

**Transportation Observations,
Considerations, and Recommendations for
Red Rock Canyon National Conservation Area
Provided by the Interagency Transportation Assistance Group (TAG) /
Alternative Transportation in Parks and Public Lands (ATPPL) Program**

**Las Vegas, Nevada
December 4-8, 2006**

A field investigation of the current transportation infrastructure and operations at Red Rock Canyon National Conservation Area (“Red Rock,” “RRCNCA,” or “NCA”) by the inter-agency Transportation Assistance Group (TAG) was conducted December 4-8, 2006, on behalf of the Bureau of Land Management (BLM) and local stakeholders. This TAG report was prepared subsequent to the site visit and documents the conditions observed, transportation issues and considerations, and recommendations arising from the TAG team’s analysis. The site visit and the preparation of this report were facilitated and funded by the Alternative Transportation in Parks and Public Lands (ATPPL) program, administered by the Federal Transit Administration (FTA) in coordination with the Department of the Interior (DOI).

Note: The TAG also conducted field work for the adjacent Spring Mountains National Recreation Area (SMNRA), a unit of the U.S. Forest Service, simultaneously. However, this TAG report is applicable only to Red Rock; a separate report has been prepared for SMNRA.

Background and Conditions

Red Rock Canyon National Conservation Area is a 198,000-acre natural area of spectacular beauty adjacent to the City of Las Vegas, one of the largest (population approximately two million) and fastest-growing urbanized areas in the United States. Red Rock is bordered on the west primarily by the Spring Mountains National Recreation Area (SMNRA, part of the Humboldt-Toiyabe National Forest, administered by the U.S. Forest Service), and by additional lands administered by BLM. Red Rock extends north to the mouth of Cold Creek Canyon and Nellis Air Force Base, and extends south to include the Bird Spring Mountain Range. A substantial portion of the eastern boundary is contiguous to the Summerlin Master Planned Community, a large and rapidly developing enclave within the City of Las Vegas. Substantial BLM lands are also immediately adjacent to the east of Red Rock, as is a small section of the Las Vegas Paiute Indian Reservation. RRCNCA is accessible via Nevada State Route (SR) 159.

Because it has unique geological and ecological characteristics and is so close to a major population center, Red Rock has long been a popular location for public recreation and leisure. The geologic features of the area include an abundance of limestone and sandstone formations, including unique features such as older limestone covering and

protecting younger and less weather resistant sandstone. The result is a 3,000-foot escarpment running north-south along the west side of Red Rock Canyon. Running along the east side of the Scenic Loop Drive (the “Loop” or “Scenic Drive”) are the Calico Hills, another sandstone formation displaying shades of red, brown, buff and gray. Weathering has added form and texture, including potholes, domes, and arches.

The Scenic Loop Drive is a 13-mile one-way loop road, which starts at the Visitor Center, with access provided from SR 159. Travel along this designated state scenic byway is counter-clockwise; with egress directly back to SR 159, more than a mile southwest of the ingress to Red Rock. The Loop becomes quite congested during times of heavy visitation, especially at primary activity nodes. Conflicts often occur between auto, tour buses, bicycles, and pedestrians. Parking along the Loop is limited and at times in great demand. The Loop provides access to 16 trail heads, each of which has associated parking facilities. In total, there are approximately 400 parking spaces provided along the Loop. Occasionally, the Loop has been closed due to the lack of parking.

Red Rock’s Scenic Drive received approximately 850,000 visitors in FY 2005^{*}; visitation was approximately 600,000 in 1996 (up from about 200,000 in 1986). Visitation is growing at an annual rate of approximately three to five percent. Spring is the peak season, with spring Sundays generating the highest daily visitor volumes (over 1,800). The fall season represents a secondary peak. Tour buses from Las Vegas are also visiting Red Rock in increasing numbers.

Approximately 300,000 to 400,000 visitors per year stop at the Visitor Center, at the beginning of the Scenic Drive. By 2021, Red Rock predicts an annual visitation of 1.0–1.3 million. Currently, there are approximately 150 parking spaces at the Visitor Center.

The peak periods for visitation are during the spring and fall months. Based on visitor surveys, the majority of visitors is in the 25-to-44-year-old age group and well educated with some college education. Approximately half of the visitors are from outside Nevada, and a little more than half are male. Many visitors are casual tourists that come to Las Vegas for other social/recreational interests and visit Red Rock for its “desert experience” and to enjoy the Scenic Drive. The Scenic Drive and adjacent overlooks and trailheads are the focal points for visitation. The average length of stay for visitors to these areas is between two to three hours. Local residents tend to visit on a regular basis for recreation such as picnicking, hiking, biking, and rock climbing. Red Rock is world-renowned for rock climbing and attracts visitors from around the world. Climbers typically stay longer than the casual tourist visitor. Local school groups also visit the site, often participating in

^{*} FY 2006 ATPPL project application. Note that different documents cite different figures, which need to be reconciled:

- FY 2006 ATPPL project application: 850,000 visitors to Loop in FY 2005; about 350,000 vehicles.
- Interpretive Center Master Plan: ~700,000 visitors to Loop in 2001 (graph, page 7). Estimated visitation of 1.1 million in 2021 (page 8). 20,214 visitors to Visitor Center in 1982; 667,277 visitors in 2001 (page 9).
- 2001 transit study: consistent with Interpretive Center Master Plan numbers.
- “3039” study: 1.0-1.2 million annual visitors. 300,000-400,000 visitors stop at the Visitor Center.

ranger-led interpretive talks and walks. Visitors arriving by car pay a daily fee of \$5.00 per vehicle.

Red Rock has completed a master plan for a new and larger visitor/interpretive center. The current Visitor Center would be converted to administrative use. The size of the parking area would remain unchanged (150 spaces for cars and 12 spaces for larger vehicles, such as buses). The new Interpretive Center would result in changes to Red Rock's access plan and entrance fee structure^{*}, and the existing satellite parking area (56 spaces) now available for local hikers and bikers, which currently allows such visitors to bypass the entrance fee, would be eliminated.

The Red Rock Resource Management Plan (RMP) includes the idea of studying a transit system on the Scenic Drive. A separate transit feasibility analysis was completed in December 2001. The transit analysis concluded that Red Rock "does have a parking problem that must be addressed," and further suggests that "implementing a transit system is very feasible and the only practical long-term sustainable solution."

Red Rock applied for \$1.2 million in funding for a transportation planning study from the Alternative Transportation in Parks and Public Lands (ATPPL) program in FY 2006. The proposal was not funded.

Transportation Issues/Problems

Along and near the Scenic Drive, there are four different categories of existing transportation problems and other issues.

Parking

Parking is the most significant transportation problem, especially during times of peak use. During the spring and fall seasons, parking demand can exceed supply at many of the parking areas. As visitation continues to increase, this problem will grow, especially since Red Rock has made a management commitment not to increase the paved area or "footprint" by constructing new parking spaces along the Scenic Drive. Currently, 11 of the 16 parking areas fill to or exceed capacity during the spring peak period; three of these parking areas experience this level of demand during the fall peak. The 2001 transit analysis estimated that "By the year 2021, it is estimated that 14 of the 16 lots will overflow in the spring and six lots will overflow in the fall peak months."

^{*} Need information on new access plan/entrance fee structure.



Figure 1: Parking Area along Loop Drive

Currently, limited parking can induce traffic congestion and cause safety problems, as visitors maneuver in and around crowded activity nodes. Visitors also routinely park in restricted/unmarked areas along the Scenic Drive. This can create bottlenecks and safety issues on the Loop. Illegal parking also has negative impacts on Red Rock’s natural resources, both along the unimproved shoulders of the roadway, and in the adjacent sensitive habitat areas. Visitors walking from unauthorized parking areas into sensitive habitat can create “braids” (informal and undesirable footpaths), resulting in aesthetic impacts, erosion and habitat degradation.



Figure 2: Unimproved roadway shoulder in Red Rock

There are also significant issues along the Loop concerning the limited number of parking spaces currently available for tour buses and for visitors with disabilities.

Visitation/Traffic/Use Conflicts

Red Rock's 2006 application for ATPPL planning funds states that during peak season, the Scenic Drive can receive upwards of 2,300 vehicles per day ("average daily traffic," or ADT); the capacity of the road itself is estimated at 6,000-8,000 ADT. The usage figure is substantially lower for non-peak times. The application also says that the maximum hourly volume during the spring peak period is only 360 vehicles per hour, representing 23% of the capacity of the road; again, the numbers for off-peak times are lower. In general, these numbers indicate that the capacity of the Scenic Drive is not currently a problem (although the ATPPL application predicts an increase to 3,800 ADT by 2021).

However, because the Loop is only one lane wide, and because there is a "clumping" or "platooning" of traffic not only during peak months or days but also during peaks *within* high-use days, traffic can be a problem, especially at locations where parking is limited.

The growing number of motorists and bicyclists on Scenic Drive is causing increasing safety concerns. Drivers distracted by the scenery may not notice bicyclists, who often ride two or three abreast. There are no specific bicycle lanes or facilities along the Loop. Also, the General Management Plan (GMP) identifies motor vehicle accidents caused by speeding, reckless driving, and driving under the influence of drugs or alcohol as the greatest single threat to public safety at Red Rock.

The Scenic Drive can be closed when the Sandstone, Red Rock, or Pine Creek washes flood, or when ice develops on the upper portions of the road. Both of these conditions can occur several times per year. There are also occasional collisions with animals (e.g., burros, tortoises) on the Loop. Some visitors do not learn that the Scenic Drive is closed until they arrive and find the gate closed.

Traffic congestion on the Loop can cause air and noise pollution, as well as visitor frustration, both of which negatively impact the visitor experience.

Management Issues

Red Rock has made a commitment not to increase its road or parking footprint (paved area). However, there may be a willingness to sanction additional car parking along the Scenic Drive, if the visitor-safety and resource-impact problems can be successfully addressed.

Red Rock had documented a plan to construct a short-return road, creating a six-mile loop connecting with the Visitor Center; however, this plan was not pursued.

Red Rock relies on the fee revenue it collects (and retains, under its fee-collection authority) from cars and bus passengers entering the NCA. Currently, Red Rock estimates that it accounts for nearly half of all revenues collected from the 27 National Conservation Areas managed by BLM. A major change to the fee structure could have

significant impact. The new Interpretive Center, when it comes on line, may result in fees being collected from hikers and bikers who now are not charged to enter the area.

Enforcement of traffic, safety, and other regulations along the Scenic Drive can be difficult. Major issues include speeding/reckless driving, drunk drivers, and unauthorized parking.

The Scenic Drive is a state scenic byway.

Future Conditions

Visitation is projected to continue to increase, reaching at least one million by 2021.* This is due in part to the continued population growth of the Las Vegas Valley, as well as to significant growth in local tourism. Red Rock is also seen as a premier rock climbing destination, and climbing continues to grow in popularity.

The new Interpretive Center, when it comes on line, may stimulate additional interest in and visitation to Red Rock.

Analysis and Recommendations

Traffic on the Scenic Drive is not currently a major problem and is not expected to become a problem for years. Currently, the largest transportation-related issue is parking: there is a limited amount now available, which causes various problems; visitation continues to increase (and may increase further with the new Interpretive Center); and, due to resource fragility, Red Rock does not want to construct any additional parking facilities.

The transit feasibility study commissioned in 2001 for Red Rock speculated as to the applicability and viability of a transit system along the Scenic Drive, which would require visitors to park at the Visitor Center. Although, as noted above, the study stated that “implementing a transit system is very feasible and the only practical long-term sustainable solution,” and estimated annual operating costs as \$565,000 in 2001, increasing to \$903,000 in 2021, there was no conclusion as to what the visitor demand for such a system would be, or how such a system could be financed or sustained.

Noting all of the above, and using the transit study, the GMP, and the Interpretive Center Master Plan as starting points, the TAG team offers the following two recommendations.

1. Develop an ATPPL Proposal for a Comprehensive Transportation Planning Study

A comprehensive, multimodal transportation planning effort would examine the following items:

* See footnotes on page 2—data must be consistent.

- Alternatives evaluation as per BLM/Red Rock goals (and ATPPL goals): e.g., no-action, demand/visitor management, allow parking along Scenic Loop Drive, implement transit system
- Explore pricing/fee structure (e.g., congestion pricing), especially in connection with new Interpretive Center
- Parking within the NCA: along scenic drive, visitor center, retain current free area
 - Examine resource impacts of allowing parking along Scenic Loop Drive: visitor safety/management, law enforcement, “braiding,” visitor capacity increase, cost/feasibility as compared to other alternatives
- Possibility of implementing ITS/parking management/traveler-advisory system
- Feasibility of providing shuttle service on Scenic Loop Drive, using the 2001 transit study as a starting point, addressing but not limited to the following:
 - Would service be mandatory (as at Zion) or optional? Exception for disabled visitors?
 - Public survey/input to determine demand/preferences for, and price sensitivity to, transit (if required or if optional): determining ridership (picnicking families, climbers with gear, etc.)
 - Type of service (seasonal? full time? weekends only? early runs for hikers/climbers?)—noting different visitor types
 - Accessibility/ADA requirements
 - Ownership/leasing
 - Maintenance/storage/fueling facility
 - Capital and operating cost requirements, and funding sources
 - Operations/management plan: BLM, RTC/Southern Nevada Interpretive Association/SMNRA/contractor/concessionaire/special-use permit
 - Fares
 - Subsidy
 - Cost-sharing (e.g., with SMNRA)
 - Indirect revenue/revenue-sharing (involving RTC?)
 - Contingency plans for road closures? Traveler information?
 - Vehicle size/propulsion (alternative fuels)/accessibility
 - System capacity: number of vehicles, headways
 - Parking (off-site: e.g., Red Rock Casino, shooting range adjacent to NCA)—*necessary as part of a shuttle system?* if existing parking within NCA is insufficient to accommodate the threshold ridership (number of people) needed to justify a transit system
 - Shelters/bus accommodations along Scenic Loop Drive

Full information on how to apply to ATPPL is at the FTA web site: www.fta.dot.gov/atppl. If an application is made for ATPPL funds, Red Rock should explain *why* the parking footprint cannot be expanded and why transit, therefore, appears to be an attractive option. Cite Resource Management Plan (RMP) considerations, safety, relevant regulations, and visitor experience considerations.

ATPPL proposals for FY 2007 are due to BLM by February 16, 2007.

2. Consider Transit Service Demonstration Project

Preliminary indications (e.g., from the 2001 transit feasibility study) are that a transit service along the Scenic Drive could be a feasible means of reducing parking congestion, thereby improving the visitor experience and enhancing the ability of BLM to protect Red Rock's natural resources. The purpose of a pilot or demonstration project would be to evaluate/validate previous/ongoing planning studies, and to gain the operational experience necessary to determine transit service viability by determining what service characteristics would work best as part of a permanent transit system.

Because the ATPPL Program cannot fund operations, BLM and perhaps a state/local partner (i.e., another funding source) would be needed to fund pilot service, but ATPPL could fund a vehicle leasing initiative. If an application is made for ATPPL funds, it would be considerably strengthened if it is informed by the results of a comprehensive transportation planning study (such as what is outlined above).

- Examples: Town of Alta/Albion Basin, as per Tri-Canyon TAG; Yellowstone-Teton-Jackson; Bryce Canyon National Park)
- Procure vehicle(s): rent/borrow/lease/work with RTC
- Determine anticipated revenue (fare box collections)

3. Develop Transportation Partnerships

- Work closely with NDOT/RTC to get project(s) into the regional Transportation Improvement Plan (TIP) and the State Transportation Improvement Plan (STIP) to be consistent with local/regional and statewide comprehensive planning mechanisms.
- RTC is a potential partner; explore joint venture to conduct a transit study and/or pilot demonstration project; nurture other potential partners as well, such as the Southern Nevada Interpretive Association (SNIA), which might be interested in running or partly funding a pilot or permanent transit system.
- Examine other potential funding sources, such as: Public Land Highways – Discretionary PLH-D, federal-aid highway funding for outside NCA (STIP), Southern Nevada Public Land Management Act (SNPLMA). Would strengthen a proposal for ATPPL funds if other funding sources were also linked in.
- Explore commonalities between federal land management agency units—applicability to both Red Rock and SMNRA:

Reasons to share transit resources:

1. complementary seasonal peaks (SMNRA has a *winter* peak)
2. proximity of units
3. similar issues (parking, potential feasibility of transit)

4. cost savings
5. seek joint funding (application may be stronger if Red Rock and SMNRA work together)

Efforts and assets that could be shared:

1. contracting for transit vehicles/service
2. service planning and marketing
3. provision of real time information to the public
4. vehicles/all capital equipment/expenses
5. operations expenses
6. maintenance facility and expenses
7. studies/ideas – surveys; website information, public feedback
8. transit service staffing

TAG Participants

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- Bruce Turner, Planning Manager, Regional Transportation Commission of Southern Nevada
- Brian Strait, Las Vegas Ski and Snowboard Resort

Supporting Documents

1. Federal Lands Alternative Transportation Systems Study report for Red Rock Canyon NCA (2001)
2. Federal Lands Alternative Transportation Systems Study report for Spring Mountains NRA (2003)
3. Red Rock Canyon NCA 2006 ATPPL project proposal
4. “Spring Mountains National Recreation Area Transportation Study” (www.mtcharlestontransportationstudy.com), September 2005 (incorporating “Existing Conditions and Needs Assessment,” October 2004)
5. Regional Transportation Commission of Southern Nevada (www.rtcsonthernnevada.com/mpo/documents.index.htm)
6. Middle Kyle Complex project (www.fs.fed.us/r4/htnf/projects/smnra/middle_kyle_complex/home.shtml)
7. “Middle Kyle Complex Environmental Impact Statement: Forest Service Responses to Scoping Comments Pertaining to Transportation Issues,” November 2006
8. City of Las Vegas Northwest Open Space Plan (www.lasvegasopenspace.com)
9. Outside Las Vegas (www.outsidelasvegas.org/partners/fs/index.htm)
10. “Red Rock Canyon NCA Interpretive Center Master Plan,” November 2002 (PDF)
11. “Red Rock Canyon NCA Facility Evaluation Report” (PDF)
12. “Red Rock Canyon NCA Transit Feasibility Study,” December 2001 (PDF/Word)
13. Red Rock Canyon NCA Resource Management Plan (WordPerfect) and Record of Decision (Word)
14. USFS/BLM Las Vegas district map

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NOTICE

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