

# Gypsum Ridge North

## Open Space & Trails Plan Phase One



**Clark County**

**Department of Comprehensive Planning  
Parks and Trails**

# Gypsum Ridge North Trail and Open Space Plan

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# Plan Overview

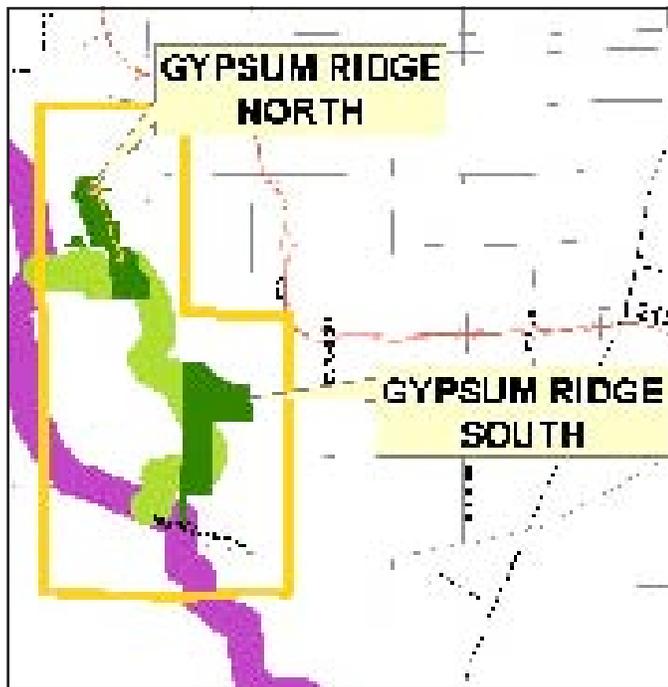
The purpose of the Gypsum Ridge North Plan is to address the conceptual development of approximately 600 acres of Open Space in the northern segment of Gypsum Ridge. This segment is the first phase of a large trail and open space program for the entire 1,200 acre Gypsum Ridge area. This segment will include the identification and analysis of significant planning features. These features will be used to locate major access points, staging areas, and park and trail locations.

Gypsum Ridge provides spectacular and readily accessible views of the Las Vegas Valley. At an elevation of 3,400 feet, Gypsum Ridge is similar in elevation to Sunrise Mountain to the east and Lone Mountain to the north. Located immediately adjacent to the unincorporated towns of Summerlin South and Spring Valley, the Ridge provides easy hiking and biking access as well as impressive views of the Las Vegas Valley. This differentiates the Ridge from other nearby outdoor experiences, such as Red Rock Canyon to the west, Mt. Charleston to the north, and Desert Breeze Regional Park to the northeast within the Las Vegas Valley.

Gypsum Ridge is comprised of two areas, Gypsum Ridge North and South are separated by approximately one mile of private land and BLM land. Phase one begins at the R-1 Flood Detention Basin and follows the ridgeline which meanders southward to the R-2 Detention Basin for a distance of approximately 1.25 miles. Gypsum Ridge North is broken down further into Phases I and II. See Exhibit A - Gypsum Ridge Study Area Boundaries.

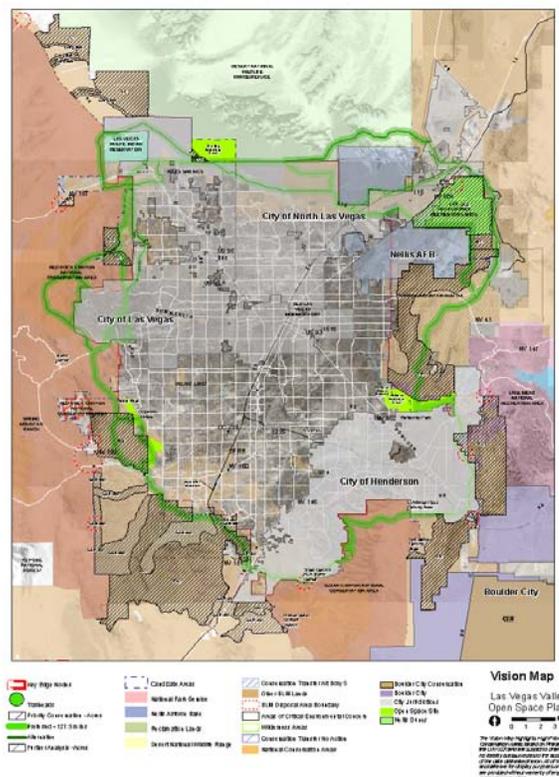


View of R-1 Flood Detention



Location map of Gypsum Ridge

This plan includes an extensive review of existing documentation. Land management, physical resource, biological, infrastructure, planned land use, composite resource and vision maps contained in the Las Vegas Valley Perimeter Open Space Plan (LVVOSP) was used to analyze existing conditions. The following Vision Map is from the LVVOSP.



# Regional Plans

Park, trail, and open space plans adopted by Clark County and regional planning agencies provide the foundation for site specific planning. The Gypsum Ridge North Phase I Plan is a site specific document providing sufficient detail to direct future design and construction efforts. This section provides an overview of relevant sections of the Clark County Comprehensive Plan and Southern Nevada Regional Planning



*View from Gypsum Ridge North*

## Clark County Comprehensive Plan - Trails Element

In 2005, the Clark County Commission adopted the Clark County Trails Element of the Comprehensive Plan. In 2007, the Commission adopted a Las Vegas Valley Trails Map, (see Exhibit M), which shows the major trail alignments in the valley. This map serves as a regional trails plan for the Las Vegas Valley, showing trail connections among the incorporated cities and the unincorporated County areas. The future Gypsum Ridge Trail alignment is identified on that map.

Within the Comprehensive Plan Trail Element "off-street trails" are defined as trails which typically occur along washes, in utility corridors, limited access roadways (highways &

beltways) and railways in both the urban and rural areas of Clark County. In the case of Gypsum Ridge North Trail, it follows the promontory of a rugged hill instead of a wash; however, it is a significant natural feature.

The Comprehensive Plan element states that priority will be given to trails that connect with adjacent jurisdictions, this trail is part of a larger system that does connect, therefore, this trail should be considered a priority trail.

The Clark County Off-Street Trails Development Standards (OSTDS) is a companion document to the trail element, providing general development standards for off-street trail systems within the County. The OSTDS include standards and guideline criteria which are consistent with national trail standards and to the extent possible, local trail standards which have been adopted by other governments in Southern Nevada.

Trailheads are also discussed in the element. They are intended to provide off-street areas where the general public can access trail systems. They may be as simple as a parking area adjacent to a trail, or can also include more elaborate facilities such as shade structures, restrooms, drinking fountains, signage, informational kiosks, and general trails information. Because of maintenance and security issues, the optimal location for trailheads is within or near park facilities. Major trailheads should also be located along trail pathways every three to five miles to ensure easy accessibility to trail systems and places where trail users can take a break.



*View of rest area*

# Regional Plans

## Parks and Recreational Master Plan 2000-2020

The Parks and Recreation Master Plan identifies trail and open space policies addressing acquisition; environmental resource opportunities; location, form and function; development, operation and maintenance; and intergovernmental coordination

The Parks and Recreation Master Plan states that the preservation and maintenance of trails and open space in the Las Vegas Valley can help provide and enhance additional recreational opportunities. Trail corridors preserve open space. Preserving these linear corridors creates areas for wildlife and native vegetation and provides separation of various urban land uses. This plan identifies a trail location which will create recreation opportunities.

The Master Plan describes trails as functional linear areas developed for one or more modes of transportation and travel designed for equestrian, bicycle and pedestrian use. Specifically, urban trails should not allow motorized access and use. These trail systems may include active recreation activity modes such as fitness apparatus and court games. Two types of urban trails are identified which are Primary Trail Corridors, the focus of the Master Plan and Secondary Trails, which complement the primary system. This plan will provide a semi-urban trail/recreational transportation link.

Primary Trail Corridors are linear trail areas that follow natural features such as desert washes and ridgelines, flood control facilities and also follow freeways, beltways and utility rights-of-way. The trail is identified as a primary trail.

## SNRPC Open Space and Trail Plans

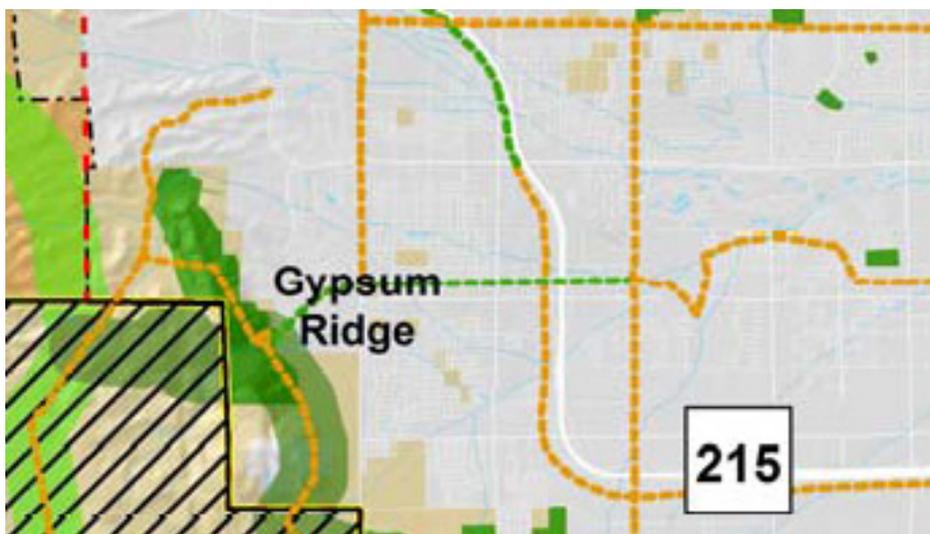
### SNRPC Regional Open Space Plan, 2006

In 2006, the SNRPC adopted the Regional Open Space Plan, showing the Gypsum Ridge trail on their concept maps (see below) and set the stage for more detailed analysis.

The SNRPC Open Space Plan defined open space as *“land that remains largely unaltered by urban activities...lands of adequate size and quality to achieve the intended infrastructure functions such as flood hazard reduction and benefits including conservation, preservation, outdoor education and low impact recreation...”*

SNRPC Regional Open Space Plan states that open space has vital functions and benefits, including:

- ◆ Public Safety and Hazard Reduction
- ◆ Vital Urban Resource Protection
- ◆ View Preservation
- ◆ Solace and Link to Nature
- ◆ Health and Wellness
- ◆ Access and Linkage
- ◆ Biodiversity
- ◆ Special Landscape Preservation
- ◆ Agricultural Lands Preservation
- ◆ Economic Value
- ◆ Community Identity and Character



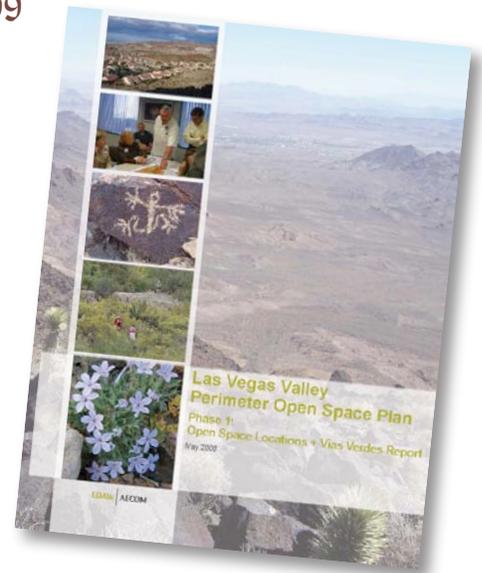
2009 SNRPC Regional Open Space Plan

## Regional Plans

### Las Vegas Valley Perimeter Open Space Plan (LVVPOSP), 2009

In 2008 the County, in association with the other valley jurisdictions, began development of the LVVPOSP. This plan continued what the 2006 SNRPC plan began and specifically identifies the need to preserve Gypsum Ridge for open space and trail development. The LVVPOSP was adopted by the SNRPC on April 21, 2009. The adoption of the SNRPC LVVPOSP in 2009 raised open space planning to the forefront of current land use initiatives.

Stakeholder involvement in this Gypsum Ridge North Phase I Plan was limited to the staff of affected agencies due to the details provided by the recently adopted LVVPOSP. The LVVPOSP involved an eight month planning effort by developers, planning directors, federal agencies and environmental stakeholders who participated through interviews, the Open Space Advisory Committee (OSAC), and the SNRPC Open Space and Trails Work Group. The objective of involving such a broad representation of stakeholders and interest groups was to provide accountability, a sounding board for issues; and to ensure that the plan reflected scientific, social, political and economic concerns that needed to be considered. The LVVPOSP provides the foundation for the Gypsum Ridge North Plan Phase I, concepts and policies are refined and applied to this relatively small and detailed area.



### LVVPOSP Resource Mapping

The LVVPOSP project team compiled a GIS database of the most accurate and available resource information for a large area, a portion of which abuts Gypsum Ridge. Data sources included Clark County and multiple local, state and federal agencies. Locations of sensitive or confidential data, such as archeological and biological data, were deliberately indicated with only a general location.



*Southerly View at the Gypsum Ridge North Overlook*

# Regional Plans

Over 4,000 files were evaluated to determine their suitability for use in the LVVPOSP. Similar to the Environmentally Sensitive Lands Study (Clark County 2004), data was categorized into the following 6 resource areas.

1. Biology Resources
2. Physical Resources
3. Land Management
4. Planned Land Uses
5. Infrastructure
6. Cultural and Scenic Resources
7. Ranking Criteria and Composite Resources

## Biological Resources (Exhibit A)

In general, the ridge areas and disturbed areas are the least biologically diverse, the side slopes are moderately diverse and the valleys, low lands and the arroyos are the most diverse. All three are part of the Gypsum Ridge plan area.

The Biological Map displays the distribution of vertebrate and plant species. The most important sources include:

- A habitat richness model prepared from the 37 vertebrate species covered under the Clark County Multiple Species Habitat Conservation Plan. The source for the habitat models was the Southwest Regional GAP Analysis Project, led by the U.S. Environmental Protection Agency. The habitat richness model shows the areas with potentially low, moderate and high concentrations of the 37 terrestrial species (i.e., fish, insects, plants are included in the SW ReGAP model).
- Data from the 2001 Eco-Region Conservation in the Mojave Desert report by The Nature Conservancy was utilized in the 2004 Environmentally Sensitive Lands Study. It shows that portions of the River Mountains, Rainbow Gardens, Corn Creek and Kyle Canyon Focus Areas are likely to contain high biodiversity.
- Single species of concern to Nevada Department of Wildlife (NDOW) or other agencies, such as bighorn sheep and desert tortoise.



- Rare plant locations identified by Clark County, The Nature Conservancy, or the Nevada Natural Heritage Program.

Biological Resource identified within the LVVPOSP applies directly to Gypsum Ridge North. This data was used in identifying a trail route and will be used in developing educational waysides and kiosks.

## Physical Resources (Exhibit B)

The northern portion of Gypsum Ridge is remarkable, the site features a dominating ridge line, a level bench, rocky drop offs, washes, valley headwalls and flood zones.

The Physical Resources Map (see Exhibit B) displays the Valley's topography, emphasizing steep slopes, washes and floodplains. Features include:

- A digital elevation model was used to illustrate areas with slopes from 12.25% and 25% plus slope. Clark County Title 30.56.100 places conditions on or prevents development of lands with these slope classes.
- Floodplain data shows the location and extent of 50 and 100-year floodplains, from FEMA.
- Multiple drainages that braid together to form a wash
- Most washes only carry water during storm events with the primary exception being the Lower Las Vegas Wash.
- Natural spring locations are shown
- Existing and planned Clark County Regional Flood Control flood channels and detention basins. These structures are used to control water and sediment, but also affect natural drainages.

The Physical Resource data helps describe opportunities and constrains. The aesthetic value of rock outcrops, steep slopes and benches as well as constrains associated floodways were considerations used when locating trails and outlooks.

# Regional Plans

## Land Management (Exhibit C)

The land ownership pattern is a complicated mix of County land, BLM managed lands, and a large private parcel, all adjacent to the developing urban area. This will require a cooperative approach to developing a comprehensive trail system, a system that will fall on both County and BLM land, skirting the private in holding. The private land is not part of this planning effort and in no way will be impacted by the proposed Gypsum Ridge trail and open space.

The Land Management Map displays land ownership, administrative designations, and other designations. Important categories include:

- BLM Lands
- National Conservation Areas
- Clark County
- Other Public Lands
- Clark County Parks and Open Space

## Planned Land Uses (Exhibit D)

The Planned Land Uses Map displays planned future land uses that have been defined by Clark County Comprehensive Planning Department. Most of the land uses adjacent to the site are residential.

## Infrastructure (Exhibit E)

The plan area contains a variety of abandoned infrastructure facilities; mine sites, rail lines, gas lines, and roads.

The Infrastructure Map displays gas pipelines, transmission lines, trails, and easements. The most important sources include:

- Existing and Planned Bike Paths and Trails, which have been adopted by the County. This data was provided by the Regional Transportation Commission (RTC). The planning team recognizes that many entities (BLM, etc) have developed more detailed trail plans for mapping purposes, only regional data was displayed.

- Underground gas pipelines show where easements are located and are potential locations for trails, as provided by Clark County.
- Electrical transmission lines show where easements are located and are potential locations for trails, as provided by Clark County and BLM.
- Other rights-of-way on BLM land for access to private land, utilities, and other purposes is illustrated within study areas, as provided by BLM.

## Cultural and Scenic Resources (Exhibit F)

Staff did not consider the abandoned mines and associated rail line as historical for the purposes of this plan; however an argument could be made for preserving some of these abandoned works. The photo below shows the road/rail bed that once serviced gypsum mines along the bench.

The Cultural and Scenic Resources Map displays areas with high aesthetic or cultural significance. The most important sources include:

- Aesthetic points include distinct land forms, scenic locations, and historic sites, provided by Clark County.
- Recreation Gateways at the starting point of state scenic byways.
- BLM Visual Resource Management – Class II, or lands with high management designations for the conservation of visual resources.



*Abandoned Roads, Rail Line and Mine Along Gypsum Ridge South*

# Regional Plans

- Culturally significant sites provided by the Nevada State Historical Preservation Office, such as the Spanish Trail. Culturally significant sites were buffered for mapping purposes so as to protect sensitive sites.

## Ranking Criteria and Composite Resource Maps (Exhibit G)

(Table 2-1 Data Sources and Category Ranking) lists the data source, file name, extent, and year for every applicable GIS dataset within the 6 categories. The previous resource maps were compiled and the values were ranked. To begin understanding where multiple resources occur, a simple ranking methodology was utilized.

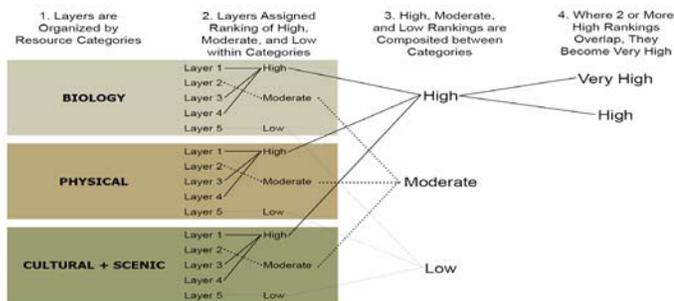


Table 2-1 Data Sources & Category Ranking.

The wash area leading to the urban area at the head of the F2 channel has very high natural values as well as the ridge and slope areas at the southern end of Gypsum Ridge. Projecting those two we can say that the ridges and slopes of Gypsum Ridge in general are of high value as well as the undisturbed outflow areas. That describes most of the plan area with the exception of the F1 and F2 dam areas.

- First, each layer was organized into a resource category.
- Second, each resource layer within each category was assigned a ranking of Low, Moderate, or High. For instance, for the FEMA floodplain layer, all 50- or 100-year floodplains were ranked as High. Some data, by nature, does not describe a resource on-the-ground, so layers from the Land Management, Planned Land Use, and Infrastructure categories were omitted from the initial composite resource model.

- Third, resource layers within each category were aggregated to determine the Low, Moderate, or High resource values for each category.

- Fourth, the Low, Moderate, or High resource areas for each category were combined across categories to produce a Composite Resource Area Map. Where a higher ranking of an area occurs in the same location as a lower ranked area, the higher rank took precedence. In areas where two or more High ranking areas overlap, the area becomes classified as Very High.

## LVVPOSP Vision Map (Exhibit H)

The Open Space Advisory Committee (OSAC), comprised of development, conservation, business, academic and jurisdictional leaders developed an Open Space Vision Plan that includes Gypsum Ridge. That plan was subsequently approved by the SNRPC. That vision was based on the following:

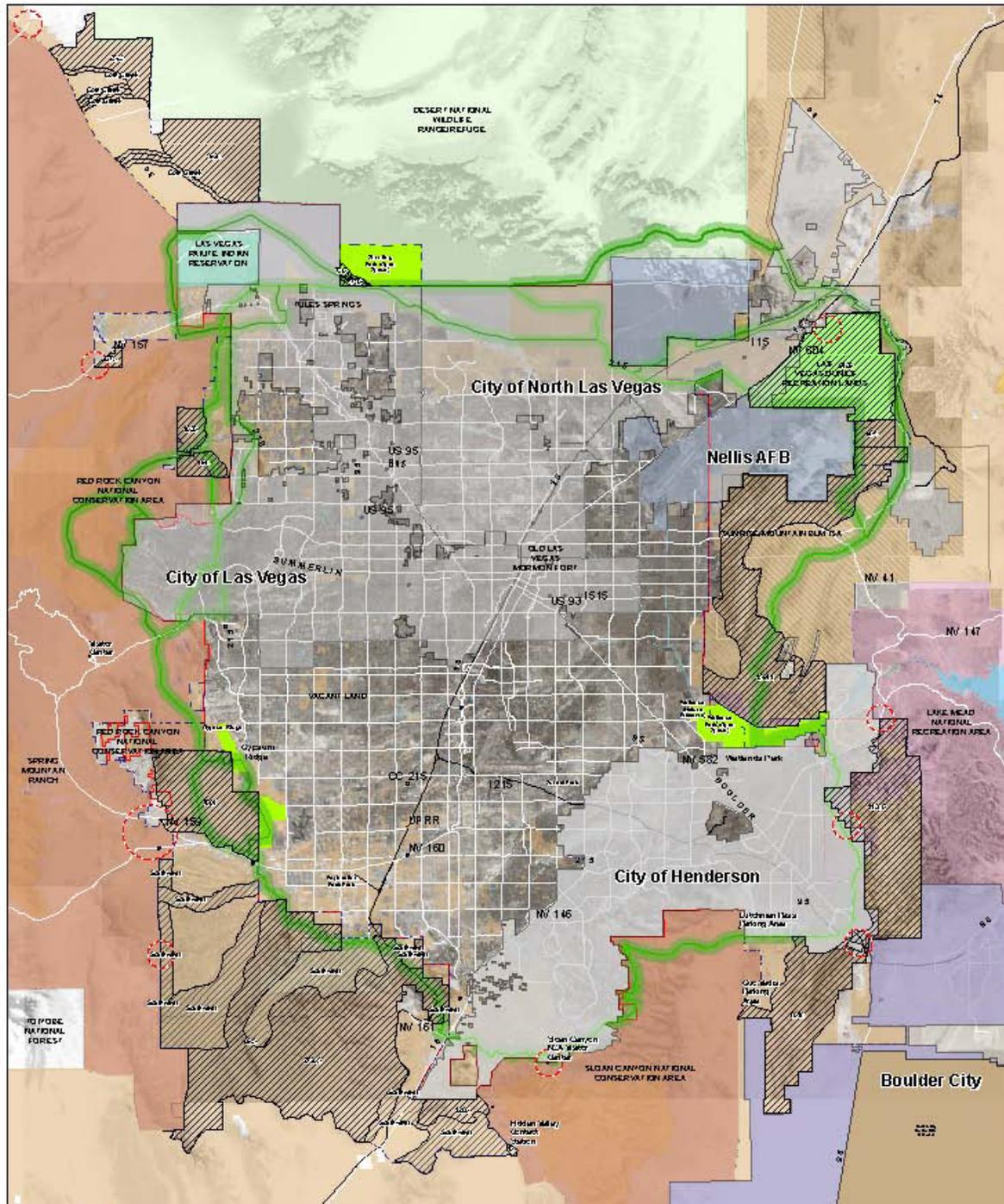
*“Preserve an interconnected and protected ring of open space and wildlands encircling the Greater Las Vegas area including protecting scenic, ecosystem, and cultural resources. Within this protected area, construct a continuous trail encircling and connecting to the Las Vegas Metro Area.”*



Open Space Advisory Committee (OSAC)

# Regional Plans

The Vision Map contains two major components: High Priority Open Space Areas, and an Open Space Corridor (Vias Verdes). The Gypsum Ridge North Plan is primarily concerned with the open space corridor and its accompanying trail system.



- |                               |                                |  |                           |
|-------------------------------|--------------------------------|--|---------------------------|
| Key Edge Nodes                | Candidate Areas                | Conservation Transit (RAIL Body 5)     | Boulder City Conservation |
| Trailheads                    | National Park Service          | Other BLM Lands                        | Boulder City Jurisdiction |
| Priority Conservation - Acres | Nellis Air Force Base          | BLM Disposal Area Boundary             | City Jurisdiction         |
| Priority - 127.5 miles        | Reclamation Lands              | Area of Critical Environmental Concern | Open Space Site           |
| Alternative                   | Desert National Wildlife Range | Wilderness Areas                       | Nellis District           |
| Priority Analysis - Acres     |                                | Conservation Transit (No Action)       |                           |
|                               |                                | National Conservation Areas            |                           |

**Vision Map**  
Las Vegas Valley  
Open Space Plan

The Vision Map highlights High Priority Conservation Areas based on the LUNOSP and is subject to change. No liability is assumed for the accuracy of the data distribution. All of the information for display purposes only are provided without warranty of any expression implied.

# Gypsum Ridge Overview

## Overview

The larger Gypsum Ridge study area contains three major areas of open space; the northern portion/area consisting of 600 acres and the southern area containing an additional 600. They are separated by the third area, a gap of federal land managed by BLM. The County will attempt to acquire an open space and parks reservation on BLM lands between the two that would create a continuous corridor between the existing County holdings.

A 150 acre private parcel is centrally located in the larger Gypsum Ridge area, but is not part of this study area and is not included in this planning effort. Development and use of the publicly owned Gypsum Ridge property will in no way conflict with private property rights.

Development of the northern section of Gypsum Ridge is the first phase of a larger trail and open space program for the entire 1,200-acre Gypsum Ridge area. This phase of planning will include the identification and analysis of significant physical and visual features. These features will be used to locate major access points, staging areas, and park locations, which are a part of this plan.

## Regional Significance

Gypsum Ridge provides spectacular and readily accessible views of the Las Vegas Valley. At an elevation of 3,400 feet, Gypsum Ridge is similar in elevation to Sunrise Mountain to the east and Lone Mountain to the north.

Located immediately adjacent to the unincorporated towns of Summerlin South and Spring Valley, the Ridge provides easy hiking and biking access as well as impressive views of the Las Vegas Valley. This differentiates the Ridge from other nearby outdoor experiences, such as Red Rock Canyon to the west, Mt. Charleston to the north, and Desert Breeze Regional Park to the northeast within the Las Vegas Valley.

## Congressional Act

Clark County has acquired two sizeable areas comprising the bulk of its open space in the last fifteen years, the Wetlands Park on the east side of the valley and Gypsum Ridge on the west side. This plan addresses approximately fifty percent of Gypsum Ridge; property that is located on its northern boundary (see Exhibit B).

The Gypsum Ridge Open Space area is a 1,200 acre property that was conveyed to Clark County by the “Clark County Conservation of Public Land and Natural Resources Act of 2002”. The Act mandates that conveyed land be used as a public park and regional trail system. A resolution signed by the BCC on June 4, 2002 states that the Parks and Recreation Department will administer these lands for the purposes stated in the Act.

## BCC Actions

As part of the land acquisition the Board of County Commissioners (BCC) recognized Gypsum Ridge as an important and valuable open space resource.



*View within Gypsum Ridge South*

# Gypsum Ridge North

## Character/Description

The subject site is remarkable; it contains a dominating ridgeline, a bench, rocky drop offs, washes, valley headwalls, and flood zones.

The trail would be constructed at the very edge of a massive area of residential development. The potential for heavy use is very real given its location and the fact that it offers great views of both urban and primitive landscapes. This is also in the category of regional facilities due to the quality of the experience and its connection with federal lands.

Currently, the trail is used lightly by hikers to access the waterfall area at the south end of the segment. There is also evidence of motocross activity.

Given the nature of the trail the plan will focus on pedestrian and physically challenged users requiring a greater degree of access accommodation. The trail is not challenging enough for most avid mountain bikers. When extended 6 miles to the south in the future it could serve as a transit route for bikers provided that the tread remains in a serviceable condition for less experienced users.

The Gypsum Ridge North trail will be upgraded over time to accommodate more users. Initially the trail will be built to its final width and the overlooks will be sized to their ultimate build out; however, funding for a more durable surface may not be available until some future date.

The trail is located in the Las Vegas Valley air shed, which is subject to federal regulations, which preclude the use of motorized vehicles.

## Site Visits

Clark County conducted three site visits to document the locations of existing trail features, views, potential access points as well as areas that might be suitable for park and overlook development.



*F1 Detention Basin at North End of Phase I  
– Adjacent to Trailhead and Parking*

## Key Opportunities

The purpose of the Gypsum Ridge North Phase I Plan is to address the conceptual development of approximately 400 acres of the 600 acres of Open Space in the northern segment of Gypsum Ridge. This segment is the first phase of a large trail and open space program for the entire 1,200 acre gypsum Ridge area. This will include the identification and analysis of significant planning features. These features will be used to locate major access points, staging areas, and park and trail locations.

# Gypsum Ridge North - Phase One Proposal

## Focus

The northern area, for the purposes of this study, is further broken down into two planning areas. The first, the subject of this plan, extends from the F-1 flood control channel and basin approximately 1.2 miles to the south (see Exhibit B). The second area extends south and is located where the promontory begins to move west into the canyon above the F-2 flood channel and debris basin. The area shown in Exhibit B, the subject of this plan contains approximately 70 percent of the land in the north Gypsum Ridge area.

The area identified in Exhibit B was selected for this plan because the technical issues in terms of design and access were not complicated by ownership issues. This plan contains only land under County ownership, access to the remaining portion of the land will require negotiation with the BLM.

Phase one begins at the R-1 Flood Detention Basin and follows the ridgeline which meanders southward past the R-2 Detention Basin for a distance of approximately 2 miles. See Exhibit A - Gypsum Ridge Study Area Boundaries.

## Facility Plans

Components of this project include a park/trailhead adjacent to the debris basin and a non-motorized trail from the park to an overlook.

The Gypsum Ridge North Park and trailhead will be 10 acres in size and will contain trailhead facilities accessed by a collector street.

The Gypsum Ridge North Phase I Trail will stretch approximately 1.2 miles along a promontory of the Gypsum Ridge. When fully developed the trail will be ADA accessible and the trail will contain two overlooks including one at the terminus.



*Easterly view from Gypsum Ridge North Overlook*

# Gypsum Ridge North - Phase One Proposal

## Park Facilities

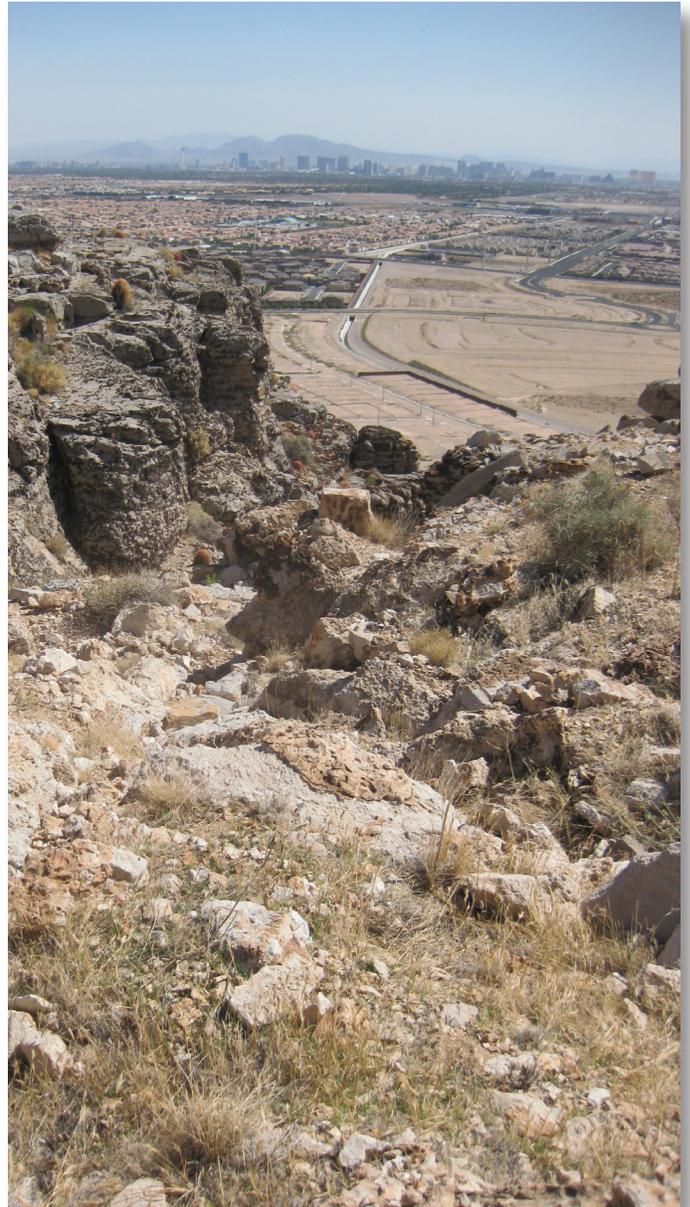
The park site consists of a large debris detention basin and surrounding sloping desert landscape. There are two channels, one flowing out of the detention basin to the east and the other flowing in from the south. The landscape to the west is sloping feeding the basin. There are substantial tracts of undeveloped residential land to the north and east of the site.

The park and trailhead design is comprised of three basic elements, a parking lot with trash receptacles on the northeast side of the R-1 Flood Detention Basin, a trailhead staging area with trail information kiosks and shade structures, connected by a pedestrian/emergency vehicle bridge over the down stream channel of the F-1 Basin. If utilities are extended to service an associated park then picnic areas, toilets and water fountains may be provided.

The debris basin bottom at 2,900 feet is unlined and there is a dam wall approximately 25 feet high on the eastern side, which does not permit convenient user access. The adjacent county land on the south is at the 2,925-foot level

## Trail Amenities

The trail begins at the trailhead and proceeds west rising to meet the elevation of the hillside bench or promontory. The trail will be a minimum of 5 feet wide and a solid gravel/rock bed. Rest areas and benches will occur at approximately 300 foot intervals. The grade will not exceed 5 percent and will hover in the 2 to 3 percent range for 80 percent of the trail. As the trail rises to the hillside bench or on its climb out of the trail head area it will turn back east and connect will an existing road bed. The trail will follow that existing road bed until that road bed turns and climbs steeply upslope. From there it will gradually climb to the terminus. In addition to the rest areas along the trail there will be two major overlooks approximately 500 feet apart towards the end of the trail. (See Exhibit C: Location of Gypsum Ridge North Trail Segment 1 - for the location of the trail and trailhead facilities.)



*Easterly view from Gypsum Ridge North*

**Alignment:** The trail alignment corridor rises up from the debris basin to the north and heads approximately 1.2 miles south to a potential overlook.

**Mesa Park Connection:** The trailhead will be linked to Mesa Park via a drainage channel trail/maintenance road and bridge located at the end of Alden Bend road.

# Gypsum Ridge North - Phase One Proposal

**Slope:** The potential staging area at the southern end of the debris basin is at 2,925 feet. It slopes rapidly up to the 3,005-foot level. At this point a discernable bench begins which connects with an existing abandoned roadway. The top of the ridge is 3,140 feet. The existing trail alignment rises gradually from 3,005 to 3,110 feet within approximately 5,000 feet for an average slope of 2 percent.

**Views:** The bench is relatively level and sits approximately 300 feet down from the crest at the terminus of the first segment. It offers stunning views of the city to the east and constantly changing views of the primitive hills to the south.

**Terrain:** The bench consists of basic desert landscape with a great number of barrel cactus. The potential tread area consists of desert soil and small angular rock. There are many small drainages that intersect the alignment; these are easily forded by means of existing stable rocky ledges that have been exposed by the action of water. These ledges are attractive and add character to the trail experience.

**Air Quality Regulations:** The trail is located in the Las Vegas Valley Air Shed, which is subject to federal regulations. Motorized vehicles will be prohibited per Air Quality Regulations. Additionally, the trail will be designed to meet ADA regulations.

**Wildlife:** Wildlife on the route consists primarily of hovering birds of prey, primarily at the terminus of trail segment 1. The birds are large and use the updrafts from the hillside to maintain their flight.

**ADA Accessibility:** When funds are available for improvement this trail segment will be upgraded to an ADA accessible trail. A trail is considered ADA accessible if it meets the following criteria among others: Five foot minimum width; Hard surfaces: Compacted crushed stone - the stones' diameter maximum of three-eighths inches; Trail gradient should be no greater than five percent (5%); rest area every three hundred feet, preferably cleared with a bench outside of the trail; and motorized vehicle access to the trail is prohibited.

## Overlook Opportunities

There are two relatively flat areas that extend from the trail alignment to the edge of the bench. These would be suitable locations for overlooks and rest stops.

## Design Standards and Specifications

Design principles and standards will be based on backcountry standards developed and used by the BLM, the U.S. Fish and Wildlife Service, and the USDA Forest Service as well as standards associated with ADA design criteria.

Under the Backcountry Standards (see Exhibit K) the proposed trail is classified as a Shared Use Path with pedestrian as the designated use in order to add other uses, such as bicycle, the design criteria would exceed the minimum backcountry standard this trail is also considered an Access Route, in that it connects trailheads, recreation facilities and other trails on federal land.

The following technical specifications/standards will be used for this project given the topography of Segment 1:

- Surface firm and stable
- Tread width 60 inch minimum
- Rest areas will be provided at approximately 300 foot intervals
- Tread surface to be crushed stone with a maximum diameter of 3/8 inches
- 80 inch minimum headroom
- Running grade maximum slope not to exceed 5%
- Cross trail slope not to exceed 5%



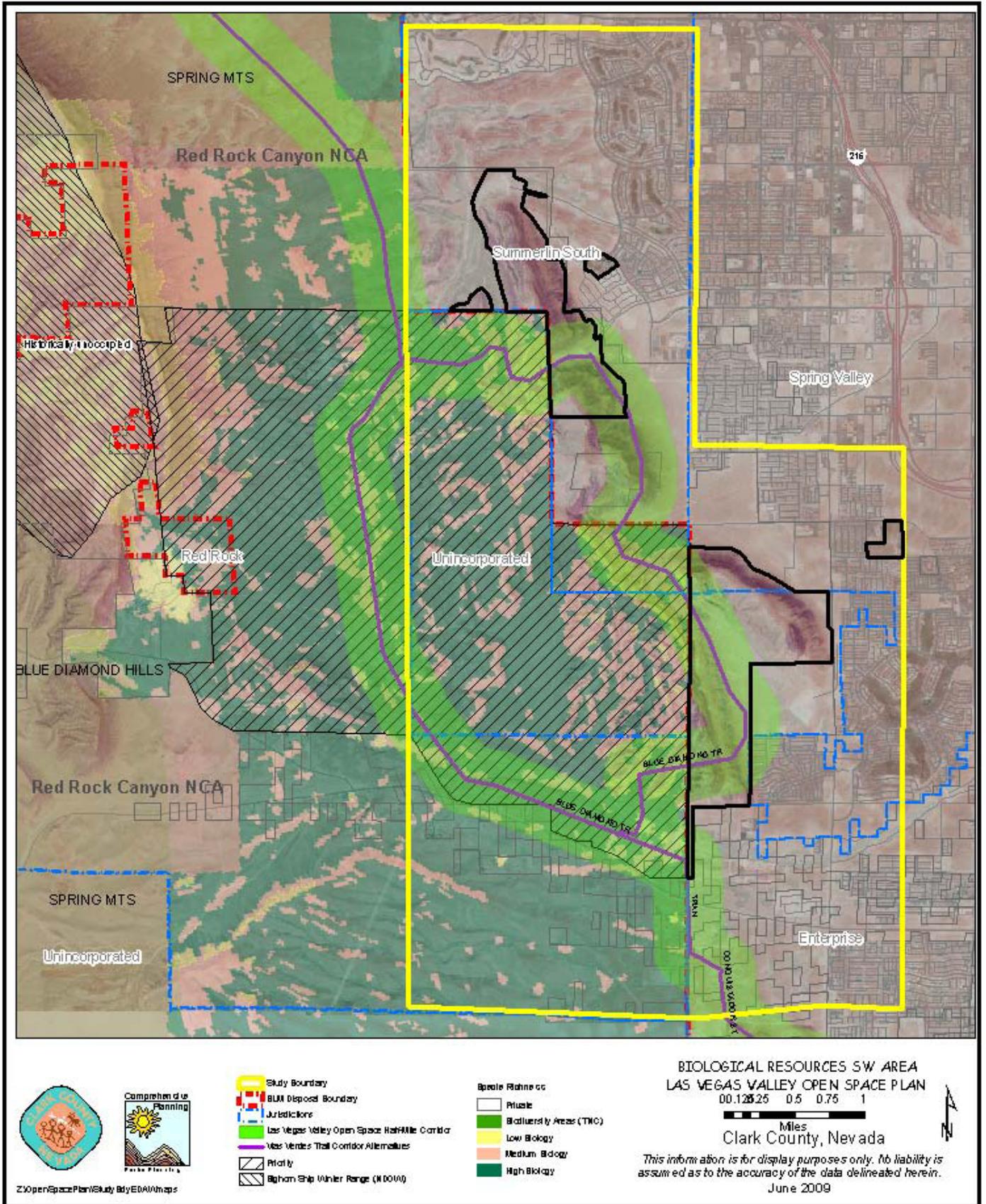
*View of Red Rock National Conservation Area from Gypsum Ridge*





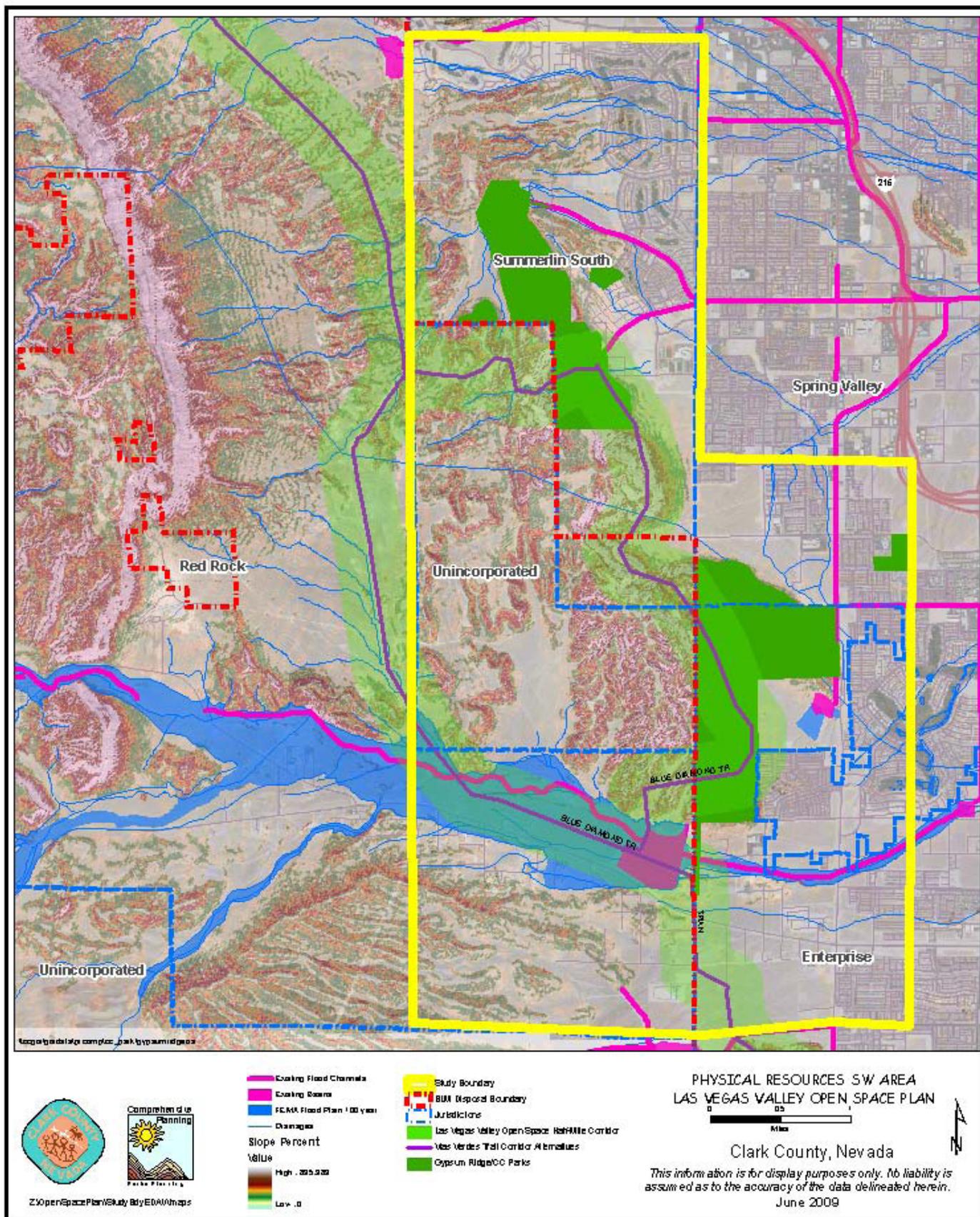
# Appendix

## Exhibit B - Biological Map



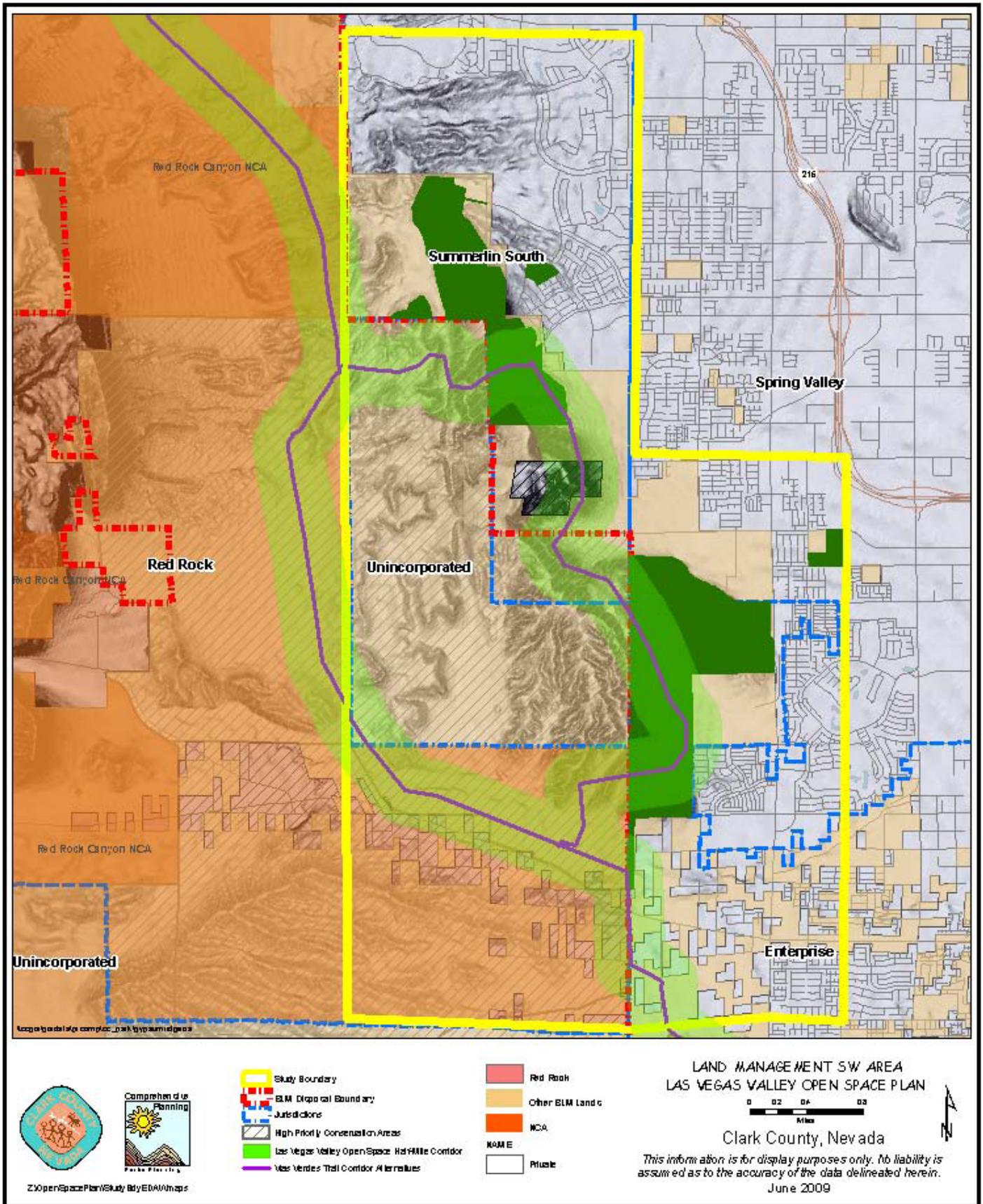
# Appendix

## Exhibit C - Physical Resources Map



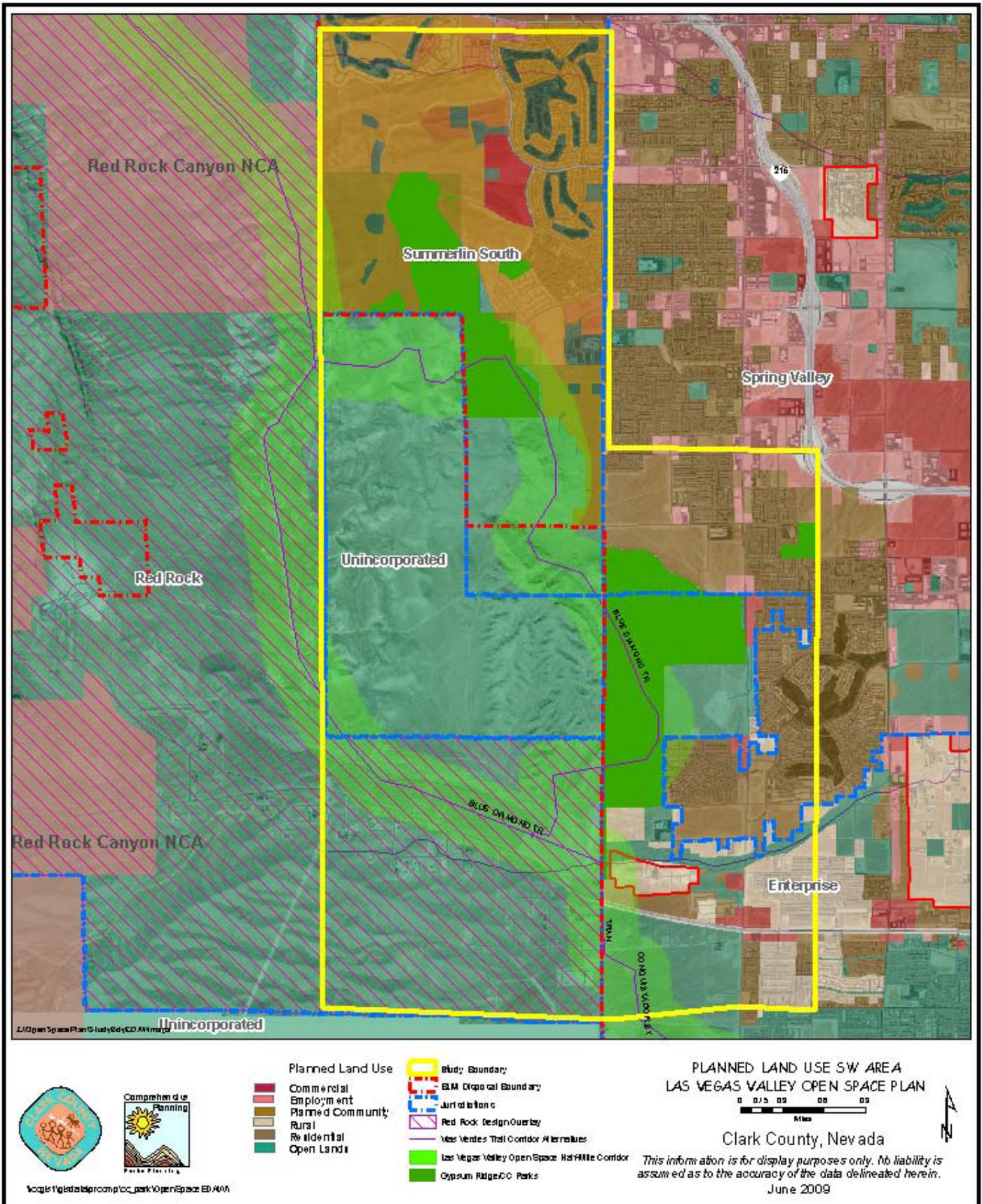
# Appendix

## Exhibit D - Land Management Map



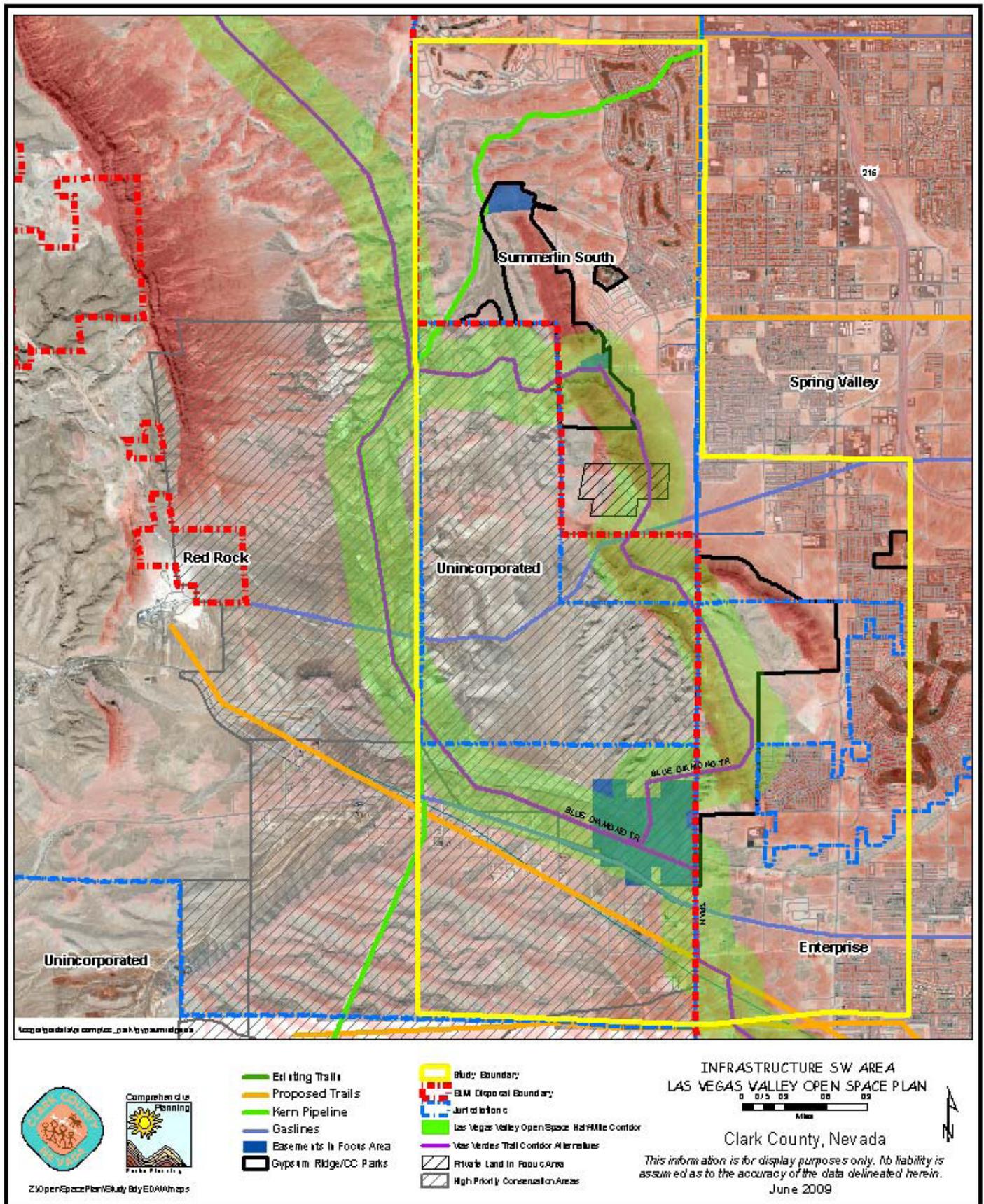
# Appendix

## Exhibit - Planned Land Uses Map



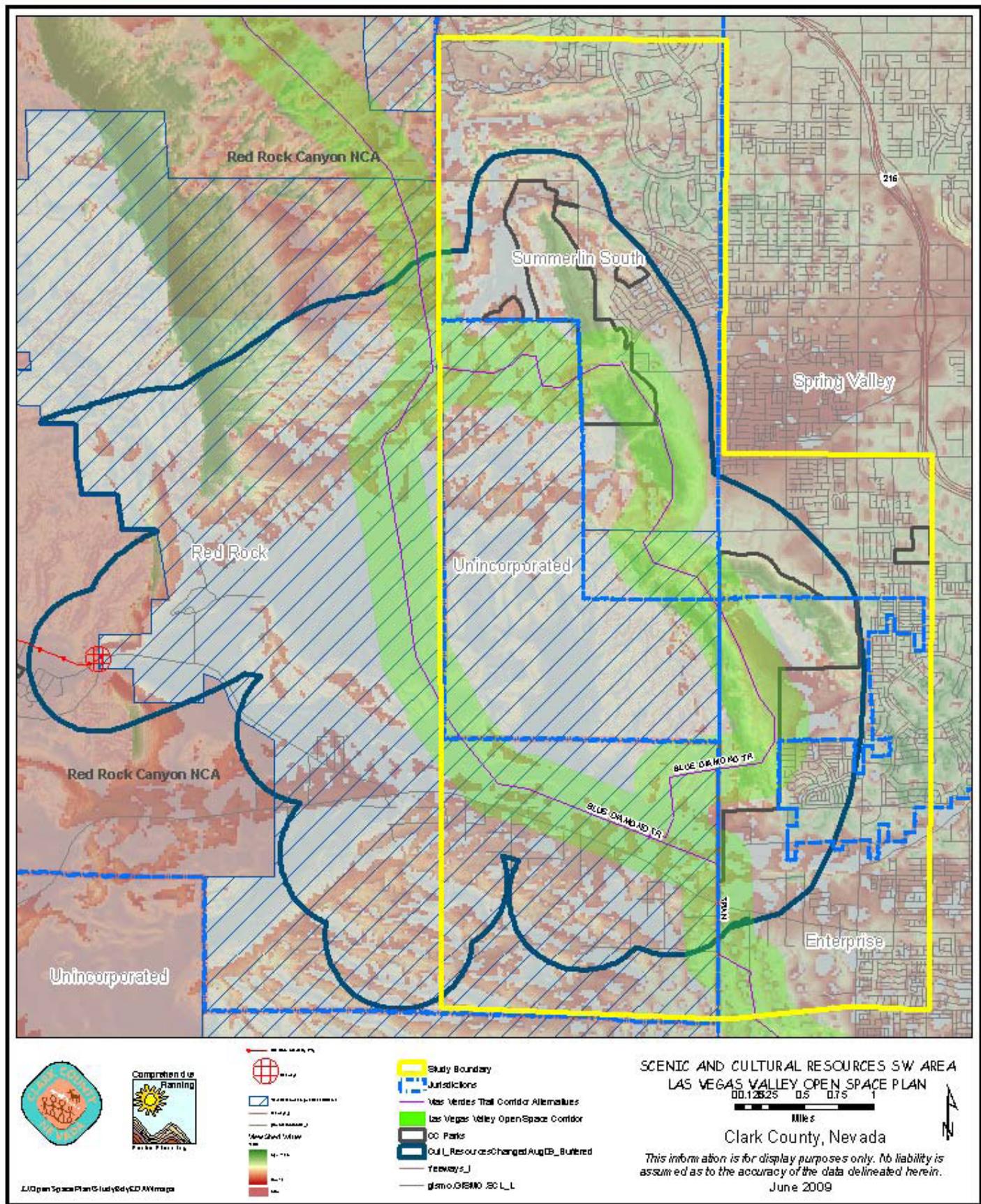
# Appendix

## Exhibit F - Infrastructure Map



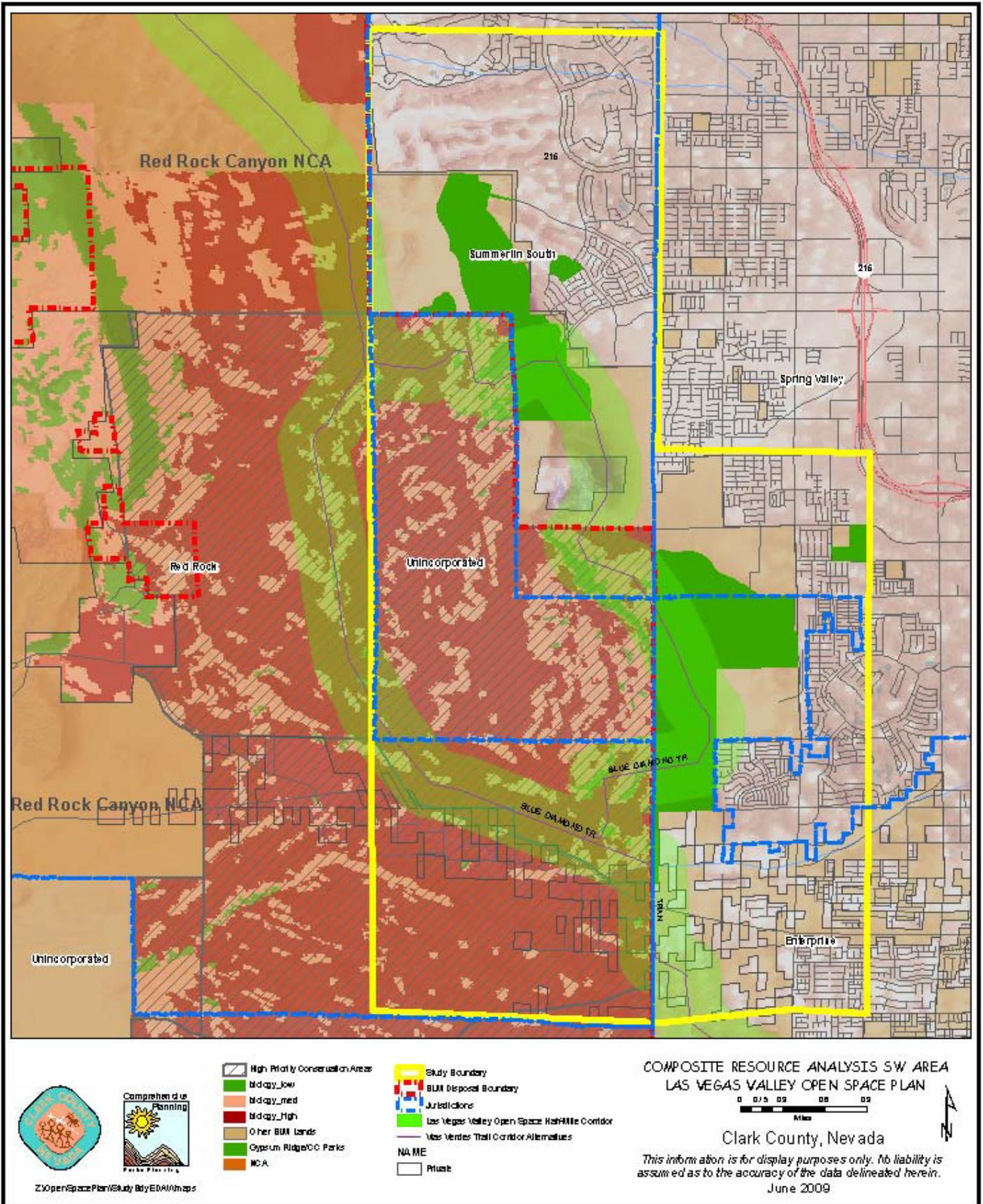
# Appendix

## Exhibit G - Cultural and Scenic Resources Map



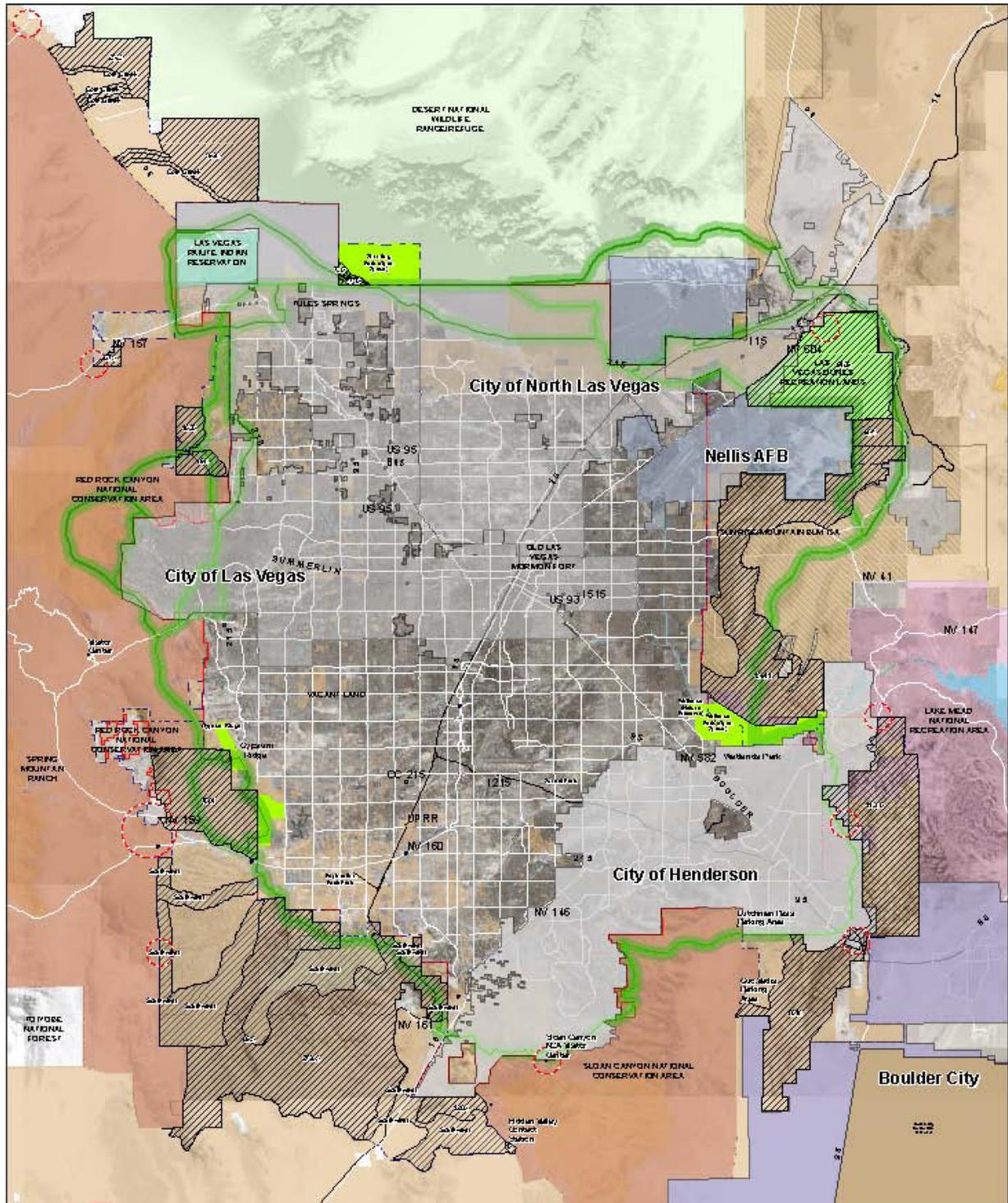
# Appendix

## Exhibit H - Ranking Criteria and Composite Resources



# Appendix

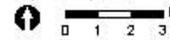
## Exhibit I - LVVOSP Vision Map



- |                             |                                 |   |                           |
|-----------------------------|---------------------------------|---|---------------------------|
| Key Edge Nodes              | Candidate Areas                 | Conservation Treaties (Alt Body 5)      | Boulder City Conservation |
| Trailheads                  | National Park Service           | Other BLM Lands                         | Boulder City              |
| Priority Conservation Areas | Nellis Air Force Base           | BLM Disposal Area Boundary              | City Jurisdiction         |
| Preferred - 127.5 Miles     | Recreation Lands                | Areas of Critical Environmental Concern | Open Space Site           |
| Alternative                 | Desert National Wildlife Refuge | Wilderness Areas                        | Nellis Drives             |
| Final Analysis - Acres      |                                 | Conservation Treaties (No Action)       |                           |
|                             |                                 | National Conservation Areas             |                           |

### Vision Map

### Las Vegas Valley Open Space Plan



The Vision Map highlights High Priority Conservation Areas based on Phase 1 of the LVVOSP and is subject to change. No liability is assumed for the accuracy of the data or the information. All of the information for display purposes are provided without warranty of any express or implied.

# Appendix

## Exhibit J - Trails Element to the Clark County Comprehensive Plan (October 2005) Policies

The Trails Element is to address issues and establish clear and practical solutions to guide the development of primarily off-street shared-use trails/paths within the County, excluding trails on federal and state lands and in municipalities. The following policies are excerpted from the Trails Element.

**Policy Trl 2.7.1** of the Trail Element states: locate trailheads within or adjacent to parks or other recreation facilities to allow shared use of these facilities, commercial developments, transportation nodes, or residential areas, and adjacent to federal lands.

**Policy Trl 2.7.2** states, where possible, install major trailheads every three to five miles along local trail systems.

**Policy Trl 2.8.1** states, provide interconnectivity to trails in other municipalities and federal lands where appropriate.

For a number of years, Clark County has been working with other local governments and federal agencies to determine appropriate connections to the various trail systems being developed throughout the County. The County will continue to work with municipal, regional, and federal representatives to provide connections and continuity among trail systems.

# Appendix

## Exhibit K - Parks and Recreation Master Plan 2000-2020 Policies

Trail and Open Space policies identified in the Parks and Recreation Master Plan 2000-2020 relate to acquisition; environmental resource opportunities; location, form and function; development, operation and maintenance; and intergovernmental coordination. Below are selected policies from the Master Plan.

Trail and Open Space Section 1 policies relate to acquisition. These recommendations reflect the desire to take advantage of public lands and rights-of-way for recreational trail and open space use. It is assumed that the unincorporated Las Vegas Valley population will nearly double from 474,538 in 1997 to 865,844 by the year 2020. As growth and development continue, opportunities for trails and open space decline.

**Policy TOS.1.1** states: identification and acquisition of trail corridors and open space should occur now to serve the future needs of the County.

An action associated with **TOS.1.1** is as follows:

A. Identify and secure urban primary trail corridors facing imminent development. This action will require a valley-wide resource evaluation process to assess necessities and opportunities. Priority criteria should include:

- Existing BLM land in the Las Vegas Valley appropriate for trails and open space.
- Proximity of open space areas needed to access public lands and/or protect vulnerable natural resource values.
- Dedicated public access to trail head and open space areas.
- Trails corridors and open space areas identified in existing land use master plans and other comprehensive plan elements.

Trail and Open Space section 2 policies relate to

environmental resource opportunities. Significant natural resource amenities still exist within the urban Las Vegas Valley. However, one consequence of continuing land development is that native wildlife and general public use of open space are displaced and concentrated in remaining open areas. These recommendations are premised on the need to preserve and manage environmentally valued resources within the context of trail corridors and open space.

**Policy TOS.2.1** states: trail facilities and open space areas should be designed and managed to enhance and protect natural resource values.

Actions associated with **TOS.2.1** are as follows:

- A. Encourage the BLM to maintain the area outside of the BLM urban land disposal boundary in public ownership. This action is consistent with BLM Resource Management Plan goals for the Las Vegas District.
- B. The County should apply for Recreation and Public Purpose Act leases for areas to be designated as open space and trail corridors. The areas immediately outside of the BLM urban land disposal boundary are typically steep-sloped and rich in view sheds, physical features and biological values and are especially appropriate for trails development and open space preservation.

# Appendix

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B. The County should apply for Recreation and Public Purpose Act leases for areas to be designated as open space and trail corridors. The areas immediately outside of the BLM urban land disposal boundary are typically steep-sloped and rich in view sheds, physical features and biological values and are especially appropriate for trails development and open space preservation.

**Policy TOS.2.2** states: Public lands outside of the BLM urban land disposal boundary should remain in public ownership and be managed as open space recreational areas.

Trail and Open Space section 3 policies relate to trail location, form and function. Multi-modal primary trails should be located in places that permit practical use by commuters as well as recreational uses. Off-street trails increase use safety by reducing contact with motor vehicle travel and increasing recreational experiences. Trails and open space must be developed and maintained to ensure public safety. AASHTO minimum standards will be used for trail design and development. Should additional standards be developed for specific trails, those standards will be incorporated into this document by reference.

**Policy TOS.3.3** states: primary trail facilities should provide

# Appendix

public access and connectivity to open space and park system facilities.

Actions associated with **Policy TOS.3.3** are as follows:

A. Trail facilities which connect existing parks and open space will be given priority. Every attempt will be made to link trails to parks and open space.

B. Designated open space will be designed to link trails through the open space. Large open space areas such as BLM lands outside the BLM urban land disposal boundary offer excellent opportunities to develop trail facilities.

Trail and Open Space section 4 policies relate to development, operation and maintenance. The acquisition of trail corridors and open space accomplishes a major goal of the Parks and Recreation Master Plan. However, if the facilities are not managed and maintained, there may be greater adverse impact to the resources, public safety issues, and loss of administrative and site improvement costs. It is important that ongoing operation and maintenance resources needed for project areas are identified and budgeted as part of the capital improvement requests.

**Policy TOS.4.1** states: trails and Open Space development should be accelerated and managed to ensure natural resource protection, quality recreation experiences and public safety.

Actions associated with **Policy TOS.4.1** are as follows:

A. Prepare site management plans for designated trail corridors and open space project areas. Management plans should include the following components:

- Physical conditions and features.
- Site layout and recreational facilities.
- Operational and administrative needs.
- Maintenance needs.
- Five-year budget for capital improvements, operation and maintenance.

Trail and Open Space section 5 Policies (TOS.5) relate to intergovernmental coordination. For instance, the BLM manages about 60 percent of the total land within Clark County and will play a key role in the development of regional trails and open space programs. Additionally, the County, cities and regional agencies, primarily the Regional Flood Control District and Regional Transportation Commission, have lead and interdependent roles in the development of a comprehensive trails program.

**Policy TOS.5.1** states: encourage coordination with existing agencies that perform trails and open space functions.

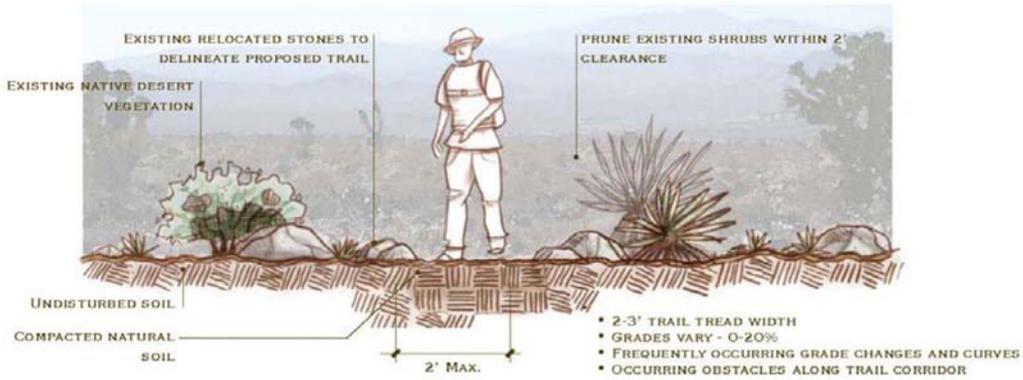
Actions associated with **Policy TOS.5.1** are as follows:

A. Participate in developing partnerships with local, state and federal agencies that will provide for coordination in the development of trails and open space. A regional trails program can be achieved only if all agencies have ownership in the process.

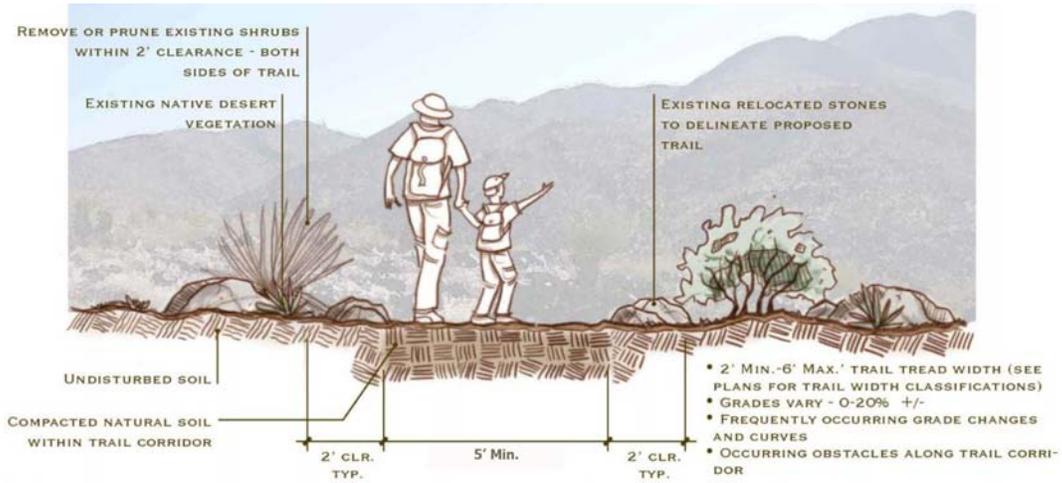
B. Coordinate with the Regional Flood Control District to develop recreational trails within flood ways and desert washes. These areas will provide the urban primary trails backbone.

# Appendix

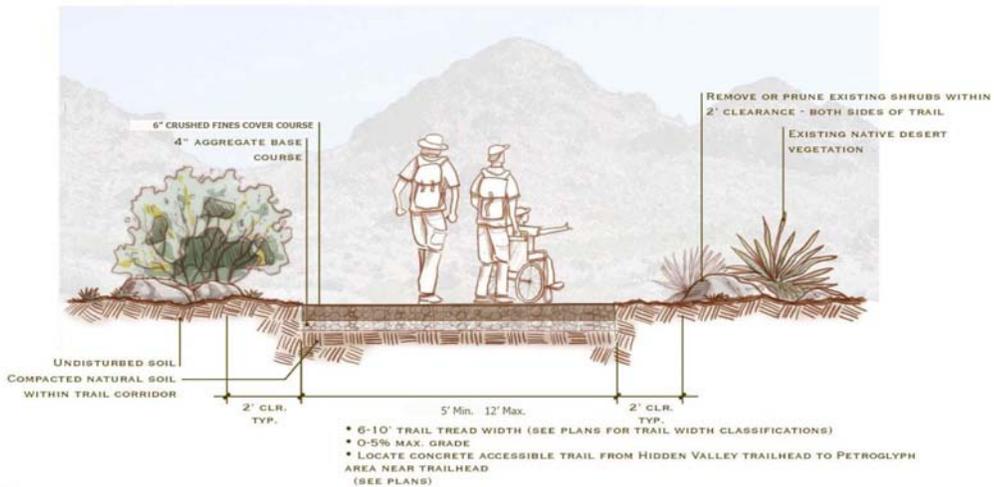
## Exhibit L - Trails Backcountry Design Standards



### Pioneer Route



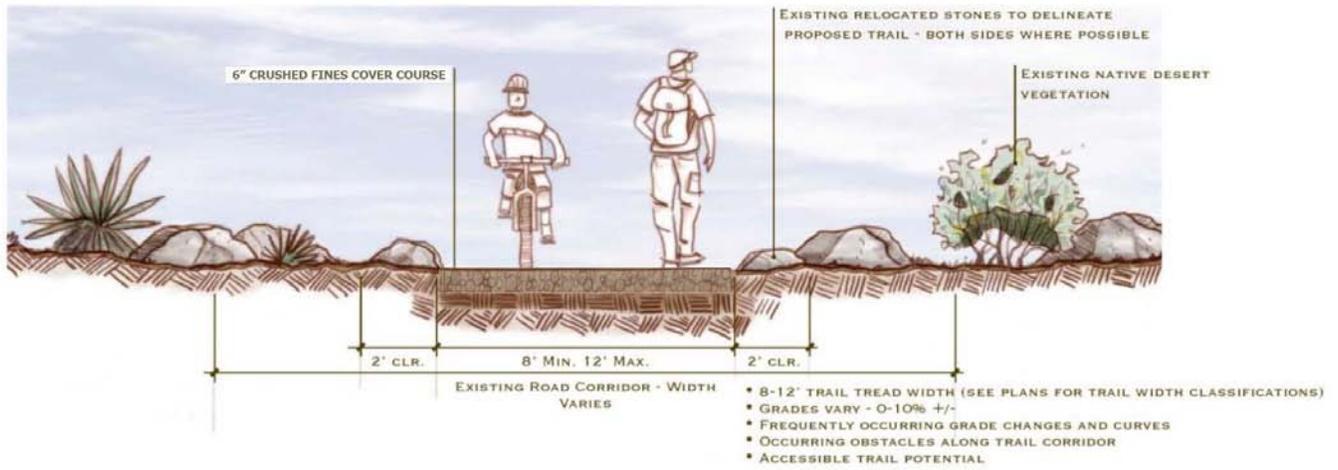
### Initial Pedestrian Trail



### Pedestrian/ADA Trail

# Appendix

## Exhibit L - Trails Backcountry Design Standards



Shared Use –Biking/Pedestrian/ADA

# Appendix

## Exhibit M - Table 2-1. Data Sources & Category Ranking 1 through 3

**Table 2-1. Data Sources and Category Ranking**

Category	Source	Details	Year	Used in ESL	Ranking	
<b>1. Biology Resources</b>	BLM	Bighorn habitat	2004		crucial bighorn habitat = high; winter range = medium	
	BLM	Chuckar habitat	2004		crucial habitat = high	
	BLM	Quail habitat	2004		crucial habitat = high	
	NNHP and TNC	Bearpoppy locations	2006		high	
	USDA	Bee locations	2005		half mile buffer = low	
	USGS	Species richness model of ReGAP layers for 37 species from CC Desert Conservation Program list	2004		24-30 species overlap = high; 15-23 species overlap = medium; 2-14 species overlap = low	
	USGS	Landcover data (riparian habitats)	2004		high	
	TNC	Mojave Desert Ecoregion Conservation Portfolio	2001	X	medium	
	Clark County	Desert Tortoise Critical Habitat area		X	high	
	<b>2. Physical Resources</b>	BLM	Spring Locations	2004	X	quarter mile buffer = medium
EPA		Stream Reach File used to determine wash areas	1998		delineated washes = high; rivers buffered a tenth of a mile = high	
Clark County		Water Bodies			display purposes	
CCRFC		Watersheds and sub-boundaries			display purposes	
FEMA		FEMA floodplains	2002		50 year or 100 year flood areas = high	
Clark County		Flood control channels			display purposes	
Clark County		Flood control basins			display purposes	
USGS		Percent slope - derived		X	over 25% = high; 12-25% = medium	
BLM		Areas of Critical Environmental Concern	2007	X	display purposes	
BLM		Disposal Area Boundary	post 2005	X	display purposes	
BLM		Public Lands Management - overall general management	2006		display purposes	
BLM		National Conservation Areas	2003	X	display purposes	
BLM		Wildlife and Natural Areas	2004		display purposes	
BLM		Indian Reservations	2004		display purposes	
BLM		County-wide land ownership	2004		display purposes	
<b>3. Management / Administrative Areas</b>		BLM	Wilderness Areas	2007	X	display purposes
		BLM	Wilderness Study Areas	2007	X	display purposes
	FWS	Desert National Wildlife Refuge		X	display purposes	
	BOR	BOR Lands			display purposes	
	Clark County	Existing parks and open space	2007		display purposes	
	Clark County	Parcel database	2006		display purposes	
	BLM	Desert Conservation Area in Enterprise Township	2004		display purposes	
	Clark County	Red Rock design overlay (planning)			display purposes	
	BLM	Conservation Transfer Area			display purposes	
	Clark County	Boulder City conservation easemnt.			display purposes	

# Appendix

## Exhibit M - Table 2-1. Data Sources & Category Ranking 4 through 6

**Table 2-1. Data Sources and Category Ranking**

Category	Source	Details	Year	Used in ESL	Ranking
<b>4. Planned Land Uses</b>	N Las Vegas	Planned Land Use			display purposes
	Henderson	Planned Land Use			display purposes
	Las Vegas	Planned Land Use			display purposes
	Whitney	Planned Land Use			display purposes
	Enterprise	Enterprise Comp Plan land uses			display purposes
	Enterprise	Enterprise Desert Conservation Area			display purposes
	Lone Mountain	Lone Mountain Comp Plan land uses			display purposes
	Lone Mountain	Lone Mountain planned rural neighborhood preservation areas			display purposes
	Sunrise Manor	Sunrise Manor Comp Plan land uses			display purposes
	Clark County	Clark County's Comprehensive Plan land uses			display purposes
	Nellis AFB	Noise and maneuver areas, including security and safety areas			display purposes
	Boulder City	Planned Land Use		X	display purposes
<b>5. Infrastructure</b>	GISMO	Street centerlines	2007		display purposes
	Clark County	Rail lines	2003		display purposes
	Clark County	Inventory of unpaved roads	2003		display purposes
	BLM	Clark County Recreation Inventory Data, in-progress	2007		display purposes
	RTC	RTC Comprehensive Trail System (off-street), proposed and existing	2007		display purposes
	Clark County + others	Gas lines, transmission lines, some row's, etc. (may be incomplete)	multiple		display purposes
	SNWA	Water pipelines			display purposes
<b>6. Cultural + Scenic Resources</b>	SHPO	State Historical Markers		X	quarter mile buffer = medium
	Clark County	List of Significant Historical Sites		X	quarter mile buffer = medium
	SHPO	Sample of archeological sites		X	high
	SHPO	Pre-buffered Spanish Trail areas			low
	BLM	Visual Resource Management Classes			VRM II = high
	Clark County	Scenic Points/Features (springs, canyons, and built features)		X	display purposes
	EDAW	Viewshed analysis			moderate-high visibility = high; low visibility = medium
	NDOT	Kyle Canyon Road State Scenic Byway			display purposes
	NDOT	Red Rock Road State Scenic Byway			display purposes
	NDOT	Mt. Charleston/Lee Canyon Road State Scenic Byway			display purposes
	BLM	Scenic Byway gateways			half mile buffer = high
	BLM	Trailheads			quarter mile buffer = high

# Appendix

## Exhibit N - Las Vegas Valley Trails Map

