) (Forest Service 1987). Management direction for the Chavez Ranch Road area is contained in the Sedona/Oak Creek Area Amendment 12 of the LRMP.

Applicable scenery goals, objectives, and guidelines for the proposed project area contained in the LRMP (Forest Service 1987:206-14–206-16) include:

**Goals**

- Provide and maintain high-quality opportunities for people to enjoy the Sedona area's many scenic and aesthetic qualities.
- Evidence of human activities and developments such as roads, trails and facilities, is visually subordinate to the natural-appearing landscape.
- Long-term soil and plant productivity, properly functioning ecosystems and clean water are considered important components of scenic quality.
- Scenic quality meets public expectations.
- Views of dramatic natural features are protected and enhanced.

**Objectives**

- Activities by National Forest visitors protect the scenic quality of the Sedona/Oak Creek Planning Area. This includes activities conducted by other agencies such as the Arizona Department of Transportation (ADOT), local governments, and land use activities conducted by commercial or private entities.
- Facility design and location retain and enhance the traveler's sense of arrival at a special place.
- Developments such as roads, trails, camping and day-use sites and trailheads borrow from local materials and landscape characteristics to blend with the adjacent natural appearing landscape. Management activities such as firewood harvest and prescribed fire result in alterations that appear natural to most visitors.

**Guidelines**

- Achieve scenic quality recovery in the shortest possible time.
- Complete scenic resource assessments for developments and projects on National Forest lands that could affect scenic quality. Include evaluation of cumulative effects.
- Follow scenic management guidelines established under the Forest Service Scenery Management System (SMS) and Guidelines for Highways on National Forest Land (ADOT and Forest Service 1994).
- Protect native plants to the extent possible by site design and mitigation measures during construction. Develop native plant rehabilitation measures for disturbed areas to speed scenic quality recovery. Use methods that result in a natural vegetative composition and pattern.
- Avoid placement of new structures where they will interfere with scenic views from primary viewing areas such as highways, recreation sites, trails and residential areas. Use natural land forms and vegetation to the extent possible to screen facilities from important viewing locations.
Proposed Action Design Features Related to Scenery

The Proposed Action is designed to comply with the LRMP scenery standards and guidelines, as amended. Protection measures are incorporated into the project to protect forest resources and scenery values. They are consistent with applicable LRMP standards and guidelines. Implementation of the project design features would avoid the occurrence of potentially significant impacts. Best Management Practices would be implemented to reduce or avoid affects to scenery resources in the project vicinity (Forest Service 1987). These design features are incorporated into the construction documents that direct all contractor activities to ensure implementation during project construction.

The following design features are incorporated into the Proposed Action to minimize impacts to scenery resources and preserve a naturally appearing landscape:

- To minimize ground disturbance, construction access on National Forest lands would be preapproved by the Forest Service and shown on the project plans.
- Any staging areas or other construction-related activities would occur within the designated limits of disturbance.
- No construction vehicle movement would occur on National Forest lands outside the construction access limits.
- Vegetation would be preserved and protected outside of the specified clearing limits. The contractor would remove trees only when specifically authorized to do so by the Forest Service and would avoid damaging vegetation that is to remain in place. Mature vegetation would be avoided to extent practicable.
- The clearing limits within National Forest lands would be irregular and staked by the contractor for approval by the Forest Service prior to the start of clearing. Limits of clearing would generally extend from the top of slope cuts (including rounding) to the toe of fills. Straight clearing lines would be avoided where possible by varying the width of the area to be cleared or by leaving selected clumps of vegetation near the edge of the clearing limit. Tree wells and/or other techniques would be used to extend the preservation of vegetation at the edge of the clearing limits as agreed upon by the Forest Service.
- Brush or roots would be chipped and spread off-site, or at sites approved by the Forest Service, in a natural and unobtrusive manner.
- To blend with natural rock features, newly exposed rock faces would incorporate characteristics of the adjacent natural rock to include scale, shape, slope, and fracturing to the extent that is practical and feasible.
- Exposed rock cuts would be evaluated for chemical staining to blend with adjacent natural rock.
- Rock outcrops within the project limits would be left in place if stable and if not creating a hazard to the traveling public, interfering with construction, or appearing out of place in the natural landscape.
- Cut and fill slopes are designed to minimize disturbance and reduce the project footprint. Where possible the slopes will be varied to simulate the surrounding terrain.
- Boulders excavated during construction would be considered for use as for use as riprap or barrier rock in closed road and parking locations, as approved by the Forest Service.
- Boulders not used for construction needs would be placed in areas where natural rock outcrops exist. These boulders would be placed in random patterns and be partially buried to simulate natural boulders in the landscape.
To promote wayfinding and protect the trail tread, boulders or other design features will be placed at trail crossings as approved by the Forest Service.

Any riprap used in the project would blend with the surrounding rock and exposed soil color and be approved by the Forest Service.

Construction materials would mimic color and texture from existing landscape features, including colored concrete, fill material, and red rock riprap in drainage structures.

Drainage structures, including box culverts, would be designed to blend into the landscape with colored concrete, minimized visibility of pipe materials, and metal handrails colored to blend with background landscape.

Retaining walls would be designed to blend with the surrounding landscape and reduce contrast with natural features. The Keystone® block wall in Segment 2 would be stained to match the surrounding landscape, as approved by the Forest Service.

Guardrails would be constructed of self-weathering steel that would weather into a natural rust/brown color to blend into the surrounding landscape.

All disturbed soils would be revegetated (except rock slopes). Soils would be mulched and seeded with a Forest Service–approved weed free native seed mix.

Cacti, yucca, beargrass, and agave plants would be salvaged and replanted in areas of disturbance where possible.

Revegetation plant material for the decommissioned road and cut slope in Segment 2 would consist of 1-gallon and 5-gallon-size plants to achieve a species mix and density similar to the surrounding landscape. These plantings will contribute to vertical mulch that will break up the slope and decommissioned road visual characteristics. Planting plans would be approved by the Forest Service.

The Forest Service would work closely with the Applicant on implementation of all aspects of the scenery design features described above, to ensure accurate execution.

AFFECTED ENVIRONMENT

Landscape Character

The landscape character of the project vicinity includes unique rock formations, biological diversity where the upland chaparral meets the Oak Creek riparian corridor, and culturally rich areas like the historic Crescent Moon Ranch. These characteristics of the project vicinity give the area its visual and cultural identity and helps to define a "sense of place” for people who live in and visit the project area vicinity. Landscape character provides people with a frame of reference from which to determine scenic attractiveness and to measure scenic integrity (Forest Service 2000). Specifically, visitors value the stunning red rock vistas and the bright green foliage of the riparian corridor, often in contrast with a deep blue sky. The Red Rock Landscape Character Zone is in the east-central portion of the COF. The colorful collection of buttes, pinacles, mesas, and canyons surrounding Sedona is world-famous for its red rock vistas (Forest Service 2011; Figure 7).

The Red Rock Landscape Character Zone is terraced, rolling, and flat to greatly sloping with scattered, steeper landforms. Recreation opportunities include developed and dispersed recreation such as driving for pleasure, hiking, picnicking, sightseeing, camping, and various day uses (Forest Service 2011). Socially desirable characteristics for this area include contrasting woodland vegetation and open vistas
of red rocks, creek and riparian corridors, and overall presence and importance of the red rock formations and Oak Creek to both the community and visitors.

Major landforms in the immediate project vicinity consist of buttes, rolling hills, scarps, riparian canyon corridor, and some plains. Elevations along the road corridor range from approximately 4,010 to 4,180 feet above mean sea level (amsl). Airport Mesa, to the northeast of the proposed project area, rises up to approximately 4,800 feet amsl. Airport/Tabletop Mesa is the highest point in the city of Sedona and a destination for the scenic overlook at the airport, the vortex at the saddle, and trail opportunities.

Notable landmarks within the project vicinity include Carroll Canyon, Airport/Tabletop Mesa to the north, the Cathedral Rock to the south, and Scheurman Mountain to the west. The contrasting red and green colors of the rocks and vegetation, the vertical cliffs and horizontal rock strata, and the linear Oak Creek drainage present valued landscape attributes. Oak Creek runs from the northeast to southwest, south and east of the proposed roadway improvements. Oak Creek is highly valued as one of the few perennially flowing creeks in the arid Southwest, and is known for exceptional scenery. The red rock formations and distant mesas visible from the proposed project area form a distinct and unique backdrop to the Sedona and Village of Oak Creek communities. These formations are visible from aerial views or from on-the-ground vantage points. The rolling terrain provides a variety of scenery and offers continuously changing sequences of panoramas of the rock formations.

Notable scenery within the vicinity of the project area includes:

- views of red rock formations such as: Bell Rock, Cathedral Rock, and Courthouse Butte (Figure 8);
- views of lush riparian areas along Oak Creek (Figure 9);
- access to recreational trails with expansive views of red rocks and Oak Creek;
- access to Oak Creek (Figure 10); and
- native vegetation surrounding the proposed project area such as: juniper, pinyon pine, mesquite, scrub oak, manzanita, yucca, prickly pear cactus, and various other forbs, grasses, and cacti (Figure 11).
Deviations from desired scenery characteristics that detract from scenery resources in the vicinity of the proposed project include the nearby power line corridor, residential housing developments, private lands, and existing roads.

Figure 8. View of Cathedral Rock, Courthouse Butte, and Bell Rock from the proposed project area.

Figure 9. Lush riparian area surrounding Oak Creek.
Water Resources

Oak Creek is a major landscape feature in the near vicinity, and runs adjacent to the east of proposed roadway improvements. Carroll Canyon runs south of proposed improvements in Oak Creek. Access to Oak Creek is afforded from the terminus of Chavez Ranch Road.

Recreation Opportunities

Developed recreation opportunities in the near vicinity include at Crescent Moon Ranch Day Use and Crescent Moon Cabin. Crescent Moon Ranch is a national and international destination offering picnicking along Oak Creek, including a covered pavilion that is often rented for weddings and other events. Crescent Moon Ranch offers Oak Creek access and the opportunity to view distinct panoramic landscapes, including access to Red Rock Crossing, an iconic location for photographing Cathedral Rock reflecting in Oak Creek.

Dispersed recreation opportunities include driving for pleasure, sightseeing, photography, wildlife viewing, and fishing and water play in Oak Creek. Trail use is popular for hiking, mountain biking, and equestrian use. At the terminus of Chavez Ranch Road is an informal parking lot where the public accesses Oak Creek (see Figure 12) for water play in slow-flowing pools, fishing, and exploring the lush riparian vegetation (see Figure 13).
Figure 12. Informal parking area for Oak Creek access at the terminus of Chavez Ranch Road.

Figure 13. Oak Creek access at the terminus of Chavez Ranch Road.

Hiking, biking, and equestrian use is prevalent in the area and three trails intersect the proposed project area (see Figures 14–17).
Figure 14. Ridge Trail (#208) access looking south from the proposed project area.

Figure 15. Ridge Trail (#208) access looking north from the proposed project area.

Figure 16. Secret Slickrock Trail access from the proposed project area.
Outfitter and guided activities in the vicinity are primarily along trails in Carroll Canyon (including those that cross Chavez Ranch Road) and on the south side of Oak Creek on the Cathedral Rock Trail vicinity.

Scenery Management System

The Coconino National Forest uses the Scenery Management System (SMS), as described in Landscape Aesthetics: A Handbook for Scenery Management (Forest Service 2000) for the inventory and analysis of scenery values and analysis of project-level impacts on scenery resources. The SMS is an update to the previously used Visual Management System (VMS) process. The scenery resources inventory for all lands on the COF was updated in 2010, and was used in this assessment. The following present the existing SMS components of the proposed project area.

Scenic Integrity Objectives

Scenic integrity is a measure of the degree to which a landscape is visually perceived to be “complete.” The Scenic Integrity Objectives (SIOs) or “intactness” of National Forest lands is the means by which proposed alterations to the land are evaluated. The highest SIOs are given to those landscapes which have little or no deviations from the character valued by constituents for its aesthetic appeal and are used to describe an existing situation, standard for management, or desired future condition. The COF LRMP has defined the SIO as “High” for the entire project area, as shown in Figure 18.

When discussing SIOs, the degree of alteration is measured in terms of the degree of deviation to the desired landscape integrity of the surrounding natural landscape. The Forest Service Handbook definitions for the applicable SIO classifications are as follows:

- **HIGH** scenic integrity refers to landscapes where the valued landscape character “appears” intact. Deviations may be present but must repeat the form, line, color, texture, and pattern common to the landscape character so completely and at such scale that they are not evident.

- **MODERATE** scenic integrity refers to landscapes where the valued landscape character “appears slightly altered.” Noticeable deviations must remain visually subordinate to the landscape character being viewed.

Figure 17. Ramshead Trail access from the proposed project area.
Figure 18. Scenic Integrity Objectives of the proposed project area.
**Scenic Attractiveness**

Scenic attractiveness is the primary indicator of the scenic importance of a landscape based on human perceptions of the intrinsic beauty of landforms, rock outcrops and forms, water forms, vegetation patterns, and cultural features. It reflects varying visual perception attributes of variety, unity, vividness, intactness, coherence, uniqueness, harmony, balance, and pattern. The frame of reference for scenic attractiveness (generally at the Section scale) is landscape character. Three levels of scenic attractiveness are identified during the scenery inventory process: (A) Distinctive, (B) Common or Typical, and (C) Indistinctive (Forest Service 2000).

- **Class A Distinctive** – Areas where landform, vegetation patterns, water characteristics, and cultural features combine to provide unusual, unique, or outstanding scenic quality. These landscapes have strong positive attributes of variety, unity, vividness, mystery, intactness, order, harmony, uniqueness, pattern, and balance.

- **Class B Typical** – Areas where landform, vegetation patterns, water characteristics, and cultural features use combine to provide ordinary or common scenic quality. These landscapes have generally positive, yet common, attributes of variety, unity, vividness, mystery, intactness, order, harmony, uniqueness, pattern, and balance. Normally they would form the basic matrix within the ecological unit.

- **Class C Indistinctive** – Areas where landform, vegetation patterns, water characteristics, and cultural land use have low scenic quality. Often water and rockform of any consequence are missing in Class C landscapes. These landscapes have weak or missing attributes of variety, unity, vividness, mystery, intactness, order, harmony, uniqueness, pattern, and balance.

The section of the roadway proposed for improvements is inventoried as Scenic Attractiveness Class B, Typical. The Oak Creek corridor and upper slopes of Airport Mesa are inventoried as Class A, Distinctive.

**Visibility**

SMS considers landscape visibility, which addresses views that visitors or residences would have from certain use areas and travelways. Travelways include linear viewing platforms such as highways, roads, trails, and waterways like Oak Creek. Use areas are locations that have concentrated public viewing use such as trailheads, campgrounds, subdivisions, and commercial areas.

**DISTANCE ZONES**

The SMS system defines four distance zones for project-level planning and to evaluate potential visibility:

- **Immediate Foreground** – At this distance people can distinguish details such as individual leaves, flowers, twigs, bark texture, small animals, and can notice the movement of leaves and grasses in light wind (from 0 to 300 feet).

- **Foreground** – At this distance people can distinguish small boughs of leaf clusters, tree trunks and large branches, individual shrubs, clumps of wildflowers, medium-sized animals, and medium-to-large birds. At this distance, people can also distinguish movement of tree boughs and tree tops in moderate winds (from 0.0 to 0.5 mile). Forms are dominant.

- **Middle Ground** – This is the predominant distance zone at which Forest Service landscapes are seen, except for regions of flat lands or tall, dense vegetation. At this distance, people can distinguish individual tree forms, large boulders, flower fields, small openings in the forest, and small rock outcrops. Tree forms typically stand out vividly in silhouetted situations. Form, texture, and color remain dominant and pattern becomes more visible (from 0.5 to 4.0 miles).
• Background – At a background distance, people can distinguish groves or stands of trees, large openings in a forest, and large rock outcrops. Texture has disappeared and color has flattened, but large patterns of vegetation or rock are still distinguishable, and landform ridgelines and horizon lines are the dominant visual characteristic (from 4 miles to the horizon).

Areas from which the proposed project area would be visible were determined through geographic information system (GIS) viewshed analysis. Viewpoints along the road corridor at 20-foot intervals and 6 feet above ground were located in a GIS digital elevation model. The viewshed or “seen area” from each of these elevation points is presented in Figure 19 (potentially visible from Segment 1) and Figure 20 (potentially visible from Segment 2). This illustrates a general representation of the landscape that could be visible from the roadway and the surrounding landscape that could have views of the Chavez Ranch Road. The model does not take into account vegetation or other landscape features that could block views. In the field it was noted that even at certain elevations in the viewshed, the project area was not visible because of tall vegetation and topography.

**CONCERN LEVELS**

Landschapes are viewed to varying degrees from different locations and subsequently differ in their importance and concern to users. To assist scenic inventory and analysis, this importance is ranked by concern levels.

Concern levels are a measure of the degree of public importance placed on landscapes viewed from travelways and use areas. Concern levels are ranked 1 – High, 2 – Moderate, and 3 – Low, representing degree of scenery importance for specific viewing locations such as communities, recreation areas, roads, and trails.

Viewing scenery is one of the most sought-after recreation activities for visitors and local residents of Sedona’s Red Rock Country. High-quality scenery contributes to local quality of life, tourism, and economic vitality. The National Visitor Use Monitoring conducted on the COF shows 32% of respondents identified hiking/walking as their main activity and 23.7% identified viewing natural features as their main activity (Forest Service 2011). The travelways and use areas inventoried in the near vicinity to the proposed roadway improvements are inventoried as Concern Level 1: areas and travel routes where the users have a high concern for scenery and where the scenic quality is critical in providing the appropriate setting for their desired experience.

Inventoried Concern Level 1 travelways (trails and roadways) and use areas in relation to the Proposed Action include (see Figure 19):

**Airport/Tabletop Mesa Trails**

- Sedona View trail – approximately 0.6 mile connector route from the overlook to the saddle/vortex area;
- Brewer Trail – approximately 0.7 mile connector trail from end of Brewer Road;
- Airport Mesa/Airport Saddle Spurs A and B Trails – approximately 0.5 mile loop trail network;
- Airport Loop Trail – approximately 3.25 mile loop around Airport Mesa; and
- Table Top Trail – approximately 0.5 mile trail to overlook, accessed from Airport Loop trail.
Figure 19. Viewshed analysis for Segment 1 and Concern Level 1 roads and trails.
Figure 20. Visibility analysis Segment 2 and Concern Level 1 roads and trails.
This trail system offers changing, panoramic views of Red Rock Country from the slopes of Tabletop or Airport Mesa. The Airport Saddle Overlook is also accessible from the Airport Saddle parking area and provides expansive red rock views in all directions and is a destination for metaphysical activities as a vortex site. The Sedona View trail, a connector route from the airport overlook to the Airport Loop Trail and Airport Saddle Parking area, increases the access to the saddle overlook and Airport Loop Trail. The Sedona View Trail generally parallels Airport Road and the proposed access routes are not likely notable to visitors on this trail. Observations during field visits indicated that visitors and commercial tours combined with easy access make the saddle a popular destination. Tabletop Mountain is the highest point in the Sedona city limits and a destination for viewing scenery. Though there is no prohibition for equestrians, equestrian use is not recommended on these trails due to the large amount of slickrock and steep drop-offs. The predominant use is from hikers and bikers. Although the area is close to private development opportunities, the slope and vegetated screen provide for secluded natural settings along the trails with expansive views along slickrock sections.

**Carroll Canyon Trails**

- Bandit Trail – approximately 0.5 mile trail connecting Carroll Canyon trail system to trail network on Tabletop Mountain via Airport Loop trail;
- Old Post Trail – approximately 2.7 mile north-south trail providing numerous loop options when connected with Carroll Canyon, Bandit, Ramshead, and Herkenham Trails;
- Ridge Trail – approximately 2.2 mile north-south route connecting west Sedona to trails south of Chavez Ranch Road;
- Carroll Canyon Trail – two segments totaling approximately 1.5 mile trail connecting Old Post and the Ridge Trail;
- Herkenham Trail – approximately 1.0 mile trail accessed from Red Rock Loop Road connecting to Old Post Trail;
- Secret Slickrock Trail – approximately 0.4 mile connector trail from Chavez Ranch Road to Ridge Trail and it crosses Chavez Ranch Road; and
- Ramshead Trail – approximately 0.9 mile trail connecting Old Post and Ridge Trails and it crosses Chavez Ranch road.

This approximately 9.2-mile network of trails in Carroll Canyon is east of Tabletop Mountain. The trail system is accessed from Chavez Ranch Road, the Old Post Trailhead, Scheurman Mountain Trailhead, Airport Overlook Trailhead, and via Shelby Drive in West Sedona. The trail system is open to hikers, bikers, and equestrians. The system is used for loops or one-way by staging vehicles at different trailheads. The trails are characterized as being out of sight of development in an open canyon with relatively little grade change and a high degree of naturalness with moderate use depending on time of day or year.

**Oak Creek Corridor**

Oak Creek is accessed from informal river access routes starting from the Chavez Ranch Road parking area at the end of Chavez Ranch Road and the Chavez Crossing Group Camp located on Oak Creek Cliffs Drive, the end of Verde Valley School Road, and the Baldwin Trailhead. The setting along Oak Creek provides a high degree of naturalness and lower visitor contacts. The swimming hole offers a somewhat secluded, quiet recreation experience, and there is little other evidence of human activity. Water play and nature study along the entire length of the creek corridor in the proposed project area is a recognized and popular public use.
Crescent Moon Ranch Picnic Area and Rental Cabin

Crescent Moon Ranch is a popular destination for picnicking, water play, and photography. There are picnic tables, cooking grills, vault toilets, and a group ramada. The site is also a destination for weddings and other group events. The historic “Red Rock Crossing” and photographs of Cathedral Rock reflected in Oak Creek are some of the most-photographed scenes in the Southwest and are accessed from this site (or from the end of Verde Valley School Road). The rental cabin is a historic ranch house open to the public for overnight use. Public access to Crescent Moon Day Use Area is via Red Rock Loop Road. Chavez Crossing Road provides visitor access to the rental cabin via a gate just to the south of its intersection with Chavez Ranch Road. The proposed project area would not be visible from either the day use area or the cabin; impacts are limited to the road access.

Existing Road Character

The existing Chavez Ranch Road is a dirt road (Segments 1 and 3) and paved road (Segment 2) varying from 18 to 22 feet wide. The road corridor generally contains rolling terrain in the pinyon-juniper forest and provides a variety of landscape views and offers varied panoramic views of area rock formations while driving. Segment 2 is a narrow road section constructed within a steep cliff. It provides views of the Oak Creek corridor, adjacent private land housing development, and area red rock formations. The road provides corridor view of green vegetation and a brown/tan road surface with no drainage improvements. Trail crossings are currently unimproved, at grade crossings. Current views from trail crossings include the dirt road, minimal cut-and-fill slope improvements, and no drainage improvements.

ENVIRONMENTAL CONSEQUENCES

Alternative 1: No Action

Direct and Indirect Effects

Under the No Action Alternative, the proposed project would not be constructed. The No Action Alternative would result in no adverse effects on scenery resources in the area as a result of the continued existence of the unimproved Chavez Ranch Road.

Alternative 2: Proposed Action

Direct and Indirect Effects

Road construction, unless directly tied to improving access to recreation opportunities, tends to detract from valued scenic attributes. Roads provide opportunities for viewing scenery and access for those using them; but when viewed from other locations, the road cut-and-fill and associated constructed features—such as culverts, drainage ditches, and associated features like riprap, detention basins, direction or safety signs, curb and gutter features, guardrails, retaining walls, or cut-and-fill necessary for road widening—can be noticeable and detract from the overall scenic beauty of a scene.

This report evaluates and characterizes the degree of deviation to the desired landscape integrity that would result from the Proposed Action as compared to the LRMP objectives for Scenery. Deviations from the desired landscape character would likely result if the Proposed Action were to be implemented. Noticeable deviations would primarily result from removal of vegetation, earthwork (cut and fill slopes), and paving within the proposed project area. The assessment for visual contrast is performed by
comparing visual elements (form, line, color, and texture) of the desired landscape with the visual elements associated with the implementation of the Proposed Action.

SEGMENT 1

Short-Term Impacts

Short-term impacts to scenery resources along Segment 1 include impacts resulting from road construction activities and the initial period after road construction. Potential construction-related visual impacts relate to the staging and operation of construction equipment and dust related to construction activities. This would impact persons traveling along the roadway, using the area trails, and persons in the foreground landscape area through visible dust and viewing and noise disturbance from construction equipment staging and operation. These impacts would be reduced by using already disturbed areas for construction equipment staging and using dust-abatement strategies during construction. Persons in the area would see ongoing construction, vegetation removal, and construction of cut and fill slopes and other road infrastructure. This would include viewing newly constructed areas that contain no vegetation. Short-term impacts include the post-construction time period before any revegetation has been accomplished. Revegation of the cut and fill slopes would occur and reduce the visual contrast between the new construction area and the natural landscape. During this time the contrast between the existing natural landscape and new cut-and-fill areas would be highly visible.

Long-Term Impacts

Scenery along the roadway and in the area surrounding in Segment 1 would change as a result of vegetation removal, road paving, and construction of cut-and-fill slopes and drainage improvements. Removal of vegetation would create a more open road corridor with less green vegetative canopy. The road footprint would be wider, covered with gray colored pavement, and include drainage ditches along both sides. Cut-and-fill slopes varying from 0-10 feet along this segment would be necessary because the roadbed would be raised slightly. The largest cut slope is near the end of Segment 1 on the west side of the road near the Ridge Trail road crossing. This slope is approximately 12 feet high and would be visible by persons traveling along the roadway and the near vicinity. The two concrete box-culvert drainage improvement structures in Segment 1 would be visible by those traveling along the road. The concrete boxes would be at road level with a 3-foot handrail extending above the concrete box at the road’s edge for public safety. The small red rock riprap basins at each end of the colored concrete box culverts would be minimally visible from the roadway. The general change in contrast from the existing landscape character resulting from roadway construction would be noticeable to persons travelling the roadway.

Trail users’ views at trail crossings would change to include improved trail crossings at new road elevations, road paving, and new cut-and-fill slopes associated with road construction. At the Ramshead Trail crossing a new two-car, paved, parallel parking area would be visible, along with a new information sign. At the Ridge Trail crossing views of the box culvert drainage improvement and the red, denuded, 12-foot cut slope on the east side of the road would be visible.

Figure 19 illustrates the foreground (within 0.5 mile) and middle ground (within 4 miles) surrounding Segment 1 in which the roadway could be visible. These views of the roadway corridor would change as a result of increased contrast to the background landscape as compared to the existing road conditions. The new corridor would contain gray road pavement, uniform grade, and straight edges that would create a discernable change from the surrounding landscape when viewed from foreground and middleground viewing areas. Potential viewers in the foreground include trail users in the vicinity include Ridge Trail, Ramshead Trail, Secret Slickrock Trail and travelers along Chavez Ranch Road.
Implementation of the Proposed Action design features would provide mitigation to general scenery impacts described above. Through use of visually compatible materials, colors found in the existing landscape, and implementation of a limited construction footprint that minimizes vegetation removal to the maximum extent possible impacts to scenery resources would be reduced.

Revegetation of the area would include seeding the disturbed areas with a native plant seed mix. This type of revegetation would likely result in grass and forb establishment on cut and fill slopes, but not larger woody plants such as trees and shrubs. The long term absence of trees and shrubs and would be highly noticeable with a change in color and texture from the natural existing landscape.

SEGMENT 2

Short-Term Impacts

Short-term impacts to scenery resources along Segment 2 include impacts resulting from construction and the initial period after road construction. Potential construction-related visual impacts relate to the staging and operation of construction equipment and dust related to construction activities. This would impact persons traveling along the roadway, using the area trails, and persons in the foreground landscape area through visible dust and viewing and noise disturbance from construction equipment staging and operation. The foreground area includes views of residents occupying homes in the area east of Segment 2, along the Oak Creek corridor. The residential views would be impacted by construction activities that include construction related dust, construction equipment staging and operation, and the initial post-construction area bare cut and fill slopes. These impacts would be minimized by using already disturbed areas for construction equipment staging and using dust-abatement strategies during construction. Short-term impacts include the post-construction time period before revegetation has seen successful plant recruitment. The post-construction cut-and-fill slopes would have a strong contrast to the background landscape. Revegation of the cut and fill slopes would occur to reduce the long-term visual contrast between the new construction area and the natural landscape. During this time the contrast between the existing natural landscape and new cut-and-fill area would be highly visible.

Long-Term Impacts

Scenery along the roadway and in the area surrounding Segment 2 would change as a result of intersection/road relocation and vegetation removal; road widening, paving and curb and guardrail installation; and construction of cut-and-fill slopes, drainage improvements, and a retaining wall. In general, the scenery impacts in Segment 2 would be visible from persons traveling along the roadway, residents in the adjacent housing development on Oak Creek, and recreationists using the Oak Creek corridor and vicinity trails. Removal of vegetation would create a more open road corridor with less green vegetative screening of roadway views. The overall character of the area would change from a narrow, rural, minimally maintained roadway with little infrastructure, to a fully developed paved roadway with accompanying road infrastructure.

The first 150 feet of Segment 2 would be the new location for the Chavez Crossing Road intersection and relocated roadway. This relocated segment would require vegetation removal from a majority of the ROW for roadway construction, including adjacent cut-and-fill slopes. This vegetation removal would change the visual character of the area and remove the green canopy and road screening.

As a result of the relocated intersection with Chavez Crossing Road, approximately 250 feet of Chavez Ranch Road would no longer be needed for travel and would be decommissioned. Decommissioning would include removal of pavement, landscape recontouring to minimize erosion, and revegetation with a native seed mix or plantings as described in the design features as approved by the Forest Service.
Revegetation and vertical mulch of the decommissioned segment would reduce contrast and allow it to blend into the natural landscape background over time.

The proposed 5-car parking area and relocated gate would be located adjacent to the decommissioned segment (see Figure 3). This area is expected to receive concentrated use and the decommissioned segment would be highly visible to persons parking and recreating in the area. The decommissioned road prism would be re-contoured and revegetated. Depending upon success of the revegetation efforts, the decommissioned roadway could be visible to persons in the foreground for the long-term. The decommissioned roadway would be noticeable with differences in form, line, and color, and reduced vegetation.

Cut-and-fill slopes along this segment would be necessary because the roadway is located along a steep slope. The large cut slope (approximately 25 feet high) on the west (uphill) side of the road (at the point where the relocated road meets the existing road) and the large fill slope (approximately 35 feet high) at the end of Segment 2, on the downhill side, would create noticeable landscape contrast to the surrounding landscape in this area. The cut slope will tie into an older cut slope constructed in the past. The size, scale and location of these cut and fill slope will make them noticeable from persons traveling along the roadway, residents of the nearby housing development, and persons recreating in the Oak Creek corridor. To minimize scenery impacts and landscape contrast, the cut-and-fill slopes would be constructed using irregular sloping and rock placement and would be revegetated to blend into the natural landscape.

Revegetation efforts would include planting containerized plant materials, however, due to the steep nature of these slopes revegetation beyond grass and forbs is unlikely.

The new retaining wall on the downslope side of Segment 2 (approximately 190 feet long, averaging from 10 to 12 feet in height with a maximum height of 19.3 feet) would be constructed with a Keystone ® block material. The wall would be visible from persons traveling west on Chavez Ranch Road, residents of the nearby housing development, and persons recreating in the Oak Creek corridor. The wall would be stained to reduce contrast and blend into the surrounding landscape. Vegetation (shrubs and trees) in the wall area would be preserved to the maximum amount possible to screen and break up the wall’s mass. Figure 21 illustrates a wall of similar construction and scale in the region (the proposed wall does not include mid-wall terracing).

![Figure 21](image_url)

*Figure 21. Example retaining wall color, texture, and form for areas along Segment 2 that require a retaining wall.*
Approximately 525 feet of self-weathering guardrail installed on the downslope side of Segment 2 would be visible from those traveling along the roadway, residents of the nearby housing development, and persons recreating in the Oak Creek corridor. The guardrail would be constructed of a self-weathering steel that would, over time, weather into a natural rust/brown color to blend into the surrounding landscape. This material would reduce the visual contrast of the guardrail and reduce impacts to the area’s scenery resources. Figure 21 illustrates a guardrail of similar construction and the visual contrast expected.

Implementation of the Proposed Action design features would provide mitigation to general scenery impacts described above. Through use of visually compatible materials, colors found in the existing landscape, and implementation of a limited construction footprint that minimizes vegetation removal to the maximum extent possible impacts to scenery resources would be reduced.

Revegetation of the area would include seeding the disturbed areas with a native plant seed mix. This type of revegetation would likely result in grass and forb establishment on cut and fill slopes, but not larger woody plants such as trees and shrubs. The long term absence of trees and shrubs and would be highly noticeable with a change in color and texture from the natural existing landscape.

SEGMENT 3

Short-Term Impacts

Short term impacts to scenery resources along Segment 3 include impacts resulting from construction and the initial period after road construction. Potential construction-related visual impacts relate to the operation of construction equipment and dust related to construction activities. This could impact persons traveling along the roadway and residents in the nearby housing development. These impacts would be minimized by using already disturbed areas for construction equipment staging and using dust-abatement strategies during construction. Short-term impacts include the post-construction time period before revegetation has seen successful plant recruitment. The post-construction cut-and-fill slopes would have a strong contrast to the background landscape until the slopes show plant material growth. During this time a contrast between the existing landscape and new cut-and-fill area would be very noticeable to visitors in the near vicinity.

Long-Term Impacts

Scenery along the roadway and in the area surrounding Segment 3 would change as a result of vegetation removal; road widening and paving; and construction of cut-and-fill slopes and drainage improvements. In general, the scenery impacts in Segment 3 would be visible from persons traveling along Chavez Ranch Road and residents in the adjacent housing development. The overall character of the area would change from a very narrow, steep, rugged four-wheel-drive road with no infrastructure, to a fully developed paved roadway with accompanying road infrastructure. The paved road with riprap ditches on each side (for the entire length) and vegetation removal would create a high degree of visual contrast with the surrounding landscape, relative to existing conditions. However, the design includes red rock riprap to blend into the surrounding landscape and implementation of a limited construction footprint that minimizes vegetation removal to the maximum extent possible to reduce impacts to scenery resources.

KEY OBSERVATION POINTS

Seven key observation points (KOPs) within the viewshed were identified (see Figures 19 and 20). KOP locations were defined based on high recreational use and/or expansive visibility of the proposed project area (for example an open cliff ledge along a trail several hundred feet above the project area). KOP locations should not be interpreted as the only areas from which the Proposed Action will be visible;
instead, they are a representation of “sample locations” to highlight the degree of discernable impacts from a few discrete locations. Each KOP was visited, photographs were taken from each point looking toward the proposed project area, and any other relevant visual detection information was recorded (Figures 22–27). Camera height for these existing conditions photos was set at approximately 6 feet above ground level, a narrative of likely impacts from the Proposed Action follows.

**Key Observation Point #1. Table Top Trail**

Portions of Segment 1 and 2 are visible in the middle ground from the Table Top Trail KOP #1 (see Figure 22). The southeastern most portion of Segment 1 is visible and the view of the road corridor would change to a wider corridor with vegetation removal, a gray asphalt road and road cut-and-fill slopes on the pavement edges. The view of Segment 2 is somewhat obscured by topography and vegetation, but still visible from this KOP. This view of this segment of road would change to a gray asphalt road surface with a guardrail.

![Figure 22. KOP #1. Table Top Trail.](image)

**Key Observation Point #2. Ridge Trail**

The southeastern most portion of Segment 1 is visible in the foreground from the Ridge Trail KOP #2 (see Figure 23). The change in view of the road corridor would include a wider corridor. The current roadway is approximately 25 feet wide and the new roadway, ditches, and cut and fill slopes would be approximately 70 feet wide. Vegetation would be removed within the 50-80-foot-wide ROW and the road would change from a tan soil color to a gray asphalt road. The road cut-and-fill slopes would extend up to 10 feet beyond the road shoulders.
Figure 23. KOP #2. Ridge Trail.

**Key Observation Point #3. Secret Slickrock Trail**

The Chavez Ranch Road is not visible from the Secret Slickrock Trail KOP (see Figure 24).

Figure 24. KOP #3. Secret Slickrock Trail.

**Key Observation Point #4. Back O Beyond area**

Segment 2 is visible from the Back O Beyond KOP (see Figure 25) as a foreground view. The road surface color would change to a gray asphalt and the visible pavement would be slightly wider than the existing roadway. The retaining wall below the roadway would be visible from this location where a viewer would notice a change in texture from removal of vegetation, a uniform tan color, and straight lines at the top of the wall. However, a majority of the wall is expected to be obscured by retained vegetation. The existing cut slope visible in the Figure 25 would be expanded to the south (outside of the photograph) and would be visible from the KOP. The viewer would notice a change in color, texture, and line from the removal of vegetation. The design feature requiring cut slopes be constructed with varied slope ratios to leave an irregular, undulating, or roughened appearance rather than a uniform grade would reduce impacts to scenery and the slope is expected to present an improvement over the existing cut slope. Vegetation would be removed and a fill slope placed below the road closer to the KOP. The viewer would notice a change in line, color, and texture from the removal of vegetation.
Key Observation Point #5. Baldwin Trail

The Chavez Ranch Road is not visible from the Baldwin Trail KOP (see Figure 26).
Key Observation Point #6. Templeton Trail

Segment 2 would be visible in the middle ground from the Templeton Trail KOP (see Figure 27). The change of view would likely include views of the cut-and-fill slopes, vegetation removal, and retaining walls associated with widening and realigning the roadway. Overall the road corridor will be more visible. This contrast would decrease if revegetation of these slopes is accomplished. Though the road cut would be evident it would not dominate the scene from this view.

![Figure 27. KOP #6. Templeton Trail.](image)

Key Observation Point #7. Cathedral Rock Trail

Segment 2 would be visible in the middle ground from the Cathedral Rock Trail KOP (see Figure 28). Similar to the view from KOP #6, the change of view of the road corridor would likely include views of the cut-and-fill slopes and vegetation removal associated with road widening and realignment- making the roadway more noticeable.

![Figure 28. KOP #7. Cathedral Rock Trail.](image)
VISUAL ABSORPTION CAPABILITY

Visual absorption capability is the relative ability of the landscape to accept human alteration without loss of valued landscape character attributes or a reduction in scenic integrity. Because the proposed project area lies in an area with rolling hills and escarpments that drop into the Oak Creek riparian corridor, the slope and topography of the proposed project area increases the visual absorption capability. In addition, the pinyon-juniper vegetation found in the proposed project area can contribute to visual absorption (Forest Service 2000). Depending on the context of the viewer, the proposed project area has a moderate to high visual absorption capability.

SCENIC INTEGRITY OBJECTIVES

The SIO classification of all three segments of the proposed project area (approximately 4.57 acres) is High (unaltered) (see Figure 18). “High” is defined as areas where management activities are not visually evident to the casual observer. The landscape character appears intact. Deviations may be present but must repeat the form, line, color, texture, and pattern common to the landscape character so completely and at such scale that they are not evident. The proposed project could be considered as a deviation evident to the casual observer and therefore inconsistent with Forest Plan direction for Scenery.

The design features incorporated into the Proposed Action would minimize impacts to scenery resources and attempt to preserve the desired naturally appearing landscape required in the SIO High designation. After implementation of the project, the road corridor is more consistent with Moderate Scenic Integrity—the valued landscape character appears slightly altered and noticeable deviations should be visually subordinate to the landscape character being viewed.
REFERENCES CITED


