Visual Resources Report

Red Rock Canyon Scenic Loop Drive and Parking Areas Improvements Project

Submitted to:

Bureau of Land Management Red Rock/Sloan Field Office & Federal Highway Administration-Central Federal Lands Highway Division

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Acronyms and Abbreviations

3-D	three-dimensional
BLM	Bureau of Land Management
GIS	geographic information system
KOP	Key Observation Point
mm	millimeter
NCA	National Conservation Area
proposed project	Red Rock Canyon Low Water Crossing and Pavement Improvement Project
RMP	Resource Management Plan
RRCNCA	Red Rock Canyon National Conservation Area
SR	State Route
TM	technical memorandum
VRI	Visual Resource Inventory
VRM	Visual Resource Management

Visual Resources Report

This technical memorandum (TM) describes the environmental and regulatory setting, data collected, and data analysis used to evaluate visual resources for the Red Rock Canyon Scenic Loop Drive and Parking Areas Improvement Project (proposed project). The Bureau of Land Management (BLM) Red Rock/Sloan Field Office will use this information to evaluate potential impacts on visual resources associated with the proposed project.

1.0 Purpose

This TM discusses and evaluates the existing visual quality and potential effects of the proposed action on visual characteristics and quality, assesses the consistency of changes with BLM Red Rock/Sloan Field Office visual management objectives, and examines mitigation requirements that apply to these effects. The TM was compiled to assist in the evaluation of the visual impacts of the proposed project and to provide background information and analysis that can be used in preparing the Environmental Assessment for the proposed project. Included in this TM is a systematic assessment of existing visual conditions in the proposed project vicinity, the visual changes that would result from the proposed project, and how the proposed project would affect the public's experience of aesthetic qualities in the region. Preparation of the analysis followed the visual impact assessment procedures established by the BLM.

2.0 Description of the Proposed Action

The Federal Highway Administration's Central Federal Lands Highway Division, in cooperation with the BLM Red Rock/Sloan Field Office, is proposing improvements to Red Rock Canyon National Conservation Area (RRCNCA) near Las Vegas, in Clark County, Nevada. Red Rock Canyon was the first designated National Conservation Area (NCA) in Nevada. Its designation arises from its unique geologic features, plants, and animals that represent the Mojave Desert. The Red Rock Canyon Scenic Loop Drive is a BLM National Scenic Backcountry Byway and traverses approximately 13 miles of the NCA with trailheads, scenic overlooks, and picnic facilities along its route.

The Project proposes improvements to several areas of RRCNCA within the vicinity of Scenic Loop Drive and includes improvements to both roadways and parking areas. The proposed action consists of the following elements:

- A return route on a new alignment connecting Sandstone Quarry to the Visitor Center, thereby allowing visitors accessing RRCNCA amenities along the first 3 miles of Scenic Loop Drive to exit the area without having to travel the remaining 10 miles of Scenic Loop Drive.
- Twelve parking areas, including a new roundabout at the Fee Station Kiosk, would be expanded or improved to better accommodate visitors.
- A roundabout would be added north of the Fee Station Kiosk to more effectively move the traffic leaving the fee station and the traffic leaving the Visitor Center.
- Pavement rehabilitation along the existing Scenic Loop Drive would consist of pulverizing the existing pavement and recycling the pulverized material for a new roadway surface.
- Signage would be added along Scenic Loop Drive to improve vehicle and bicycle movements in and out of parking areas. In addition, signage and bike lane striping would be added to SR 159 to better facilitate vehicle and bicycle movement from SR 159 onto Scenic Loop Drive.
- Improvements to secondary roads would include pavement rehabilitation on Moenkopi Road and Rocky Gap Road, and ditch grading/grade raise combination on White Rock Road and Oak Creek Road.

3.0 Regulatory Framework

This section provides a summary of regulations and relevant BLM plans that govern visual resources within the study area. The study area occurs entirely within BLM administered land and, therefore, the proposed project would be subject to BLM standards for visual resources.

3.1 Federal Regulations

Under the Federal Land Policy and Management Act of 1976 [U.S. Code Chapter 43 §1712(c)(9)], the BLM is required to consider scenic values of lands under its jurisdiction. The BLM Visual Resource Management (VRM) system establishes management objectives for visual resources (BLM, 2009). A Visual Resource Inventory (VRI) is required as part of the baseline for National Environmental Policy Act analyses on BLM land, and all field offices must have VRI and VRM classes delineated as part of the land use planning process. In the event a field office does not have VRI data, an inventory must be completed to process permit applications.

3.2 BLM Plans

Red Rock Canyon National Conservation Area Resource Management Plan. Federal lands in the proposed project study area are managed by the BLM Red Rock/Sloan Field Office, which issued the *Red Rock Canyon National Conservation Area Resource Management Plan* (RMP) in 2005 (BLM, 2005). The RMP establishes management direction for lands administered by the BLM Red Rock/Sloan Field Office and identifies VRM goals and planned actions for specially designated areas located within the proposed project study area. The RMP cites the Keystone Thrust Fault, which extends north-south along the western boundary of the area forming the Spring Mountains, as one of the region's most unique geologic features. The RMP also references the Calico Hills, which run along the northern edge of the area north of the entrance to the Scenic Loop Drive, as providing a dramatic grouping of sandstone formations for RRCNCA visitors to view.

4.0 Data Collection Methods

This section describes the methods used to evaluate the proposed project for effects on visual resources. The methods were established in coordination with Lauren Brown, District Weeds Management Specialist and ESR Coordinator Southern Nevada District Office and Brenda Warner, BLM Red Rock/Sloan Field Office Recreation Planner, during in-person meetings that took place in February 2015. The methods apply the procedures and concepts of the BLM VRM system.

This section describes the following data collected and analyses performed:

- Obtaining BLM VRI and VRM data
- Identifying sensitive areas (communities, recreational areas, travel routes, and designated scenic areas)
- Selecting Key Observation Points (KOPs)
- Creating visual simulations for KOPs
- Completing BLM visual contrast rating worksheets

4.1 Analysis Area for Visual Resources

This analysis focuses on the assessment of the impacts of the visual changes that would be brought about by development of the new return road and the expansions of the Calico 1, Sandstone Quarry, Lost Creek, and Willow Springs parking areas. The physical changes related to these facilities would be the most substantial changes that the project would bring about, and because many (but not all) of these facilities are located in VRM Class II areas, the project-related changes of these facilities have the greatest potential for creating changes that would be inconsistent with VRM objectives. The analysis also considers the impacts of the additional signage that will be installed along the Scenic Loop Drive, some of which will be located in VRM Class II areas and some in VRM Class III areas.

The visual changes brought about by the other components of the proposed project—addition of another bay to the fee station; rehabilitation of the Scenic Loop Drive's pavement;; improvements to the surfaces of White Rock Road, Rocky Gap Road, and Oak Creek Road; rehabilitation of the pavement of Moenkopi Road; improvements to SR-59; and expansion of the Calico Hills 2, High Point Overlook, White Rock Trailhead and equestrian parking, Ice Box Canyon, Red Rock Wash Overlook, and Pine Creek Canyon parking areas—would be less substantial, and in most cases, the areas affected have a VRM Class III designation. The only retaining walls included in the project improvements are located along the southern portion of the High Point Overlook parking area. The retaining walls are located in a VRM Class III area, and because of the configuration of Scenic Loop Drive leading to the parking area is from the east, the visibility of the walls will be limited. Mitigation, including minimizing vegetation disturbance and painting the walls to match the surrounding soils, have been included in the mitigation measures section to further reduce any potential visual impacts at the High Point Overlook parking area.

As a consequence, based on initial screening, it was determined that the levels of visual impact associated with these project elements will be low and the project-related visual changes will be consistent with the VRM classification applicable to the areas in which these project components are located. For this reason, the impacts associated with these proposed project features are not discussed in detail in this TM.

The area analyzed in this TM encompasses the area within 1.5 miles of the Sandstone to Visitor Center Scenic Loop Return Road and the areas within 0.25 mile around each of the parking areas included in the analysis. In addition, it includes the entire area along the Scenic Loop Drive to encompass the areas where new signage will be installed. Although views toward the Scenic Loop Return Road will be limited to a large degree by its location in the folds of the hillside, there are locations on public roadways and in observation areas up to 1.5 miles away from which segments of the new return road will be potentially visible. The parking lots are well integrated into the overall landscape and generally have substantial visibility only in close-by areas as they are approached from nearby segments of the Scenic Loop Road or nearby trails. Because visibility of the parking areas is limited by the winding and curving nature of the Scenic Loop Road, the rolling topography, and the screening provided by the desert vegetation, in most cases it was adequate to focus the analysis on the areas within 0.25 mile of them. An exception was made in the case of the Calico 1 parking area, which, because it has the potential to be seen from more distant viewpoints to the southwest, was evaluated using views not only from a nearby segment of the Scenic Loop Drive, but also from the Visitor Center located approximately 0.8 mile away and from the Red Rock Overlook, 2.2 miles away.

4.2 Applicable Methods

To analyze potential visual impacts, this TM uses the BLM's VRM system (BLM, 1986a; 1986b), which consists of the following two stages:

1. Inventory: VRI
2. Analysis: Visual resource contrast rating

Visual Resource Inventory

BLM's VRI process, as outlined in BLM *Handbook H-8410-1, Visual Resource Inventory* (BLM, 1986a), determines visual values and classifies BLM land according to those values. The inventory consists of the following three steps:

1. Scenic quality evaluation
2. Viewer sensitivity-level analysis
3. Delineation of distance zones

Through these three analyses, BLM-administered lands are placed into one of four VRI classes based on value of the visual resources. Lands placed in VRI Class I and VRI Class II are the most valued; lands in VRI Class III are of moderate value, while lands in VRI Class IV are of least value. VRI results are an important

component considered in the development of BLM's RMP for the area. The RMP establishes how the public lands will be used for different purposes and considers visual values, along with public input, throughout the RMP process. The area's visual resources are then assigned to VRM classes with the following established objectives:

- VRM Class I Objective: To preserve the existing character of the landscape. The level of change to the characteristic landscape should be very low and must not attract attention.
- VRM Class II Objective: To retain the existing character of the landscape. The level of change to the characteristic landscape should be low.
- VRM Class III Objective: To partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate.
- VRM Class IV Objective: 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.

Visual Resource Contrast Rating

Visual resource contrast rating is used to analyze the potential visual impacts of a proposed project and determine whether the impacts would be consistent with BLM's management objectives. The contrast rating process is laid out in BLM *Handbook H-8431-1, Visual Resource Contrast Rating* (BLM, 1986b) and is based on a comparison of the existing landscape to the way it would appear following construction of the proposed project. Because it is not possible to analyze every view toward project features, the contrast rating process requires selection of representative views, or KOPs. KOPs represent a range of views available to the public, including common views and sensitive views, the latter of which consists of views from communities, recreational areas, and travel routes.

For each KOP, the existing and with-project conditions are assessed for land and water features, vegetation, and structures in terms of the elements of form, line, color, and texture. The degree of contrast (strong, moderate, weak, or none) is assessed for each of these features and elements based on the criteria in **Table 1**. Landscape VRM classes are presented in **Table 2**.

TABLE 1
VRM Degrees of Contrast and Criteria

Degree of Contrast	Criteria
None	The element contrast is not visible or perceived.
Weak	The element contrast can be seen but does not attract attention.
Moderate	The element contrast begins to attract attention and begins to dominate the characteristic landscape.
Strong	The element contrast demands attention, will not be overlooked, and is dominant in the landscape.

Source: BLM *Handbook H-8431-1, Visual Resource Contrast Rating*.

The degree to which the proposed project is consistent with the VRM classification of the land on which it would be located is based on the thresholds indicated below.

TABLE 2
Landscape VRM Classes

Degree of Contrast	Existing Landscape's VRM Class
None	I
Weak	II
Moderate	III
Strong	IV

The BLM visual resources contrast rating process involves analysis of contrast between existing visual conditions and the visual conditions that would result from the proposed project. The difference between the two landscapes is described by the extent of contrast (strong, moderate, weak, or none). To properly assess the contrasts between the proposed and existing condition, it is necessary to break each down into the basic features (i.e., landform/water, vegetation, and structures) and basic elements (i.e., form, line, color, and texture) so that the specific features and elements that cause contrast can be accurately identified and put in context. Additionally, ten factors are considered in evaluating the degree of contrast and include:

1. Distance–The contrast created by a project usually is less as viewing distance increases.
2. 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.
3. 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.
4. Relative size and scale–The contrast created by the project is directly related to its size and scale as compared to the surroundings in which it is place.
5. Season of use–Contrast ratings should consider the physical conditions that exist during the heaviest or most critical visitor use season, such as snow cover and tree defoliation during the winter, leaf color in the fall, and lush vegetation and flowering in the spring.
6. Light conditions–The amount of contrast can be substantially affected by the light conditions. The direction and angle of lighting can affect color intensity, reflection, shadow, form, texture, and many other visual aspects of the landscape.
7. Recovery time–The amount of time required for successful re-vegetation should be considered.
8. Spatial relationships–The spatial relationship within a landscape is a major factor in determining the degree of contrast.
9. Atmospheric conditions–The visibility of projects due to atmospheric conditions such as air pollution or natural haze should be considered.
10. Motion–Movement such as waterfalls, vehicles, or plumes draws attention to a project.

Completed BLM Visual Contrast Rating Worksheets (Form 8400-4) for each of the KOPs evaluated in this TM are provided in **Appendix B**.

Data Collection, Fieldwork, and Selection of Key Observation Points

CH2M HILL obtained available BLM VRI and VRM data from the BLM Red Rock/Sloan Field Office. CH2M HILL used these data to create maps to which project features, communities, travel routes, and recreation areas

were added using ArcInfo™ geographic information system (GIS) mapping. Analysis of these maps allowed a preliminary assessment of the proposed project's potential impacts on visually sensitive areas. In consultation with the BLM Red Rock/Sloan Field Office representative, CH2M HILL compiled a list of potential KOP locations.

On February 24 and 25, 2015, CH2M HILL's visual resource specialist conducted field work in the project area, and during this time visited the potential KOP locations, took photographs, and recorded the global positioning system coordinates of each of the viewpoints from which views toward the project alignment were photo documented. All photographs were taken with a digital camera with a lens set to take photos equivalent to photos taken with a 35 millimeter (mm) camera using a lens with a 50 mm focal length. Based on observations made during the field visit, CH2M HILL selected eight locations as KOPs to be used as the basis for evaluation of the project's visual impacts. The viewpoints selected—and the photos selected to represent the views from them—were reviewed and agreed upon by the representative from the BLM Red Rock/Sloan Field Office.

Project Simulations

CH2M HILL prepared eight visual simulations using computer modeling techniques to depict the views from the KOPs as they would appear were the proposed project completed. A combination of computer-aided drafting, GIS, and rendering programs was used to produce the images of the proposed project facilities that were superimposed on photographs.

To produce the simulations, a digital site model was created using topographic and site data. Next, three-dimensional (3-D) models of proposed project features were prepared using proposed project plans and superimposed on the digital site model. For each KOP, viewer location was digitized from topographic maps using 1.5 meters (5 feet) as the assumed eye level. Computer "wire-frame" perspective plots were overlaid on the photographs of the KOPs from the simulation viewpoints to verify scale and viewpoint location. Digital visual simulation images were produced based on renderings of the 3-D model combined with the high-resolution digital base photographs.

Issues for Analysis

Potential environmental changes are described in this TM in terms of their effects on the form, line, color, and texture of the elements visible in the landscapes in which they will take place. The acceptability of these visual changes is determined by comparing the project's effects on each of these dimensions with degree of visual contrast that is consistent with the visual quality objectives established for the VRM class assigned to the area in which the project feature will be located.

5.0 Affected Environment

5.1 Regional Setting

The proposed project is located entirely within the boundaries of the RRCNCA. As the inset map on Figure 1 in Appendix A indicates, the RRCNCA is located in southern Nevada at the western edge of the city of Las Vegas. NCAs are designated by Congress to conserve, protect, enhance, and manage public lands for the benefit and enjoyment of present and future generations. These lands feature exceptional scientific, cultural, ecological, historical, and recreational values. Congress conferred NCA status to the area in 1990. Red Rock Canyon was the first designated NCA in Nevada. Its designation arises from its unique geologic features, plants, and animals that represent the Mojave Desert. Today, it is one of only three NCAs designed within Nevada.

The RRCNCA reports over one million visits every year to its Visitor Center. The area is a destination for locals and for national and international visitors who visit it in conjunction with stays in Las Vegas. The Red Rock Canyon Scenic Loop Drive is a BLM National Scenic Backcountry Byway and traverses approximately 13 miles of the RRCNCA with trailheads, scenic overlooks, and picnic facilities along its route. The RRCNCA

has more than 100 miles of known trails of various standards for hikers, rock climbers, horse riders, and cyclists, although bicycles and motorized vehicles are prohibited from off-highway use in the area.

Red Rock Canyon Scenic Loop Drive is situated within the Spring Mountain Range. Unique to this area is the abundance of groundwater-fed springs and seeps, with output varying seasonally. The Spring Mountains in the vicinity of the proposed project illustrate banding from different geologic eras—showing reds, yellows, and grays within the mountainous landforms. Vegetation in this area is indicative of low-growing blackbrush, desert shrub, desert wash, and chaparral vegetative communities. These vegetative communities produce muted green, gray, and brown color patterns.

The Scenic Loop Drive is a one-way road for vehicles, and views for motorists are typically limited to a distance of less than 0.25 mile because of the winding and curving nature of the roadway, the rolling topography, and the screening provided by the desert vegetation.

The nearest population center to the RRNCA is Calico Basin (approximately 1,800 residents), located immediately northeast of Red Rock Canyon Scenic Loop Drive, although its view of the Scenic Loop Drive is blocked by the Calico Hills. The western edge of the Las Vegas suburb lies approximately 4.5 miles east of the RRCNCA Visitor's Center. Otherwise, no residences are located in the vicinity of Red Rock Canyon Scenic Drive Loop. State Route (SR) 159, also named Red Rock Canyon Road, is the major travel route in the area, providing access to RRCNCA from both northwest and southwest Las Vegas. No designated historic landmarks are present in the vicinity of the study area.

The RMP for the RRCNCA, adopted May 20, 2005, assigned VRM Classifications of Class II and Class III for the areas where the improvements proposed by the project will be taking place. For the most part, the large basin area around which the Scenic Loop Drive travels has a Class III designation, while the areas of rock outcrops and higher elevation lands that surround it have a Class II designation. As a result, much of Scenic Loop Drive from the RRCNCA's entrance at SR 159 to Sandstone Quarry lies within the Class II area, but at the boundary between Class II and Class III designations. Between Sandstone Quarry and Rocky Gap Road, some segments of Scenic Loop Drive lie within Class II areas, while most are located on Class III lands.

- Class II
  - Fee Station, White Rock Road, Moenkopi Road, and the northern segment of Rocky Gap Road
  - The Calico 1, Calico 2, Sandstone Quarry, White Rock Trailhead, and Willow Springs parking areas
- Class III
  - Scenic Loop Drive between Rocky Gap Road and SR 159
  - Proposed return road from Sandstone Quarry to the Visitor Center
  - All of the other areas where improvements are proposed

5.2 Areas Potentially Affected By the Proposed Project

5.3 Sandstone to Visitor Center Return Route

KOPs 1, 2, and 3 were selected to provide a basis for assessing the visual effects of the proposed return road from Sandstone to the Visitor Center. The locations of these viewpoints are indicated on the maps in **Figures 1 and 2**.

KOP 1 is located on a trail by the picnic area next to the Visitor Center and is intended to encompass the views from this heavily visited area toward the southern end of the proposed route of the return road. The existing view from this viewpoint is documented in Figure 4.A. This view looks out over the basin of the Red Rock Canyon. Large reddish rock outcrops at the perimeter of the basin and behind them, the Spring Mountains serve as the backdrop for this view. The only human-made structures detectable in this view consist of the small collection of equipment in the meteorological station in the foreground of the view. The rock outcrops and mountains in the background are irregular and pronounced, creating a dominant

landform. By contrast, the landform in the foreground and middleground conveys smooth undulations. The mass and the outline of the mountains contrasting against the skyline draw the eye to the view's backdrop. The vegetation in the foreground consists of low-growing, green desert shrubs and tan desert grasses, under which patches of tan soil are visible. From this vantage point, the vegetation creates a coarse texture in the foreground and a more stippled texture as it recedes into the distance. The edge of the valley floor against the base of the mountain range and the horizon of the mountains create horizontal line patterning in this view.

KOP 2 is located on Scenic Loop Drive at a point west of the Sandstone Quarry parking area on the slope leading down to the crossing of Sandstone Wash. The view was selected to encompass the area at the northern end of the proposed return road's alignment. This existing view from this location (Figure 5.A.) looks south over the Red Rock Canyon basin toward SR 159, which is visible in the distance. A small area of the Scenic Loop Drive's pavement and curb is visible in the immediate foreground of the view. The foreground area beyond the roadway is covered by a low, patchy carpet of dispersed dark green, tan, and yellow desert vegetation, under which areas of tan soil are visible. The more distant basin and the hillslopes that flow into it are covered by low vegetation that creates a fine, even texture. The border between a large area of dark green vegetation and an area with vegetation that is more brown in color creates a straight horizontal line down the middle of the basin area. The backdrop of the view is defined by the tall, rugged rock outcrops along the western and southwestern edge of the basin and the mountains seen in the distance in the south. The only human-made elements in this view are the small segment of the Scenic Loop Drive visible in the foreground and curving segments of SR 159 seen below in the distance at the edge the basin.

KOP 3 is located at the Red Rock Overlook, an area along SR 159 developed with parking, a rest room facility, picnic areas, and overlooks that provide visitors with panoramic views looking out over Red Rock Canyon. The view from this area selected for evaluation (Figure 6.A.) looks northeast over the canyon's basin area toward the alignment of the proposed return road, which is approximately 1.45 miles away. This view also takes in the Calico 1 parking area, which is a feature that is barely detectable in the right third of the photo at the base of the Calico Hills rock outcrop, approximately 2.2 miles away. This view looks over the Red Rock Canyon basin area, which has rolling topography and is covered with a layer of short, finely grained, green and tan vegetation, through which the underlying tan soil can be seen. The view is backdropped by the striking red, orange, and tan rock outcrops of the Calico Hills and by Turtlehead Mountain beyond. The only human activity obviously evident in this view is the cluster of parked cars at the distant Calico 1 parking area.

5.4 Calico 1 Parking Area

KOPs 4 and 5 were selected to provide a basis for assessing the visual effects of the proposed expansion of the parking area at Calico 1and the realignment of the segment of the Scenic Loop Drive that passes adjacent to it. The locations of these viewpoints are indicated on the maps in **Figures 1 and 2**.

KOP 4 is located on Scenic Loop Drive at a point just before it reaches Calico 1 parking area. This view (Figure7.A.) is oriented toward the northwest and takes in Calico 1and the segment of Scenic Loop Drive that continues to the northwest. The segment of pavement and curb of the Scenic Loop Drive is the visually dominant element in the foreground. To the left and immediate right of the road, the nearby topography is flat to rolling. On the right, the view is framed by the chunky-appearing, brightly orange-colored mass of the Calico Hills rock outcrop. Turtlehead Mountain is visible behind the Calico Hills, and is part of a range of steep sided, light to dark gray mountains that define the background of the view. The flat to rolling lands in the foreground and middleground are covered with thin layer of low, green and brown vegetation through which small areas of gray to brown soil are visible. The vegetation on the lower slopes of the distant mountains is dark green and has a fine texture. The flat, black road surface bordered by the white-appearing curb is the most obvious human-made element in the view. Other human-made elements include the rectangular signs supported by vertical posts and the cluster of cars in the parking lot and the fence at the edge of the overlook area.

KOP 5 is located on the viewing platform located in the developed interpretive area behind the Visitor Center. This view (Figure 8.A) looks due north toward Calico 1, which 0.8 mile away. In this view, the location of Calico 1 to the right of the center is made evident by the cluster of parked cars seen in the distance at the base of the Calico Hills rock outcrop. The flat to rolling landscape between the viewpoint and the Calico Hills is covered by a thin, low carpet of vegetation, under which large patches of brown soil are visible. In the foreground to middleground, the vegetation is mostly green and yellow and the individual plants appear irregular in shape. In the far middleground, the vegetation appears as a low, fine-textured brown carpet. The view is backdropped by the striking red, orange, and tan rock outcrops of the Calico Hills and by Turtlehead Mountain beyond. The only human-made intrusions evident in this view are the cluster of parked cars at the distant Calico 1 parking area and a small segment of the Scenic Loop Drive that is visible in the distance on the left side of the view.

5.5 Sandstone Quarry Parking Area

KOP 6 was selected to provide a basis for assessing the visual effects of the proposed expansion of the parking area at Sandstone Quarry. The location of this viewpoint is indicated on the maps in **Figures 1 and 2**.

KOP 6 is located on the one-way road that provides access into the Sandstone Quarry parking area from Scenic Loop Drive. The view (Figure 9.A) looks north into the parking area. The land in the foreground area is flat to sloped. The brown soils of this area's surface are partially covered by a layer of low, widely spaced vegetation that is green, gray, and brown in color. In the area alongside the road, particularly to the right of the road, there are areas of dark green vegetation that are denser and taller. The backdrop of the view is defined by the striking smooth-sided, curving form of a tan rock outcrop located immediately behind the parking lot, and behind that, by a tall, steep-sided mountain ridge characterized by horizontal bands that are tan, light gray, and dark gray in color. The distant mountain ridge is also marked by horizontal bands of vegetation, which at this distance, appear dark green in color and to have a stippled texture. The human-made elements in this view include the narrow, curving access road, the surface of which has curving, parallel light gray and black stripes, and the flat, black surface of the parking lot on which a dense cluster of parked cars can be seen.

5.6 Lost Creek Parking Area

KOP 7 was selected to provide a basis for assessing the visual effects of the proposed expansion of the parking area at Lost Creek. The location of this viewpoint is indicated on the maps in **Figures 1 and 3**.

KOP 7 is located on Rocky Gap Road, the roadway that provides access to the Lost Creek and Willow Springs parking areas from Scenic Loop Drive. The view (Figure 10.A) looks west from Rocky Gap Road into the parking area. The land in the immediate foreground area is generally flat. Behind the narrow flat area, steep-sided, tan, blocky rock formations rise up to create the backdrop. The thick green and tan vegetation that covers the flat lands in the foreground area is moderately tall and has irregular forms. The human-made elements in this view include a segment of Rocky Gap Road, a sign along the roadway, the parking lot, and a rest room structure. The road segment dominates the immediate foreground of the view. The gray of the road's pavement and the whitish gray area of gravel along its edges contrast with the colors, forms, and textures of the surrounding landscape and create a strong linear element. The flat, gravel surface of the parking lot is whitish gray, with a slightly rough texture, and the parking lot is occupied by a cluster of vehicles of various colors. A small corner of the brown rest room structure is detectable through the vegetation at the near end of the parking lot. The diamond shaped road sign supported by a thin, gray vertical post is visible to the left of the road before the parking lot.

5.7 Willow Springs Parking Area

KOP 8 was selected to provide a basis for assessing the visual effects of the proposed expansion of the parking area at Willow Springs. The location of this viewpoint is indicated on the maps in **Figures 1 and 3**.

KOP 8 is located on Rocky Gap Road, the roadway that provides access to the Lost Creek and Willow Springs parking areas from Scenic Loop Drive. The view (Figure 11.A) looks northwest from Rocky Gap Road into the

parking area. The land in the immediate foreground area is generally flat. Behind the narrow flat area, steep-sided, tan, blocky rock formations rise up to create the near backdrop. In the large gap between the rock outcrops on the left and right sides of the view, there is a vista toward a tall, steep-sided mountain ridge that completely encloses the view. The thick green and tan vegetation that covers the narrow area flatland in the foreground area is low to moderate in height and has irregular forms. The vegetation on the lower and upper slopes of the mountain ridge in the background is dark green and creates a fine, stippled texture. The most evident human-made elements in this view are a segment of Rocky Gap Road and a portion of the parking lot. The gray of the road's pavement and the whitish-gray area of gravel along its edges contrast with the colors forms and textures of the surrounding landscape and create a strong linear element. The flat, gravel surface of the parking lot is whitish gray and has a slightly rough texture. The parking lot is occupied by a cluster of vehicles. A small No Parking sign is visible at the left side of the road, to left of the parking lot.

5.8 Scenic Loop Drive - Signage

KOP 4, the view from Scenic Loop Drive just before it reaches the Calico Hills Overlook parking area, is typical of the views from Scenic Loop Drive where existing signs will be replaced and/or additional signs will be added as a part of the proposed action. In most areas along the roadway, the pavement and curb are visually dominant elements in the foreground of the view. In addition, the topography of the areas along the roadway is flat to rolling and is covered with a low carpet of dispersed green and brown vegetation. Between Sandstone Quarry and the Rocky Gap Road turnoff to the Lost Creek and Willow Springs parking areas, much of the Scenic Loop Drive is windy, and in many areas, the lands along it are steeply sloped. In most areas, views toward the west are backdropped by rock formations and mountains, and views to the east are sweeping, open views across the valley. In areas where signs now exist, they tend to be rectangles supported by vertical posts, and the signs tend to be brown in color with contrasting white lettering.

6.0 Environmental Consequences

The visual effects of the project elements on the views described in Section 5.0 were evaluated based on a review of the simulations presented on **Figures 4 through 11 in Appendix A** and a systematic comparison of them with the visual conditions seen in the existing views. The visual changes observed were noted using the BLM Visual Contrast Rating Worksheets (Form 8400-4). Copies of the forms completed for each of the KOPs evaluated are provided in **Appendix B**. This section provides a brief narrative summary of the results of those evaluations. This summary focuses on the potential impacts of the visual changes that would be brought about in the areas seen in KOPs 1 through 8 by development of the new return road, and the expansions of the Calico 1, Sandstone Quarry, Lost Creek, and Willow Springs parking lots. This narrative does not include evaluations of the visual effects of the project's other components. As indicated in the Analysis Area for Visual Resources discussion in Section 4, the visual changes brought about by the other components of the proposed project would be less substantial, and in most cases, the areas affected have a VRM Class III designation. Consequently, the levels of visual impact associated with these project elements will be low and the project-related visual changes will be consistent with the VRM classification applicable to the areas in which these project components are located. For this reason, the impacts associated with these proposed project features are not included in the analyses summarized here.

6.1 Sandstone to Visitor Center Return Route

Key Observation Point #1 - View from Trail Near Picnic Area By Visitor Center

Figure 4

The development of the proposed return road would introduce a linear roadway into a view where the only evident human-made feature is the small meteorological station. The roadway would add a horizontal line across the landscape, but it would mirror the existing line between the edge of the valley floor and the base of the mountains. The smooth, black surface of the roadway and the lighter tan of the disturbed area along the roadway's edge would create a moderate degree of contrast. Because the visual contrasts created by the presence of the new roadway in this area would be moderate at most, they would be consistent with

this area's Class III VRM designation. However, mitigation is recommended to further reduce the potential levels of visual contrast. The measure most appropriate for this area is to ensure that any areas of disturbance along the roadway are covered with topsoil to avoid exposure of lighter colored sub-soils and to encourage revegetation.

Key Observation Point #2 – View from Scenic Loop Drive Near Crossing of Sandstone Wash

Figure 5

The development of the proposed return road would entail removal of the segment of the Scenic Loop Drive now visible in the foreground of this view and its replacement with a roadway that would extend across the plateau area on the south side of the existing road. With the replacement of the existing road segment with the new road segment, a new, horizontal element will extend into the plateau, creating a contrast that will be no more than moderate because of the consistency of this horizontal element with other linear elements in the view. The surface of the new road will appear dark gray and moderately textured. Because the visual changes brought about by the development of the new road will have a moderate impact on the form, line, color, and texture of the view, the impacts on line will be high; they will be consistent with the visual quality objectives of the VRM Class III classification assigned to the entire area in which it is located. To further attenuate the new road's level of visual contrast, mitigation is recommended. The measure that would be most appropriate to reduce the potential visual impacts to this view include ensuring that any areas of disturbance along the roadway are covered with topsoil to avoid exposure of lighter colored sub-soils and to encourage revegetation.

Key Observation Point #3 – View from Red Rock Overlook

Figure 6

In this view, the development of the proposed return road would create a thin, intermittently visible horizontal line along the top of a ridge located in the center of the basin area in which no human-made modifications are currently apparent. For the most part, the visibility of the proposed roadway will be related to the visibility of light soils exposed by construction of the roadway in the areas alongside it. The visual contrasts created by the return road in this view will be moderate at most. As a consequence, the new road will be consistent with the basin area's Class III VRM designation. Mitigation is recommended to reduce the potential levels of visual contrast even further. The measure most pertinent to the visual changes in this view is the requirement that any areas of disturbance along the roadway are covered with topsoil to avoid exposure of lighter colored sub-soils and to encourage revegetation.

6.2 Calico 1 Parking Area

Key Observation Point #4 – View from Scenic Loop Drive

Figure 7

The straightening of Scenic Loop Drive and the expansion of the parking area to the east will create a much wider and more visually dominant paved area in the foreground of this view and will permit the creation of a much larger mass of parked vehicles in the center of the view. The horizontal lines created by the realigned roadway would extend far into the view until they disappear because of a change in slope. The area of dark concrete that is smoother than the surfaces of the surrounding landscape will be noticeably increased. The visual changes will produce strong contrasts in terms of form, and line, and moderate contrasts in terms of color and texture. These levels of visual contrast are inconsistent with the visual resource management objectives of this area's VRM Class II designation.

To bring the project into conformance with the area's VRM Class II designation, mitigation is required. One of the mitigation measures recommended is to ensure that any areas of disturbance along the roadway and parking lot are covered with topsoil to avoid exposure of lighter colored sub-soils and to encourage revegetation. In addition, the areas in the plans and in the simulation shown as striped that indicate that parking will not be taking place there, should be left unpaved, and if already vegetated, the existing

vegetation should be left in place. If there is currently no vegetation in these areas, it should be replanted. Even though these islands of vegetation may be relatively small, they will visually break up the expanse of asphalt and will attenuate its overall degree of visual dominance and contrast.

Key Observation Point #5 – View from the Viewing Platform at the Visitor Center

Figure 8

The straightening of Scenic Loop Drive in front of Calico 1 and the expansion of the parking area will be visible in the distance from this viewpoint. The flat, continuous paved area of the road and expanded parking lot will be visible as a large, flat, smooth, black surface that will create a linear feature at the base of the Calico Hills. The form contrast will be moderate, the line contrast will be weak, and the color and texture contrasts will be strong. These contrast levels are inconsistent with the VRM objectives of this area's VRM Class II designation. To bring the project into conformance with the area's VRM Class II designation, mitigation is required. The mitigation measure that is relevant to the visual changes seen in this view is the creation of small, vegetated islands in the parking area to visually break up the expanse of asphalt and thus attenuate its overall degree of visual dominance and contrast.

Key Observation Point #3 – View from Red Rock Overlook

Figure 6

Although this view was established to serve as a basis for evaluating the visual effects of the return road as it travels across the ridges of the basin area, it was also used to evaluate the potential visual effects of the proposed changes at Calico 1. . The Calico 1 parking area was detectable to a small degree in the existing view and it was thought the proposed road widening and parking lot expansion could have the potential to increase this facility's visibility in this distant view. Review of the simulation determined that the relocated segment of Scenic Loop Drive and parking expansion at Calico 1 would increase the visibility of Calico 1. However, the view would include a barely detectable dark line at the base of the distant Calico Hills that would, at most, create a weak level of contrast. In this view, the project changes at the Calico 1 would be consistent with the visual quality objectives of the VRM Class II designation of the area.. The mitigation measures that would be applied to bring about compliance with the VRM Class II standards in the views seen from KOPs 4 and 5 would be likely to make the proposed Calico 1 weak levels of contrast even weaker.

6.3 Sandstone Quarry Parking

Key Observation Point # 6 – View from Sandstone Quarry Parking Area Entrance Road

Figure 9

The modifications to the Sandstone Quarry parking area will bring about an increase in the expanse of paving whose form, dark color, and smooth surface will create strong contrasts with the surrounding landscape. These levels of visual contrast are not consistent with the VRM objectives of this area's VRM Class II designation.

To bring the project into conformance with the area's VRM Class II designation, mitigation is required. The recommended mitigation measure is to ensure that any areas of disturbance along the parking lot are covered with topsoil to avoid exposure of lighter colored sub-soils and to encourage revegetation. In addition, the areas in the plans and in the simulation shown as striped that indicate that parking will not be taking place there should be left unpaved, and if already vegetated, the existing vegetation should be left in place. If there is currently no vegetation in these areas, it should be replanted. Even though these islands of vegetation may be relatively small, they will visually break up the expanse of asphalt and will attenuate its overall degree of visual dominance and contrast.

6.4 Lost Creek Parking Area

Key Observation Point # 7 – View from Rocky Gap Road

Figure 10

The modifications to the Lost Creek parking area will bring about an increase in the expanse of paving whose form, dark color, smooth surface, and straight edges will create strong contrasts with the surrounding landscape. These levels of visual contrast are not consistent with the visual resource management objectives of this area's VRM Class III designation.

To bring the project into conformance with the area's VRM Class III designation, mitigation is required. One of the recommended mitigation measures is to ensure that any areas of disturbance along the parking lot are covered with topsoil to avoid exposure of lighter colored sub-soils and to encourage revegetation. In addition, the areas in the plans and in the simulation shown as striped that indicate that parking will not be taking place there should be left unpaved, and if already vegetated, the existing vegetation should be left in place. If there is currently no vegetation in these areas, it should be replanted. Even though these islands of vegetation may be relatively small, they will visually break up the expanse of asphalt and will attenuate its overall degree of visual dominance and contrast.

6.5 Willow Springs Parking Area

Key Observation Point # 8 – View from Rocky Gap Road

Figure 11

The modifications to the Lost Creek parking area will replace the existing gravel parking area with a substantially larger paved lot whose form, dark color, smooth surface, and straight edges will create strong contrasts with the surrounding landscape. These levels of visual contrast are not consistent with the VRM objectives of this area's VRM Class II designation.

To bring the project into conformance with the area's VRM Class II designation, mitigation is required. One recommended measure is to ensure that any areas of disturbance along the parking lot are covered with topsoil to avoid exposure of lighter colored sub-soils and to encourage revegetation. In addition, the areas in the plans and in the simulation shown as striped that indicate that parking will not be taking place there should be left unpaved, and additional unpaved islands should be created in areas that abut the Rocky Gap Road roadway. In areas that are already vegetated, the existing vegetation in the island areas created should be left in place. If there is currently no vegetation in any of the areas where islands are created, it should be replanted. These islands of vegetation will visually break up the expanse of asphalt and will attenuate its overall degree of visual dominance and contrast.

6.6 Scenic Loop Drive - Signage

The replacement signs and the new signs to be added, particularly in the approaches to parking areas and the turnoffs to side-roads leading to parking areas will increase the number of human-made features in the near foreground of views from the Scenic Loop Drive that have the potential to contrast with the natural setting. Given the low speed on the loop and the high value visitors place on the scenic qualities of the setting, although the visual changes brought about by the additional signs may be small, they have the potential to detract from the scenic experience that visitors have come to the Conservation Area to enjoy. Although the level of visual contrast created by the replacement and additional signs would be consistent with the standards for the VRM III areas, they have the potential to create a high enough level of contrast to conflict with the VRM II standards. To reduce the visual contrast of the signs and to bring them into compliance with the VRM standards, low profile signs designed using the Look and Feel Modernization Initiative for NLCS units should replace most signage on the loop and also at the Visitor Center. Traffic and regulatory signs in the Look and Feel Modernization Initiative are described as "not being modified", but, entail simple, low-cost mitigation to reduce their visual contrast without compromising safety. These measures include lowering the height of the signs as low as practical and the sign posts and back sides painted with an appropriate non-reflective environmental color. Speed limit signs can also be lowered

similar to the stop signs, or possibly placed in a monument style enclosure. Other directional and informational signs should also be lowered and designed to be compatible with the Look and Feel Modernization Initiative for NLCS units. Redundant or optional signs can evaluated for removal and no replacement signs would be necessary.

7.0 Conclusions

As stated in Section 4.1, the Analysis Are for Visual Resources, based on a pre-screening analysis, it was determined the visual changes brought about by a large number of the project's components would range from minor to less than substantial, and would easily be consistent with the visual quality objectives of the VRM classes that apply to the areas in which they are located. These features include the addition of another bay to the fee station; rehabilitation of the Scenic Loop Drive's pavement; improvements to the surfaces of White Rock Road, Rocky Gap Road, and Oak Creek Road; rehabilitation of the pavement of Moenkopi Road; improvements to SR 159; and expansion of Calico 2, High Point Overlook, White Rock Trailhead, Ice Box Canyon, Red Rock Wash Overlook, and Pine Creek Canyon parking lots.

Among the project features evaluated in detail in this analysis only one, the new return road from Sandstone to the Visitor Center, was found to be consistent with the visual resource management objectives for the area in which it is located. The remaining features including the expansions of the parking areas at Calico 1, Sandstone Quarry, Lost Creek, and Willow Springs, and the installation of additional signage in VRM Class II areas along Scenic Loop Drive were all found to create levels of contrast that would not be consistent with the visual quality objectives for the VRM classes assigned to the lands on which they would be located. With implementation of the mitigation measures that have been recommended, the levels of contrast will be reduced to levels that are consistent with the VRM classes assigned to the areas in which these features are located.

8.0 Mitigation

Although the new return road from Scenic Loop Drive near Sandstone Quarry back to the Visitor Center would be consistent with the visual quality objectives established for the VRM III lands on which it is located, the mitigation measure recommended to further reduce the road's level of visual contrast with its landscape setting consist of the following:

- Ensure that any areas of disturbance along the roadway are covered with topsoil to avoid exposure of lighter colored sub-soils and to encourage revegetation

For the expansions of the parking areas at Calico 1, Sandstone Quarry, Lost Creek, and Willow Springs, the measures recommended for implementation to bring the improvements at these areas into compliance with the applicable VRM visual quality objectives are:

- Ensure that any areas of disturbance along the edges of the parking lot are covered with topsoil to avoid exposure of lighter colored sub-soils and to encourage revegetation.
- The areas in the plans and in the simulation shown as striped that indicate that parking will not be taking place there should be left unpaved, and if already vegetated, the existing vegetation should be left in place. If there is currently no vegetation in these areas, it should be replanted.

For the expansion of the High Point Overlook parking area, the mitigation measure recommended to bring the improvements into VRM compliance are:

- Retaining walls should be constructed in a manner that minimizes the disturbance of surrounding vegetation
- Retaining walls should be tinted/painted with a color that matches the surrounding soils

For the signage that will be installed along Scenic Loop Drive, the mitigation measure recommended to bring the improvements into VRM compliance are:

- Low profile signs designed using the Look and Feel Modernization Initiative for NLCS units should replace most signage on the loop and also at the Visitor Center.

9.0 References

Bureau of Land Management (BLM). 1986a. *Handbook H-8410-1, Visual Resource Inventory*.

Bureau of Land Management (BLM). 1986b. *Handbook H-8431-1, Visual Resource Contrast Rating*.

Bureau of Land Management (BLM). 2005. *Red Rock Canyon National Conservation Area Resource Management Plan*.

Bureau of Land Management (BLM). 2009. "Visual Resource Management System." Available at http://www.blm.gov/wo/st/en/prog/Recreation/recreation_national/RMS/2.html.

APPENDIX A

Figures

APPENDIX B

Contrast Rating Worksheets