

June 2024

# Vegas Valley Rim Trail Report

Trail Alignment and Analysis to  
serve Clark County

A collaborative effort by: Get Outdoors  
Nevada, BEC Environmental, inc., and Ardurra



**bec environmental, inc.**  
*Environmental Services*



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## 1 Introduction

There are innumerable trails and paths in the beautiful mountains surrounding Las Vegas. In 2007 the ambitious idea of the Vegas Valley Rim Trail (VVRT) was introduced to create a loop connecting the existing trails along the perimeter of the Valley. Now, in 2024, the VVRT consists of trails totaling approximately 100 miles in length that encompass Las Vegas from the Southeast near Henderson to North Las Vegas, and through the west side in Summerlin. This report is intended to provide guidance on the continuation of this trail, specifically in the Southwest area (from Tropicana Avenue to I-15) as the desire to complete the VVRT continues strong to this day.

The roots of the VVRT can be traced back 18 years when Outside Las Vegas Foundation (now known as Get Outdoors Nevada) initiated a working group called the Vias De Vegas Committee following their involvement in the River Mountains Loop Trail. In 2006 the Southern Nevada Regional Planning Coalition (SNRPC) commissioned the Regional Open Space Plan to include a transitional belt between the backdrop and the urbanizing area encircling the Valley as an interconnected trail system. This seems to be the initiating project idea for what is now the Vegas Valley Rim Trail (VVRT). The Via de Vegas Committee held an Open Space Trails Summit in 2007, and through the summit, the SNRPC formed the Open Space Advisory Committee, which is now Regional Open Space and Trails (ROST). Through funding from SNRPC and Clark County, the Open Space Advisory Committee developed the Las Vegas Valley Perimeter Open Space Plan and Vias Verdes Report. That report was presented to the SNRPC in 2009 and included the overall concept with alternatives for alignments of the (VVRT). From there it was carried forward over the years by various supporters and ultimately took the name of the Vegas Valley Rim Trail. More recently, legislation (AB84) provided funding for the VVRT's design and construction.

At the request of Clark County, Get Outdoors Nevada, BEC, and Ardurra were tasked with developing a report to serve as a general guide for the continuation of the VVRT from one of its existing endpoints, to the next desired milestone. This report is not intended to present plans for construction. Rather, it is intended to provide analysis on a proposed trail alignment and implementation based on existing conditions and conformance with existing regulatory and guiding plans. It also includes an estimation of fiscal requirement to implement the plan, and final recommendations informed by meaningful public and stakeholder input. The trail proposed in this report would be between 36-45 miles in length, be almost entirely on public land, and presents several alternatives based on public safety considerations and other constraints.



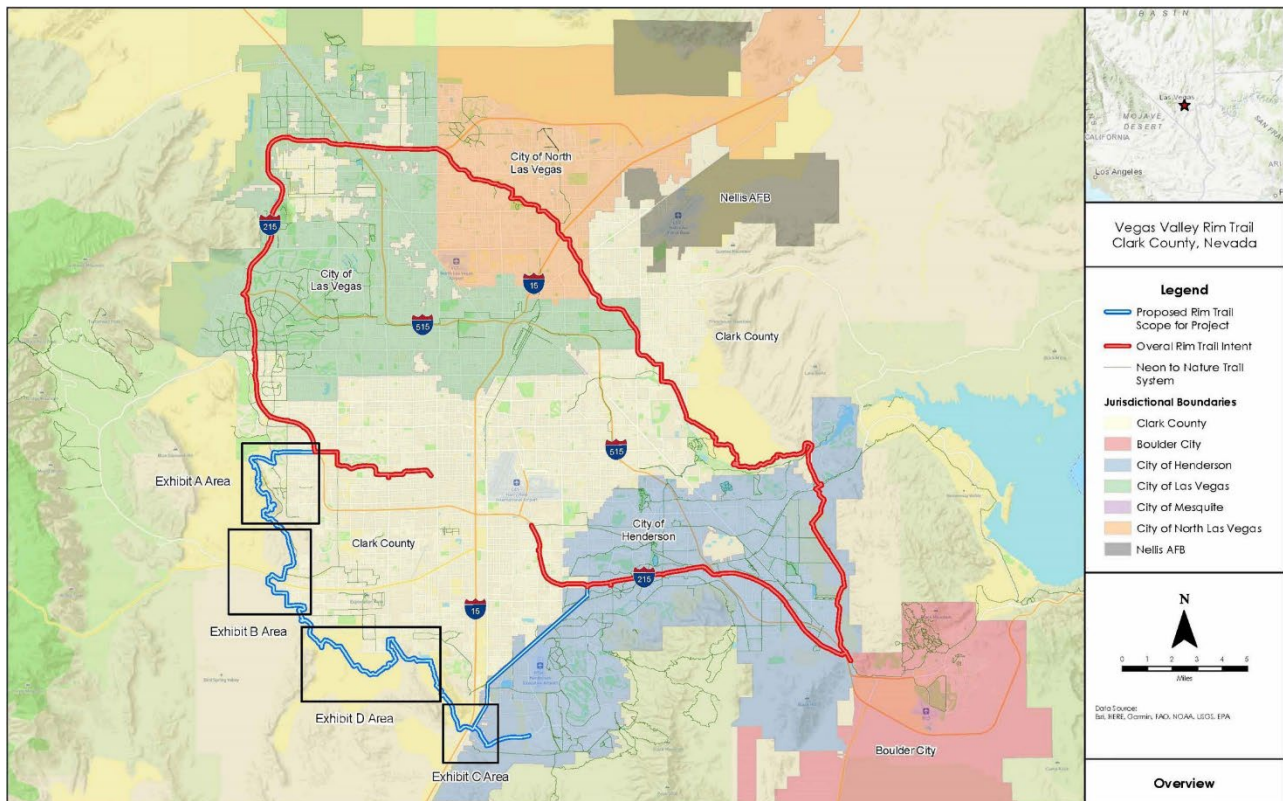
**Figure 1. Proposed trail area facing northeast towards the Las Vegas Strip**

## 2 Trail Alignment Deep Dive

### 2.1 Primary Trail path

The span between the defined VVRT terminal points has been selected to maximize the use of existing trails while maintaining accessibility for the community and focusing on public safety. This methodology provides benefits such as reduced overall construction costs, existing familiarity for those utilizing the trails, and reducing potential environmental impacts. There are several neighborhoods in this area with existing trailheads that tie into existing hiking trails within the southwest mountains of the Valley. The stark elevation difference between the urban-wildland interface limits the viable connection points.

The proposed trail alignment has been created with the aforementioned factors considered. The resulting alignment strives to connect the endpoints utilizing as many existing paths as possible. Please refer to the overall exhibits, Appendix A – Overview Maps for views of the alignment overlaid with jurisdictional boundaries, property ownership, as well as Clark County commission districts. There are countless trails throughout this area. The proposed alignment is designed to maintain a logical path for users to follow, while adhering to the goals of the Vegas Valley Rim Trail.



**Figure 2. An overview map showing the existing VVRT intent in red and the proposed VVRT section in blue.**

## **2.2 Connections To Existing Trails and Neighborhoods**

The VVRT has an end point at the western side of the intersection of Tropicana Avenue and the Clark County 215 Beltway, facing south. Determining in which direction the VVRT should extend from this current end point was a critical decision of this plan. Having the trail continue south was not viable due to right-of-way constraints. If the path were to turn east and begin traversing through town it would hardly be considered a “rim trail” and would not capture the original intent and vision of the VVRT which is to create a trail system encircling the valley that links the urban areas to the surrounding recreational and natural resources. Both options face land ownership and acquisition hurdles that could add significant cost and time delays. Considering these factors, the best choice is to propose the trail head to the west, along the north sidewalk of Tropicana, to continue the trail pathway towards the Desert Hills Range and closer to nature. This proposed stretch utilizes the existing pedestrian infrastructure. After approximately 1.65 miles, Tropicana Avenue becomes South Town Center Drive, and connects to the existing Mesa Trailhead to the south. This is a key point where the defined path leads from a concrete sidewalk to a natural surface. Furthermore, it serves as a connection point from the adjacent neighborhood to the VVRT.

The second terminal point is south of Las Vegas Boulevard near the intersection of Sloan Road and I-15. The proposed trail will approach this intersection from the west and provide a connection point for the future southern segment of the VVRT. The alignment for the southeast continuation does not yet have a final determination and was not studied in detail in this report. However, for purposes of providing continuity of the VVRT, a preliminary connection utilizing Las Vegas Boulevard and the Saint Rose Parkway Trail is depicted. This preliminary alignment begins on the east side of the I-15 near the intersection of Sloan Road and travels north along the Las Vegas Boulevard right-of-way before connecting to the Saint Rose Parkway Trail. The alignment then travels northeast on the Saint Rose Parkway Trail and connects to the I-215 East Beltway Trail. The existing VVRT does not yet continue through this area and future analysis will be needed to determine the best final alignment. The portion of the VVRT proposed in this report utilizes the preliminary Las Vegas Boulevard and Saint Rose Parkway Trail alignment to provide a complete connection to the existing VVRT until future additional alignments can be studied and planned.

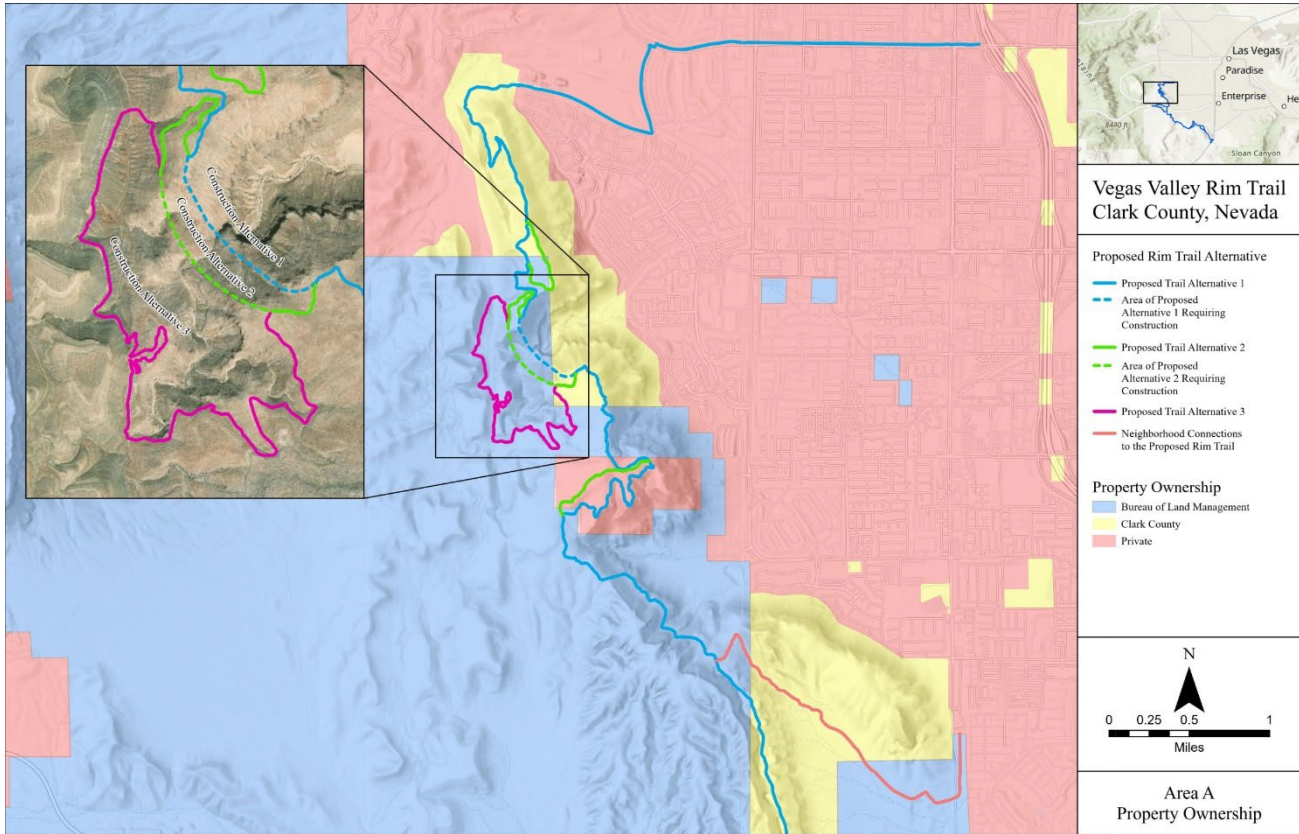
## **2.3 Alternative Areas**

There are four areas of the proposed trail studied in this report that offer several options for trail alignment; these areas are designated as Alternative Areas A, B, C and D. The exhibits showing the options are included below in the report, as well as in Appendix B. These are unique areas that require additional consideration due to the constraints from existing conditions. As such, the alternatives offer different trade-offs, typically in the form of increasing accessibility at the cost of new construction. These exhibit areas and alternative options are abbreviated later in the report to two-character combinations such as A2 or B3.

To minimize costs outside of the Alternative Areas, the majority of the proposed VVRT alignment utilizes existing trails along the inside of the Valley’s rim. Across this section there are many official, and countless unofficial, trails. The desires of public accessibility, proximity to nature, and interconnectivity created a guide to which trails should be considered for incorporation into the VVRT.



### 2.3.1 Exhibit A Area - Deep Dive



**Figure 3. Proposed alternative options for traversing the wash. Exhibit also shows the starting point at Tropicana Ave.**

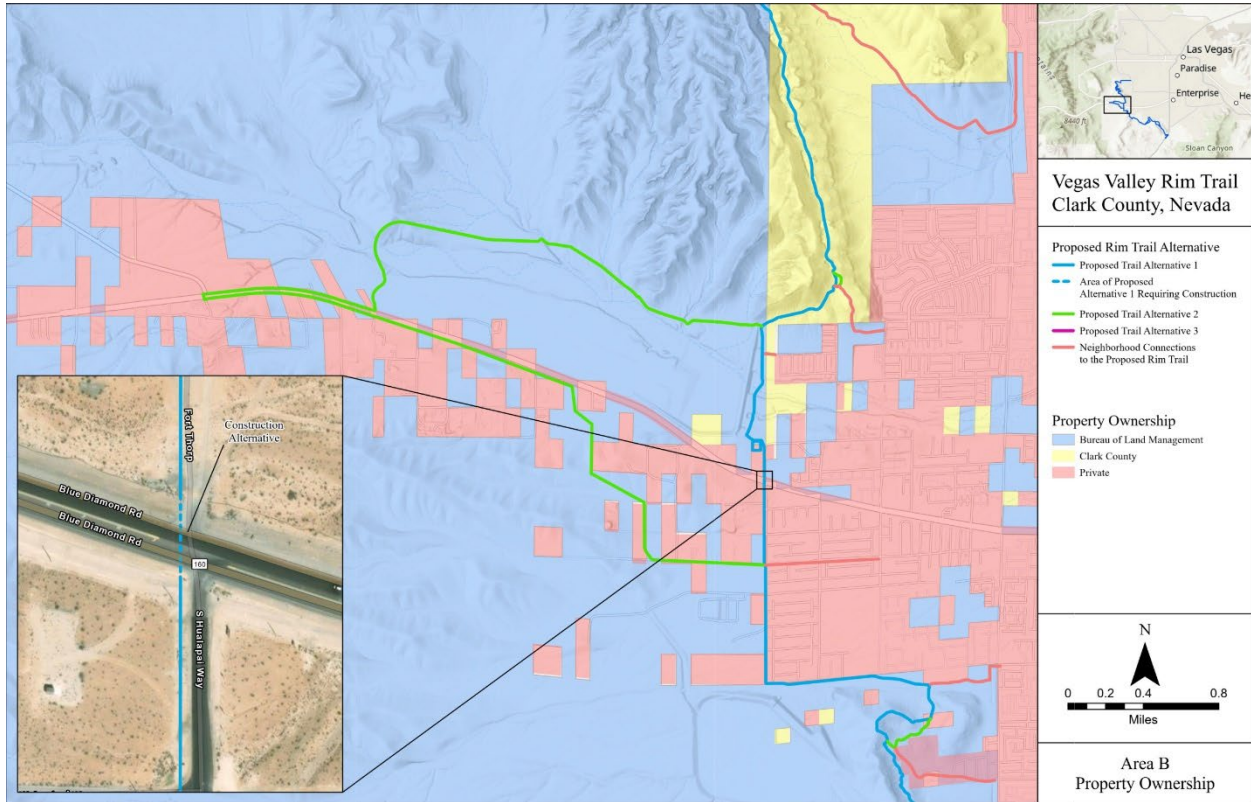
The first area with focused alternatives contains a non-traversable dry channel. Please refer to Appendix B - Exhibit A for the full-size PDF version of the Figure 3 above.

Trail alternatives A1 and A2 both require the construction of a pedestrian bridge to span over the deeply eroded wash. Further analysis and design of this potential bridge or path will be necessary; meetings will be needed between Clark County, structural engineers, and civil engineers in order to determine: 1) the vision that Clark County has for this bridge, as it has the potential to be a breathtaking view and draw in those who may not typically utilize these trails, and 2) scope of bridge construction vs trail setting. Due to these factors, the estimated cost for this work could vary greatly and exact costs are not presently known.

Trail alternative A3 utilizes existing unofficial trails, to get around the deep wash as opposed to building a direct crossing. Diverting the trail further West allows the trail to cross the collector channels which are more shallow and thus easier to cross. Unfortunately, these trails are on the opposite side of the mountain ridge. This deviates from the intent of the VVRT, as those hiking will no longer have any visual of the city and will be guided to the backside of the Desert Hills mountains. This option does have the large benefit of requiring less new construction, the cost to enact this plan would only be the cost to make necessary improvements to current trails and maintenance costs. Additionally, this option is available immediately, and would not require the time associated with developing and constructing a new trail.

A separate study for the Southwest Ridge Trail was recently completed by Sierra Trail Works (*Southwest Ridge Area Trails Plan, 2024*). While this study was independent from the VVRT report, the analysis of potential alignments along the Southwest Ridge is valuable information and should be referenced or incorporated into any future work on the VVRT. Coordinating these two reports will provide the best alternatives and alignments and avoid duplication of efforts.

### 2.3.2 Exhibit B Area - Deep Dive



**Figure 4. Exhibit B, Proposed Alternative Options for Crossing Blue Diamond Road**

The Exhibit B area is focused on the crossing of Blue Diamond Road. Refer to Appendix A - Exhibit B to better view the details of the Figure 4 above. SR 160, also known as Blue Diamond Road, is a state highway with many vehicles traversing daily at speeds greater than 60mph. To provide a safe path of travel for those utilizing the trail there are two main options, each of which has its own nuances.

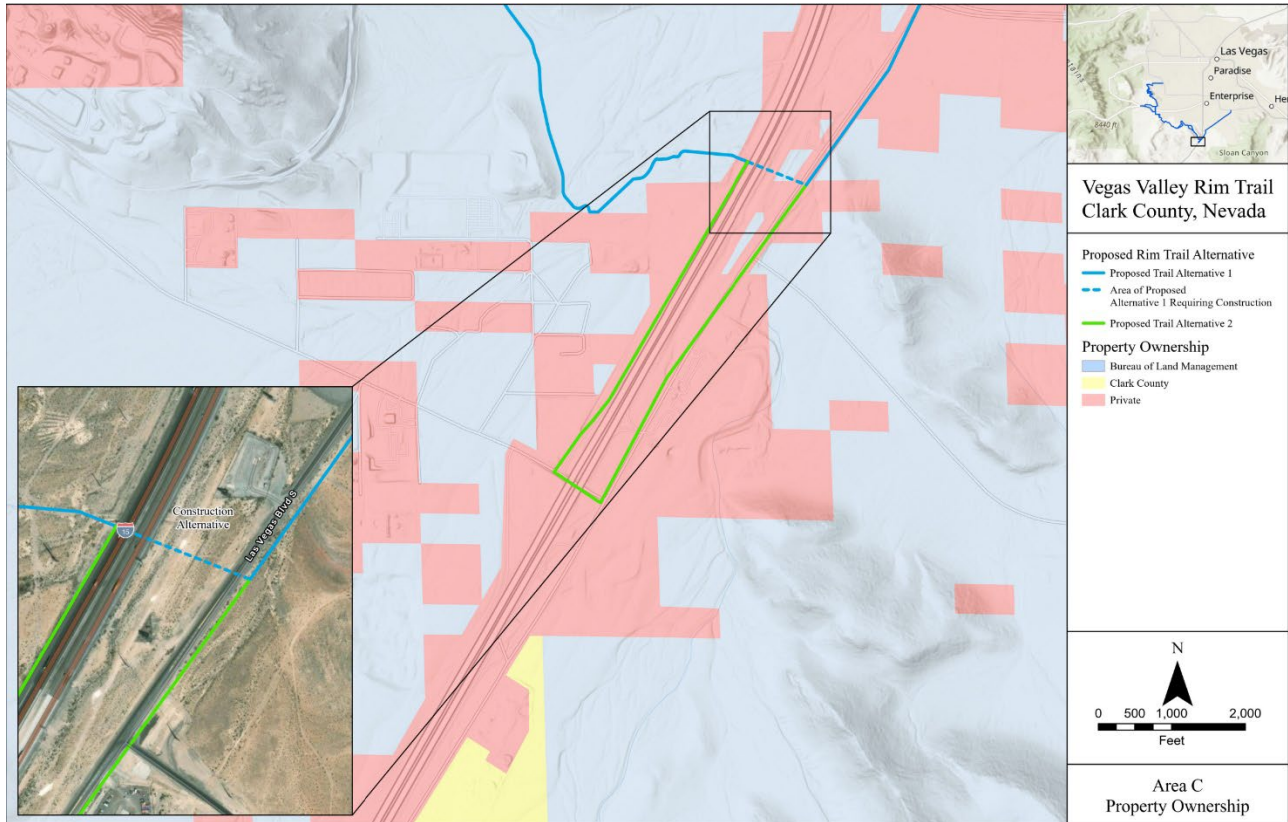
Alternative B1 came through coordination with representatives of Clark County. The design team was informed by the County of the intent to build a multi-use path, and parking lot as a part of the Legacy Trail project. This parking lot is to be on the north side of Blue Diamond Road, in line with Hualapai Way. This proposed path and trailhead serve as a perfect point for connectivity between the larger trail systems of VVRT and the Legacy Trail. The addition of more hikers to this area further enhances the need for a safe crossing point along SR 160 and is worthy of a third alternative option to showcase a crossing of Blue Diamond Road at Hualapai Way.

Alternative B2 is utilizing existing unofficial trails to reach the intersection of Red Rock Canyon Road and Blue Diamond Road, where there is a traffic light and signaled pedestrian



crossings. Although this would certainly be the cheaper alternative, it has significant drawbacks. Not only would this add approximately 3.8 miles to the trail path, but also much of this distance would be along the side of the SR 160 highway. This configuration is not ideal for the experience or the safety of pedestrian users. A signalized crossing may be planned at, or near, Hualapai Way which would provide a superior alternative for crossing Blue Diamond Road instead of crossing at the intersection of Red Rock Canyon Road and Blue Diamond Road. The alignment described in Exhibit B should be further refined in the event a signalized crossing at Hualapai Way is constructed.

### 2.3.3 Exhibit C Area - Deep Dive



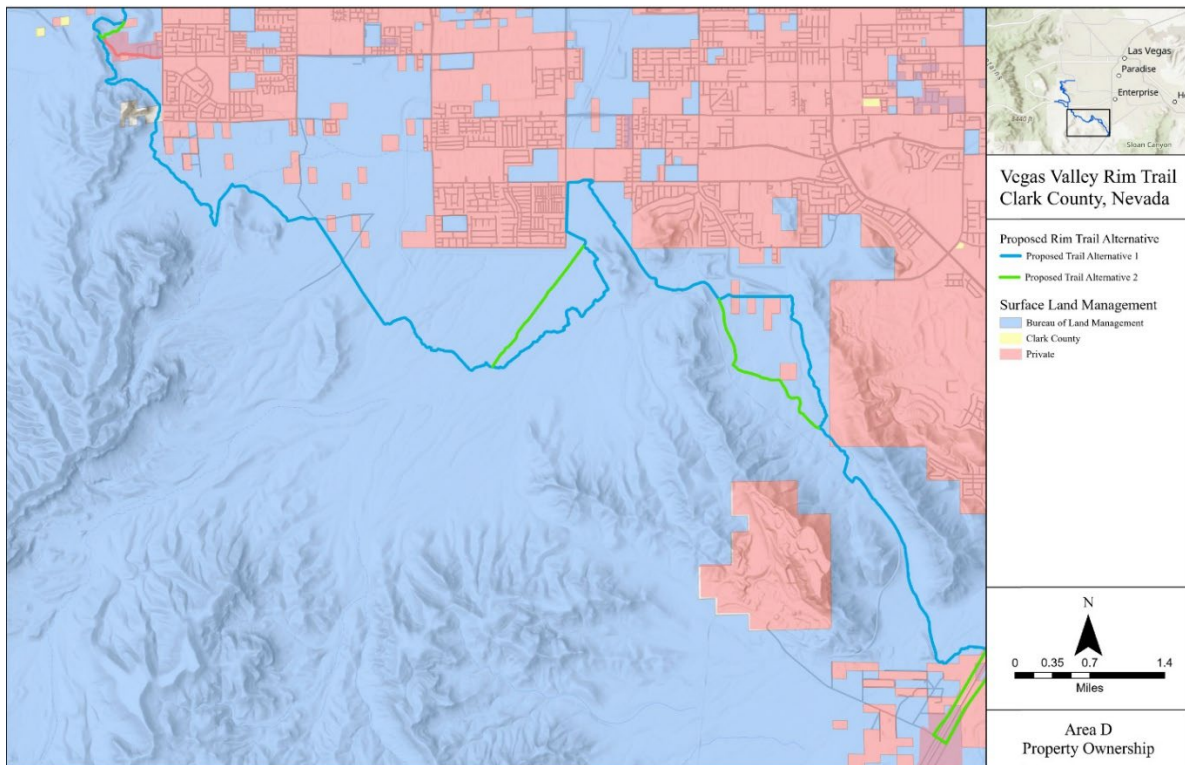
**Figure 5. Exhibit C, Proposed Alternative Options for VVRT Crossing I-15**

The Exhibit C area deals with the crossing of I-15 at a location approximately 2.3 miles south of SR146, near the intersection of Sloan Road. Refer to Appendix A - Exhibit C for full size version of the exhibit. The options for the trail path are like those from the previous alternative area: construction for direct crossing vs existing infrastructure for indirect route. A direct path over or under the I-15 interstate would require new construction of a pedestrian crossing. Such crossing would require significant coordination with the Nevada Department of Transportation (NDOT) and would likely result in substantial construction costs. In lieu of a new crossing, hikers would be able to cross I-15 at the Sloan Road underpass where an existing pedestrian path exists. This 1.7-mile detour would lead along the frontage of the interstate southbound lanes and proceed along S. Las Vegas Boulevard northbound before veering east after the Speed Vegas recreational facility. Should new interchanges at Sloan Road or Via Inspirada be planned, inclusion of pedestrian walkways

should be considered and encouraged. It is recommended to work with NDOT for a trail or pedestrian path for any new interchange or overpass/underpass that may be constructed.

As the planning of the VVRT alignment moves forward, another infrastructure project will be breaking ground: Brightline West Rail. The alignment of this proposed passenger rail line could very well interfere with the proposed path shown on Exhibit C. Further coordination with the design team of the Brightline project is necessary to determine the final alignment of the rail and any additional considerations that are currently unknown in this preliminary planning phase.

### 2.3.4 Exhibit D Area - Deep Dive



**Figure 6. Exhibit D, Proposed Alternative option for segment of VVRT crossing through BLM boundary area and privately owned parcels.**

Exhibit D area shown on the map above depicts two proposed trail alternatives, referred to as Alternative 1 (depicted by the blue line) and Alternative 2 (depicted by the green line). Alternative 1 proposed trail path begins in the northwest portion of the subject area. It follows existing unofficial trails that cross through BLM disposal areas and privately owned parcels. Alternative 2 would also follow existing unofficial trails but would deviate slightly, with most of what is proposed not interfering or crossing over privately owned parcels. However, the southeast portion of the alternative trail path does cross through a privately owned parcel.

Where trail paths cross through privately owned parcels, alignments will need to be secured. When applicable, Clark County will work with property owners to secure these alignments.

Neighborhood connection points that do not traverse through privately owned parcels would be more desirable. Refer to Appendix B - Exhibit D for full size version of the exhibit.

### **3 Considerations Driving Design**

The boundaries of this new portion of Vegas Valley Rim Trail are defined as follows: Start Point: the existing VVRT trail end at Tropicana Avenue/215 Beltway, End Point: The East side of I-15 South. The span between these two defined endpoints is about 13 miles as the crow flies, and the trail path would be about 29 miles (or 37 miles if all longer alternatives are selected). This significant difference between linear and actual distance is to be expected as the proposed design supports a naturalistic trail experience, as opposed to maximizing the most direct or efficient trail route. This approach is bountiful in both fiscal and environmental benefits. By avoiding private land as much as possible, the time and costs associated with land acquisition is reduced. Please refer to Appendix A - Overview which depicts the proposed VVRT along with the land ownership. This proposed alignment stays mostly within property under the management of the Bureau of Land Management (BLM) and within public rights-of-way. This will reduce difficulties of landowner coordination and obtaining access easement agreements. Additionally, the plan takes into consideration the public's input and environmental factors as outlined in more detail in subsequent sections.

#### **3.1 Public Engagement Summary**

This project focused on two main activities to support public engagement goals. First, a steering committee was convened. Secondly, opportunities for direct engagement with members of the community were provided by holding a public informational meeting and conducting a community-wide survey.

The steering committee was composed of content matter experts representing several local jurisdictional and agency stakeholders, as well as elected officials representing areas affected by or adjacent to the project area. Jurisdictional and agency representation included: City of Henderson, Clark County, Bureau of Land Management, Southern Nevada Regional Transportation Commission, and Southern Nevada Health District. Elected officials included Clark County Commissioner Justin Jones (staff), Nevada State Senator Dallas Harris, and Nevada State Assemblywoman Michelle Gorelow.

The steering committee met (virtually) on October 10, 2023, and again on December 11, 2023. The first meeting provided committee members with an overview of the project, including the project team, scope, and timeline. A preliminary plan for public engagement (detailed below) was shared and feedback from the committee was used to inform and strengthen this plan. The steering committee convened again in December and the preliminary results from the community-wide survey and from the December 7, 2023, public informational meeting was shared.

The community-wide survey was designed and implemented utilizing Survey Monkey and was distributed from November 27 to December 23, 2023. A link to the survey was promoted via various communication and social media channels including from project team organizations Get Outdoors Nevada and BEC Environmental, as well as by partners at Clark County, Mojave Max, City of Henderson, and City of North Las Vegas. In addition, the community-wide survey was featured by CBS affiliate Channel 8 and local Meteorologist Nate Tannebaum. The combination of the



project team’s grassroots promotion and the on-air mention resulted in 274 individuals responding to the survey.

The survey included both closed and open-ended questions, collecting demographic and general trail use information from all respondents, as well as respondent feedback regarding trail alignment options within three specific areas along the proposed southwest corridor of the VVRT. The survey was designed so respondents could respond to just the first portion, which included basic demographic and trail use data. Or they could respond to the entire survey, which included additional and more specific questions relevant to the project. Of the 274 respondents, 197 completed the full survey. The results of the survey are discussed below.

A virtual public informational meeting occurred on December 7, 2023, at 11:00 am and like the survey, was promoted via social media, including a QR code and direct link to the virtual meeting. Pre-registration was not required to avoid potential barriers to participation. Ultimately, participation in the meeting was limited, with fewer than five individuals (in addition to the project team) participating. It is likely that those who joined were representatives from stakeholder agencies, including Clark County.

**Community Survey Design**

The community survey included 12 questions and was divided into two sections. The survey design allowed respondents to answer a general set of questions and then, if they were amenable, to move to a second set of questions. The first set of questions gathered demographic data; however, the survey only required a response to Zip Code (Table 1) to help determine where respondents reside. All other questions related to demographic information were optional. The first section of the survey was completed by 274 respondents. The second set of questions was more specific to the study area and required respondents to provide their opinions after reviewing study area maps and considering optional trail alignments. Most respondents (197 or 72%) completed both the first and second sections of the survey.

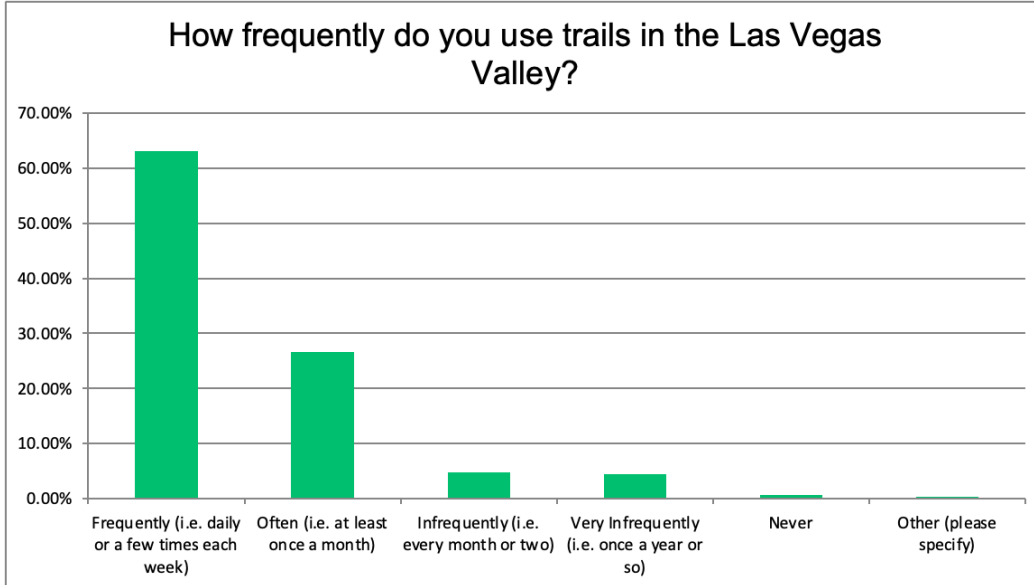
**Question 1: Demographic Information**

<b>City/Towns (based on zip code)</b>	<b>Number of Responses</b>	<b>Percentage of Responses</b>
Las Vegas	104	38.0%
Henderson	85	31.0%
Unincorporated Clark County	65	23.5%
North Las Vegas	16	5.8%
Outside Clark County	3	1.0
Boulder City	2	0.7%
(Total)	<b>274</b>	<b>100.0%</b>

**Figure 7, Demographic Responses from Survey**

**Question 2: How frequently do you use trails in the Las Vegas Valley?**

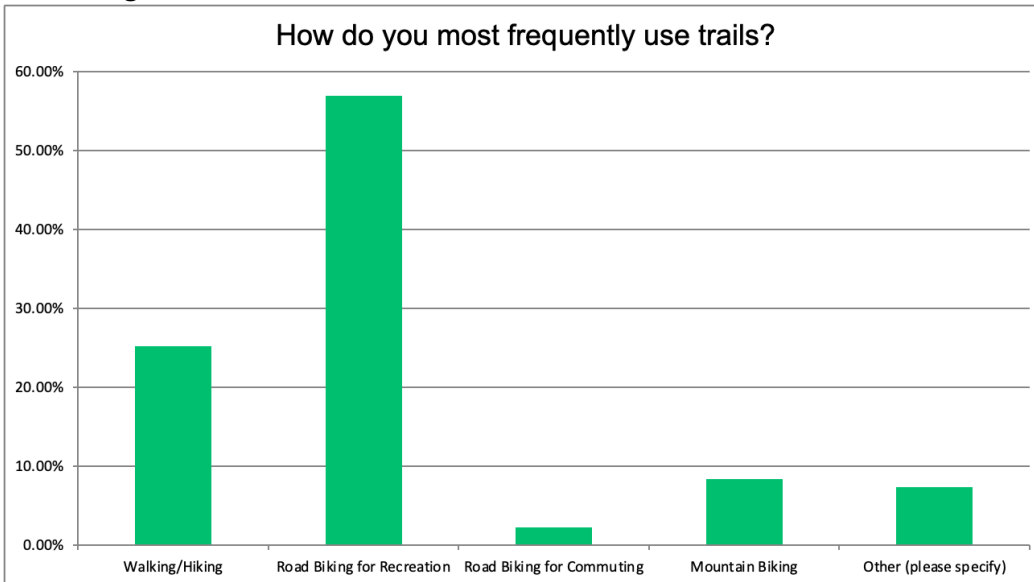
An overwhelming majority of survey respondents use area trails at least once a month (27%), and most use trails daily or multiple times per week (63%). Just two respondents reported never using area trails, and one respondent selected “Other”, noting that their frequency of use depends on if they are training for a race.



**Figure 8, Illustrating Frequency of Use**

**Question 3: How do you most frequently use trails?**

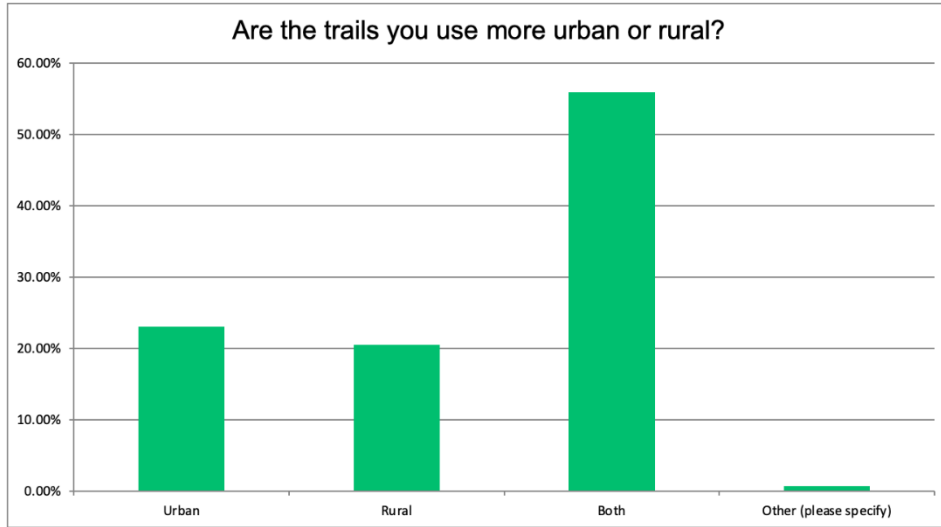
Most of the respondents report using trails for road biking for recreation (57%), with walking and hiking accounting for 25% of respondents. Respondents who reported “Other” listed “Trail Running”, “Multi-Use”, “Equestrian” and other uses such as “Handcycling”, “Recumbent Trekking” and “Rollerblading”.



**Figure 9, How Participants Typically Use the Trails**

**Question 4: Are the trails you use more urban or rural?**

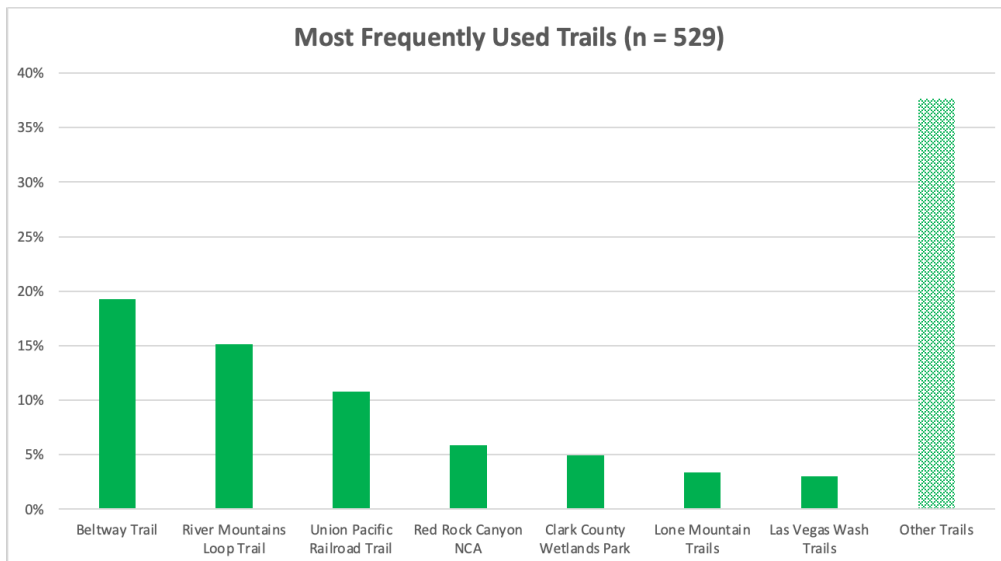
Most respondents report using both urban and rural trails (56%), while the remainder report urban trails (23%), and rural trails (20%). Two respondents chose “Other” and noted that they “use urban trails to get to the desert” and the other said “all of the above”.



**Figure 10, Distribution of Rural or Urban Trail Usage**

**Question 5: What trails do you use most often?**

Respondents listed specific trails or trail systems approximately 529 times total. The following graph depicts the most frequently listed trails in the first seven graph bars. These trails account for 330 of the trails listed (62%) and each was listed by at least 16 respondents. Trails or trail areas with 15 or fewer mentions each were lumped and are depicted by the last graph bar labeled “Other Trails”. This bar (light green) accounts for the remaining 38% of the trails listed, including approximately 36 additional trails or trail areas.



**Figure 11, Participant Usage of Named Trail Systems vs Other**

**Question 6: Where would you like to see new trailheads?**

Approximately 50 respondents (18%) replied with neutral responses such as “N/A”, “do not know”, “not familiar enough with the area”, “no opinion” or positive, but non-specific answers, such as “anywhere”, “everywhere”, or “happy now”.

Eleven respondents (4%) shared positive feedback regarding the VVRT project overall, with comments such as, “I would like to see the full loop” and “would love to see the VVRT completed; so happy to see this survey”. Just one respondent shared negative feedback regarding the development of additional trailheads, saying “I prefer that we keep it non-developed, please”.

A majority of responses (75%) to this question were not specific to the creation or placement of new trailheads as we had intended, but instead, addressed more general concerns and preferences related to trail safety (i.e. safety from vehicular traffic, safe crossings, bike lanes), accessibility (i.e. convenient to home/residential areas, ample parking, access to amenities), and connectivity, (i.e. linkages between existing trails, adjacent to parks, facilitates active transport between destinations) with connectivity being the most frequently cited topic.

Respondents provided a wide range of feedback related to connectivity, from very general statements about geography such as “more trails are needed in southwest and northeast” or “more trails are needed to connect the inner urban area for commuting”, to slightly more specific requests like “east-west connectivity for the Beltway Trail”, to very specific requests for filling gaps at particular locations, such as “Craig Road to Nellis Air Force Base” or “UPRR Trail connection to Sunset Park”.

Safety and accessibility were mentioned less frequently than connectivity, but this should not be a surprise because the question does not specifically prompt feedback regarding these topics. Nevertheless, more than 16% of respondents cited concerns related to safety and/or accessibility. For example, respondents named specific areas that they currently perceive as “very dangerous”, including areas along the I-215 West Beltway Trail (at Fort Apache and Tropicana) and in the Northeast, noting a lack of safe options for crossing the I-15 (at Craig) to safely transit to Nellis Air Force Base.

**Figure 12** lists the most frequently mentioned areas or locations where greater connectivity is desired. Locations marked with a double asterisk (\*\*) were mentioned by five or more respondents.

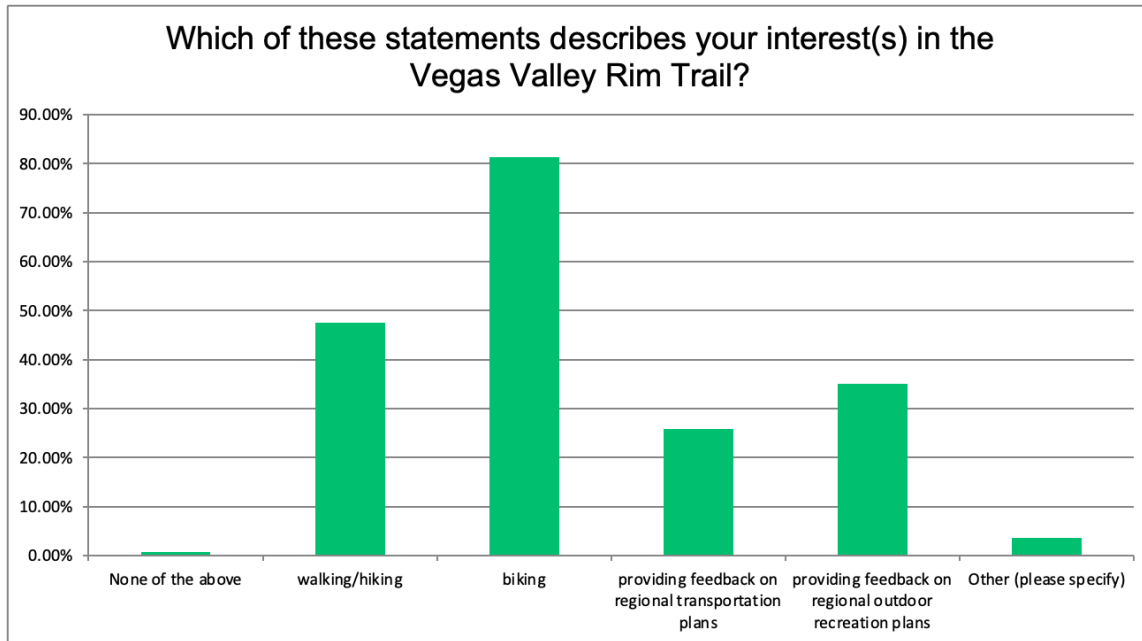
Aliante	Lee Canyon
Anthem Hills	Lone Mountain
Avi Kwa Ame	McCullough Hills
Bears Best	North Las Vegas (near Apex)
Beltway East to West**	North Las Vegas to/from Henderson
Beltway to Red Rock Canyon**	Old Henderson
Black Mountain	Rainbow Gardens
Blue Diamond/Fort Apache**	Rainbow/Starr

Centennial Hills	Red Rock Canyon to SR159/SR160**
Central Valley/Downtown**	Skye Canyon
Durango/Flamingo	Sloan Canyon NCA
Floyd Lamb Park	St. Rose Parkway (near M Resort)
Gas Peak	Summerlin
Green Valley Parkway/Eastern Avenue	Tule Springs
Ice Age Fossils State Park	UPRR to Beltway
Kyle Canyon	UPRR to Sunset Park
Lake Mead NRA	

**Figure 12, Table of Trails Mentioned by Survey Participants, alphabetical order**

**Question 7: Which of these statements describes your interest(s) in the VVRT?**

Respondents were invited to select as many options as applied to them. Most respondents were interested in the project as it relates to “biking” (81%) and “hiking” (47%). Additionally, respondents were interested in providing feedback on “regional outdoor recreation planning” (35%) and “regional transportation planning” (26%). Those who responded “Other” noted interest in using the trail for running, horseback riding, and wheelchair access.



**Figure 13, Graph of Respondent Interest in VVRT**

### Question 8: Optional Respondent Engagement Continuation

Respondents were invited to continue to answer the remaining survey questions specific to the VVRT project. The remaining questions required respondents to provide their opinions after reviewing study area maps and considering optional trail alignments. Of the original 274 respondents, 197 (72%) completed the remaining questions.

### Question 9: Considering Exhibit A, what are your preferences for using existing trails versus creating a new route to align this segment of the trail?

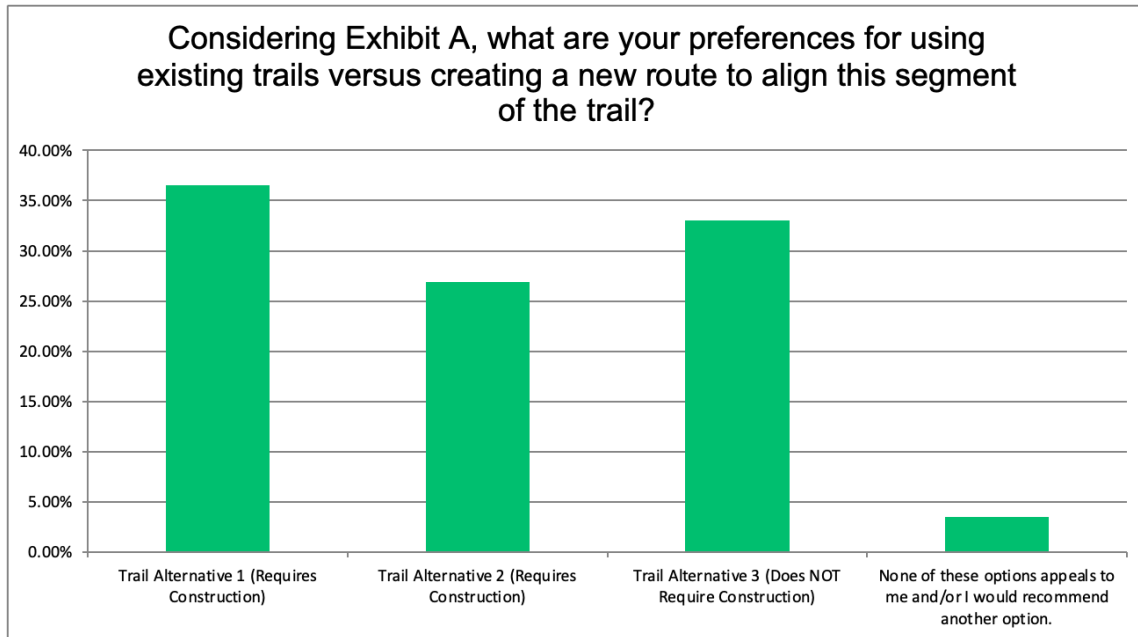
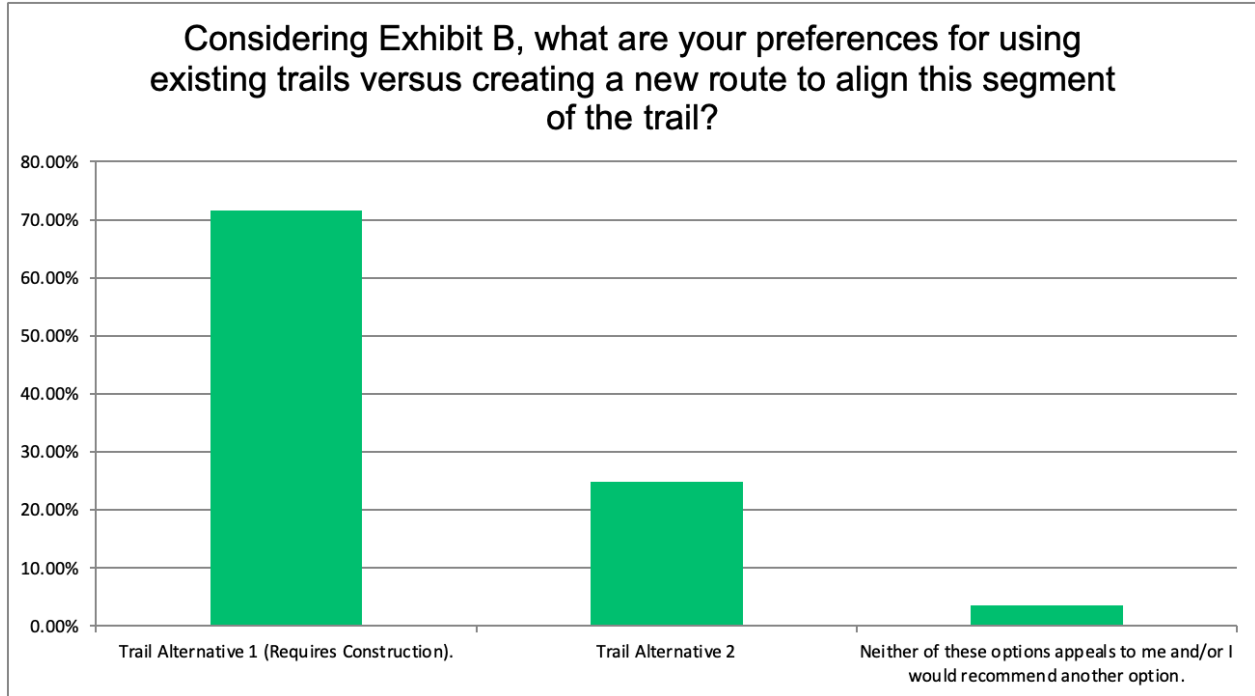


Figure 14, Graph of Feedback Received for Exhibit Area A

Respondents show a slight preference for Trail Alternative 1 (37%) over Trail Alternative 2 (27%) and Trail Alternative 3 (33%). When combined, most respondents (64%) prefer a trail alternative that requires construction, citing their preference for a more direct route with views of the valley, while still providing the option for a more scenic and longer route via the existing trail. However, a large portion of respondents (33%) prefer using the existing trail because it provides a more naturalistic and scenic route, while also requiring fewer resources (i.e. less costly) and having a shorter timeline to completion (i.e. no construction would expedite completion).

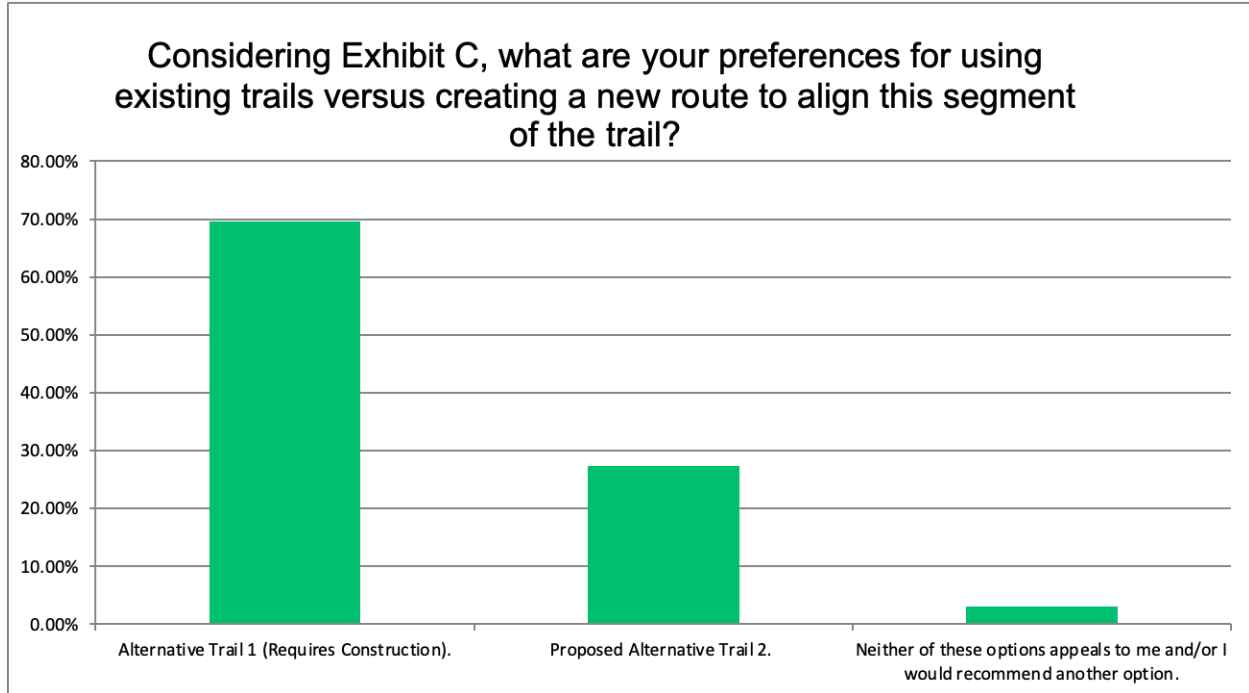
**Question 10: Considering Exhibit B, what are your preferences for using existing trails versus creating a new route to align this segment of the trail?**



**Figure 15, Graph of Feedback Received for Exhibit Area B**

Many respondents prefer Trail Alternative 1 (72%) citing their preference for the most direct and safest route, though many qualified their response suggesting that it would depend on the design and construction of the crossing. Several respondents were emphatic that the proposed detour is unacceptably long and some suggested that it would result in trail users crossing the roadway unsafely to avoid the extra distance. Nearly 25% of respondents prefer Trail Alternative 2 even though it adds a significant distance when compared to Trail Alternative 1. Some respondents suggested that the current crossing (at Red Rock Canyon Road) is already in use, and therefore, a new crossing is redundant and unnecessary. Others suggested that they prefer the longer distance as it provides a more scenic route, while others cited their disapproval of spending the money for new construction.

**Question 11: Considering Exhibit C, what are your preferences for using existing trails versus creating a new route to align this segment of the trail?**



**Figure 16, Graph of Feedback Received for Exhibit Area C**

Most respondents prefer Trail Alternative 1 (70%) vs. Trail Alternative 2 (27%), showing a strong preference for the most direct and shortest route, mirroring responses and rationale provided to Question 10.

### **3.2 Public Engagement: Conclusions And Recommendations**

In each alternative trail scenario, most respondents (70% or >) reported a preference for trail alignments that result in more direct routes, even though these options require construction and therefore, investment of more time and resources (i.e. money). While respondents are interested in the most direct routes, many qualified their preference for direct routes by emphasizing the utmost importance of safe connections and crossings. These respondents often cited their interest in views of the valley and easier access to the urban center. Respondents who selected the non-construction routes (25% to 33%) typically cited their preference for using existing trails to avoid disturbance to the natural landscape and/or to save money and time. Some also cited their preference for longer treks and access to more rural and naturalistic landscapes.

Considering the diverse opinions and preferences expressed by survey respondents, the initial decision to align the main trail path closer to the desert edge, as opposed to abutting existing development, strikes the right balance. This approach aligns with the original vision for the VVRT. Additionally, it offers distinct options at crucial connection points, enabling individuals to prioritize routes. Some routes are more direct but necessitate construction, while others are less direct and require no construction. This strategy aims to accommodate various preferences and maintain alignment with the trail's original vision.



Based on the positive outcomes of our survey, upcoming public engagement initiatives should also utilize surveys and incorporate visuals, including maps and photos, to better inform the public. It is important to note that some respondents reported having difficulty interpreting the maps included in the survey, noting that they were “too small”, “difficult to see”, and “hard to read”. Future survey exhibits should be designed with this constructive feedback in mind. Furthermore, a more in-depth examination of safety concerns should be conducted, specifically focusing on the potential dangers posed by vehicular traffic along the trail and at key connection points as portrayed in Exhibit Areas A, B and C in this study. This approach would enhance the development of effective safety measures to address potential issues.

### **3.3 Environmental Constraints Analysis Purpose**

#### **3.3.1 Proposed Alternatives and Activities**

There are three areas with alternative trail alignments proposed for the Project Area (**Appendix A – Overview Map**).

Exhibit Area A is in an undeveloped area near a deep wash system west of Bishop Gorman High School and the East Russell Road/South Hualapai Road intersection, and east of the Red Rock National Conservation Area (**Appendix A, Exhibit A**). Area A has three alternatives proposed; Alternatives A1 and A2 require the construction of a pedestrian crossing structure to be built over a large dry wash; Alternative A3 is a no-build alternative using existing trails to detour around the wash system, with a significantly longer route than A1 or A2.

Exhibit Area B is located along Blue Diamond Road and proposes two alternatives (**Appendix A, Exhibit B**). Alternative B1 proposes to utilize an existing pedestrian crossing at Red Rock Canyon Road and Blue Diamond Road to cross the highway. Alternative B2 proposes to construct a new pedestrian crossing near Hualapai Way to cross Blue Diamond Road, creating a direct crossing rather than requiring users to travel along Blue Diamond Road before being able to cross.

Exhibit Area C is in Sloan, Nevada (south end of the Las Vegas Valley), along Interstate 15 (I-15) and proposes two alternatives as well (**Appendix A, Exhibit C**). Alternative C1 proposes to utilize an existing pedestrian crossing at Sloan Road to cross over I-15. Alternative C2 proposes to construct a new pedestrian crossing farther north along I-15, creating a direct crossing rather than requiring users to travel along Interstate before being able to cross.

#### **3.3.2 Disturbances**

Areas utilizing existing trails would not create additional permanent disturbance; however, trails may require additional blading/grading for maintenance or improvements. Improvement of existing trails may draw in more users to the area. Underdeveloped areas along the proposed alignment may also require the construction of new or significantly improved connecting trails. Areas where additional trail development is proposed may require the use of heavy equipment for grading and leveling of new trails. The grading of new trails would create permanent disturbance approximately eight to 14 feet wide depending on the terrain. Construction would also create temporary noise and visual disturbances, in addition to generating dust and exhaust (air pollution).

Areas proposed for the construction of a crossing structure, such as a pedestrian bridge, would require heavy equipment and traffic controls. Crossing structure construction would have

temporary ground, visual, air quality, and noise disturbance during construction. Permanent impacts would include visual impacts as well as impacts related to increases in pedestrian traffic.

### **3.4 Habitat Assessment**

BEC scientists reviewed readily available climate, geological, soil, vegetation, and similar data from federal and state databases. BEC scientists used the information collected to develop a preliminary habitat characterization of the Project Area then compiled a preliminary list of plant and animal species of concern potentially present within the Project Area that could be impacted by Project construction and/or use.

#### **3.4.1 Topography and Setting**

The Project Area ranges in elevation from 2,600 to 3,500 feet above sea level (**Appendix A, USGS Topographic Map**) (USGS, 2013). The Project Area has uneven topography with hills, washes, and steep slopes.

#### **3.4.2 Climate**

The Western Regional Climate Center (WRCC) was used to collect weather and climate characteristics near and around the Project Area. The Red Rock Spring Mountain Ranch, Nevada Cooperative Station (266691), located approximately five miles west of the Project Area (WRCC, 2009), was the closest station with consistent data; values for the Project Area may vary but not to a degree that would nullify the following generalization. Temperatures in and around the Project Area ranged from a minimum of 21.8 degrees Fahrenheit (°F) to a maximum of 116.00°F between 2000 and 2017. The station reported an average annual precipitation of 11.64 inches between 1977 and 2016, with the wettest month being February and the driest month being June.

#### **3.4.3 Aquatic Features**

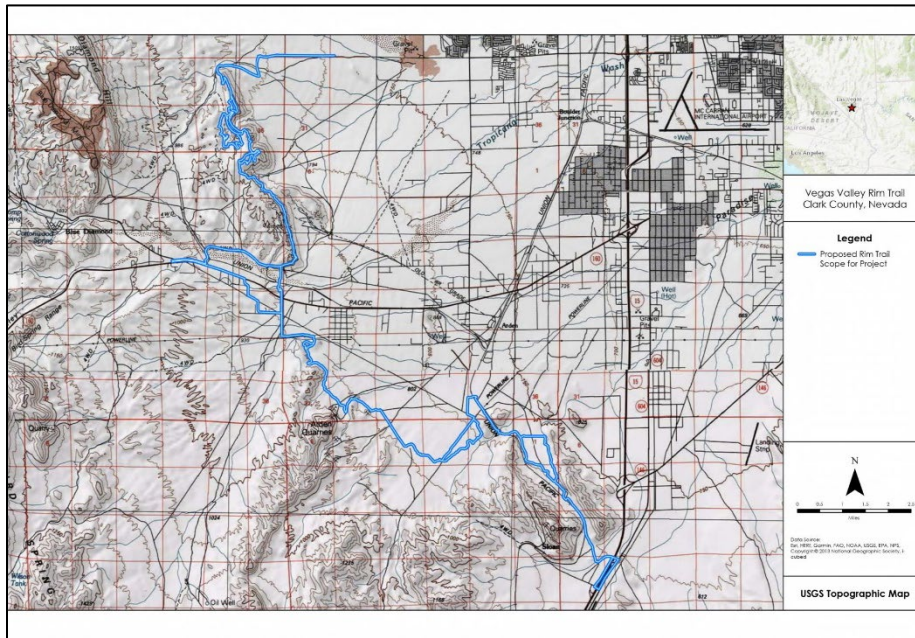
Aerial imagery from Google Earth, US Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) (USFWS, 2023), and USGS topographic maps (USGS, 2013), were reviewed to identify water features near or within the Project Area with a potential to provide suitable habitat for special status or sensitive species.

No waterways with relatively permanent water are present within the Project Area. The closest feature with relatively permanent water to provide aquatic habitat is the Colorado River approximately 27 miles to the east. The closest water feature with the potential for riparian habitat is the lower reaches of the Las Vegas Wash located approximately 17 miles east of the Project Area.

The Project Area contains many ephemeral dry washes originating from the Spring Mountains and Bird Spring Mountains to the west and south, respectively. Most of the ephemeral wash features are characterized as nontidal wetlands dominated by trees, shrubs, and persistent emergent or intermittent seasonally flooded riverine streambed features (USFWS, 2013).

Ephemeral dry washes only flow in response to storm events and do not have consistent periods of flowing or standing water (**Appendix A, National Wetlands Inventory**).

There are multiple historic springs approximately two miles east of Area B that may experience seasonal, or storm event related flowing or standing water (**Figure 17**). These springs occur outside of the Project Area and would not be impacted.



**Figure 17. A USGS Topographic Map highlighting the locations of historical springs in proximity to Area B**

### 3.4.4 Vegetation Associations

USGS National Southwest Regional Gap analysis Program (SWReGAP) data was used to determine the expected vegetative cover and ecological units for areas within the Project Area proposed for additional construction or development of new trails.

According to the SWReGAP output, the Project Area is primarily composed of *Sonora-Mojave Creosotebush-White Bursage Desert Scrub*. Additionally, Areas A and B contain steep outcrops and hills composed of *North American Warm Desert Bedrock Cliff and Outcrop* (**Appendix A, Area A: SWReGAP Land Cover and Area B: SWReGAP Land Cover**) (Lowry, 2005). There are small pockets of *Sonora-Mojave Mixed Salt Desert Scrub* in Area B and *Inter-Mountain Basins Semi-Desert Shrub Steppe* in Areas A and B around existing trails. Area C also contains a classification for *Developed, Medium – High Intensity* along the I-15 corridor. The landcover systems in the Project Area are typical and common for the Mojave Desert and southern Nevada.

The *Sonora-Mojave Creosotebush-White Bursage Desert Scrub* system forms the vegetation matrix in broad valleys, lower bajadas, plains, and low hills in the Mojave and lower Sonoran deserts. This desert scrub is characterized by a sparse to moderately dense layer (2% to 50% cover) of xeromorphic microphyllous and broad-leaved shrubs. Creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*) are typical dominants, but many different shrubs, dwarf-shrubs, and cacti may co-dominate or form typically sparse understories. Associated species may include four-wing saltbush (*Atriplex canescens*), desert-holly (*A. hymenelytra*), brittlebush (*Encelia farinosa*), Nevada ephedra (*Ephedra nevadensis*), Anderson's wolfberry (*Lycium andersonii*), and beavertail cactus (*Opuntia basilaris*). The herbaceous layer is typically sparse but may be seasonally abundant with ephemerals. Herbaceous species such as

spurge (*Chamaesyce* spp.), desert trumpet (*Eriogonum inflatum*), fluff grass (*Dasyochloa pulchella*), three-awn grass (*Aristida* spp.), forget-me-not (*Cryptantha* spp.), fiddleleaf (*Nama* spp.), and scorpionweed (*Phacelia* spp.) are common (Lowry, 2005).

The *North American Warm Desert Bedrock Cliff and Outcrop* system is found from subalpine to foothill elevations and includes barren and sparsely vegetated landscapes (generally less than ten percent plant cover) of steep cliff faces, narrow canyons, and smaller rock outcrops of various igneous, sedimentary, and metamorphic bedrock types. Also included are unstable scree and talus slopes typically occurring below cliff faces. The species present are diverse and may include Bigelow's beargrass (*Nolina bigelovii*), teddy-bear cholla (*Opuntia bigelovii*), and other desert species, especially succulents. Lichens are predominant lifeforms in some areas. This habitat may include a variety of small desert shrublands, less than five acres in size, from adjacent areas (Lowry, 2005).

The *Sonora-Mojave Mixed Salt Desert Scrub* system includes extensive open-canopied shrublands of typically saline basins in the Mojave and Sonoran deserts. Stands of this association often occur around playas. Substrates are generally fine-textured, saline soils. Vegetation is typically composed of one or more *Atriplex* species such as four-wing saltbush (*A. canescens*) or all-scale saltbush (*A. polycarpa*) along with other species of *Atriplex*. Species of iodine bush (*Allenrolfea* spp.), glasswort (*Salicornia* spp.), seepweed (*Suaeda* spp.), or other halophytic plants often co-dominate. Graminoid species may include alkali sacaton (*Sporobolus airoides*) or saltgrass (*Distichlis spicata*) at varying densities (Lowry, 2005).

The *Inter-Mountain Basins Semi-Desert Shrub Steppe* system occurs throughout the Intermountain western U.S., typically at lower elevations on alluvial fans and flats with moderate to deep soils. This semi-arid shrub-steppe is typically dominated by graminoids (more than 25% cover) with an open shrub layer but includes sparse mixed shrublands without a strong graminoid layer. Characteristic grasses include Indian rice grass (*Eriocoma hymenoides*), blue grama (*Bouteloua gracilis*), desert saltgrass, needle-and-thread grass (*Hesperostipa comata*), Galleta grass (*Pleuraphis jamesii*), Sandberg bluegrass (*Poa secunda*), and alkali sacaton (*Sporobolus airoides*). The woody layer is often a mixture of shrubs and dwarf-shrubs. Characteristic species include four-wing saltbrush, sand sagebrush (*Artemisia filifolia*), Greene's rabbitbrush (*Chrysothamnus Greenei*), yellow rabbitbrush (*Chrysothamnus viscidiflorus*), jointfir (*Ephedra* spp.), rubber rabbitbrush (*Ericameria nauseosa*), broom snakeweed (*Gutierrezia sarothrae*), and winterfat (*Krascheninnikovia lanata*). Scattered big sagebrush may be present but does not dominate. The general aspect of occurrences may be either open shrubland with patchy grasses or patchy open herbaceous layer (Lowry, 2005).

The *Developed, Medium – High Intensity* system is composed of *Developed, Medium Intensity* and *Developed, High Intensity*. *Developed, Medium Intensity* is characterized as a mixture of constructed materials and vegetation. Impervious surface accounts for 50 to 79% of the total cover. These areas most commonly include single-family housing units. *Developed, High Intensity* is characterized as areas where people reside or work in high numbers. Examples include apartment complexes, row houses, and commercial areas. Impervious surfaces account for 80 to 100% of the total cover.

### 3.5 Evaluation of Environmental Factors

#### 3.5.1 Wildlife

BEC scientists queried the agencies and databases discussed to compile an inventory of sensitive species with the potential to occur in the Project Area. The US Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) and the Nevada Department of Wildlife (NDOW) databases were queried on January 3, 2024, to gather information on all Federally-listed Threatened, Endangered, and Candidate species, and critical habitat which may occur in the vicinity of the Project Area (**Appendix B – Agency Responses**).

##### **Federally Threatened and Endangered Species**

Five species Federally Protected under the Endangered Species Act of 1973 (ESA) have been identified as being potentially present in the vicinity of the Project Area. Some species have been granted further protection under the Migratory Bird Treaty Act (MBTA) of 1918 and/or Nevada Administrative Code Chapter 503 (NAC 503).

The Project is located predominantly on undeveloped land adjacent to urban neighborhoods. The IPaC species list from the Southern Nevada Fish and Wildlife Office indicated four species listed under the ESA and one identified as a Candidate for listing under the ESA occur within the region of the Project Area and therefore may occur in the vicinity of the trail network.

The species include:

- southwestern willow flycatcher (*Empidonax traillii extimus*), a Federally and State Endangered bird species
- Pahrump pool fish (*Empetrichthys latos*), a Federally and State Endangered fish species
- yellow-billed cuckoo (*Coccyzus americanus*), a Federally and State Threatened bird species
- Mojave Desert tortoise (*Gopherus agassizii*), a Federally and State Threatened reptile species
- monarch butterfly (*Danaus plexippus*), a federal Candidate insect species

No critical habitat was identified within the in the vicinity of the Project Area.

##### **Evaluation**

There is potential for Threatened and Endangered Species to occur within the Project Area based on the adjacent vacant desert landscape.

The southwestern willow flycatcher has been observed in desert riparian habitats along bodies of water where willow (*Salix* spp.), desert broom (*Baccharis* spp.), salt cedar (*Tamarisk* spp.), or other riparian vegetation is present. This type of riparian habitat is not present in the Project Area.

The Pahrump pool fish is endemic to the Mojave Desert, specifically to the Manse Spring system in Pahrump Valley, Nevada. There is no habitat present in the Project Area to support this pool fish.

The yellow-billed cuckoo uses densely wooded habitat with a dense understory of vegetation near streams and marshes. Nesting habitat includes areas with willows along streams or rivers. This habitat is not present in the Project Area.

The desert tortoise lives in open desert habitats with sparse vegetation. The mapped range of the desert tortoise extends into the Las Vegas Valley. NDOW reported one direct sighting of a Mojave Desert tortoise within the Project Area. The species has the potential to occur in the project area due to its connectivity to and presence in open desert habitat.

The monarch butterfly is widespread and scattered with migratory patterns throughout the State of Nevada. The species requires milkweed (*Asclepias* spp.) as host plants for larvae and utilizes large shrubs and trees for roosting and numerous desert shrub species as nectar sources for adults. The species has the potential to occur in the Project Area based on its movement/migratory patterns and potential for nectar plants to be present near the Project Area.

### ***Migratory Birds***

USFWS and NDOW reported the potential for migratory birds to occur in the Project Area, including various raptors. Migratory birds are Federally protected under the MBTA and State Protected under NAC 503.045. USFWS reported five migratory birds of conservation concern may occur in the Project Area. NDOW reported 23 species of raptors as having been reported to have ranges overlapping the Project Area.

While these agencies have identified this list of species as having the potential to occur in the area, the actual number of migratory birds with the potential to occur within the Project Area throughout the various seasons is significantly higher.

### ***Nevada Game Species***

NDOW reported one direct observation of a State Game Bird, the Inca dove (*Columbina inca*) within the Project Area. The Inca dove is known in the southwest U. S. and Central America. They can be found year-round and have adapted to living in urban residential areas. The Inca dove may occur within the Project Area based on its proximity to residential areas.

Additionally, NDOW reported bighorn sheep (*Ovis canadensis canadensis*) distribution as being mapped within the Project Area. Bighorn sheep are classified as being a State Sensitive Game species and are protected under NAC 503.020. Bighorn sheep may occur within the Project Area based on the proximity to the mapped distribution for the species (**Figure 18**).

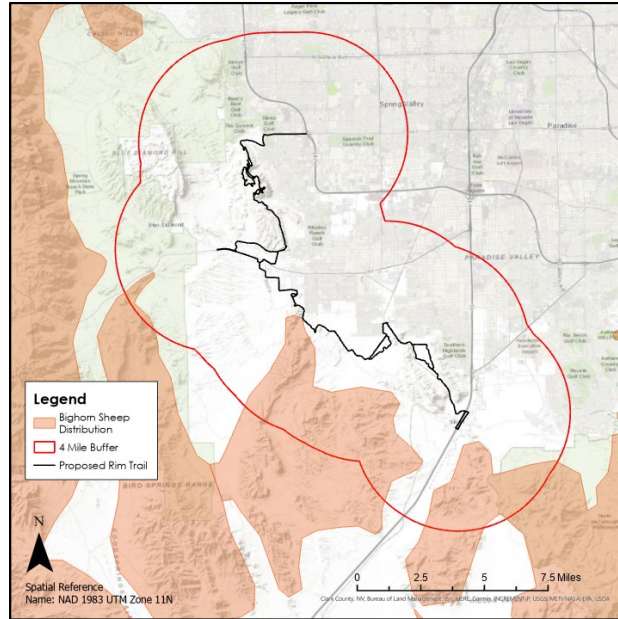


Figure 18 Big Horn sheep Distribution Map Provided by NDOW.

### **Bats**

NDOW reported the potential for bats to occur within the Project Area based on the proximity to abandoned mines features. Nevada has 23 species of bats, all of which have been classified as State Protected under NAC 503.030 as of March 3, 2022. Bats can usually be found roosting in caves and cliffs. Bats are also known for roosting in abandoned mines. Bats have the potential to occur in the Project Area based on the proximity to the Desert Hills, which contain numerous former mine features where bats may be present as well as steep cliffs.

### **Other Wildlife**

NDOW reported two other non-protected wildlife species having been directly observed in the Project Area; the northern desert night snake (*Hypsiglena chlorophaea*) and zebra-tailed lizard (*Callisaurus draconoides*). Snakes, scorpions, and insects are common in the desert and would likely be present along hiking trails with native vegetation. Although human activity could deter some native wildlife from entering the Project Area, encounters with the local wildlife would be expected.

### **3.5.2 Vegetation**

The mapped land cover within the Project Area is common throughout the Mojave Desert. An increase in human activity in the area and development of new trails would result in disturbance to the native vegetation. Areas requiring trail improvements would result in new temporary disturbance. Areas of the trail requiring the use of heavy equipment to construct a new trail would result in permanent disturbance to vegetation.



Conducting trail maintenance and establishing new trails may result in a decrease in unofficial trails, which may decrease disturbance to the vegetation outside of the proposed trail alignment within the Project Area.

There is potential for Critically Endangered and State Protected plant species to occur within the Project Area. Species-specific surveys and mitigation measures should be implemented prior to and during construction to ensure compliance with the ESA and State Regulations. The proposed trail alignment maximizes the use of existing trails to decrease the impact on vegetation.

### 3.5.3 Water Resources

#### *Waterways*

Sections of the proposed trail alignment cross large washes. Increased human activity within these washes may disturb the ecology of the wash through increased erosion and compaction of soils.

Alternatives A1 and A2 in Area A are located within a large wash with steep slopes (**Figure 19**). These alternatives propose to construct pedestrian crossings to prevent trail users from trekking directly into the wash. Both alternatives would require construction and the use of heavy equipment. These alternatives would have a temporary impact on the wash system and create a permanent structure; however, constructing a pedestrian crossing structure (bridge) may disincentivize trail users from developing new unofficial trails through the wash to avoid a longer detour around it.



**Figure 19** A satellite image displaying a prominent wash in the vicinity of Area A.

Alternative B1 in Area B proposes to utilize an existing trail to travel across a braided wash system with dense vegetative cover (**Figure 20**). Alternative B2 proposes to construct a new pedestrian crossing to circumvent a longer detour along Blue Diamond Road. Construction of the pedestrian crossing proposed for Alternative B2 would result in Bridge construction would cause additional disturbance near the crossing, but it would reduce the use of the roadside trail. There are no mapped wetlands, riparian habitat, or springs within the Project Area.





Figure 20. A satellite image displaying a prominent wash in the vicinity of Area B.

### Floodplains

Areas B and A of the Project Area are not located within a Federal Emergency Management Agency (FEMA)-identified Special Flood Hazard Area (SFHA), they are located within Zone X, Area of Minimal Flood Hazard, as depicted on the National Flood Hazard FIRMette Panels Numbers 32003C2550F, effective November 16, 2011; 32003C2910F, effective November 16, 2011; and 32003C2925D, effective September 27, 2002 (**Figures 20 and 21**).



Figure 21. A FEMA Flood Map delineating flood hazards in Area A.

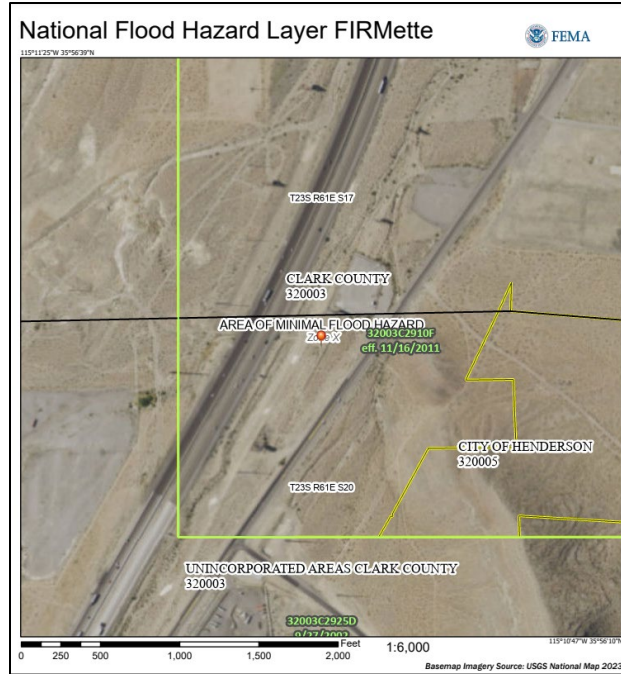


Figure 22 A FEMA Flood Map delineating flood hazards in Area C.

Area B is also in SHFA Zone X – Area of Minimum Flood Hazard, as depicted on the National Flood Hazard FIRMette Panel Number 32003C2550F, effective November 16, 2011 (Figure 20). The proposed trail would stay outside of the delineated zone A which is constrained within the storm water facility.

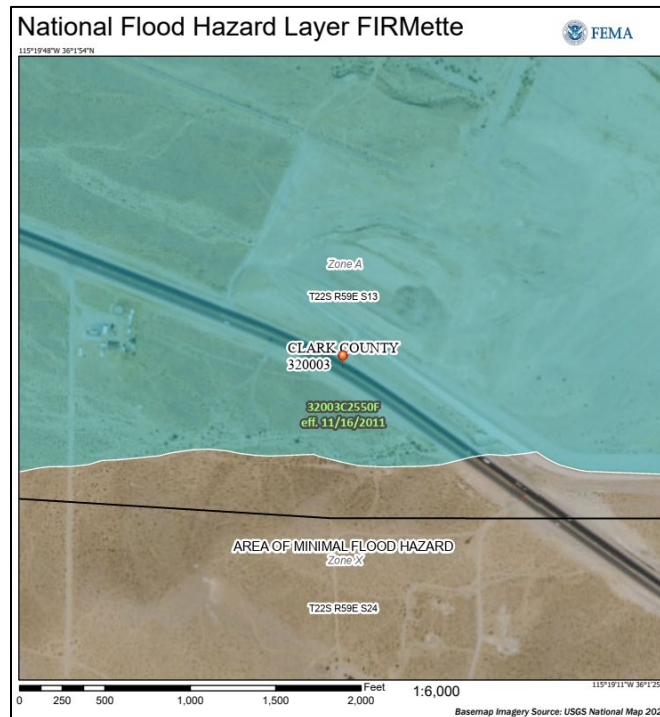


Figure 23 A FEMA Flood Map delineating flood hazards in Area B.

The remainder of the proposed trail would encounter varying levels of mapped flood hazards. However, in most areas, there are either existing established trails or unofficial trails, necessitating only trail maintenance or restoration efforts. It is not anticipated that the proposed trail would significantly alter the flow of floodwater.

For sections of the trail with a higher susceptibility to flooding, additional maintenance would be necessary following flood events to ensure its integrity and usability.

### **3.5.4 Air Quality, Noise, and Visual Impacts**

#### ***Air Quality***

Areas of the country where air pollution levels persistently exceed the National Ambient Air Quality Standards (NAAQS) may be designated as areas of “nonattainment” by the Environmental Protection Agency (EPA). The EPA Green Book provides detailed information about NAAQS designations, classifications, and nonattainment status.

Portions of Clark County are in nonattainment for 8-hour Ozone and are subject to air quality maintenance plans for carbon monoxide (CO) and particulate matter less than or equal to 10 microns in aerodynamic diameter (PM10).

This Project will be in conformance with Clark County’s portion of the Nevada State Implementation Plan through following applicable regulatory, non-regulatory, and quasi-regulatory regulations and permitting requirements.

Construction activities where blading or pedestrian crossing construction is required can contribute to air pollution through the operation of diesel engines, generators, vehicle use, and working with toxic materials. Construction activities for the Project would not be a significant generator of ozone.

All construction sites generate dust. Construction dust is classified as PM10. The proposed Project could potentially disturb an area greater than one acre, therefore a Dust Control Permit must be obtained from the Clark County Department of Air Quality.

#### ***Noise***

Construction activity for the Project would be expected to create noise during construction; however, following construction, the Project is not expected to generate noise not typical for the area. Additional use of the new and/or improved trail could also increase use of the trails. Increased numbers of trail users could potentially also increase noise levels in the natural environment.

#### ***Visual Impacts***

The Project proposes to utilize existing trails throughout a majority of the Project Area. Sections requiring trail maintenance would not be visible from the nearby residential areas. New trails would be developed at the ground level and the view from residential areas would be obstructed by ground level landcover such as shrubs, rocks, and slopes. Additionally, the trail color would blend in with the natural environment of the surrounding area. The trails would be visible to pedestrians using the trails or near the trail.

Alternatives A1 and A2 in Area A propose the construction of a pedestrian crossing structure over a large wash system. The Alternative A1 bridge would be located on the west side of the large ridge and be east facing. The A1 bridge would be visible from the nearby residential areas while also providing a scenic viewpoint of the Las Vegas Valley for trail users. The bridge may not fit the natural landscape of the surrounding area, but visual impacts may be minimized by using certain colors of paint to blend with its surroundings and minimizing the structure. The residential buildings may also obstruct the direct line of sight to the bridge from other nearby neighborhoods or adjacent residences (**Figure 24**).

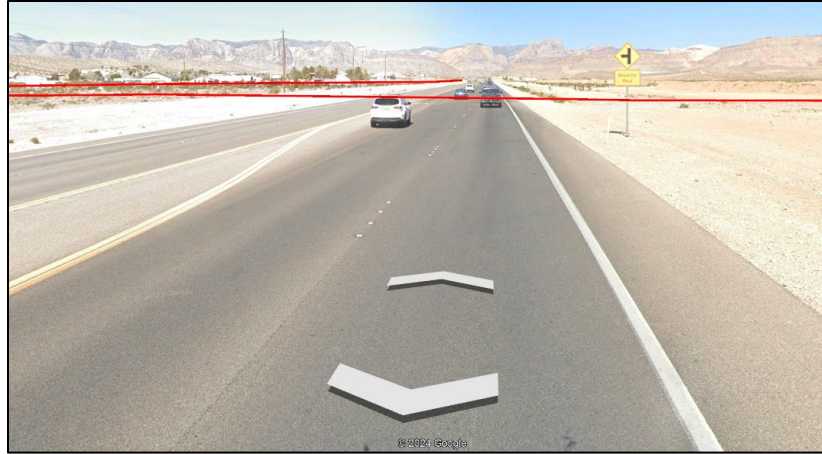


**Figure 24.** A Google Streetview image of the proposed Alternative A1 location from a residential area.

The Alternative A2 pedestrian crossing would be located on the east side of the ridge along the wash and be west facing. The Alternative A2 structure would not be visible from the east side of the ridge. Alternative A3 would use existing trails and would not have a visual impact on the surrounding area.

Alternative B1 in Area B would utilize an existing road crossing near Red Rock Canyon Road and would not have a new visual impact on the surrounding area. The construction of a new pedestrian crossing proposed by Alternative B2 would be visible to cars driving along Blue Diamond Road, other pedestrians, and the nearby residences to the west. Alternatively, the B2 crossing could be at ground level and utilize pedestrian safety measures rather than a bridge structure. There are no similar structures near the proposed Alternative B2 area; therefore, the crossing may alter the visual aesthetic of the area (**Figure 24**). A study would need to be done to determine which type of pedestrian crossing would be most feasible based on cost and safety considerations.





**Figure 25. A Google Streetview image of the proposed Alternative B2 location.**

Alternative C1 would utilize an existing pedestrian crossing near Sloan and would not have a visual impact on the surrounding area. The bridge structure proposed in Alternative C2 would be highly visible and stand out due to no other similar structures in its direct vicinity and the relatively flat topography of the immediate area (**Figure 26**). The pedestrian bridge would be visible to cars traveling along I-15, other pedestrians, and the businesses and residences in Sloan, Nevada.



**Figure 26. A Google Streetview image of the proposed Alternative C2 location.**

### **Cultural Resources**

Projects with a federal nexus (Federal Highway Administration) are required to consult with the State Historic Preservation Office (SHPO) prior to beginning of construction according to Section 106 of the National Historic Preservation Act (NHPA). The Project is in areas with a potential for paleontological, archaeological, and historic resources which would need to be evaluated for potential impacts. Through the Section 106 process, Native American tribes with cultural or historic interest in the land would be invited to participate in the consultation process.

The Project Area passes through areas that were previously surveyed for cultural resources during the development of the 2004 Las Vegas Valley Disposal Boundary Environmental Impact

Statement. Additionally, Area C is in the vicinity of one of the six locations that underwent an archaeological investigation for the Southern Nevada Regional Heliport Project.

The Project Area also passes through various historic mining sites, such as the Desert Hills and Blue Diamond Mines. The Las Vegas Valley also contained several historic railways which accessed the area mines. Based on the previous cultural surveys and number of potential resources in the Project Area, surveys would need to be conducted in the Project in areas proposed for disturbance. If historic or cultural resources are found, the areas would either need to be avoided or an interpretive area could be established on that section of the trail.

### ***Environmental Justice***

The proposed Project is not expected to have a disproportionate effect on low-income or minority populations; there would be no displacement of vulnerable populations and the trails, although adjacent to the urban environment, would be constructed in a rural desert area already used for outdoor recreation. The Project would provide additional recreational hiking trails and access to outdoor recreation for all residents of the Las Vegas Valley.

### ***Trail Deterioration and Erosion***

Hiking trails are susceptible to trail deterioration through erosion. The two main factors in trail deterioration through erosion is human traffic and water. Trail erosion can have significant impacts on ecological and recreational environments, as well as public safety.

Regular trails use and human traffic can damage the trails through erosion and compaction. Incorrect use of a trail, such as diverting from the established path, can increase the spread of deterioration and erosion in an area. Soil compaction may create areas where the soil's water absorption ability is impacted and result in flooding during rain events and further cause erosion in waterlogged areas.

The Las Vegas Valley is an arid region experiencing long periods without rain; however, short, and heavy rain events do occur resulting in flash flooding. Flash floods can damage trails, making them unsafe.

Area A could have erosion issues based on its proximity to a large wash. Construction contractors would implement erosional mitigation measures during construction. The pedestrian crossing structures proposed for Alternatives A1, B2, and C2 would need a geotechnical study to assess soil erodibility and stability prior to construction.

Trail deterioration and erosion caused by hikers and rain may have negative impacts to the surrounding vegetation, soil quality, and wildlife. The proposed Project would require regular maintenance for trail upkeep throughout the year, as well as potentially additional trail maintenance following storm events.

## **3.5.5 Public Safety**

### ***General Use Hazards***

The Project would seek to improve public safety through the development of an established trail system in the area. Developing an established trail system could potentially lower the use and

creation of unofficial trails and dissuade the public from accessing areas not within the trail system, reducing impacts to area flora and fauna. The Project could also direct hikers and the public away from hazardous areas (e.g., unstable, steep slopes). Additionally, development of a mapped and established trail may provide better access for emergency response services in the event of an emergency.

***Traffic Hazards***

The proposed Project has the potential to increase pedestrian traffic through the improvement of existing trails and development of new trails.

Additionally, the proposed crossing structures proposed in Areas B and C could potentially increase public safety by providing additional road crossings where none currently exist. This could lower the rate of illegal road crossing (i.e., jaywalking) around Blue Diamond Road and the I-15 near Sloan, Nevada. The proposed Project may increase pedestrian traffic along Blue Diamond Road and I-15.

Sections of the Project propose utilizing existing trails running parallel to the Union Pacific Railroad (**Figure 27**). Increased pedestrian traffic along the railroad tracks may result in unauthorized access to the railroad by the public and increase potential human-train interactions.



**Figure 27. A Google Street View image capturing a trail close to the Union Pacific Railroad (right) and vacant land (left).**

***Physical and Structural Hazards***

The proposed crossing structure in Area A would provide a more direct trail route. However, the steep topography of the area may be a hazard. Alternative B1 in Area B proposes to use a storm water structure near north of Blue Diamond Road as a means of crossing over a large wash. Safety features exist, such as fencing, to prevent the public from accessing hazardous areas. However, use of the storm water structure during periods of heavy rain may introduce additional hazards.

The section of the proposed trail passing through the Desert Hills, north of Area B, has numerous abandoned mines which could pose a risk to public safety if the mine features have not

been properly closed. Establishing a trail through this area would provide access to those abandoned mines and potentially impact public safety.

The project would require additional trail maintenance to improve public safety and address trail deterioration following storm events. Additional public safety measures may require fencing in some areas and secure closures of mines which are still open.

### ***Health Hazards***

Although wildlife along the trail may be deterred by the increase in human activity, an increased use of the hiking trails in the area may result in increased encounters with wildlife, such as snakes, scorpions, and insects. This increase in encounters may result in more animal and insect bites/stings. Additionally, the trails near abandoned mines may result in unauthorized mine exploration that could result in exposure to remnant mine substances/materials and dangerous gasses that could be hazardous as well as bats, which can be carriers of rabies.

## **3.6 Environmental Constraints Assessment**

### **3.6.1 Expansion of the Las Vegas Valley Rim Trail**

The expansion of existing and development of new trails may have minor and short-term impacts in the immediate vicinity from noise and dust; however, these impacts are expected to discontinue once construction is completed. The permanent impacts to the surrounding environment would result in the use of the new trails, the proposed crossing structures, and an increase in human activity in those areas.

The Project proposes to maximize the use of existing trails to minimize impacts on the environment. The Project would need to implement mitigation measures before, during, and after construction to reduce potential impacts on the environmental factors previously discussed.

### ***Improving Existing Trails***

Some areas would require additional trail maintenance or additional grading and would create a temporary disturbance during the improvements, but the impact is expected to be minimal and temporary. Using existing trails would minimize impacts to the surrounding environment and improve trails currently being used. Improving existing trails may reduce the number of unofficial trails being used by providing an established well demarcated trail to follow. The current trail system in the proposed Project Area includes many unmaintained unofficial trails with no directional signage.

### ***Neighborhood Connections***

The Project proposes to establish new neighborhood connections or trailheads for the Rim Trail to allow more access for potential users. The increase in neighborhood connections would allow more trail access, shorten the distance needed to travel for access to the remote hiking areas, and improve public safety. Additional neighborhood connections to the Rim Trail may increase the use of the Rim Trail as a form of recreation and travel. Without the development/improvement of neighborhood connection trails, residents and trail users may be more inclined to take shortcuts (create unofficial trails) to access the Rim Trail.



***Pedestrian Crossing Alternatives***

The addition of pedestrian bridges or crossings would require significant construction, the use of heavy equipment, and create a permanent structure in locations currently without one. Construction activity impacts would be minimal and temporary, but the construction of a new structure would create a visual impact in the area and potentially increase foot traffic. The purpose behind constructing new pedestrian crossings in Areas A, B, and C would be to provide an area of safe crossing for trail users to avoid roads and steep climbs.

All three Areas propose alternatives utilizing existing road crossings or trails but result in significant detours that lengthen the distance a user would travel to get from one side of the obstruction or barrier to the other. These alternatives would improve public safety by providing a safer method to cross major roadways or significant topography.

The non-construction alternatives may have a smaller impact on the surrounding environment because of the use of existing trails and road crossings. There would also be no visual impact or change to the visual aesthetic of the areas.

**3.6.2 Importance of Balancing Trail Development with Environmental Conservation**

Establishing a new trail system in Clark County, with the purpose of connecting to the existing Rim Trail and other existing trails in the County's trail system, is expected to have a positive social effect, providing a new avenue for recreation and outdoor activity. However, conducting trail maintenance and developing new trails would attract more pedestrian traffic to areas that may not be easily accessible to the public which in turn may create future disturbance and have a negative impact on the local ecology.

The Project will need a trail maintenance plan to provide trail upkeep and monitor the negative impacts of the increase to human traffic.

## **4 Implementation Information**

To implement the proposed VVRT trail alignments discussed in the report, there will need to be further communication with the pertinent agencies. Appendix A – Overview Exhibit shows the property ownership map for the parcels of land that the trail alignment is proposed within. When reviewing this exhibit, it is apparent that the entity that will be the most involved is the BLM, as the bulk of the trail distance is on public land. A point worth emphasizing is the permitting hurdles that could face the two short segments proposed within NDOT ROW's. They total to be less than a mile in length, but the coordination and permitting effort for these two segments could require significant lead times and should be anticipated by the County in the future project schedule. On the contrary, there are only a few segments of the trail that will be going within the Right-of-Ways of City of Las Vegas. Because these are utilizing the existing pedestrian sidewalk, the planning and permitting should be limited in scope.

### **4.1 BLM Recreational Leasing and NEPA**

Through contact with representatives at the Bureau of Land Management, below is what the potential permitting process would look like for the establishment of the Rim Trail on public land being managed by BLM. If Clark County does have an existing right-of-way, the process would be to amend that right-of-way. If Clark County does not have the right-of-way, they would need a right-of-way authorization. However, if the trail is “casual use” of the land, acquiring a right-of-way would not be needed. From preliminary discussion with BLM representatives, the establishment of a walking trail on existing unofficial trails would fall under the casual use description. More nuanced conversations will be needed between all parties at the beginning of the permitting process to determine what that would entail and what is the desired outcome for the project.

#### **4.1.1 NEPA BLM Leasing Information**

If the project goes forward utilizing federal lands, there are specific BLM requirements under the Federal Lands Recreation Enhancement Act (REA) of 2004 and the Recreation and Public Purposes Act (R&PP) to consider when leasing BLM land for recreational use (Title 43 of the Code of Federal Regulations (43 CFR), Parts 2740 (Sales) and 2912 (Leases)). R&PP triggers a review of the project under the National Environmental Protection Act (NEPA) to evaluate any federal action. The approval of permits relies on conformance with all applicable land use planning documents and with environmental review in accordance with NEPA. All permit administration will be done in accordance with the NEPA; BLM Manual: H-2930-1 (Recreation Permit Administration) and all associated SRP Instruction Memorandums (IMs) and Information Bulletins (IBs). More specific details will need to be gathered from the BLM Nevada Recreation Clark County contacts.

R&PP leases involve using land for community purposes, even though the land remains under the management and control of the Bureau of Land Management. Any planned use of the land must either directly or indirectly support or benefit the R&PP lands or serve a public purpose. For instance, creating a trail system accessible to the public is an acceptable use of R&PP leased lands.

There is no limit on the amount of land the BLM may lease for recreational purposes and permanent conveyances of land for recreational purposes are made without any charge. Lease periods for non-permanent conveyances may vary but shall not exceed 25 years for governmental entities. Prior to applying for the R&PP lease of the trails, the County would need to consult with the local BLM office. The time of year the application is submitted may affect the processing time. Applications are made on BLM Form 2740-1 and require: a nonrefundable filing fee; a certified copy of a resolution or other evidence authorizing the filing of the application and further authorizing the signing officer to execute the application; draft development plans (extent depends on the character of the land and its acreage, the purpose, public demand, and other factors); and a management plan. The plans should anticipate the development required during the first five years of the project.

Scheduling and review times may vary, however, a general timeframe for the BLM's NEPA process include a 30 to 60-day scoping period, 30 to 60-day comment period on the environmental assessment and 30-day protest period. This does not include the amount of time required to coordinate with the BLM during the drafting of the Environmental Assessment (see discussion in next section), which is typically six months to more than a year.

#### **4.1.2 NEPA Environmental Review**

NEPA is activated by federal actions and/or the utilization of federal funds to support those actions. In the case of the Vegas Valley Rim Trail, the use/lease of federal land to advance the project would trigger the NEPA process. Furthermore, the BLM leasing process mandates the appropriate level of NEPA documentation for completion.

Much of the rim trail is proposed for areas outside of the developed regions in Clark County. It falls beyond the boundaries delineated in the 2004 Las Vegas Valley Disposal Boundary. As a result, the project area has not undergone prior evaluation under the Las Vegas Valley Disposal Boundary EIS and would necessitate a review under the NEPA.

Given most of the land identified for the Vegas Valley Rim Trail falls under BLM management, the NEPA process necessitates close coordination with BLM. Any environmental review must closely adhere to the BLM NEPA Handbook.

The BLM NEPA Handbook provides a screening process to facilitate the determination of environmental review required for a project (**Figure 28**) (BLM, 2008).

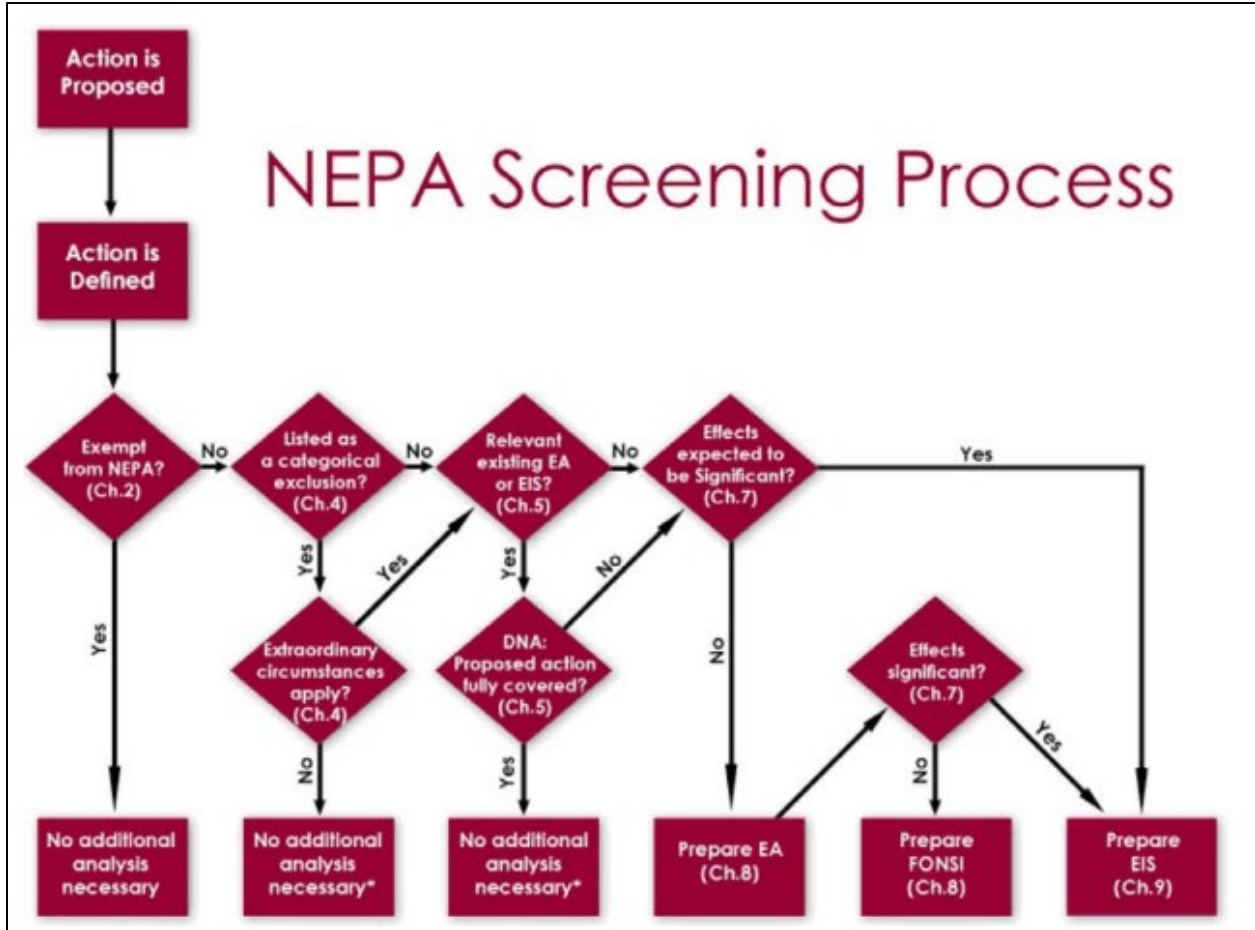


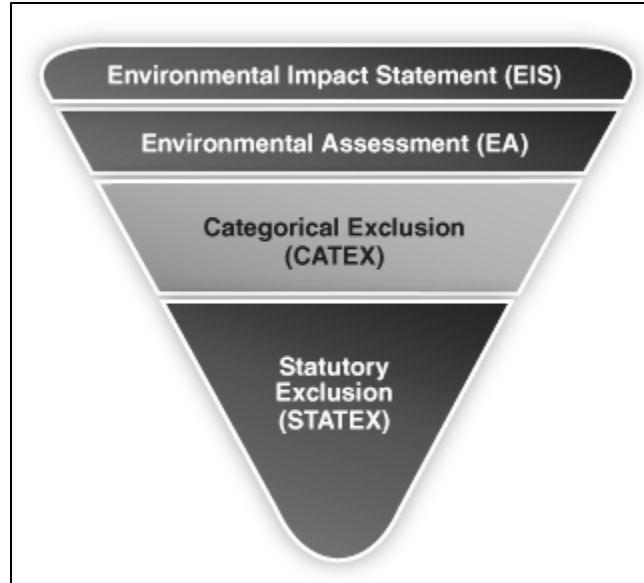
Figure 28. A flowchart of the BLM NEPA screening process.

The Environmental Review (ER) process under NEPA entails three distinct levels of analysis: Categorical Exclusion determination (CATEX), Environmental Assessment/Finding of No Significant Impact (EA/FONSI), and Environmental Impact Statement.

The initial step of the ER involves determining the appropriate level of environmental review, which is accomplished through coordination with BLM. Based on the proposed actions of the project, the two potential levels of environmental review that may be required are either a Categorical Exclusion (CATEX) or an Environmental Assessment (EA).

**Categorical Exclusion (CATEX)**

If the project may qualify for Categorical Exclusion (CATEX), it is advisable to engage with the BLM early in the project design stage. A project may be considered "categorically excluded" if its actions have no significant effect on the environment. In the case of the Vegas Valley Rim Trail project, both BLM leasing process and the use of federal funds would, at the minimum, trigger a CATEX environmental review.



**Figure 29. A BML chart of the different NEPA levels by complexity.**

The CATEX process represents the least complex level of ER and can often be completed through desktop research. The BLM has a CATEX checklist, which includes a comprehensive list of resources to be screened. These resources at a minimum typically encompass:

- Visual Resources
- Noise Disturbance
- Air Quality
- Biological Resources
- Water Resources
- Cultural Resources
- Environmental Justice
- Energy
- Climate Change

For each of these resources, an environmental screening is conducted, requiring a determination of impact, rationale, and mitigation measures if impacts are identified. The CATEX would require providing documentation to support the rationale.

Although a less complex ER, using a CATEX would still require other procedures to be undertaken. This includes consultation with relevant entities such as the Nevada State Historic Preservation Office (NV SHPO) to ensure compliance with the National Historic Preservation Act (NHPA). Additionally, the project must adhere to the requirements of the ESA to address potential impacts on endangered or threatened species and their habitats if present.

#### ***Environmental Assessment/Finding of No Significant Impact***

Should the project's actions not be categorically excluded, an EA would be required to analyze the potential impacts of the project. In the case for this Project, alternatives proposing construction on BLM land or would require additional groundwork that may impact vegetation or

natural habitat, would require an EA to evaluate the level of disturbance the Project may have on the environmental resources.

The EA process will evaluate the proposed project actions and evaluate the environmental impacts to a greater extent. An EA will evaluate the significance of effects and likelihood of those effects on those resources by the proposed actions. Unlike the CATEX, the EA will require public involvement in the preparation of the EA document. Additionally, the entity developing the EA would be required to respond to public comments.

An EA will also require formal consultation with agencies such as the USFWS when developing the document. An EA will be followed by a FONSI should the analysis determine no significant impact on the environment. However, the EA/FONSI are not decision-making documents. To establish a decision, the BLM would follow the submission of the EA/FONSI with a Decision Record (DC), to be signed by the proponent.

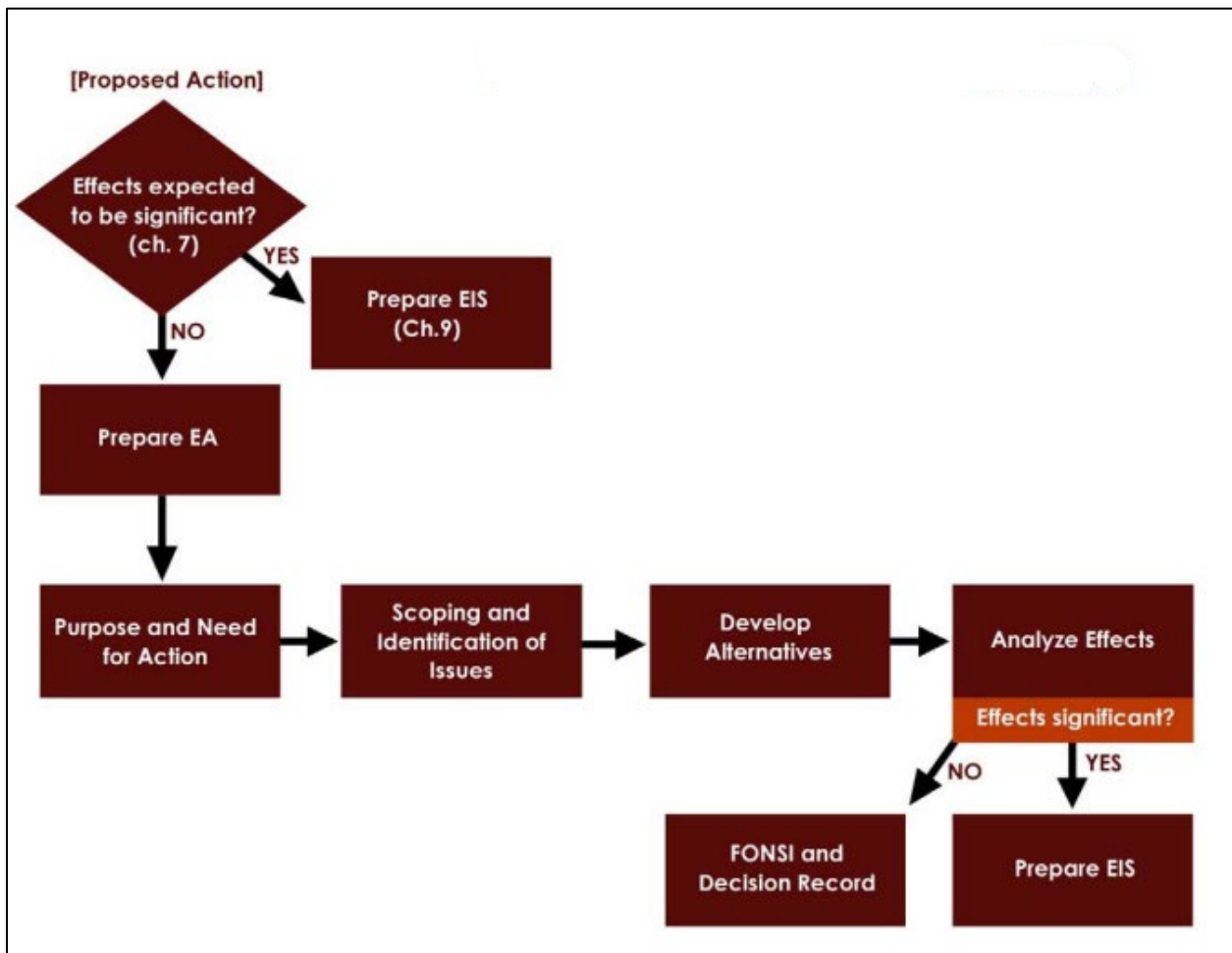


Figure 30. A flowchart of the EA process.



### ***Species Surveys***

Federal agencies can leverage the NEPA process to fulfill other environmental requirements, including compliance with statutes like the ESA, the NHPA, and directives such as the Environmental Justice Executive Order. If the project requires an EA, it may necessitate species-specific surveys, particularly in construction zones and trail enhancement areas. These surveys would be species specific and would have restrictions on the time of the year the surveys could be conducted, which could affect the NEPA review timeline.

### ***Environmental Impact Statement***

The EIS represents a considerably more complex process and document, tasked with assessing the potential impacts of a project's actions that are projected to have a significant adverse effect on the environment. Given the nature of this project's proposed actions, it is not anticipated that the BLM would necessitate the development of an EIS. This determination suggests that the project's potential environmental impacts are not expected to reach a level that would warrant the extensive analysis and documentation characteristic of an EIS.

### ***NEPA Cost and Timeline***

The NEPA process can vary between projects, based on the level of environmental review and the proposed action. Generally, the CATEX represents the simplest and fastest NEPA process, as it bypasses the need for public involvement. Additionally, the CATEX is typically the most cost-effective option, considering the level of review required for completion. However, any additional documentation or surveys required as part of the CATEX process may impact the overall timeline of events.

On the other hand, the EA process tends to be more time-consuming due to the heightened level of detail required for the impact analysis for each resource. Resource surveys are also often necessary as part of the EA process. Although the public comment period typically lasts around 30 days, the duration for the BLM to review and provide comments on all documents and findings may vary. It is advisable to engage the BLM as early as possible to establish a clear timeline for the project and ensure timely completion of all required steps. An EA level of review typically requires six months to 18 months to complete.

## ***4.2 Privately Owned Property***

When looking at land ownership depicted on Exhibits A through D the reader may notice privately owned parcels beneath portions of the proposed alignment for the VVRT. These privately owned parcels are generally undeveloped and planned for low-density single-family residential development with supporting land uses to include agriculture and neighborhood-serving public facilities such as parks, trails, and open space. These parcels could also be used for mining activities. On the privately owned parcels that are abutting existing residential developments it could reasonably be assumed that these parcels may be developed with residential uses in the future. Per development regulations, off-site improvements including sidewalks are typically

required. However, there is no guarantee that (a) sidewalks would be included as they may be waived or otherwise not required (b) the VVRT path's intersecting points will be honored and (c) any residential subdivision will not be gated or restrict access to residents only. This presents a unique opportunity for Clark County. As one of the agencies that will be granting approval of the development plans, it is possible for the County to coordinate with the owner(s) to provide a through path for those utilizing the trail. This could range from providing locations within future rights-of-way for the development of trails to securing easements for trails within the development to ensure proper trail integration and connectivity.

The maps for the exhibit areas depicts several privately owned parcels located along the trail alignment. Exhibit Area A depicts alternative 1 and 2 crossing through one large privately owned parcel. The County would need to work with the property owner to secure easements for a trail. If a trail through this privately owned land cannot be achieved, it is possible to bypass the private parcel and stay on public land to the east.

Exhibit Area B depicts alternative 2 traversing through several privately owned parcels along Blue Diamond Road. As alternatives 1 and 2 traverse to the southwest, they primarily utilize the public ROW but do cross through one or more privately owned parcels. Easements for a trail through these privately owned parcels may not currently exist and would need to be secured. The neighborhood connections proposed also may require easements if they are not located in the public ROW.

Exhibit Area C depicts both alternatives 1 and 2 crossing through several privately owned parcels. This alignment would also require coordination for easements through privately owned parcels. Potential refinement of the Exhibit Area C alignments to make use of the public ROW and existing or future planned interchanges is recommended. However, due to the relative lack of appropriate routes within existing public ROWs, the challenges resulting from a trail alignment through privately owned parcels remains.

Exhibit Area D depicts alternatives 1 and 2 primarily sited on public lands, a majority of which is under management of the BLM. In the far northwest portion of the Exhibit Area D alignments, the alternatives 1 and 2 cross through a privately owned parcel which would require easements or other means to secure access. As alternative 1 and 2 lead to the southeast, they remain on publicly owned land or along public ROWs. Alternative 1 would require additional potential private property crossings in the area approximately 1,500 feet south of Buena Martina way. However, the alignment for alternative 1 could be refined to stay on publicly owned land in the vicinity, or the route could follow alternative 2 which already remains on publicly owned lands.

For all Exhibit Areas (A, B, C, & D) further planning and study of the specific Exhibit Areas and alignments is recommended to minimize the need for private property authorizations and to maximize the use of publicly owned lands and/or existing official and unofficial trails.

### **4.3 Nevada Department of Transportation**

Proposing the construction of a pedestrian crossing within the NDOT right-of-way is considered a permanent encroachment. There are two permitting components that must be secured prior to performing work within the right-of-way: NDOT-Approved Traffic Control Plan and an Encroachment Permit. Advanced meetings to review preliminary plans with an NDOT District Traffic Engineer are recommended to avoid making multiple sets of plans before construction elements are acceptable for review. Clark County should assume a timeframe of approximately six to nine months to secure necessary approvals. It can be anticipated that NDOT will require a traffic study of each highway crossing (I-15 and SR160) along with accompanying engineering plans produced to NDOT specifications.

## 5 Cost Estimation - Operation and Maintenance

Proper operation and maintenance (O&M) are essential to safety, long-term success and to prolong the useful life of trails. It is important to consistently maintain the trails and associated facilities, typically on a yearly basis at a minimum, to reduce the overall cost of maintenance. Trails that lack consistent maintenance or are neglected for an extended period typically result in major rehabilitation or repair needs that come at a higher cost. This section aims to analyze these potential costs and provide the County with the background information necessary to establish an anticipated yearly maintenance budget.

Many factors contribute to the cost of trail O&M to sustain the trails at current and future levels of infrastructure. These include factors such as the type of trail material (dirt, concrete, asphalt, etc.), surrounding terrain, accessibility, the amount of yearly use, and the type of use (biking, walking, hiking, etc.).

Trail maintenance is generally broken down into two categories: routine (also known as minor) and major. Routine maintenance, which is recommended to be performed at least once a year, includes tasks such as sweeping/blowing debris from the trail, removing fallen branches and trees from the trail, clearing surrounding brush, mowing adjacent to trails, trash pick-up, cleaning graffiti, cleaning, and painting benches. Major maintenance, which typically occurs on an as-needed basis, includes re-grading or rolling the trail surface, repaving the trail, patching or crack repair of the trail surface, replacement of water fountains, replacement of benches, replacement of signs or sign poles, and drainage improvements.

An excellent national resource for trail planning, construction and maintenance is the organization Rails to Trails Conservancy (RTC) which was established in 1986 with the goals of “building a nation connected by trails” and “reimagining public spaces to create safe ways for everyone to walk, bike and be active outdoors.”

Based on the 2015 study, “Maintenance Practices and Costs of Rail-Trails” prepared by the RTC; which details the results of a comprehensive survey of 200 trail managers on the type, scheduling, and costs of maintenance tasks; it is estimated that the County should anticipate a yearly maintenance budget range between \$800 to \$1,500 per mile of trail. This range was developed by comparing similar example trail systems in the study to the current and future Vegas Valley Rim Trail. This includes looking at various terrain, surface types, structures, or bridges, potential usage, and level of amenities.

Below is the proposed milage breakdown for cost estimating purposes. All numbers are provided as ranges due to the possible alternative paths, as discussed in Exhibit A, B, C areas.

Total trail length within the project scope area: 36.3 – 44.7 miles  
Total dirt/gravel trails: 33.2 – 41.0 miles  
Total asphalt/hard surface trails: 3.1 – 3.7 miles

This range, along with the varying terrain, trail use and surface types, results in a speculative routine maintenance cost of approximately \$29,000 to \$67,000 per year.

A beneficial and financial resource that Clark County may utilize to aid with funding the yearly routine maintenance budget is the Interlocal Contract 255A-Q10 for Off-Street Shared Use Path Maintenance. This contract is facilitated by the Regional Transportation Commission of Southern Nevada (RTC-SN) and is approved through the Clark County 2026 fiscal year, utilizing collected tax dollars within Clark County to help provide funds for maintaining shared use trails. Under 255A-Q10, the County may submit the total number of trail mileage per year they would like to be considered for the available funding and receive approximately \$900/mile.

Below is a snapshot from the RTC-SN website showing the current 255A-Q10 funding that has been spent and the amount available to Clark County for future O&M.

Project Number	Project Name	Project Limit	Filter Entity																				
255A-Q10	Off-Street Shared Use Path Maintenance	Clark County Fiscal Year 2022-2026-	Clark County																				
<p><b>Name:</b> Off-Street Shared Use Path Maintenance  <b>Phase:</b> Construction  <b>Contract Date:</b> 07/08/2021  <b>Contract Expiration:</b> 06/30/2026</p> <table border="1"> <thead> <tr> <th>Event</th> <th>Encumbered</th> <th>Expended</th> <th>Balance</th> </tr> </thead> <tbody> <tr> <td>Construction</td> <td>\$215,000.00</td> <td>\$107,931.99</td> <td>\$107,068.01</td> </tr> <tr> <td>Engineering</td> <td>\$0.00</td> <td>\$0.00</td> <td>\$0.00</td> </tr> <tr> <td>Right of Way</td> <td>\$0.00</td> <td>\$0.00</td> <td>\$0.00</td> </tr> <tr> <td><b>Totals</b></td> <td>\$215,000.00</td> <td>\$107,931.99</td> <td>\$107,068.01</td> </tr> </tbody> </table>				Event	Encumbered	Expended	Balance	Construction	\$215,000.00	\$107,931.99	\$107,068.01	Engineering	\$0.00	\$0.00	\$0.00	Right of Way	\$0.00	\$0.00	\$0.00	<b>Totals</b>	\$215,000.00	\$107,931.99	\$107,068.01
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**Figure 31. Public Funding Availability of Clark County 2022-2026**

## Conclusion

This report outlines a proposed trail path that expands the Vegas Valley Rim Trail in the southwest region of the Valley. Furthermore, this report serves as a tool to provide insight into what factors were considered to reach this recommended design, as well as provide Clark County with a general guide for potential next steps in the process and estimated future maintenance costs.

The recommended next steps would generally be as follows: (1) Begin with a joint jurisdictional meeting between the Clark County, City of Las Vegas, and NDOT to discuss this report and ensure that the potential trail alignments, crossings, and connections outlined herein are generally acceptable and are able to be permitted within the reviewing agency's jurisdiction. (2) Clark County should coordinate with BLM to secure trail alignments and any other necessary approvals for the portions of the trail alignment occurring on BLM lands. (3) Clark County should determine the final trail alignments to engage a design consultant for the design and permitting of final trail design construction plans.

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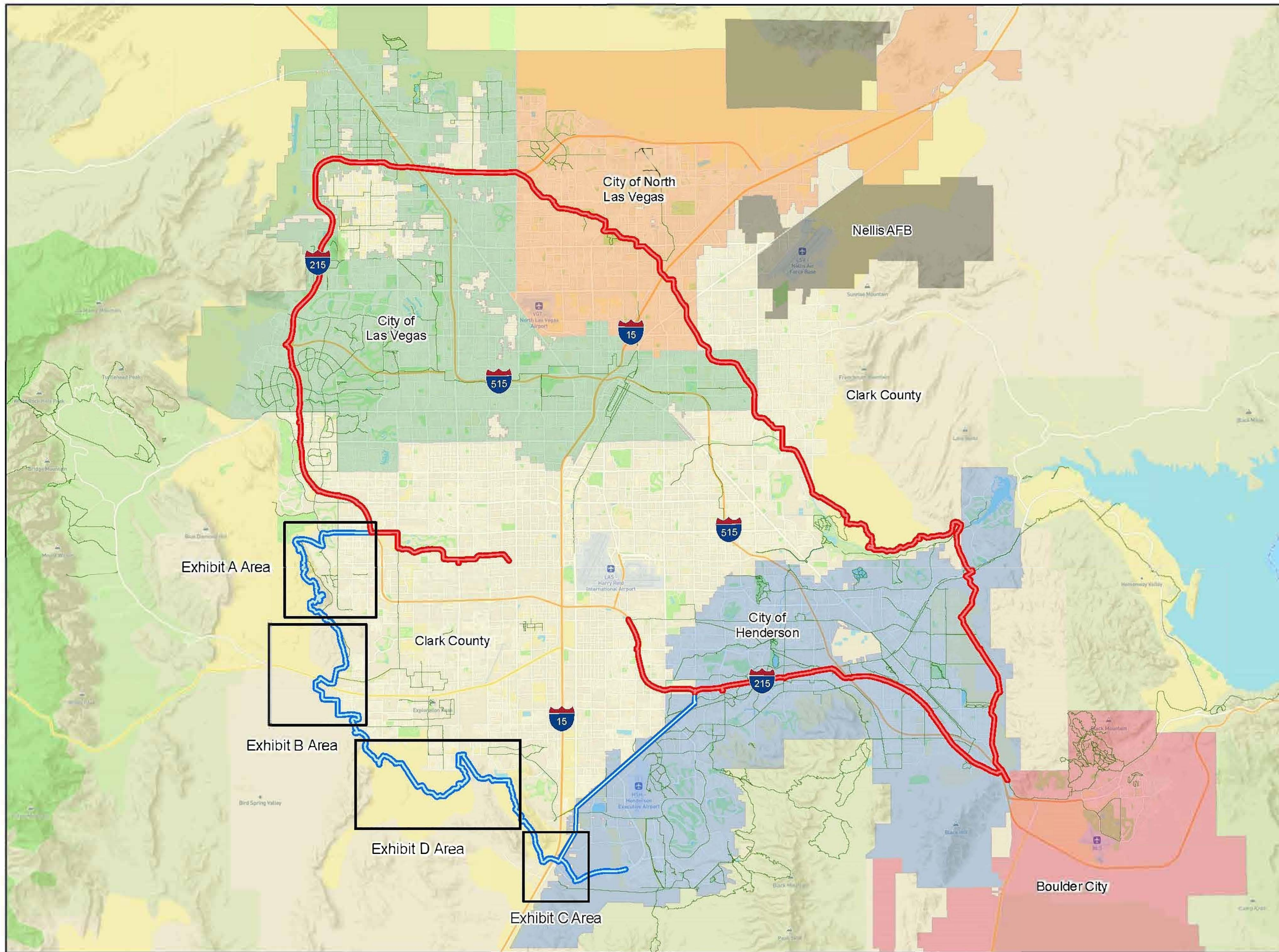


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## Appendices




### **APPENDIX A – OVERVIEW MAPS**






Vegas Valley Rim Trail  
Clark County, Nevada

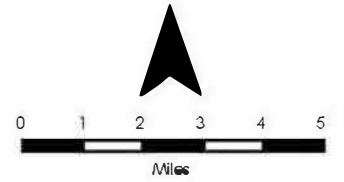
**Legend**

-  Proposed Rim Trail Scope for Project
-  Overall Rim Trail Intent
-  Neon to Nature Trail System

**Jurisdictional Boundaries**

-  Clark County
-  Boulder City
-  City of Henderson
-  City of Las Vegas
-  City of Mesquite
-  City of North Las Vegas
-  Nellis AFB

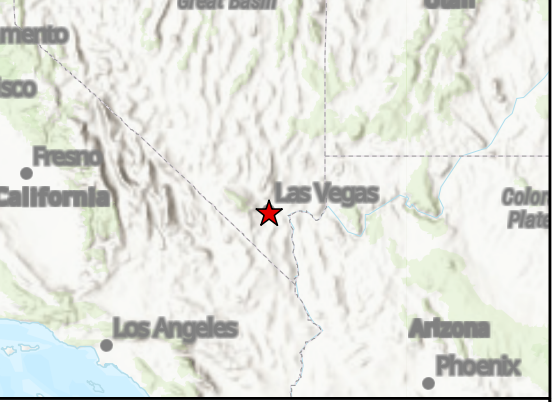
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Data Source:  
Est. HERE, Garmin, FAO, NOAA, USGS, EPA

**Overview**





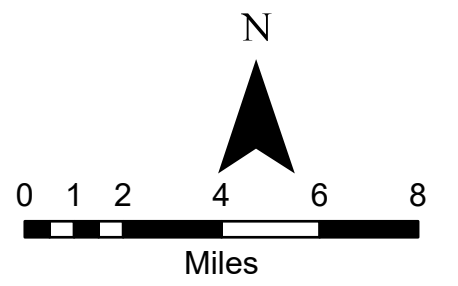
# Vegas Valley Rim Trail Clark County, Nevada

## Legend

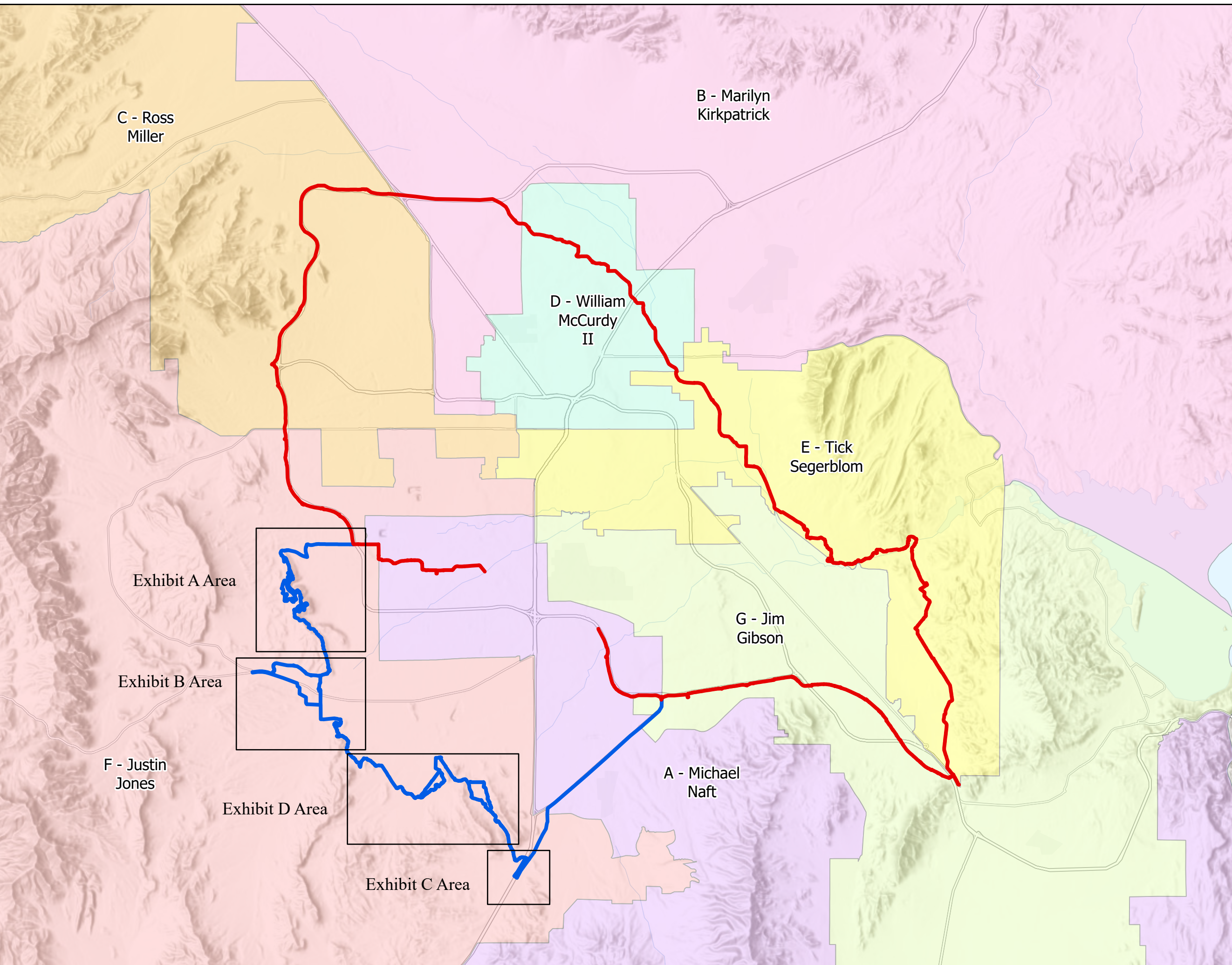
- Overall Rim Trail Intent
- Proposed Rim Trail Scope for Project

## Commission Districts

- A - Michael Naft
- B - Marilyn Kirkpatrick
- C - Ross Miller
- D - William McCurdy II
- E - Tick Segerblom
- F - Justin Jones
- G - Jim Gibson



Commission Districts



C - Ross Miller

B - Marilyn Kirkpatrick

D - William McCurdy II

E - Tick Segerblom

G - Jim Gibson

Exhibit A Area

Exhibit B Area

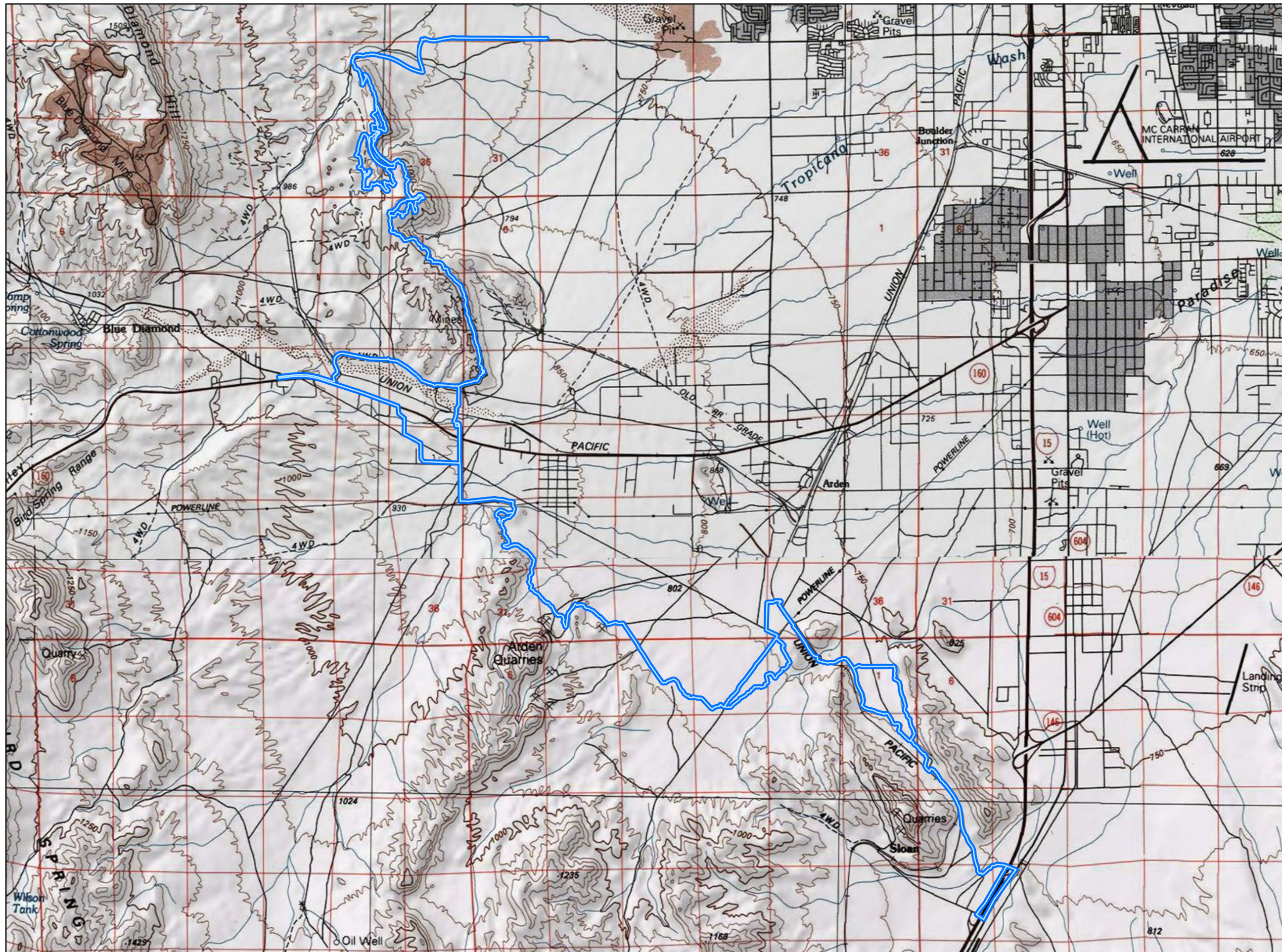
F - Justin Jones

Exhibit D Area

Exhibit C Area

A - Michael Naft



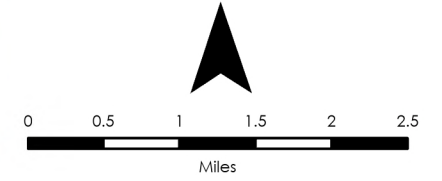


Vegas Valley Rim Trail  
Clark County, Nevada

**Legend**

- Proposed Rim Trail Scope for Project

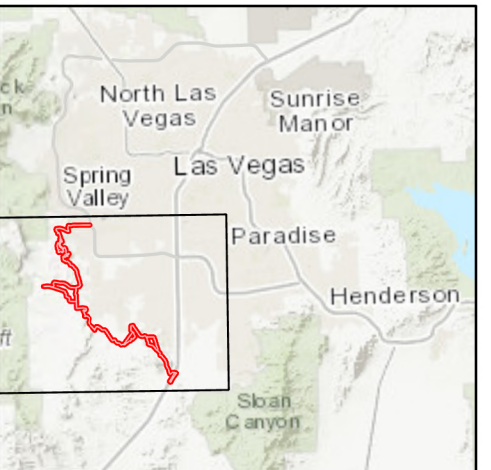
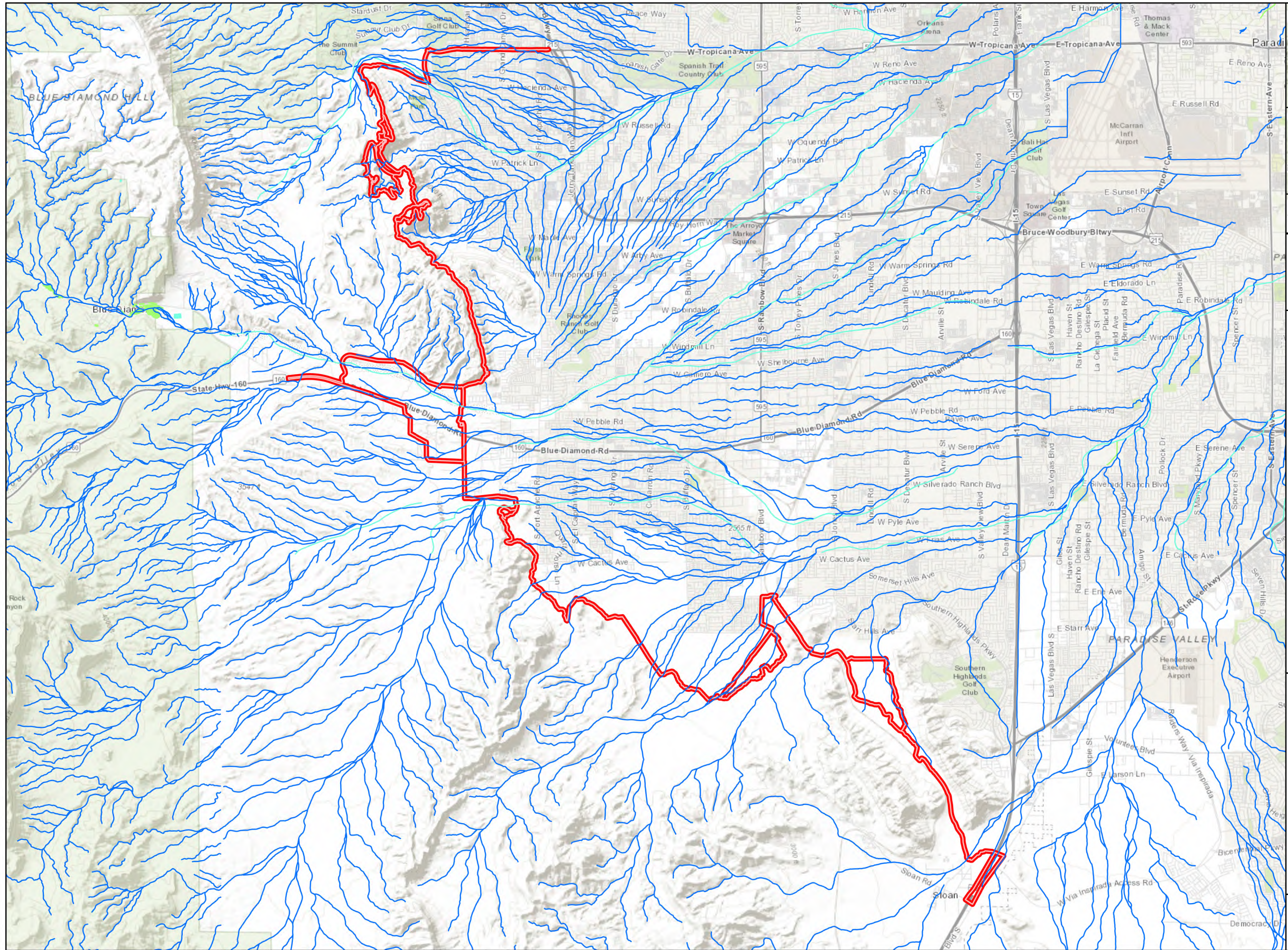
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Data Source:  
Esri, HERE, Garmin, FAO, NOAA, USGS, EPA, NPS,  
Copyright: © 2013 National Geographic Society, i-cubed





**USGS Topographic Map**

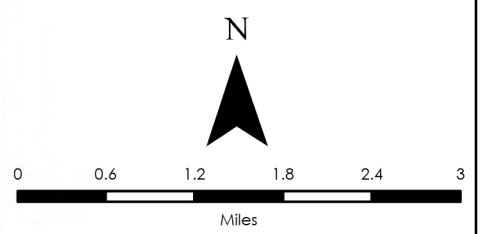




Vegas Valley Rim Trail  
Clark County, Nevada

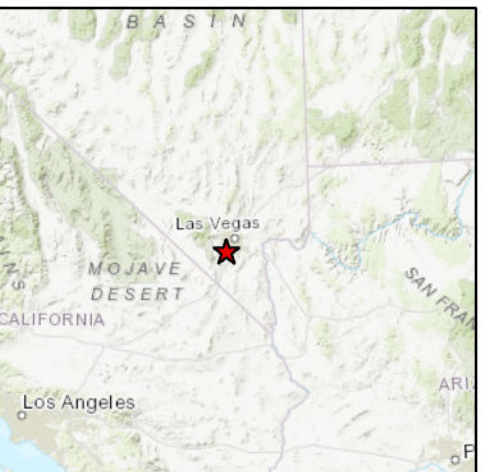
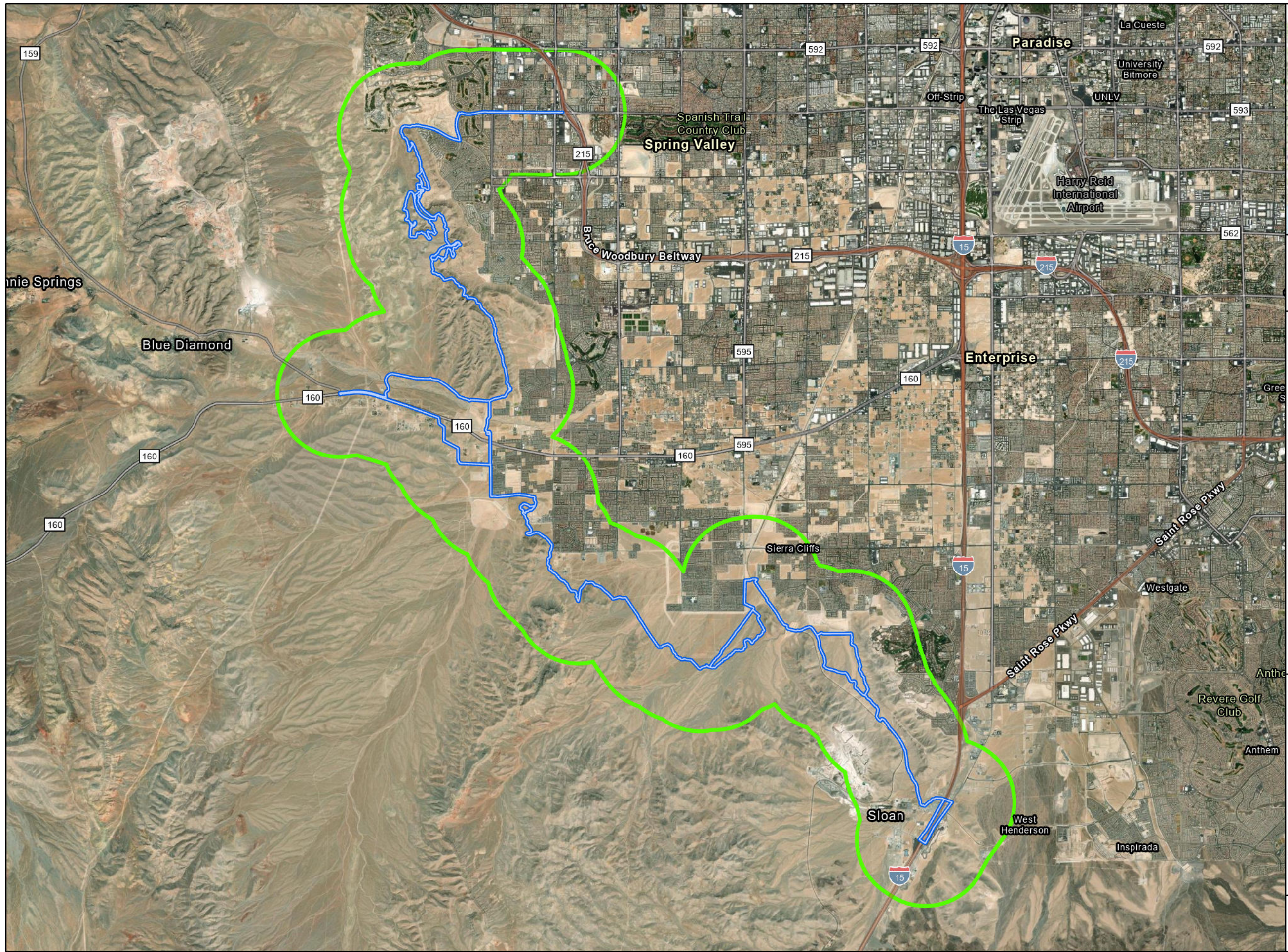
**Legend**

-  Proposed Rim Trail Scope for Project
- NHD Flowlines**
-  Freshwater Forested/Shrub Wetland
-  Freshwater Pond
-  Riverine



Data Source:  
Esri, HERE, Garmin, FAO, USGS, NGA, EPA, NPS, Clark County, NV, Bureau of Land Management, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, NGA, EPA, USDA

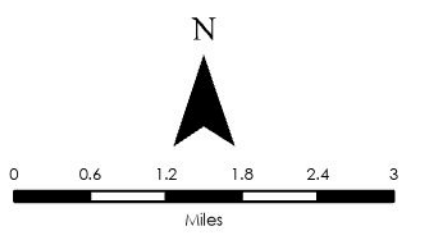




Vegas Valley Rim Trail  
Clark County, Nevada

**Legend**

- Proposed Rim Trail Scope for Project
- Analysis Area



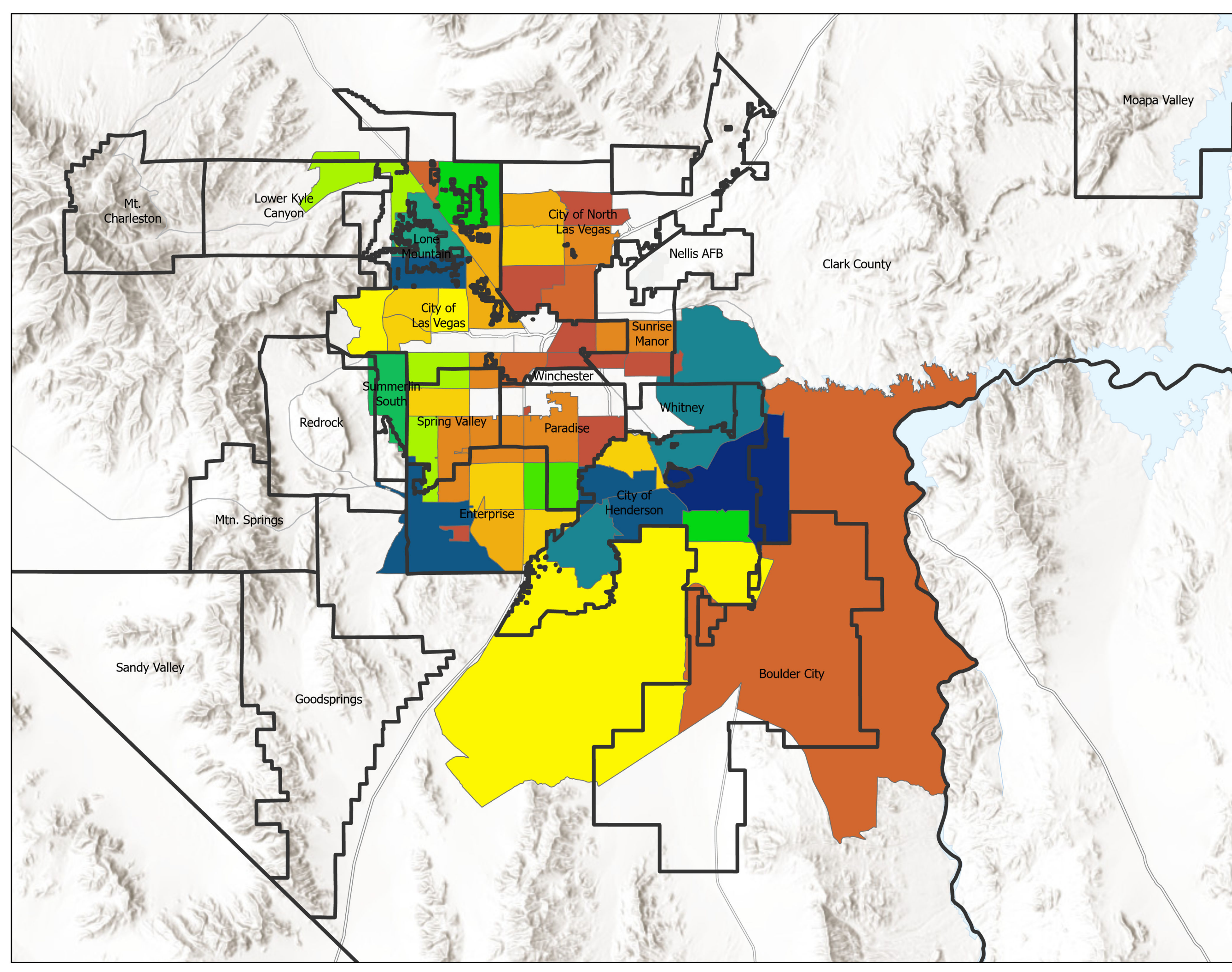
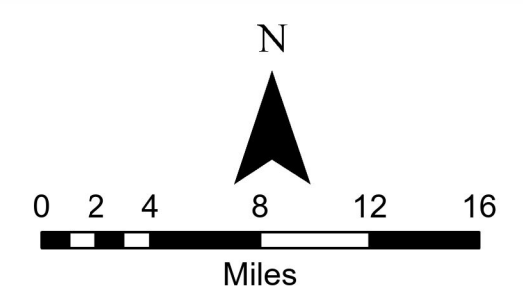
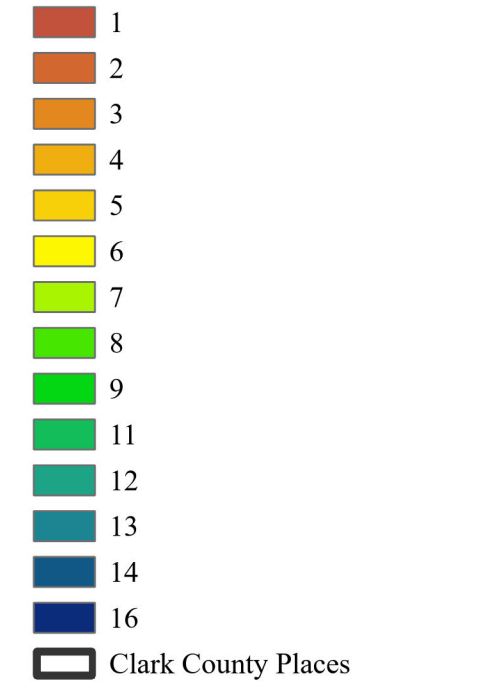
Data Source:  
 Earthstar Geographics, Clark County Dept of Aviation,  
 California State Parks, Esri, TomTom, Garmin,  
 SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS,  
 Bureau of Land Management, EPA, NPS, USDA, USFWS,  
 Esri, HERE, Garmin, FAO, NOAA, USGS, EPA

**Environmental Constraints  
Analysis Area**



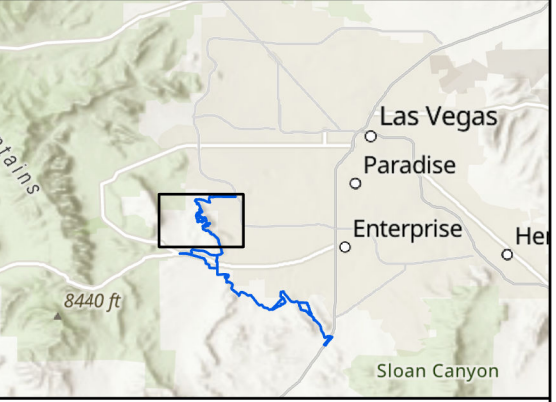
# Vegas Valley Rim Trail Clark County, Nevada

## Survey Results by Zip Code



## **APPENDIX B – AREA ALTERNATIVES EXHIBITS**





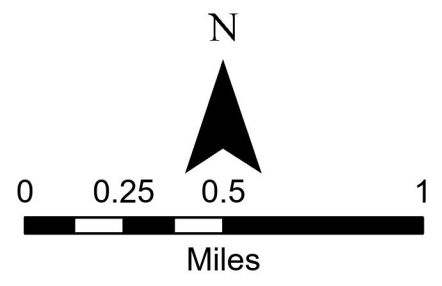
# Vegas Valley Rim Trail Clark County, Nevada

## Proposed Rim Trail Alternative

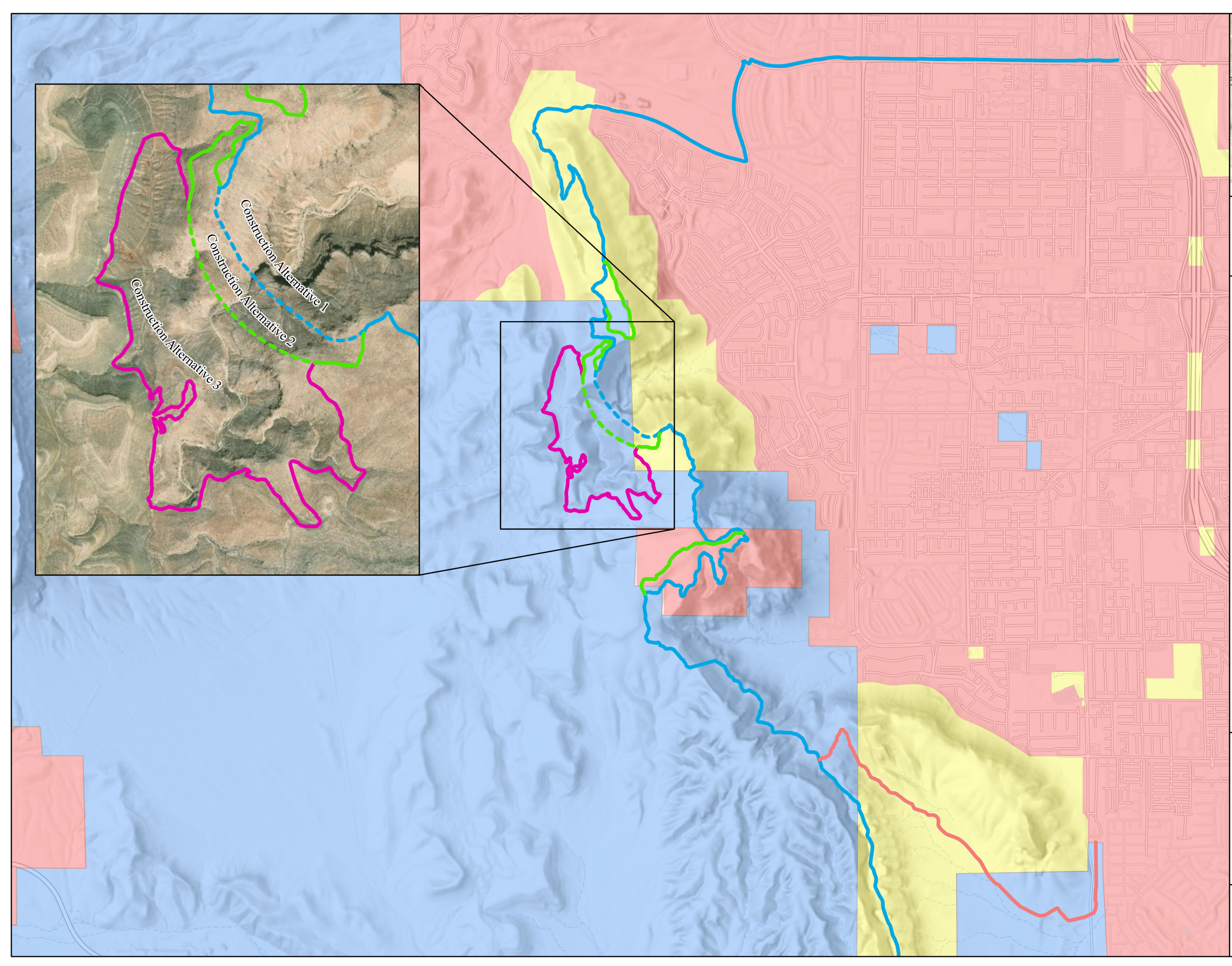
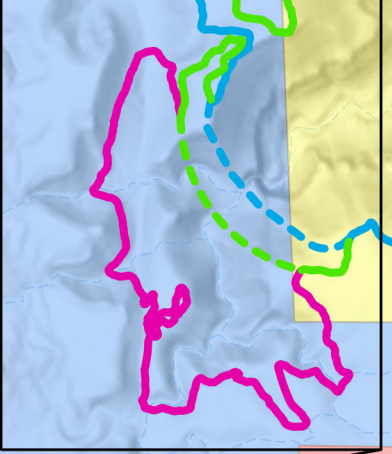
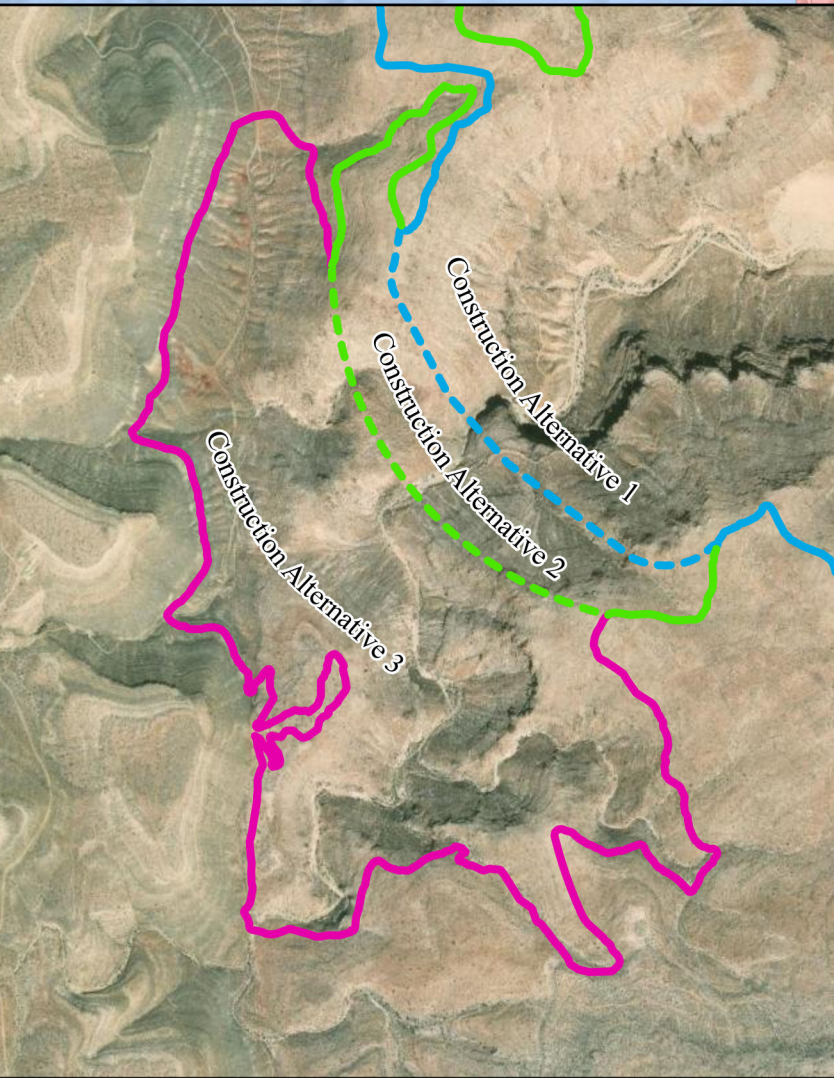
- Proposed Trail Alternative 1
- - Area of Proposed Alternative 1 Requiring Construction
- Proposed Trail Alternative 2
- - Area of Proposed Alternative 2 Requiring Construction
- Proposed Trail Alternative 3
- Neighborhood Connections to the Proposed Rim Trail

## Property Ownership

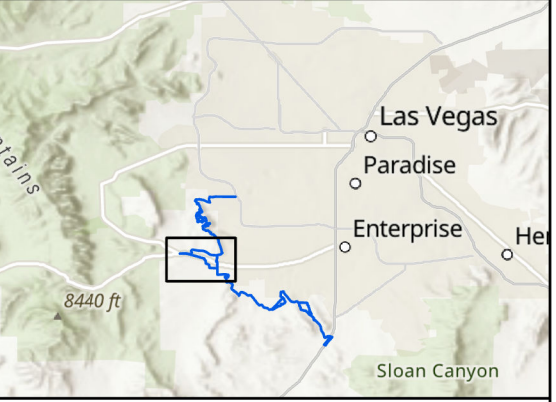
- Bureau of Land Management
- Clark County
- Private



Area A  
Property Ownership



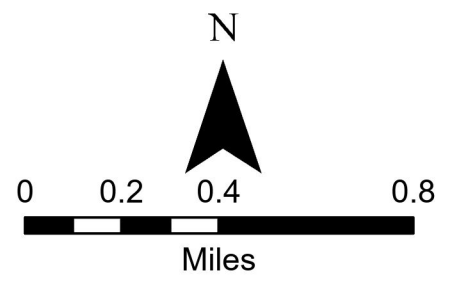




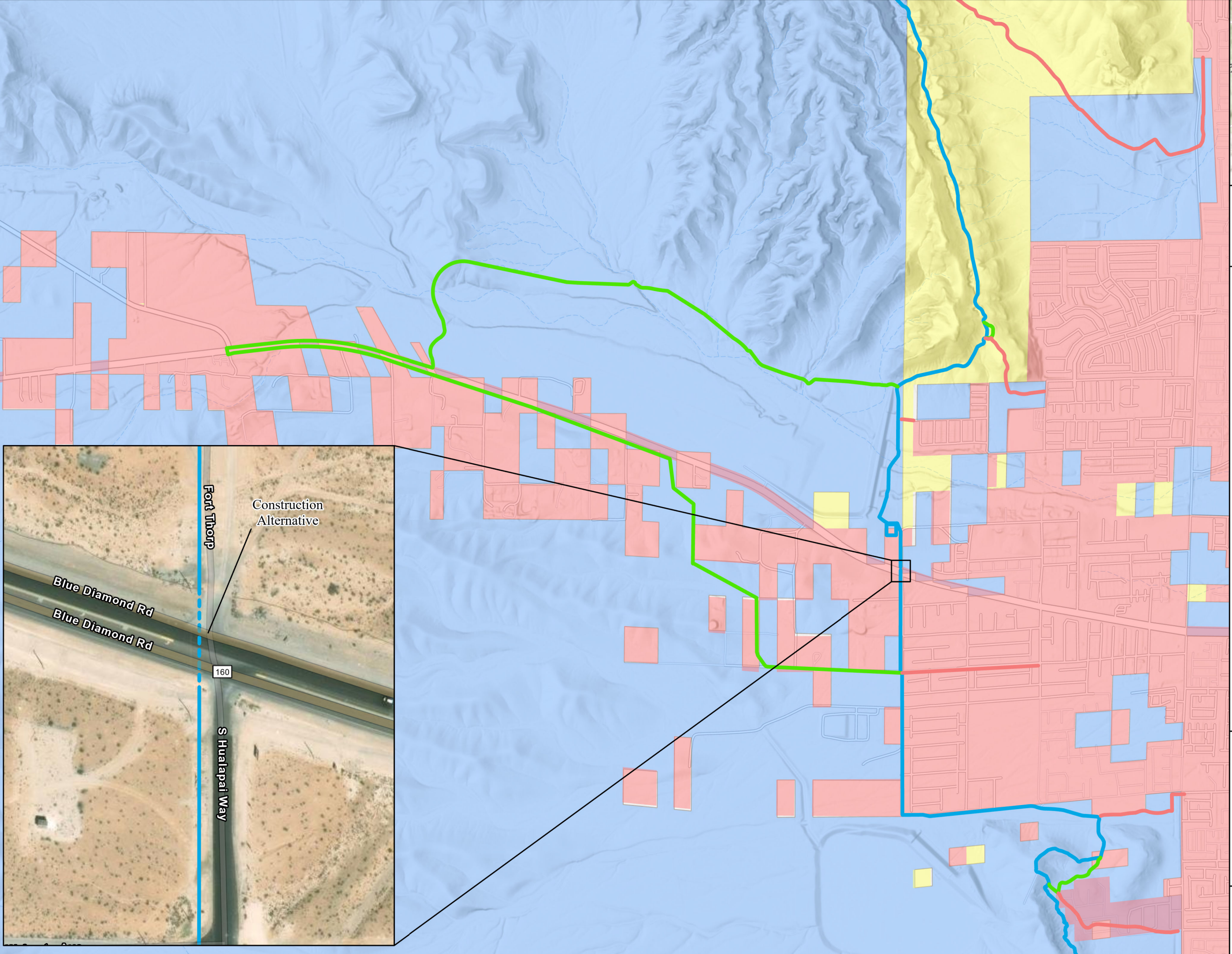
# Vegas Valley Rim Trail Clark County, Nevada

- Proposed Rim Trail Alternative**
- Proposed Trail Alternative 1
  - Area of Proposed Alternative 1 Requiring Construction
  - Proposed Trail Alternative 2
  - Proposed Trail Alternative 3
  - Neighborhood Connections to the Proposed Rim Trail

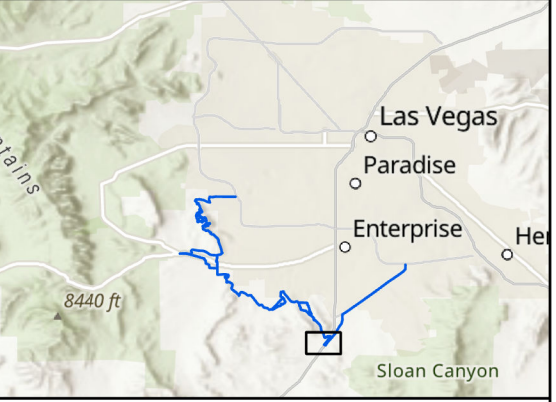
- Property Ownership**
- Bureau of Land Management
  - Clark County
  - Private



Area B  
Property Ownership

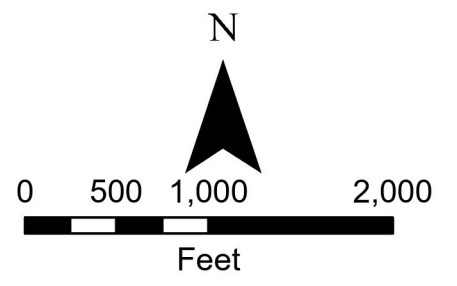




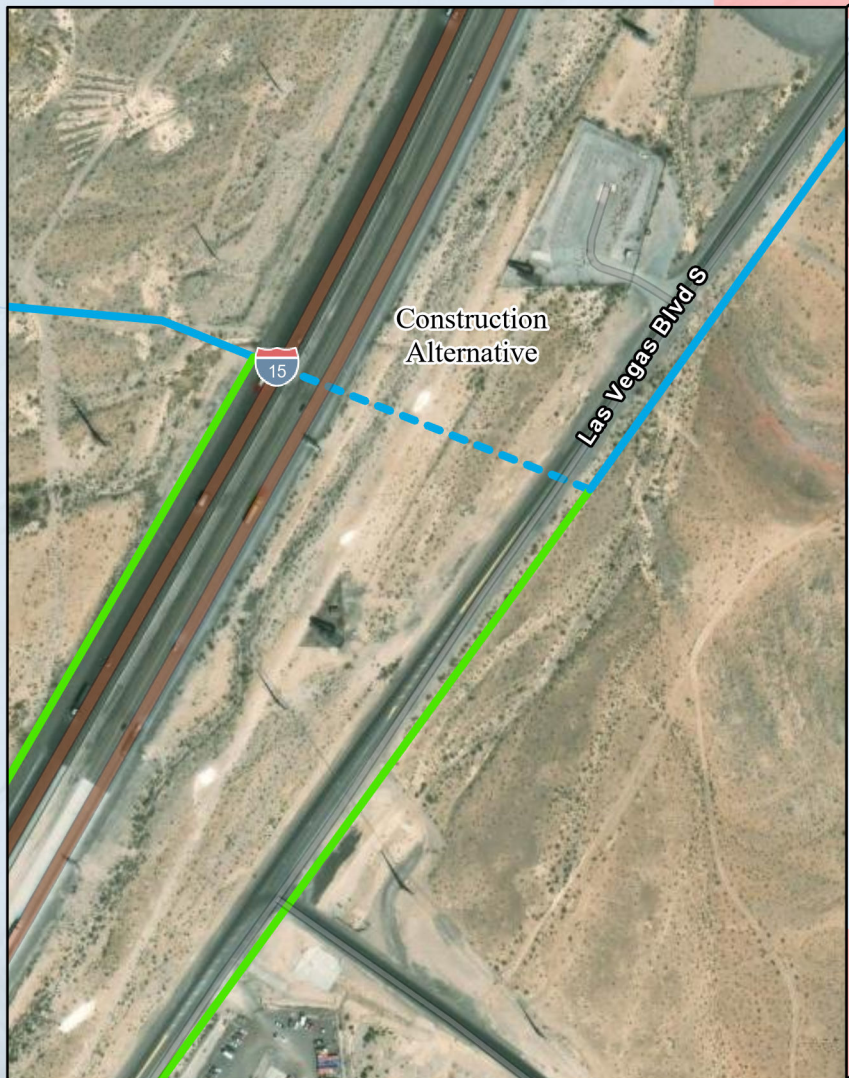


# Vegas Valley Rim Trail Clark County, Nevada

- Proposed Rim Trail Alternative**
- Proposed Trail Alternative 1
  - - Area of Proposed Alternative 1 Requiring Construction
  - Proposed Trail Alternative 2
- Property Ownership**
- Bureau of Land Management
  - Clark County
  - Private



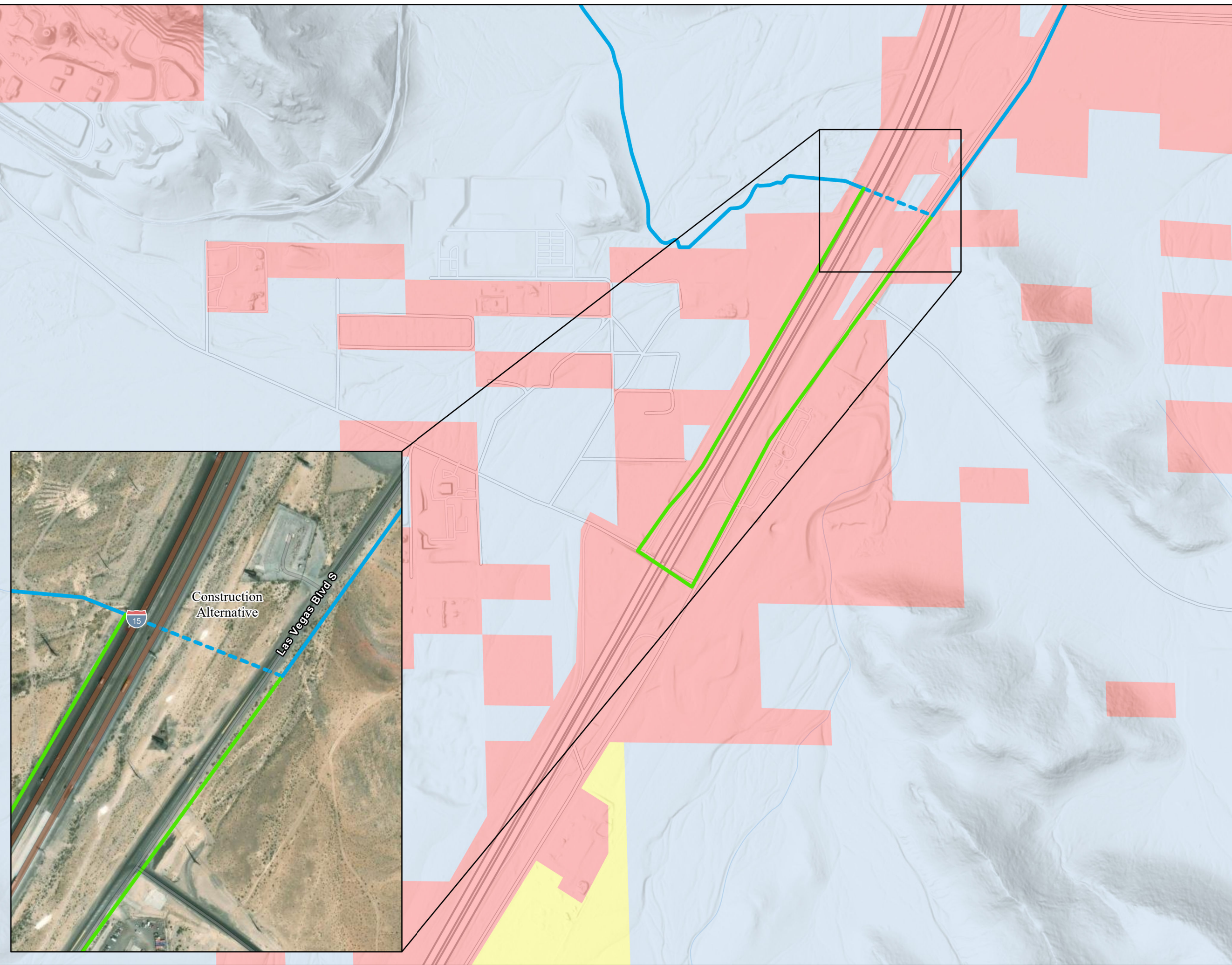
Area C  
Property Ownership



Construction  
Alternative

Las Vegas Blvd S

15



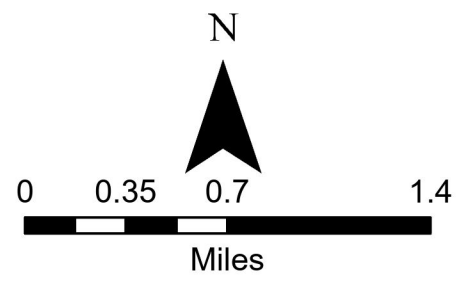




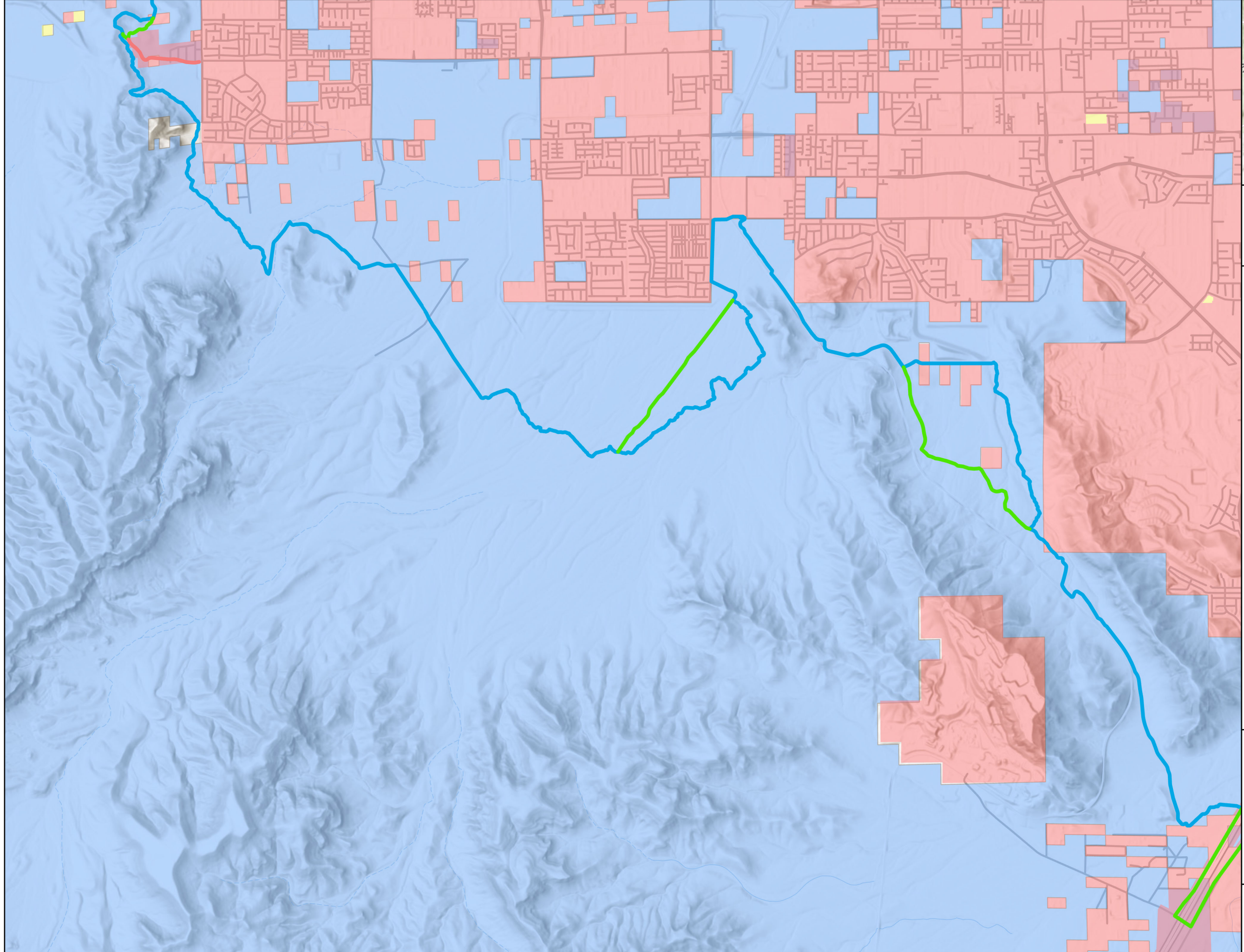
# Vegas Valley Rim Trail Clark County, Nevada

- Proposed Rim Trail Alternative**
- Proposed Trail Alternative 1
  - Proposed Trail Alternative 2

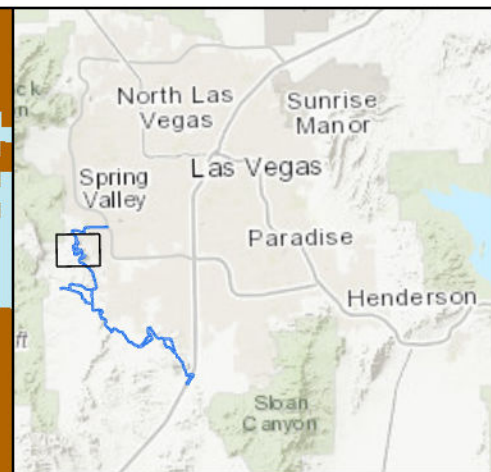
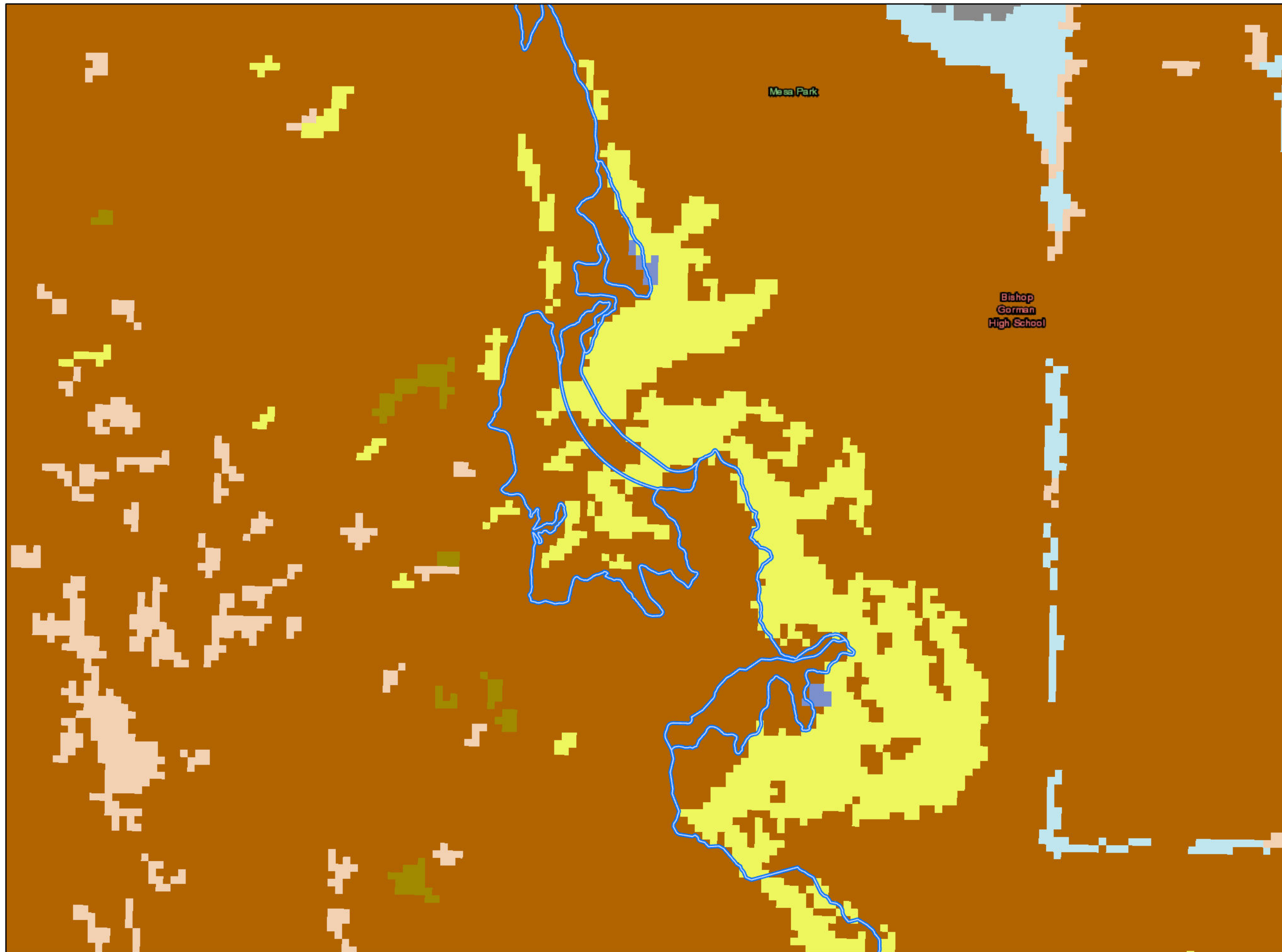
- Surface Land Management**
- Bureau of Land Management
  - Clark County
  - Private



Area D  
Property Ownership







Vegas Valley Rim Trail  
Clark County, Nevada

**Legend**

 Proposed Rim Trail Scope for Project

**Landcover Classification**

 North American Warm Desert Bedrock Cliff and Outcrop

 North American Warm Desert Playa

 Mojave Mid-Elevation Mixed Desert Scrub

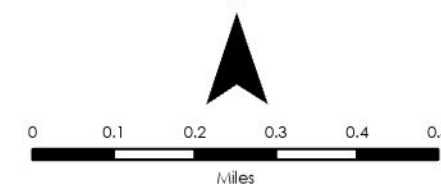
 Sonora-Mojave Creosotebush-White Bursage Desert Scrub

 Sonora-Mojave Mixed Salt Desert Scrub

 Inter-Mountain Basins Semi-Desert Shrub Steppe

 Developed, Open Space - Low Intensity

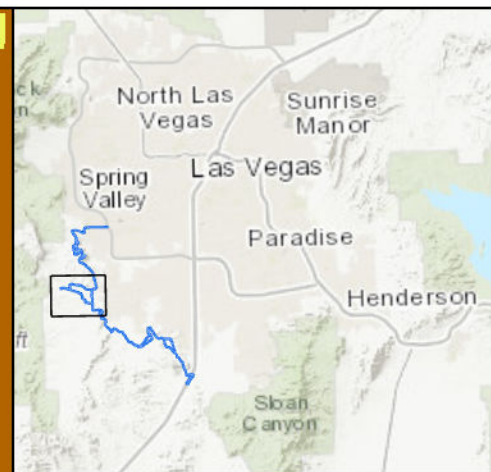
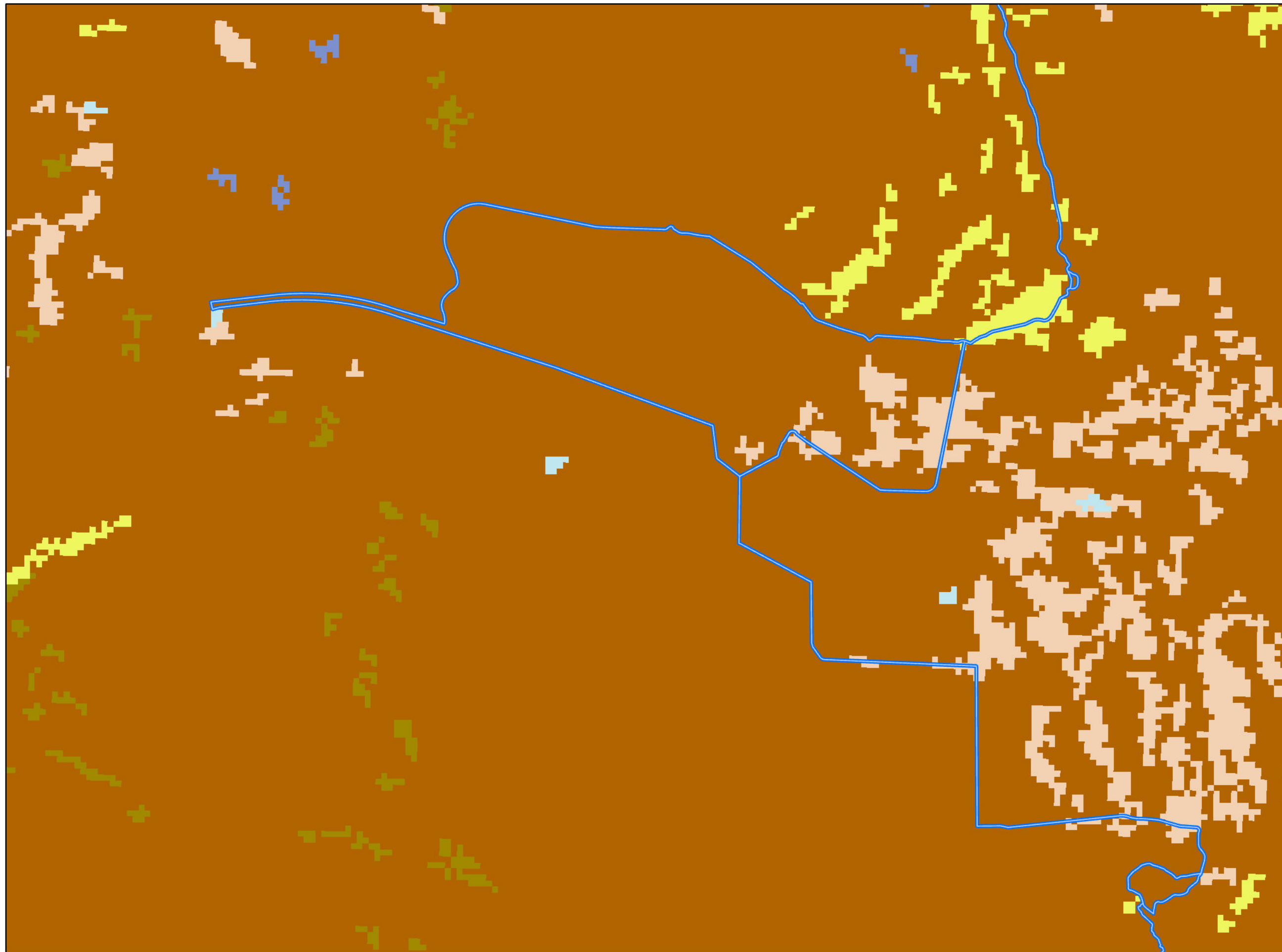
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Data Source:  
Esri, HERE, Garmin, FAO, USGS, NGA, EPA, NPS, Esri, HERE, Garmin, IPC, Maxar

**Exhibit G: Area A  
SWReGAP Land Cover**





Vegas Valley Rim Trail  
Clark County, Nevada

**Legend**

 Proposed Rim Trail Scope for Project

**Landcover Classification**

 North American Warm Desert Bedrock Cliff and Outcrop

 North American Warm Desert Playa

 Mojave Mid-Elevation Mixed Desert Scrub

 Sonora-Mojave Creosotebush-White Bursage Desert Scrub

 Sonora-Mojave Mixed Salt Desert Scrub

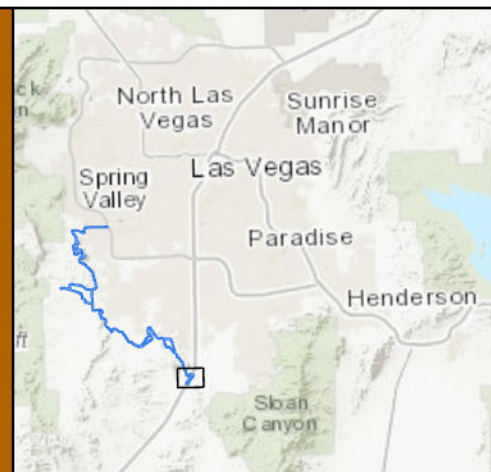
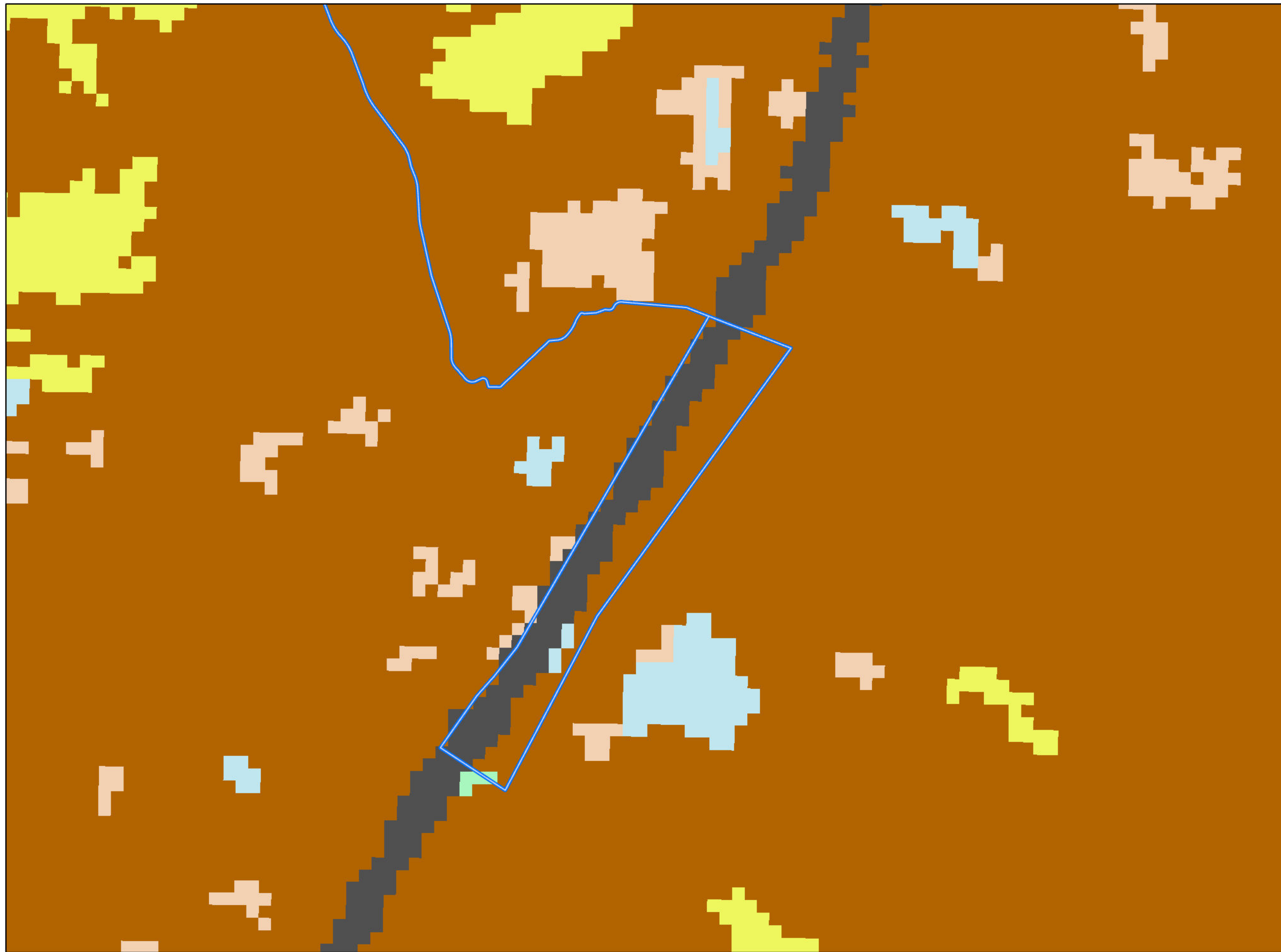
 Inter-Mountain Basins Semi-Desert Shrub Steppe

N



Data Source:  
Esri, HERE, Garmin, FAO, USGS, NGA, EPA, NPS, Clark County, NV, Bureau of Land Management, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA

**Exhibit H: Area B  
SWReGAP Land Cover**



Vegas Valley Rim Trail  
Clark County, Nevada

**Legend**

 Proposed Rim Trail Scope for Project

**Landcover Classification**

 North American Warm Desert Bedrock Cliff and Outcrop

 North American Warm Desert Wash

 North American Warm Desert Playa

 Sonora-Mojave Creosotebush-White Bursage Desert Scrub

 Sonora-Mojave Mixed Salt Desert Scrub

 Developed, Medium - High Intensity

N



Data Source:  
Esri, HERE, Garmin, FAO, USGS, NGA, EPA, NPS, City of Henderson, Clark County, NV, Bureau of Land Management, Esri, HERE, Garmin, INCREMENT P, Intermap, USGS, METI/NASA, EPA, USDA

**Exhibit I: Area C  
SWReGAP Land Cover**

## **APPENDIX C – AGENCY RESPONSES**



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Southern Nevada Fish And Wildlife Office  
4701 N. Torrey Pines Drive  
Las Vegas, NV 89130-2301  
Phone: (702) 515-5230 Fax: (702) 515-5231

In Reply Refer To:  
Project Code: 2024-0032122  
Project Name: Vegas Valley Rim Trail

January 03, 2024

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

### To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through IPaC by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: <https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

**Migratory Birds:** In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see [Migratory Bird Permit | What We Do | U.S. Fish & Wildlife Service \(fws.gov\)](#).

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see <https://www.fws.gov/library/collections/threats-birds>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
-

## OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Southern Nevada Fish And Wildlife Office**

4701 N. Torrey Pines Drive

Las Vegas, NV 89130-2301

(702) 515-5230

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## PROJECT SUMMARY

Project Code: 2024-0032122  
Project Name: Vegas Valley Rim Trail  
Project Type: New Constr - Above Ground  
Project Description: Proposed development of a trail system connecting the Las Vegas Valley Rim Trail.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@36.0149079,-115.3159502640375,14z>



Counties: Clark County, Nevada

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## ENDANGERED SPECIES ACT SPECIES

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## BIRDS

NAME	STATUS
Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i> There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/6749">https://ecos.fws.gov/ecp/species/6749</a>	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. DPS There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/3911">https://ecos.fws.gov/ecp/species/3911</a>	Threatened

## REPTILES

NAME	STATUS
Desert Tortoise <i>Gopherus agassizii</i> Population: Wherever found, except AZ south and east of Colorado R., and Mexico There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/4481">https://ecos.fws.gov/ecp/species/4481</a>	Threatened

## FISHES

NAME	STATUS
Pahrump Poolfish <i>Empetrichthys latos</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/7281">https://ecos.fws.gov/ecp/species/7281</a>	Endangered

---

## INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Candidate

## CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

## **IPAC USER CONTACT INFORMATION**

Agency: BEC Environmental, Inc.

Name: Juan Garcia

Address: 7241 W Sahara Ave #120

City: Las Vegas

State: NV

Zip: 89117

Email: juang@becnv.com

Phone: 7023049830

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STATE OF NEVADA

**DEPARTMENT OF WILDLIFE**

6980 Sierra Center Parkway, Suite 120

Reno, Nevada 89511

Phone (775) 688-1500 • Fax (775) 688-1595

ALAN JENNE  
*Director*

JORDAN GOSHERT  
*Deputy Director*

CALEB MCADOO  
*Deputy Director*

MIKE SCOTT  
*Deputy Director*

January 05, 2024

Juan Garcia  
Environmental Scientist  
BEC Environmental  
7241 W Sahara Ave. Ste 120  
Las Vegas, Nevada 89117

Re: Vegas Valley Rim Trail Project Standard Data Request

Dear Juan Garcia,

We are responding to your request for information from the Nevada Department of Wildlife (NDOW) on the known or potential occurrence of wildlife resources in the vicinity of the Vegas Valley Rim Trail Project located in Clark County. In order to fulfill your request an analysis was performed using the best available data from the NDOW's wildlife occurrences, raptor nest sites and ranges, greater sage-grouse leks and habitat, and big game distributions databases. These data should be considered sensitive and may contain information regarding the location of sensitive wildlife species or resources. All appropriate measures should be taken to ensure that the use of this data is strictly limited to serve the needs of the project described on your GIS Data Request Form. Abuse of this information has the potential to adversely affect the existing ecological status of Nevada's wildlife resources and could be cause for the denial of future data requests.

To adequately provide wildlife resource information in the vicinity of the proposed project the NDOW delineated an area of interest that included a four-mile buffer around the project area you provided on January 03, 2024. Wildlife resource data was queried from the NDOW databases based on this area of interest. The results of this analysis are summarized below.

**Big Game** – Occupied bighorn sheep distribution exists within the project area and surrounding 4-mile buffer area. No known occupied elk, mule deer, or pronghorn antelope distributions exist within the project area or surrounding 4-mile buffer area. Please refer to the attached maps for details regarding big game distributions relative to the proposed project area.

**Greater Sage-Grouse** – There is no known greater sage-grouse habitat within the project area or surrounding 4-mile buffer as classified by the Nevada Sagebrush Ecosystem Program (<https://sagebrusheco.nv.gov/>).

**Raptors** – Various species of raptors, which use diverse habitat types, may reside in the vicinity of the project area. American kestrel, Cooper's hawk, Swainson's hawk, bald eagle, barn owl, burrowing owl, ferruginous hawk, flammulated owl, golden eagle, great horned owl, long-eared owl, merlin, northern goshawk, northern harrier, northern saw whet owl, osprey, peregrine falcon, red-tailed hawk, rough-legged hawk, sharp-shinned hawk, short-eared owl, turkey vulture, and

western screech owl have distribution ranges that include the project area and/or surrounding 10-mile buffer.

Raptors have been observed within the 10-mile buffer surrounding the project area, but there are no recorded raptor sightings directly within the project area.

Raptor species are protected by State and Federal laws. In addition, bald eagle, burrowing owl, California spotted owl, ferruginous hawk, flammulated owl, golden eagle, northern goshawk, peregrine falcon, prairie falcon, and short-eared owl are NDOW species of special concern and are target species for conservation as outlined by the Nevada Wildlife Action Plan. Per the *Interim Golden Eagle Technical Guidance: Inventory and Monitoring Protocols; and Other Recommendations in Support of Golden Eagle Management and Permit Issuance* (United States Fish and Wildlife Service 2010).

We have queried our raptor nest database to include raptor nest sites within ten miles of the proposed project area. There are 136 known raptor nests within the project area and/or surrounding 10-mile buffer.

Other Wildlife Resources – No water developments are present within the project area. No known Lahontan cutthroat trout (LCT) watershed(s) are present within the project area.

The following wildlife species have been observed directly within the project area.

Common Name	ESA	State	SWAP SoCP
Desert tortoise	LT	Threatened	Yes
Inca dove		Game	
Mojave Desert sidewinder			Yes
Northern desert nightsnake			
Zebra-tailed lizard			

The proposed project area may also be in the vicinity of abandoned mine workings, which often provide habitat for state and federally protected wildlife, especially bat species, many of which are protected under NAC 503.030. To request data regarding known abandoned mine workings in the vicinity of the project area please contact the Nevada Division of Minerals (<http://minerals.state.nv.us/>).

The information provided is based on data stored at our Reno Headquarters Office and does not necessarily incorporate the most up to date wildlife resource information collected in the field. Please contact the Habitat Division Supervising Biologist at our regional offices to discuss the current environmental conditions for your project area and the interpretation of our analysis. Furthermore, it should be noted that the information detailed above is preliminary in nature and not necessarily an identification of every wildlife resource concern associated with the proposed project. Consultation with the Supervising Habitat biologist will facilitate the development of

appropriate survey protocols and avoidance or mitigation measures that may be required to address potential impacts to wildlife resources.

Federally listed Threatened and Endangered species are also under the jurisdiction of the United States Fish and Wildlife Service. Please contact them for more information regarding these species.

If you have any questions regarding the results or methodology of this analysis, please do not hesitate to contact us as (775) 688-1500 or via email at [NDOWdata@ndow.org](mailto:NDOWdata@ndow.org).

Appendix A: Raptor Nest Table

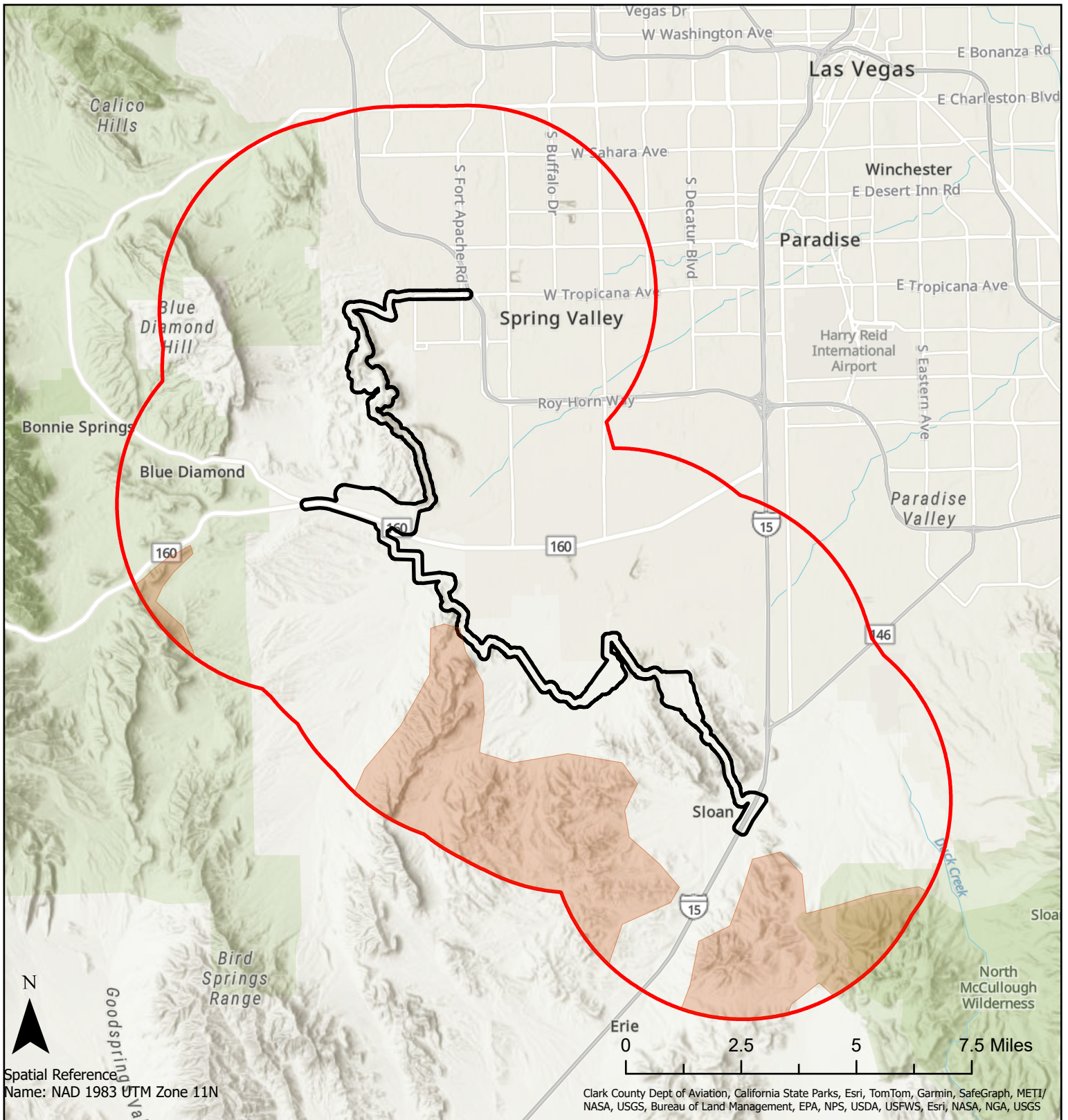
Nest Type	Nest Substrate	Nest Size	Last Visit Date	Last Occupied Species	Last Occupied Date
Cavity			06/26/1993	American kestrel	06/26/1993
			06/13/1981	American kestrel	06/13/1981
Burrow			05/22/1997	Burrowing owl	05/22/1997
Stick nest			05/03/2011	Common raven	05/03/2011
Stick nest			07/18/1981	Coopers hawk	07/18/1981
Stick nest			06/26/1993	Coopers hawk	06/26/1993
Stick nest			05/23/1993	Golden eagle	05/23/1993
Stick nest			05/03/2011	Golden eagle	05/03/2011
			05/22/1993	Golden eagle	05/22/1993
Stick nest			05/12/2009	Golden eagle	05/12/2009
Stick nest			05/06/2008	Golden eagle	05/06/2008
			03/01/1993	Golden eagle	03/01/1993
Stick nest			06/26/1993	Long-eared owl	06/26/1993
Scrape			05/01/2003	Peregrine falcon	05/01/2003
Scrape			07/06/2012	Peregrine falcon	07/06/2012
Scrape			03/17/2005	Peregrine falcon	03/17/2005
Scrape			04/28/2005	Peregrine falcon	04/28/2005
Scrape			04/10/2006	Peregrine falcon	04/10/2006
Scrape			05/09/2006	Peregrine falcon	05/09/2006
Scrape			06/22/2006	Peregrine falcon	06/22/2006
Scrape			07/03/2006	Peregrine falcon	07/03/2006
Scrape			06/06/2012	Peregrine falcon	06/06/2012
Scrape			06/22/2011	Peregrine falcon	06/22/2011
Scrape			06/29/2010	Peregrine falcon	06/29/2010
Scrape			07/05/2006	Peregrine falcon	07/05/2006
Scrape			07/05/2006	Peregrine falcon	07/05/2006
Stick nest			06/09/2010	Peregrine falcon	06/09/2010
Stick nest			06/12/2009	Peregrine falcon	06/12/2009
Stick nest			03/26/2008	Peregrine falcon	03/26/2008
Stick nest			07/03/2006	Peregrine falcon	07/03/2006
Stick nest			04/29/2011	Peregrine falcon	
Stick nest			07/03/2006	Peregrine falcon	07/03/2006
Stick nest			06/07/2006	Peregrine falcon	06/07/2006
Scrape			06/30/2012	Peregrine falcon	06/30/2012
Scrape			07/15/2012	Peregrine falcon	07/15/2012
Scrape			06/01/2007	Peregrine falcon	06/01/2007
Scrape			04/27/2012	Peregrine falcon	
Scrape			04/15/2012	Peregrine falcon	
Scrape			07/07/2012	Peregrine falcon	07/07/2012
Scrape			06/10/2009	Peregrine falcon	06/10/2009



Scrape			05/23/2008	Peregrine falcon	
Scrape			06/21/2007	Peregrine falcon	06/21/2007
Scrape			05/21/2012	Peregrine falcon	05/21/2012
Scrape			06/22/2009	Peregrine falcon	06/22/2009
Scrape			05/11/1982	Prairie falcon	05/11/1982
Scrape			05/06/2008	Prairie falcon	05/06/2008
Scrape			05/23/1982	Prairie falcon	05/23/1982
Scrape			03/23/2012	Prairie falcon	
Scrape			01/01/1990	Prairie falcon	01/01/1990
Scrape			05/22/1993	Prairie falcon	05/22/1993
Scrape			01/01/2001	Prairie falcon	01/01/2001
Scrape			05/23/1982	Prairie falcon	05/23/1982
Scrape			07/04/2012	Prairie falcon	07/04/2012
Scrape			03/13/2010	Prairie falcon	03/13/2010
Scrape		medium	05/20/2012	Prairie falcon	05/20/2012
Stick nest			05/03/2011	Red-tailed hawk	05/03/2011
Stick nest			04/29/2011	Red-tailed hawk	04/29/2011
Stick nest			05/03/2011	Red-tailed hawk	05/03/2011
Stick nest			04/29/2011	Red-tailed hawk	04/29/2011
Stick nest			04/29/2011	Red-tailed hawk	04/29/2011
Stick nest			06/26/1993	Red-tailed hawk	
Stick nest			01/01/1991	Red-tailed hawk	01/01/1991
Stick nest			06/27/1993	Red-tailed hawk	06/27/1993
Stick nest			01/01/1987	Red-tailed hawk	01/01/1987
Stick nest			07/03/1993	Red-tailed hawk	07/03/1993
Stick nest			05/03/2011		
Stick nest			04/29/2011		
Scrape			06/13/2006		
Stick nest			05/06/2008		
Scrape			06/02/2006		
Scrape			03/16/2009		
Scrape			05/25/2010		
Stick nest			05/03/2011		
Stick nest			05/12/2009		
Stick nest			05/03/2011		
Stick nest			05/12/2009		
Stick nest			04/29/2011		
Stick nest			05/12/2009		
Stick nest			05/07/2004		
Stick nest			04/29/2011		
Stick nest			05/06/2008		
Stick nest			04/29/2011		
Stick nest			04/29/2011		
Stick nest			04/29/2011		
Stick nest			05/06/2008		

Scrape			04/01/1996		
Stick nest			04/29/2011		
Stick nest			04/29/2011		
Scrape			01/01/1992		
Stick nest			05/07/2004		
Stick nest			05/07/2004		
Stick nest			05/07/2004		
Stick nest			04/29/2011		
Stick nest			05/03/2011		
Stick nest			04/28/2006		
Stick nest			05/03/2011		
Stick nest			05/03/2011		
Stick nest			05/23/1993		
Scrape			05/23/2012		05/23/2012
Stick nest			05/12/2009		
Stick nest			05/03/2011		
			05/03/2011		
Stick nest			07/25/1993		
			05/03/2011		
Stick nest			05/07/2008		
			05/03/2011		
Stick nest			05/01/1993		
Stick nest			05/07/2008		
Stick nest			05/03/2011		
Stick nest			05/12/2009		
Stick nest			05/03/2011		
Stick nest			05/03/2011		
Stick nest			05/12/2009		
Stick nest			05/03/2011		
Stick nest			01/01/1993		
Stick nest			05/03/2011		
			05/03/2011		
Stick nest			01/01/1998		
Stick nest			05/12/2009		
Stick nest			05/07/2004		
Stick nest			05/03/2011		
Stick nest			05/03/2011		
Stick nest			07/10/1993		
Scrape			01/01/1998		
Stick nest			05/03/2011		
			05/03/2011		
Stick nest			05/03/2011		
Stick nest			06/26/1993		
Stick nest			05/12/2009		
Stick nest			05/12/2009		

Stick nest			05/03/2011		
Scrape			04/01/1993		
Stick nest			05/03/2011		
Stick nest			05/03/2011		
Stick nest			05/07/2004		
			01/01/1977		



## Legend

- Bighorn Sheep Distribution
- Project Area 4-mile Buffer
- Project Area

# Bighorn Sheep Distribution near the Vegas Valley Rim Trail Project

January 05, 2024



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