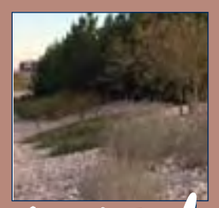
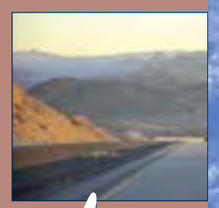

I-15 landscape and aesthetics corridor plan

CORRIDOR PLAN

NEVADA DOT

UNLV

I-15 FROM
PRIMM TO MESQUITE

DESIGN WORKSHOP
MacKay & Somps
JW Zunino & Assoc.
CH2MHill
Jones & Jones

August 3, 2005

MESSAGE FROM THE GOVERNOR OF NEVADA
KENNY C. GUINN

On June 30, 2002, the Nevada Department of Transportation adopted as policy, "Pattern and Palette of Place: A Landscape and Aesthetics Master Plan for the Nevada State Highway System". Now, the second phase of planning is complete. This I-15 Landscape and Aesthetics Corridor Plan represents a major step forward for the Landscape and Aesthetics program created by the Master Plan. It is significant because it involves local public agencies and citizens in the planning process so that Nevada's highways truly represent the State and its people. The Corridor Plan will be the primary management tool used to guide funding allocations, promotes appropriate aesthetic design, and provides for the incorporation of highway elements that uniquely express Nevada's landscape, communities, and cities, as well as its people. The State considers this Corridor Plan to be a major accomplishment for the future of Nevada highways.

MESSAGE FROM THE DIRECTOR
NEVADA DEPARTMENT OF TRANSPORTATION
JEFFREY FONTAINE, P.E.

It is NDOT's responsibility to ensure that landscaping and aesthetics are an important consideration in building and retrofitting our highway system. This Landscape and Aesthetics Corridor Plan for I-15 in Northern Nevada helps realize our vision for the future appearance of our highways. The plan will provide the guidance for our own design teams as well as help Nevada's citizens play an important role in the context-sensitive solutions for today's transportation needs. Together, we will ensure our highways reflect Nevada's distinctive heritage, landscape, and culture.

ENDORSEMENT

This Corridor Plan has been reviewed by the following groups and agencies:

City of Boulder City
City of Henderson
City of Las Vegas
City of Mesquite
City of North Las Vegas
Clark County Comprehensive Planning Steering Committee
Clark County Department of Air Quality Management
Clark County Department of Public Works
Clark County Neighborhood and Town Services
Las Vegas Chamber of Commerce
The Nature Conservancy
Nevada Department of Transportation, District 1 Office
Nevada Division of Forestry
Nevada Division of State Parks, Las Vegas Region
Nevada Division of Wildlife, Southern Region
North Las Vegas Chamber of Commerce
Regional Transportation Commission of Southern Nevada
Sierra Club, Southern Nevada Group
Southern Nevada Homebuilders
Southern Nevada Regional Planning Coalition
Southern Nevada Water Authority
University of Nevada, Las Vegas
University of Nevada, Reno
U.S. Bureau of Land Management
U.S. Department of Transportation - Federal Highway Administration

ACKNOWLEDGEMENTS

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I-15 CORRIDOR PLAN SUMMARY AND USER'S GUIDE

This plan illustrates a detailed vision for the landscape and aesthetics of the I-15 corridor. This vision synthesizes historic, current, and future conditions into a comprehensive guide to improve the visual appearance of I-15 from the California stateline at Primm to the Arizona border at Mesquite.

The first chapter of this report provides an introduction to the NDOT Landscape and Aesthetics program, the public participation process that has influenced the program, and the mechanism by which the design of the corridor will be managed. The second chapter sets the foundation for many of the design and project decisions discussed later in the report. In this chapter, information regarding demographics and growth, water availability, land ownership, and natural resources is discussed. A detailed analysis of the terrain surrounding the I-15 corridor, including viewsheds to significant natural features and environmental features, is also presented. This information is then synthesized in a series of Opportunities and Constraints maps that specifically identify project opportunities along three distinct segments of the corridor. These chapters should be read carefully so design decisions will be made with a solid analytical basis rooted in the physical and historical nature of the area.

The third chapter, Elements of Landscape and Aesthetics, is critical to understanding the types of enhancements and traveler amenities that will be provided through the NDOT Landscape and Aesthetics program. At the beginning of the chapter is a description of softscape and hardscape types. These represent increasing levels of visual enhancement, amenity, cost, and maintenance, and have been prescribed across the entire I-15 corridor. Additional items included in the Elements of Landscape and Aesthetics are a roadside signage program, varying degrees of enhanced road services, a native wildflower program, and an effort to minimize the visual impacts of outdoor advertising and billboards.

Detailed analysis and further understanding of the I-15 corridor resulted in the creation of three distinct, yet consistent, Landscape Design Segments: Gateway to Nevada's Excitement, Dynamic Desert Metropolis, and Mojave High Desert. These segments are examined individually in the fourth chapter of this report. A description of the theme and design objectives of the segment is provided giving the reader a sense of the design aesthetic that is appropriate and desired within the segment. Maps and sections of the individual Landscape Design Segments provide further detail regarding the location of specific projects and where the varying levels of softscape types and hardscape treatments are to be achieved.

Design guidelines are included in the fifth chapter to articulate qualitative design for all aspects of the corridor. These apply at all levels of engineering and facility planning and design. The final chapter describes funding and project priorities for each segment of the I-15 corridor.

This Corridor Plan is a management tool that will direct decisions made on Nevada's Interstate Highway system with the goal of considering landscape and aesthetics as an integrated part of all design undertaken by NDOT and the community partners within the state.

How to Use the Corridor Plan for a Segment of I-15:

- *Refer to the section beginning on page 3.1 to determine the softscape and hardscape type and treatment.*
- *Refer to the section beginning on page 4.1 to determine the Landscape Design Segment and design theme.*
- *Refer to the section beginning on page 4.3 for design objectives and intended future context.*
- *Refer to the section beginning on page 4.7 for design interpretation.*
- *Refer to the section beginning on page 5.1 for specific design guidelines.*
- *Refer to the section beginning on page 6.1 for project priorities and a description of funding and costs.*

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NDOT HIGHWAY LANDSCAPE AND AESTHETICS - *THE VISION*

Nevada has a renewed commitment to landscape and aesthetics as integral elements of the state's highways. In 2002, the Nevada Department of Transportation (NDOT) adopted the *Landscape and Aesthetics Master Plan* and with it the following vision for the state Highway system.

> *"We envision a system of state highways that reflect the land and people of Nevada. We believe that Nevada should have highways that are aesthetically pleasing, as well as safe and cost effective. Therefore, no state highway is complete until landscape and aesthetics are considered and addressed. "*

Today, it is the policy of the State of Nevada to consider landscape and aesthetics along with all other design factors in all transportation projects. Furthermore, local communities, the public, other permitting agencies, and the private sector are encouraged to be involved in the planning, design, construction, and maintenance of transportation projects. Such a partnership will help to ensure Nevada's highway system expresses the unique heritage, culture, and environment of the state and its communities.

PURPOSE OF THE CORRIDOR PLAN

Based on the vision and recommendations of the *Master Plan,* the *I-15 Landscape and Aesthetics Corridor Plan* has been developed. This plan includes landscape and aesthetic recommendations for all of Interstate 15 from the California border at Primm to the Arizona border at Mesquite, US-95 from Henderson north to the junction with SR-157 at Lee Canyon, the I-215 beltway, and portions of I-515. The *Corridor Plan* identifies the major design themes and materials to be used in landscape and aesthetic treatments, recommends the level of treatment to be applied to highway features in the corridor, provides a broad cost estimate of treatments, and outlines strategies for funding of construction and long-term maintenance.

The *Corridor Plan* is a means to improve the aesthetic qualities of the I-15 corridor and associated highways, particularly as they relate to the adjacent cities, communities, and neighborhoods. The *I-15 Landscape and Aesthetics Corridor Plan* is intended to affect both existing highways as well as future expansion projects.

Landscape and aesthetic treatments identified and prioritized in the *Corridor Plan* will be funded from a variety of sources. As a general rule, up to three percent of total highway construction costs on all new construction and capital improvements will be allocated to landscape and aesthetic treatments. Funding for the retrofit of landscape and aesthetic improvements to existing highways is based on matching state funds with a share of local money or in-kind contributions.

The *Corridor Plan* is a public/private partnership initiative. This unique initiative is guided by the partnership policy outlined in the *NDOT Landscape and Aesthetics Master Plan*, which states that

> *"Local communities, the public, other permitting agencies, and the private sector are encouraged to be involved in planning, design, construction, and maintenance of transportation projects to express the unique heritage, culture, and environment of the state and its communities."*

Furthermore, NDOT will work with local governments, private citizens, civic groups, and the business community to develop cooperative agreements for funding the design, construction, and maintenance of landscape and aesthetic improvements identified in this corridor plan.

"Highways are aesthetic entities involving all the senses, much as a piece of architecture or sculpture does. A road is not just a linear element composed of interlocking forms; it has depth and height, and should be considered as a three-dimensional form in all stages of design and construction.

It is important that design and construction of roads fit the country or city where they are sited. This is the only way in which the problem of reconciling human perception with machine speed can be solved.

When a highway is safe to drive on and satisfying to use and observe, the problem of perception has been resolved and the road has both external and internal harmony."

- NDOT 1968 Aesthetics Manual

(1) *The first corridors to be planned have been the interstate highway routes across the state: I-15 and I-80. Both of these corridor planning projects included an extensive public participation program.*

PUBLIC PARTICIPATION PROCESS

Early and ongoing public involvement was critical to the success of the *Landscape and Aesthetics Corridor Plan*. For this reason, NDOT fostered extensive public dialog at every stage of planning and development engaging communities in helping to develop with local support.

The public participation process provided stakeholders with a forum for sharing knowledge of their communities, identifying opportunities for enhancing the landscape and aesthetics of the corridor, creating design objectives and guidelines for highways in their area, and prioritizing prospective projects.

The public participation process ensured:

1. Identification of issues and concerns of each community.
2. A method, strategy, and action plan to address community concerns.
3. Opportunities for the public to express their level of support for the *Corridor Plan*.
4. Release of full information about the *Corridor Plan* through public meetings, the *Corridor Plan* website, and fact sheets.

The public process involved a multi-layered approach to encourage maximum participation.

- A Technical Review Committee (TRC), composed of a broad range of stakeholders, contributed significant local agency and community knowledge.
- The public was able to identify issues, ask questions, and provide input at two public meetings.
- A fact sheet was widely distributed to provide general information about the corridor plan.
- The public was able to visit a corridor planning website to learn more about corridor planning and keep current on planning activities.
- Individual stakeholder meetings were conducted to ensure that all those who needed to be involved were involved.
- A media relations strategy was developed to encourage even greater participation.

Public participation and community involvement are important components of the planning process because they have helped to ensure the recommendations outlined in this *Corridor Plan* reflect the ideas and suggestions of local community members.

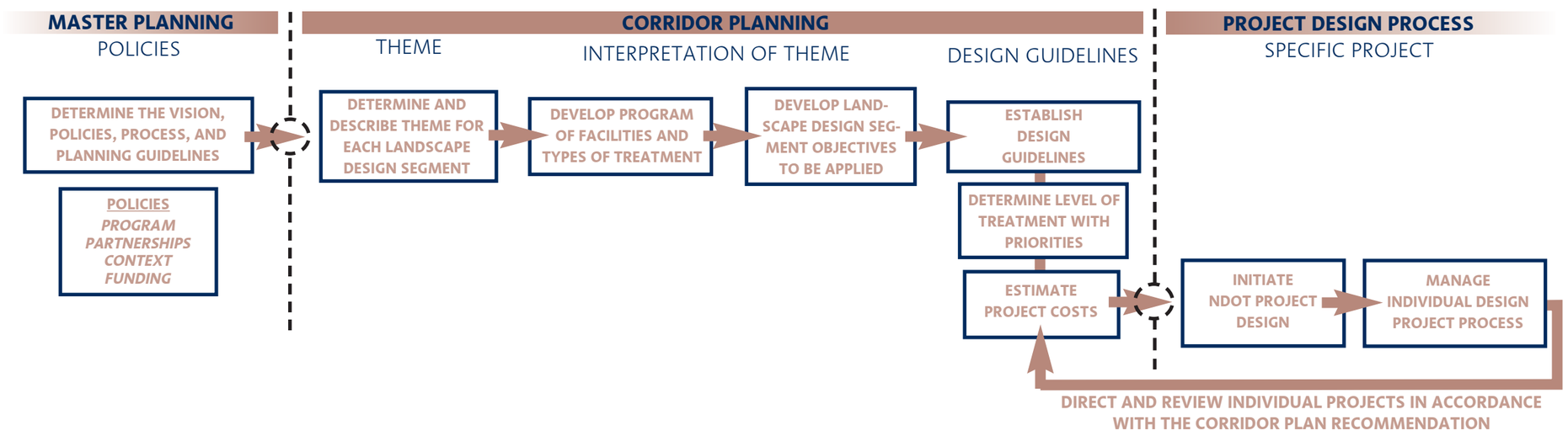
(2) *From the inception of the corridor planning process a Technical Review Committee provided knowledgeable input, ideas, and comments on the plan. Workshops have involved stakeholders and the general public.*

CORRIDOR DESIGN MANAGEMENT

The *I-15 Landscape and Aesthetics Corridor Plan* is a design management tool for NDOT and others who will ultimately design specific highway projects. This plan establishes a context for these future projects and through its recommendations, programs, and description of the intended result, guides the Landscape and Aesthetics program for the I-15 corridor.

Prior to the design of a specific highway project, which may be a new facility, upgraded or a retro-fitted project, the corridor plan establishes how the project level design would fit within a particular Landscape Design Segment. A theme, or overarching idea, for the design is established and described. The development of projects within each Landscape Design Segment is guided by its theme, associated design objectives, a program of facilities with common definitions, and examples that illustrate interpretation of the theme. Finally, design guidelines, estimated costs, and project priorities are established. NDOT will use the *Corridor Plan* to manage the design of specific projects. Figure 1, below, describes the steps in this process to direct the outcome of the Landscape and Aesthetics program for this corridor.

Figure 1



(1) *Previous phases of the corridor planning process studied the natural landscape of the state in detail and applied recommendations for the highway corridor.*

(2) *The landscape and aesthetics treatments for the urban Las Vegas portion of the I-15 corridor have the potential to positively shape the character of the city's future.*

(3) *The landscape and aesthetics treatments recognize the dynamic Las Vegas metropolitan character.*

(1) *River corridors and adjacent vegetation patterns provide scenic interest while travelling along eastern I-15 and are rare ecosystems in this arid landscape.*

(2) *The view toward Moapa Valley, located along the northeastern portion of I-15, is composed of dramatic colors, distinctive landforms, and unique vegetation communities. Color within the landscape is one attribute that creates a context for sensitive design decisions.*

OVERVIEW OF CORRIDOR PLAN

In addition to this introduction, the *Corridor Plan* is comprised of seven major chapters:

- Background Information
- Elements of Landscape and Aesthetics
- Landscape Design Segments
- Design Guidelines
- Cost Estimates
- Priority Projects
- Funding and Partnerships

Background Information provides an overview of important data related to the I-15 Corridor. This section summarizes past, present and future community growth along the corridor; describes land ownership patterns; briefly outlines water resource availability for Southern Nevada; identifies tourism and travel patterns; and, summarizes natural resource information. This section also provides a summary of visual analysis, including viewsheds and distance zones, environmental analysis that was conducted, and offers an overview of opportunities and constraints along the I-15 corridor. A complete inventory of data and analysis of opportunities and constraints is included in the *NDOT I-15 Landscape and Aesthetics Corridor Plan: Technical Report Volume One - Background Information* and in the *NDOT I-15 Landscape and Aesthetics Corridor Plan: Opportunities and Constraints* report. Both of these documents were published in 2004 and are available through NDOT.

Elements of Landscape and Aesthetics defines the functional purpose and visual intent of highway corridor improvements. The Elements of Landscape and Aesthetics section describes varying levels of treatment for softscape as well as structures and hardscapes to be used in the corridor. This chapter also details a number of programs that should be considered for highways on a statewide basis including: a place name signage program, road service program, native wildflower program, invasive and noxious weed control program, outdoor advertising program, and scenic highway designation program.

Landscape Design Segments section describes the three main design segments: the Gateway to Nevada's Excitement, Dynamic Desert Metropolis, and the Mojave High Desert. This section defines the design themes and objectives for each design segment. In addition, the Landscape Design Segments section outlines the softscape and hardscape types and levels of treatment for specific locations along the corridor, as well as specific corridor features that should be highlighted.

Design Guidelines section provides a framework for improving landscape and aesthetics when designing new and retrofit highway projects. The guidelines are written statements of desired performance to meet the design objectives of each Landscape Design Segment.

Guidelines and Cost Estimates details a minimum level of landscape and aesthetics quality that all NDOT highway projects should meet as described in the design guidelines, along with a breakdown of costs associated with the levels of treatment for each design segment.

Priority Projects outlines the future projects as currently identified by NDOT and the priority associated with them to improve their landscape and aesthetics.

Funding and Partnerships outlines the funding mechanisms and partnership opportunities that exist and/or will be established to implement the *Landscape and Aesthetics Corridor Plan*.

PRESENT & FUTURE COMMUNITY GROWTH

Southern Nevada's historic settlement is tied to travel. In fact, the first people to place roots in Las Vegas Valley were travelers, not settlers. Those entering the Valley were using the 2200 mile long Old Spanish Trail trade route, as well as a road through Death Valley established for Mormon travel between Salt Lake City and California. Today, the Las Vegas Valley is the quintessential 20th century city. The majority of growth in the valley has occurred over a relatively short time - less than 100 years. And, over the last two decades, the Las Vegas Valley has seen extraordinary population growth. Between 1995 and 2001, the Valley's population increased from 1 million to over 1.6 million people.

At the time of this corridor plan, the Las Vegas Valley was continuing to grow with an average of 5000 new residents moving into the area every month. Most local market observers believe that the rapid growth of the 1990s will give way to slower, yet steady growth through the next decade. Based on community plan population projections, by the year 2020 the Valley may be home to nearly 3 million people.

The Las Vegas Valley settlement pattern alongside the I-15 corridor (including portions of I-515, US95, and I-215) is characterized by intense urban and suburban development and growth. The I-15 corridor passes through a number of incorporated and unincorporated communities, including the City of North Las Vegas, the City of Las Vegas, the City of Henderson, as well as seven unincorporated planning areas of Clark County. Growth and development of these communities, particularly amongst the unincorporated planning areas along I-215 is tied to the development and improvement of the highway corridors. Outside of the Las Vegas Valley, other distinct settlement areas include Primm, located at the southern end of I-15 at the Nevada/California border, and Jean approximately 13 miles northwest of Primm. In contrast to the intense urban pattern of the Las Vegas Valley and the casino dominated settlements of Primm and Jean, settlement to the north of the I-15 corridor outside of the Valley remains typically low in density and rural. In fact, Mesquite is the only incorporated community north of the Valley along the I-15 corridor. The urban settlement in Mesquite, particularly along the south side, is surrounded by agricultural land and riparian areas of the Virgin River. Glendale, a small unincorporated village-like community lies approximately 40 miles south of Mesquite adjacent to I-15.

ANTICIPATED URBAN CHANGES

The anticipated urban changes over the next twenty years most likely to influence the I-15 corridor (and related study area including portions of I-515; US 95; and, I-215) will occur in the City of Las Vegas; the City of North Las Vegas; the City of Henderson; and, the unincorporated communities of Enterprise, Lone Mountain, Spring Valley and Summerlin South of Clark County. The Southern Nevada Public Land Management Act, legislated in 1998, resulted in the Land Disposal Boundary which now serves as an outer limit to private sector development in the Valley. Though the Disposal Boundary serves as a growth boundary to the region, approximately 27,000 acres of Bureau of Land Management land within the Land Disposal Boundary will be made available over a period of 20 years through auctions to the private sector for development. The substantial growth and land use development of these cities and communities, particularly amongst the unincorporated planning areas along I-215 and the southern portion of I-15, will have the most significant impacts on use and aesthetics of highway corridors in the Las Vegas Valley.

LAND OWNERSHIP

The State of Nevada consists of 83% public land, the highest percentage of federal lands among the contiguous 48 states, (BLM, 2000). The Bureau of Land Management (BLM) owns the bulk of the federal lands with small and large in-holdings of other public agencies and private landowners. In southern Nevada, land is managed by BLM, U.S Fish and Wildlife Service, Department of Defense, National Park Service, U.S. Forest Service, Bureau of Indian Affairs (BIA) regional agencies, local jurisdictions and private landowners. Federal agencies own 89% of Clark County lands. The rural land adjacent to I-15 (outside of NDOT's right-of-way) belongs to BLM, BIA and the Department of Defense. In urban areas, the land is primarily under private land ownership.

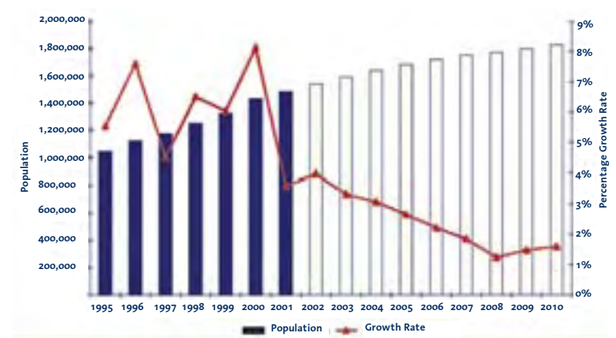
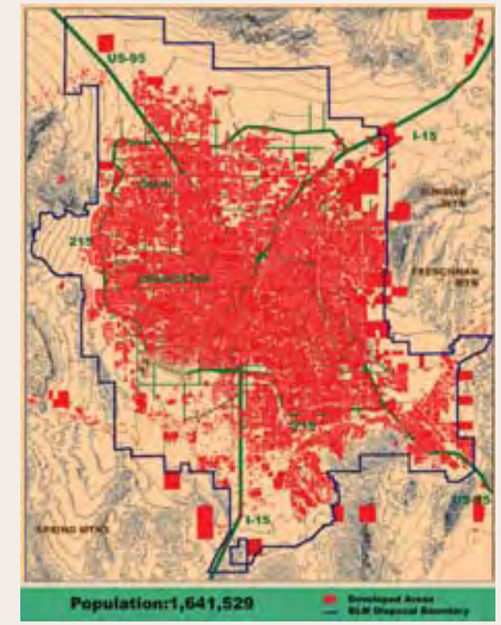
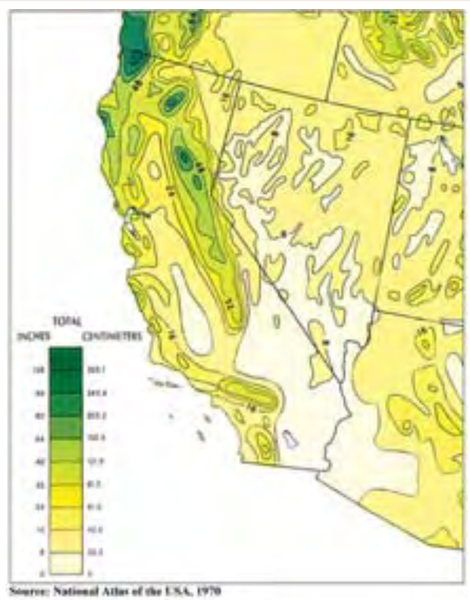


Figure 2: *Clark County Historic and Projected Population*



(1) *Clark County 2004 population estimate and projected urban growth areas. The blue line indicates the public lands disposal boundary in which federal land will become private.*



***(1)** This annual precipitation map reveals how much of Nevada is arid, especially southern Nevada. Nevada is the driest state in the US.*

Land ownership affects land use and the visual character of the landscape. Public agencies such as BLM and the U.S. Forest Service operate under a multiple-use mandate. From the highway, drivers see evidence of grazing, mining, power generation, and tourism throughout the multiple-use federal lands. In the greater Las Vegas area, where land is private, development in its different forms predominates. NDOT may have flexibility or influence over the visual character of public lands adjacent to the right-of-way because of the possibility of interagency agreements. Public lands with a single-use permit, such as the Department of Defense, National Park Service, or Wilderness Study Areas within BLM lands, are not immediately located adjacent to I-15, but can be seen in the background.

WATER RESOURCE AVAILABILITY

The availability of adequate infrastructure may constrict the supply of developable land. The most pressing infrastructure concern in the Las Vegas Valley is an adequate water resource and delivery system. This is a major issue, and particularly pertinent at the time of this report due to a sustained drought period. It is anticipated that after the year 2016, there will be limited water resources to meet demand. Ultimately, Southern Nevada's continued growth depends on the ability to tap into additional water resource supplies. In addition to future population growth and land use development for each community, the uncertain water resource availability in the valley will require water conserving design for landscape and aesthetics projects. Many communities and water districts have landscape ordinances and policies that focus on this aspect of landscape design and other standards that are relevant to appropriate landscape design.

COMMUNITY SETTLEMENT PATTERNS

The geography of settlement along Nevada's I-15 corridor has been studied and mapped. People everywhere develop an attachment to a geographic place, characterized by a set of natural boundaries that are created by physical, biological, social, cultural, and economic systems. (Kent and Baharav, 2002, Kent and Preister, 1999). Unique beliefs, traditions, and stories tie people to a specific place, to the land, and to social/kinship networks, the reflection and function of which is called "culture".

The Human Geographic Map of Nevada included in Figure 3 is based on the published result and definitions of the boundaries (Kent and Schultz, 1993, map updated in 2000). Social Resource Units are the aggregation of small units defined by cultural descriptions. Often a river basin, for example, is the basis of shared history, lifestyle, livelihood and outlook. Social ties are created by action around issues and common values.

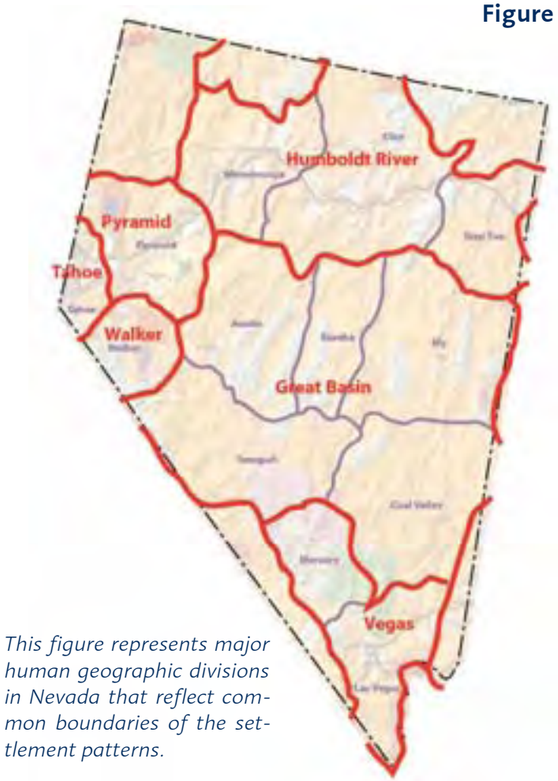
Social Resource Units are characterized by a sense of belonging. These districts represent the boundaries within which people already mobilize to meet life's challenges, see Figure 3. These social divisions have been important in determining the boundaries of the Landscape Design Segments contained in this *Corridor Plan*. Participation in Technical Review Committees, based on these boundaries, has provided place-based knowledge and stakeholder input.

TRAVEL AND TOURISM PATTERNS

Southern Nevada provides a host of tourism and travel opportunities. Coined the "Las Vegas Territory" by the Nevada Commission on Tourism, southern Nevada offers diverse cultural and regional character. From over 20 world-renowned casinos such as the Bellagio, the Luxor, and the Mirage within Clark County, to the Desert National Wildlife Refuge - the largest national wildlife refuge in the lower 48 states - Southern Nevada is considered a genuine tourist Mecca. In addition to the diversity of cultural and regional features found within this territory, Southern Nevada, particularly the Las Vegas region, is the staging, or jumping off point, to other very popular national tourism destinations such as the Grand Canyon, Hoover Dam, and Lake Mead.

Las Vegas hosted 35 million visitors in 2003, (Las Vegas Conference Bureau). Approximately 15 million tourists are traveling annually by car north and south along the I-15 corridor to Las Vegas. Approximately six million visitors are then traveling the portions of the I-15 corridor to visit other destinations, as described above. The I-15 corridor informs, and is informed by, the travel and tourism patterns of these visitors. There are likely few other highways in the country that are used as extensively for vacation and/or pleasure travel purposes. The I-15 corridor is a vital connection and travel route to major tourism destinations and travel attractions in Southern Nevada and the rest of the state.

Figure 3



This figure represents major human geographic divisions in Nevada that reflect common boundaries of the settlement patterns.

TRANSPORTATION AND ARRIVAL

The Las Vegas valley's steady flow from tourism and incoming residents presents several transportation planning challenges. Increased demands on the airport and valley road systems has sparked much concern by local citizens and urban planners. Clearly there is a need for alternative transportation.

Currently, feasibility studies, environmental studies, and potential funding sources are being researched for the following variety of alternatives:

- A passenger and cargo airport in the Ivanpah Valley, lessening the load on McCarran International Airport.
- A high speed intercity passenger rail line from California to the Las Vegas metropolitan area (additionally servicing the potential Ivanpah airport).
- A valley wide light rail system utilizing the old Union Pacific tracks linking downtown Las Vegas to Henderson and North Las Vegas.

Relative to the I-15 corridor, the Ivanpah airport will introduce a new point of arrival into the Las Vegas Valley. The current planning identifies the need for the airport and airport site when the passenger load at McCarran airport exceeds 50 million enplanements per year.

NATURAL RESOURCES

Topography & Surface Hydrology

Nevada is one of the most mountainous states in the U.S., with over 314 named mountain ranges and 232 basins that create a landscape rich in diversity. Nevada consists of four major ecosystem units or eco-regions - the Great Basin, Mojave Desert, Columbia Plateau, and Sierra Nevada. Of these, the Great Basin and Mojave Desert eco-regions are part of the I-15 corridor.

The Mojave Desert covers the state's south tip and consists of broad valleys and fewer mountain ranges than the Great Basin. There are some perennial stream reaches and numerous springs in the area, but water is a precious commodity in the desert. The Colorado River, a major regional river, flows through the eastern portion of the eco-region, and other important area-wide streams include the Amargosa, Muddy, Virgin, Meadow Valley, and White Rivers.

Vegetation Communities

The physiographic region primarily influencing vegetation along I-15 is the Mojave Desert of southern Nevada. In general, most of the land along the highway is arid, with the exception of areas where rivers and streams are sustaining pockets of riparian vegetation with willows, alders, dogwoods and cottonwoods. Some areas of salt marsh do not provide fertile grounds for the establishment of vegetation. I-15 crosses mostly areas of creosote, bursage, blackbrush, and bare land.

The vegetation communities found along I-15 include, from most to least prevalent: Southern Desert Shrub and Creosote (*Larrea tridentata*)/ Bursage (*Ambrosia dumosa*), Riparian/Grass that includes desert riparian species and mesquite (*Prosopsis juliflora*), Blackbrush (*Coleogyne ramosissima*), Mojave Yucca (*Yucca schidigera*), and Joshua Tree (*Yucca brevifolia*).

Wildlife and Wildlife Habitat

Nevada is renowned for its variety of wildlife and vegetative habitats that include more than 3800 plant and animal species, and some of the most biologically diverse eco-regions in North America. Nevada is inhabited by a large number of species and subspecies that are unique to the state.

Habitat for large mammals is limited to the fact that much of the land surrounding the I-15 corridor is part of the Mohave Desert. Elk are currently found in several locations in northeastern and central Nevada. There is elk habitat just west of Las Vegas, but there are no elk habitat areas that cross the I-15 corridor. Mule deer is the most common wild ungulate found in Nevada today, with more than 145,000 located in the northern portion of the state. Bighorn sheep is one of the most distinctive and easily recognized desert animals. There are scattered bighorn sheep habitat areas throughout the I-15 corridor, some of which crosses the highway between Apex and Garnet. There is also bighorn sheep habitat near Primm.

Wildlife movement corridors are composed of contiguous habitat that provides shelter and food sources for resident and migratory wildlife species. There are very few movement corridors across the Mohave Desert, with bighorn sheep being one of the few large mammals found in the area. Surprisingly, there is extensive, diverse wildlife habitat around the Las Vegas area. Yet, not surprisingly, there are no documented wildlife movement corridors that cross the I-15 corridor in this area. Bighorn Sheep habitat is dissected by the I-15 corridor just east of Las Vegas, and north along the I-15 there are areas of critical environmental concern just south of Mesquite.

(1) *This bridge on I-70 near the continental divide in Colorado was constructed without center piers to frame the view of the mountain range beyond. This underpass window enhances the view for the driver.*

(2) *Mojave Desert roadside vegetation community is influenced by climate and specific adaptation to the conditions. In the southern portion of Nevada, less than 4 inches of rainfall occurs in a year.*

(1) *Virgin Mountains are the background view to the Joshua tree community occurring on Mormon Mesa. The increase in elevation creates enough soil moisture to support this infrequently found plant community.*

VIEWSHEDS AND DISTANCE ZONES

Viewshed refers to all areas that are visible from a section of highway. Similar to the boundaries of a watershed, the boundaries of viewsheds are usually high points in the landscape, such as ridges and hills. Distance Zones, including Foreground Zones, Middle Ground Zones and Background Zones, define the viewing distances of the traveler.

Viewsheds are determined by analyzing digital elevation models using Geographic Information System software. All areas that are visible from the highway are combined to create the viewshed. Distance Zones are delineated through a process developed by the U.S. Forest Service which relates the detail and importance of distance to the driver on the highway.

Viewsheds and Distance Zones along the I-15 corridor are shown as Map A on page 2.5. This analysis sets the foundation for visual quality management across the entire I-15 Corridor. Darker shading corresponds to areas that can be seen more often from points along the highway (Figure 4). These areas usually coincide with landscapes of high visual quality and scenic value such as mountain ranges. Management of these areas through multi-jurisdictional cooperation can protect them from billboards and other land uses that obstruct views and detract from the travel experience.

VISUAL ANALYSIS

A visual analysis was conducted along the I-15 corridor to evaluate existing views from the highway and rank them relative to their quality. Information to be highlighted within the Visual Analysis mapping includes: scenic features and "highly" visible landforms such as mountain ranges and unique cliffs, as shown on Maps B, C, and D. Areas of highest scenic value include:

- The Spring Mountain Range West of Las Vegas
- The Moapa Valley and Moapa Peak Landscapes
- Mormon Mesa

Intrinsic landscape districts are defined on the Visual Analysis maps. They represent natural boundaries such as topographic edges that confine their spatial dimensions. Intrinsic landscape districts can be visualized as large outdoor "rooms" defined naturally by the boundaries of the surrounding landscape.

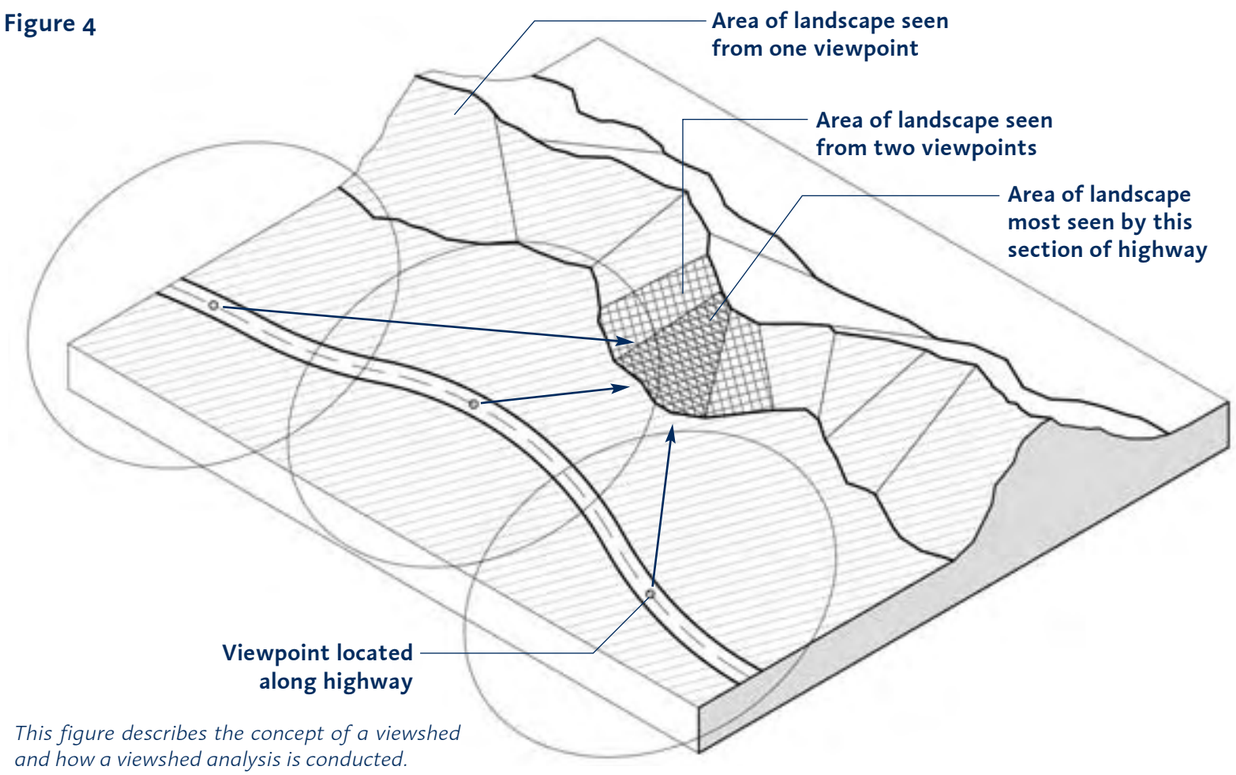
ENVIRONMENTAL ANALYSIS

The landscape of southern Nevada has many special environmental features, including: plant communities, rivers, lakes, wetlands, playas, wildlife, rock outcroppings, cliffs, and mountain ranges. To analyze the environmental features, data was gathered from a variety of sources and analyzed according to its relationship to the I-15 corridor. Unique features visible from the highway or that influence the highway were mapped (see Map E-G).

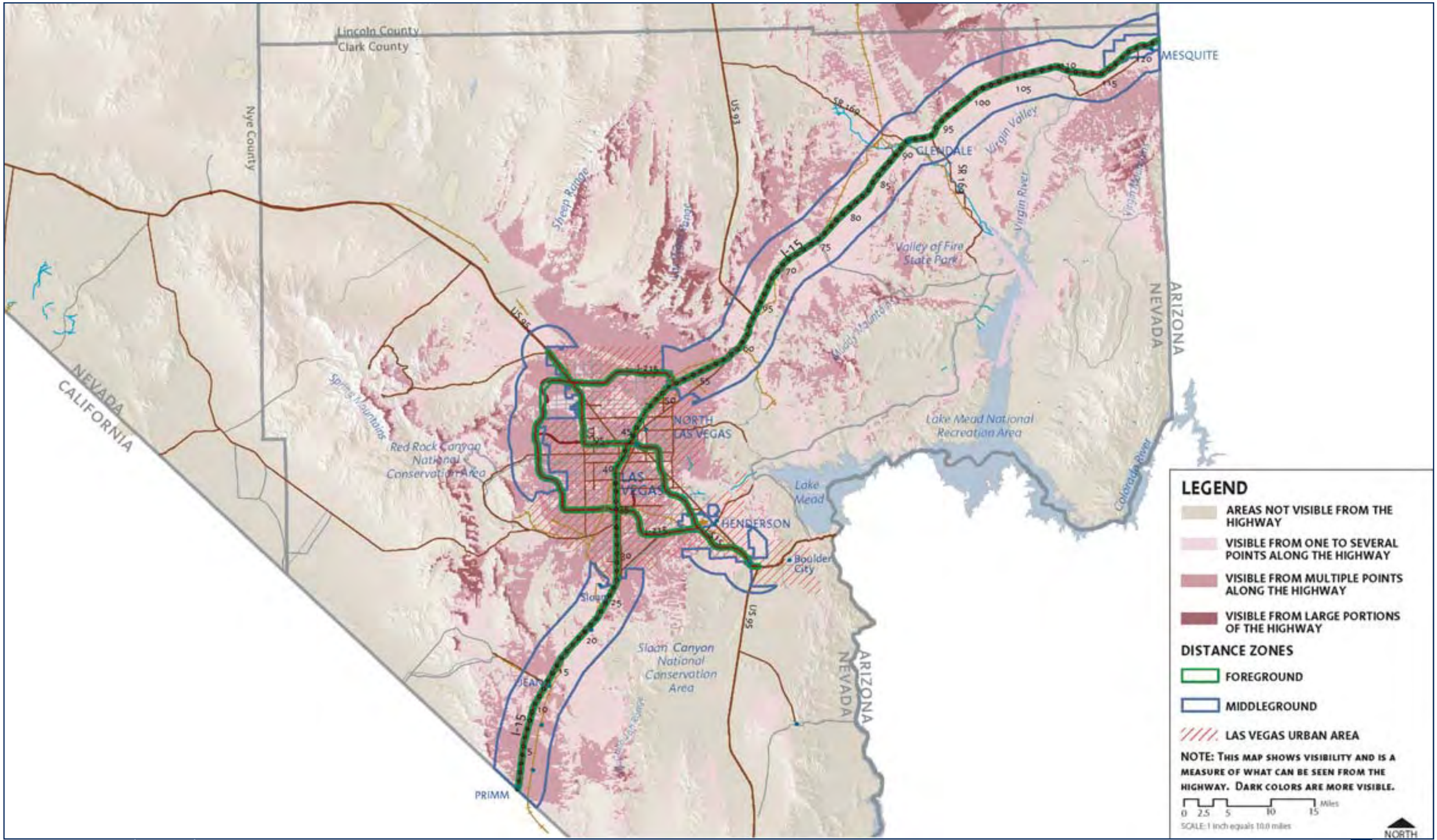
Environmental features provide an opportunity to create pull-offs to view the feature, preserve natural systems, and to enhance wildlife movement corridors.

Public agency coordination is essential to maintain visual and environmental quality management. This may affect land use decisions, facility placement, and environmental standards utilized on adjacent lands. Among this coordination would be the Southern Nevada Land Disposition Boundary which affects federal lands predominantly held by the U.S. Bureau of Land Management. Consideration of land sales in regard to the design objectives of this plan is an opportunity to enhance the quality of the Landscape Design Segments.

Figure 4



This figure describes the concept of a viewshed and how a viewshed analysis is conducted.

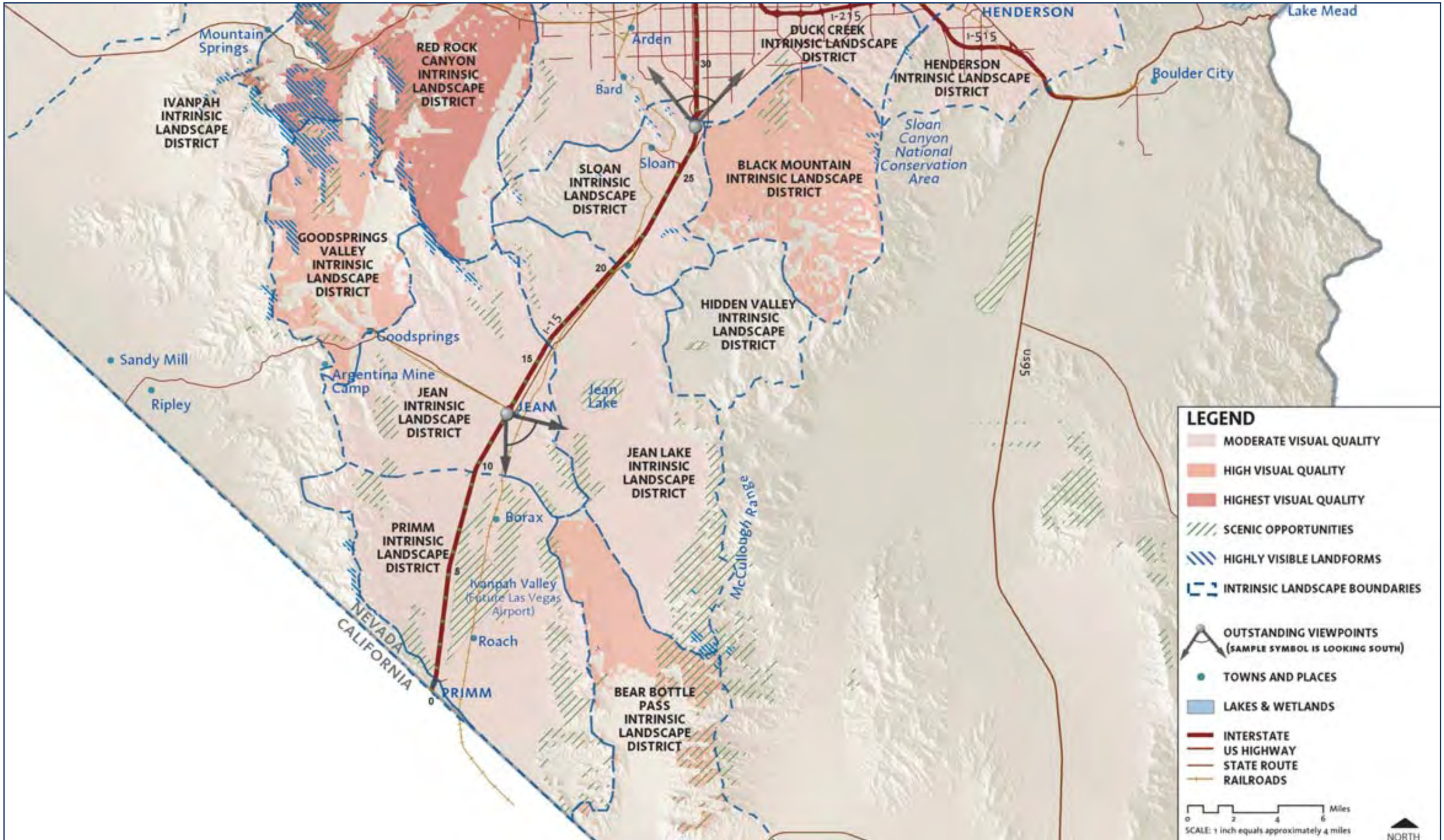


VIEWSHED AND DISTANCE ZONES

I-15 CORRIDOR

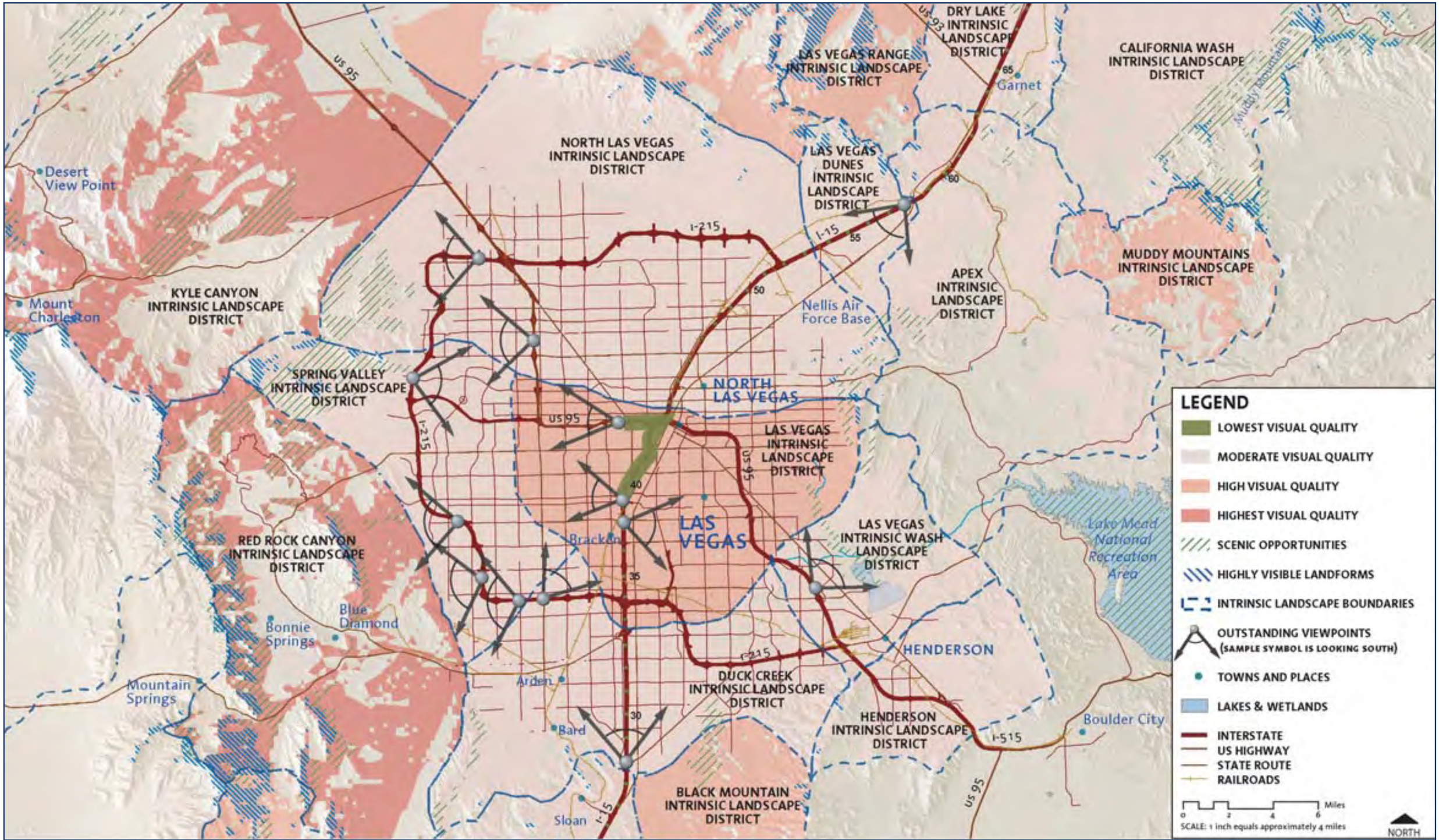
MAP A

2.5



VISUAL ANALYSIS

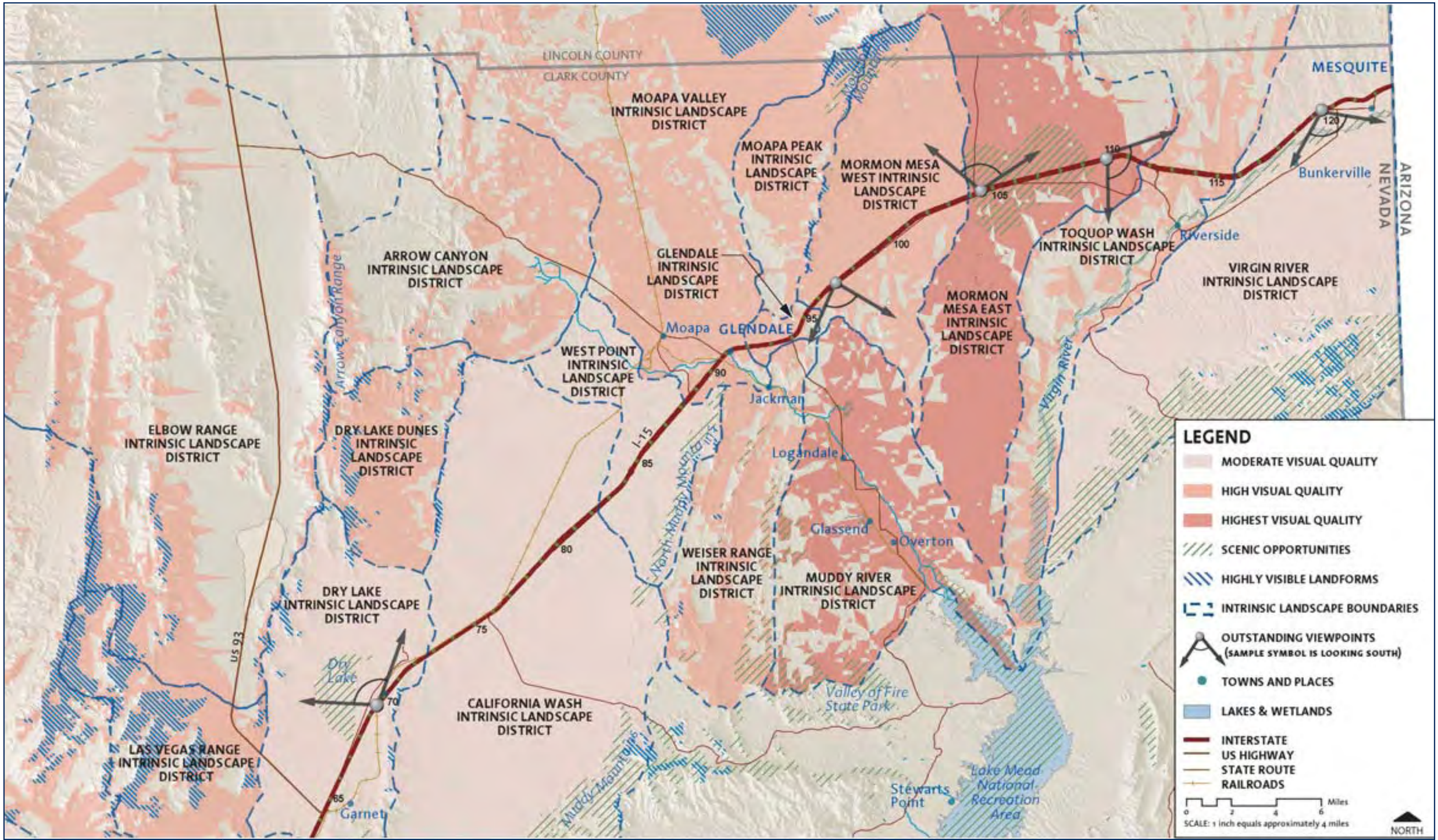
GATEWAY TO NEVADA'S EXCITEMENT LANDSCAPE DESIGN SEGMENT



VISUAL ANALYSIS

DYNAMIC DESERT METROPOLIS LANDSCAPE DESIGN SEGMENT

MAP C 2.7

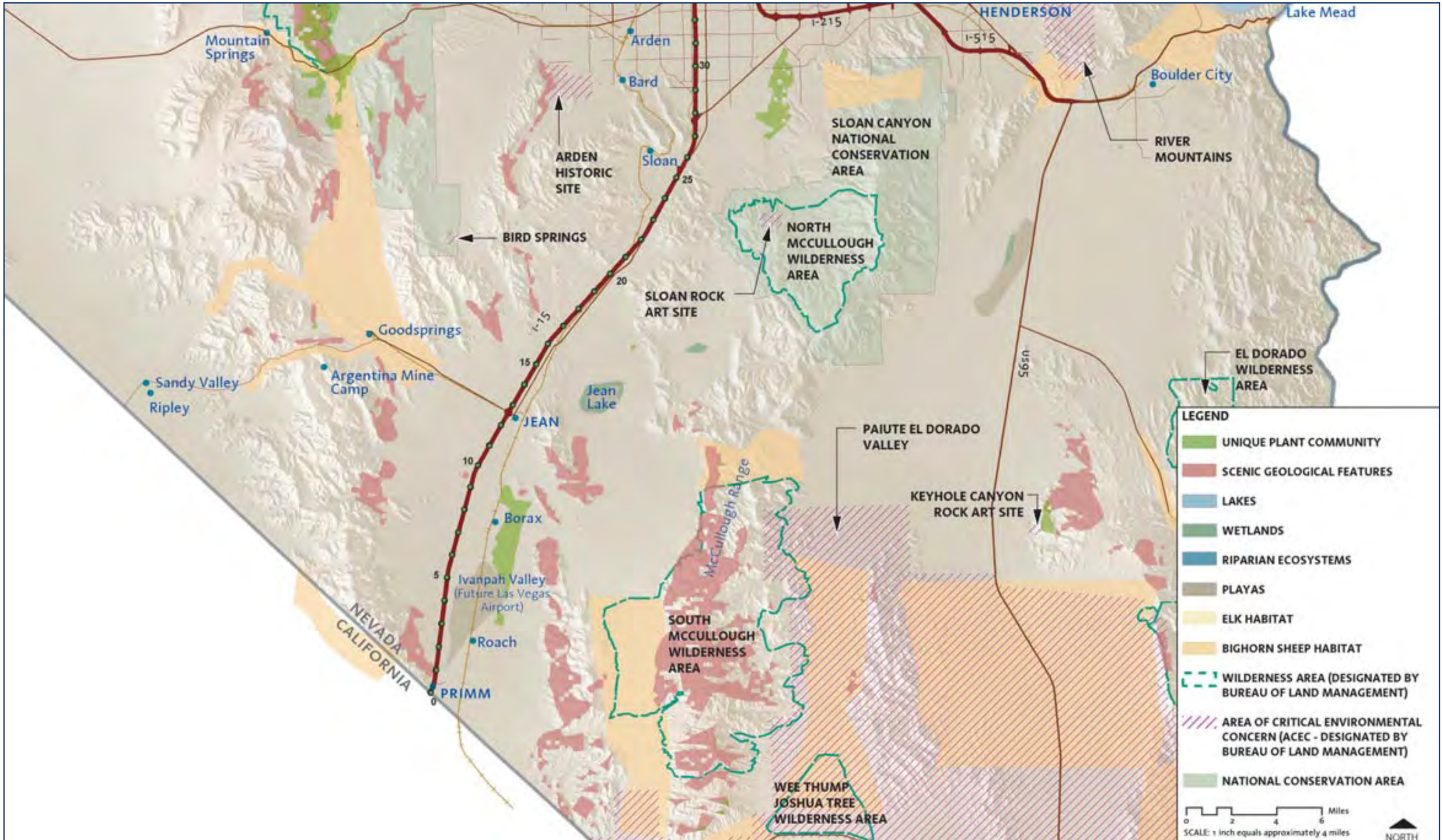


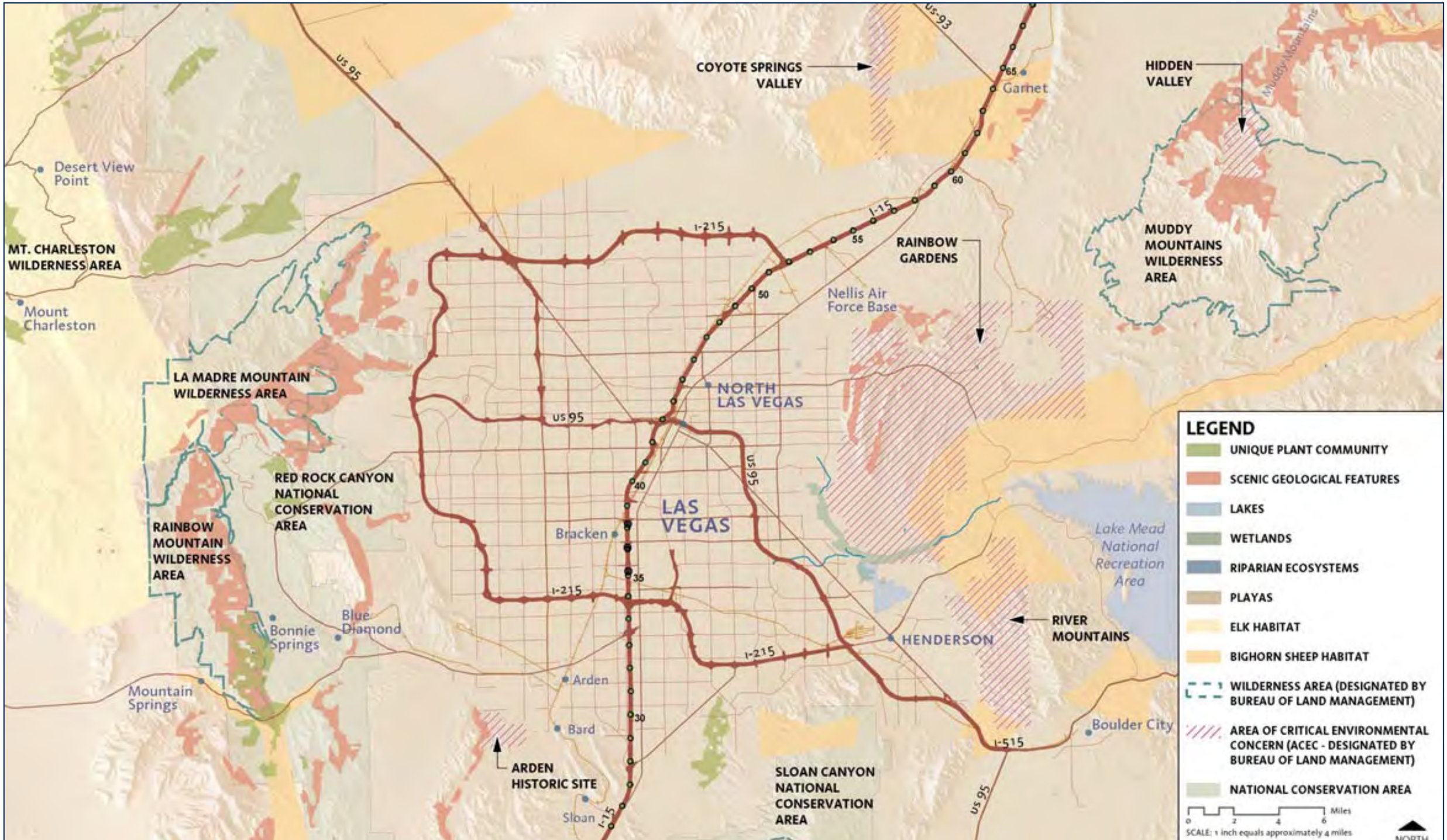
MAP D 2.8

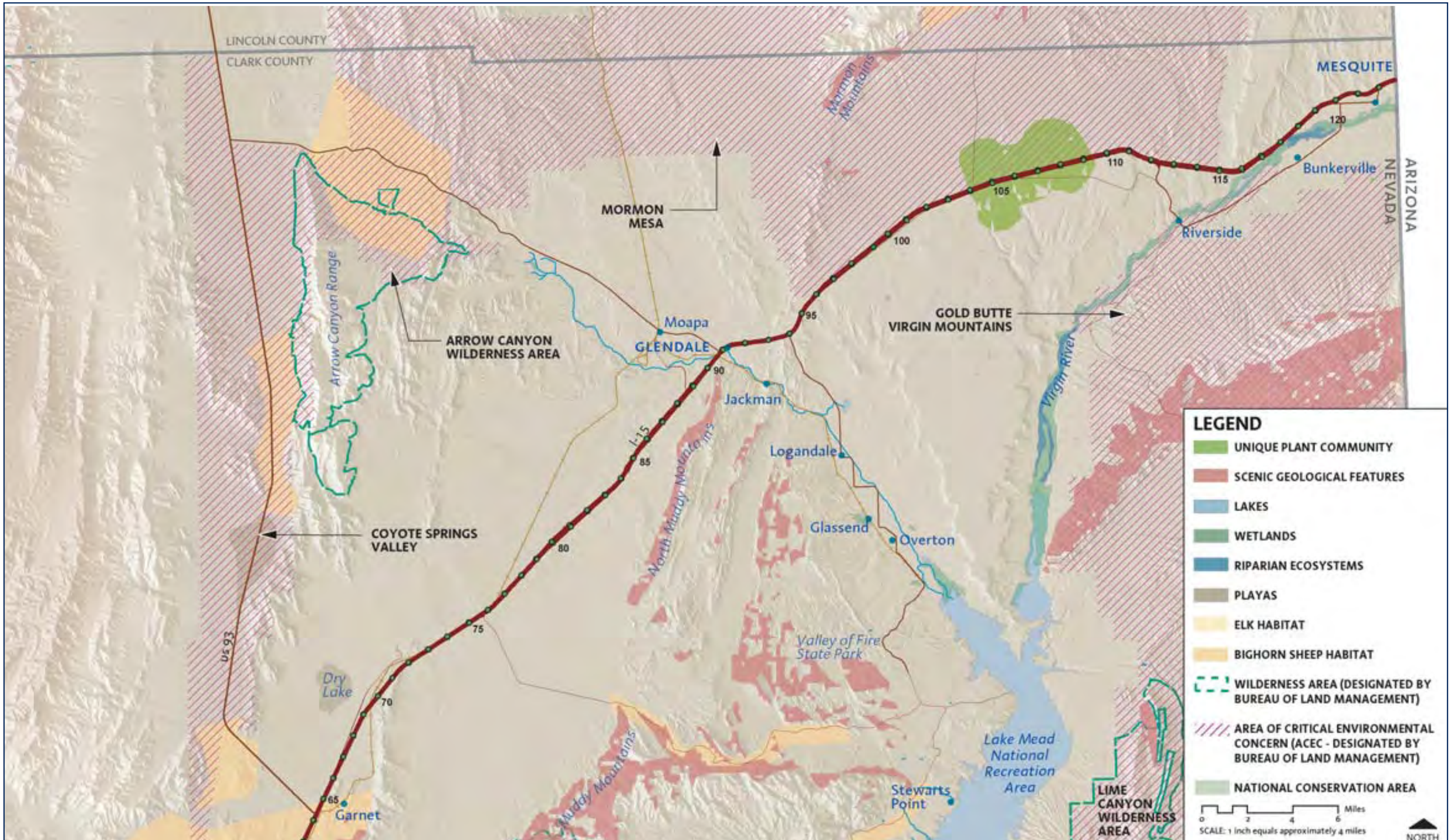
I-15 corridor plan

VISUAL ANALYSIS

MOJAVE HIGH DESERT LANDSCAPE DESIGN SEGMENT


HENDERSON
Lake Mead
Mountain Springs
Arden
Bard
Sloan
Boulder City
I-215
I-515
30
25
20
15
10
5
0
I-15
US95
ARDEN HISTORIC SITE
SLOAN CANYON NATIONAL CONSERVATION AREA
RIVER MOUNTAINS
BIRD SPRINGS
NORTH MCCULLOUGH WILDERNESS AREA
SLOAN ROCK ART SITE
Goodsprings
Sandy Valley
Ripley
Argentina Mine Camp
Jean Lake
JEAN
EL DORADO WILDERNESS AREA
PAIUTE EL DORADO VALLEY
KEYHOLE CANYON ROCK ART SITE
McCullough Range
Borax
Ivanpah Valley
(Future Las Vegas Airport)
Roach
PRIMM
NEVADA
CALIFORNIA
SOUTH MCCULLOUGH WILDERNESS AREA
WEE THUMP JOSHUA TREE WILDERNESS AREA
LEGEND
UNIQUE PLANT COMMUNITY
SCENIC GEOLOGICAL FEATURES
LAKES
WETLANDS
RIPARIAN ECOSYSTEMS
PLAYAS
ELK HABITAT
BIGHORN SHEEP HABITAT
WILDERNESS AREA (DESIGNATED BY BUREAU OF LAND MANAGEMENT)
AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC - DESIGNATED BY BUREAU OF LAND MANAGEMENT)
NATIONAL CONSERVATION AREA
0 2 4 6 Miles
SCALE: 1 inch equals approximately 4 miles
NORTH


COYOTE SPRINGS VALLEY
HIDDEN VALLEY
Muddy Mountains
Garnet
Desert View Point
MT. CHARLESTON WILDERNESS AREA
Mount Charleston
LA MADRE MOUNTAIN WILDERNESS AREA
RED ROCK CANYON NATIONAL CONSERVATION AREA
RAINBOW MOUNTAIN WILDERNESS AREA
Bonnie Springs
Blue Diamond
Mountain Springs
RAINBOW GARDENS
Nellis Air Force Base
MUDDY MOUNTAINS WILDERNESS AREA
NORTH LAS VEGAS
LAS VEGAS
Bracken
Arden
Bard
ARDEN HISTORIC SITE
Sloan
SLOAN CANYON NATIONAL CONSERVATION AREA
HENDERSON
RIVER MOUNTAINS
Lake Mead National Recreation Area
Boulder City
US 95
US 93
I-15
I-215
I-515
65
60
55
50
40
35
30
LEGEND
UNIQUE PLANT COMMUNITY
SCENIC GEOLOGICAL FEATURES
LAKES
WETLANDS
RIPARIAN ECOSYSTEMS
PLAYAS
ELK HABITAT
BIGHORN SHEEP HABITAT
WILDERNESS AREA (DESIGNATED BY BUREAU OF LAND MANAGEMENT)
AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC - DESIGNATED BY BUREAU OF LAND MANAGEMENT)
NATIONAL CONSERVATION AREA
0 2 4 6 Miles
SCALE: 1 inch equals approximately 4 miles
NORTH


LINCOLN COUNTY
CLARK COUNTY
MESQUITE
Mormon Mountains
MORMON MESA
Bunkerville
NEVADA
ARIZONA
Riverside
GOLD BUTTE VIRGIN MOUNTAINS
Arrow Canyon Range
ARROW CANYON WILDERNESS AREA
Moapa
GLENDALE
Jackman
Virgin River
Logandale
North Muddy Mountains
Glassend
Overton
COYOTE SPRINGS VALLEY
US 93
Valley of Fire State Park
Dry Lake
Lake Mead National Recreation Area
Muddy Mountains
Stewarts Point
Garnet
LIME CANYON WILDERNESS AREA
I-15
65
70
75
80
85
90
95
100
105
110
115
120
LEGEND
UNIQUE PLANT COMMUNITY
SCENIC GEOLOGICAL FEATURES
LAKES
WETLANDS
RIPARIAN ECOSYSTEMS
PLAYAS
ELK HABITAT
BIGHORN SHEEP HABITAT
WILDERNESS AREA (DESIGNATED BY BUREAU OF LAND MANAGEMENT)
AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC - DESIGNATED BY BUREAU OF LAND MANAGEMENT)
NATIONAL CONSERVATION AREA
0 2 4 6 Miles
SCALE: 1 inch equals approximately 4 miles
NORTH

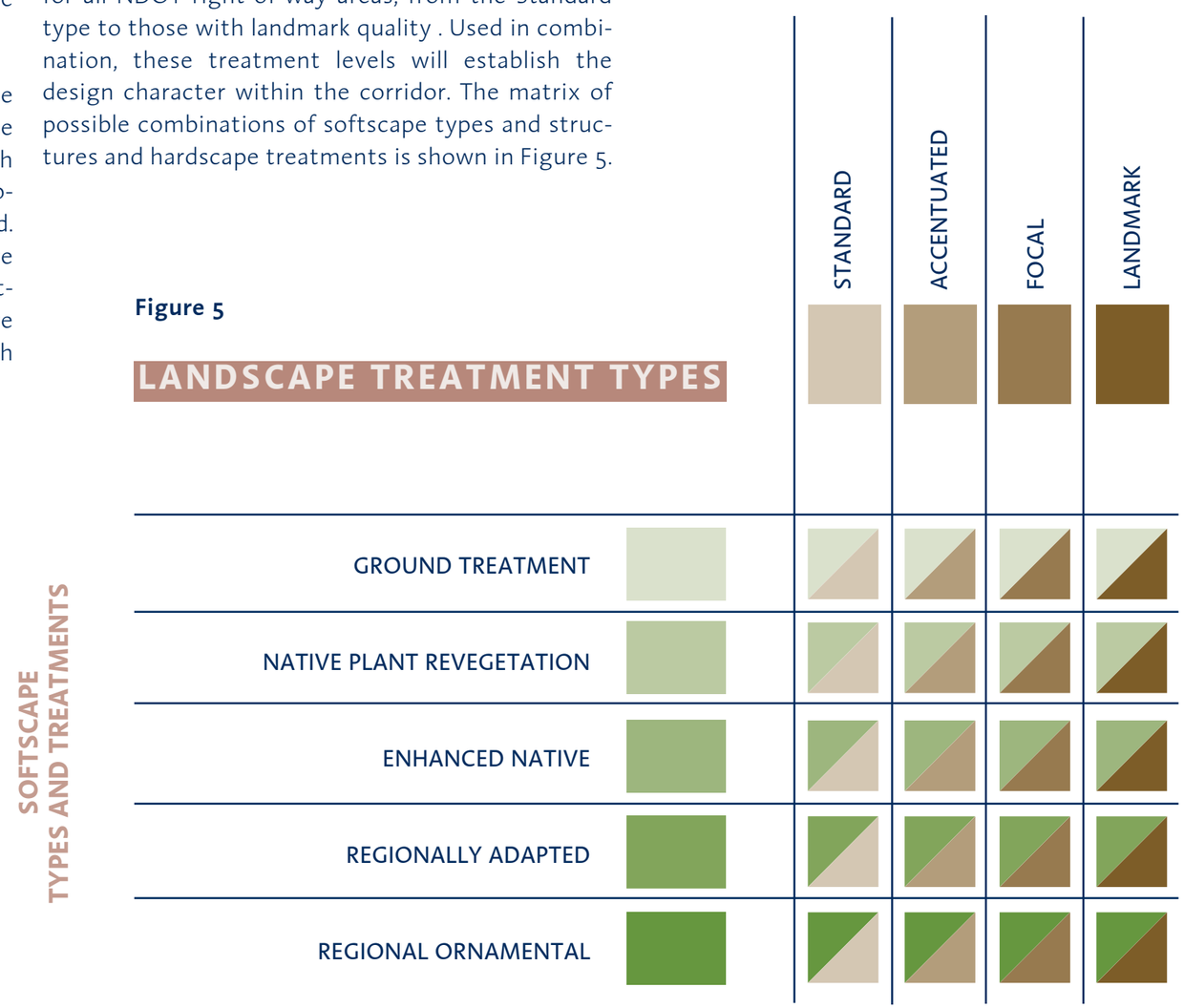
ELEMENTS OF LANDSCAPE AND AESTHETICS

The Elements of Landscape and Aesthetics define the functional purpose and visual intent of highway corridor improvements. The elements are represented by a variety of different components including: varying intensities of softscape, structures and hardscape, state-wide signage, rest area facilities, and many other items that affect visual quality within the corridor. To create a standardized understanding of the corridor plan, the following pages describe each of the elements.

While NDOT currently incorporates some of these elements, the descriptions in this section redefine the application of existing programs and establish new facility types. Following the component descriptions, each Landscape Design Segment is detailed. Design objectives, specific to each segment, are introduced at the beginning. Landscape and aesthetic elements that support the design objectives are then explicitly located and identified within each design segment.

Identifying a specific Landscape Treatment Type is the first Element of Landscape and Aesthetics and is composed of a softscape designation and a structures and hardscape type. Every square foot of NDOT right-of-way has a Landscape Treatment Type associated with it to define its design character and maintenance requirements. Softscape types are defined by a hierarchy of treatment levels, each with an established design intent. In a similar way, structures and hardscape treatments have been defined for all NDOT right-of-way areas, from the Standard type to those with landmark quality . Used in combination, these treatment levels will establish the design character within the corridor. The matrix of possible combinations of softscape types and structures and hardscape treatments is shown in Figure 5.

Figure 5



Comprehensive Design Concept

The corridor design concept can be articulated for both rural and urban segments. In rural or predominately undeveloped areas, the highway should blend into the natural landscape. The presence of the road is muted by design interpretations including naturally occurring patterns of geology, vegetation, and soils. The successful emulation of these patterns result in a landscape environment that includes the highway avoiding the distinctive separation between road and land.

In urban interstate highway segments, the highway is a major component of the character of the city. In fact, our perception of urban places is shaped by a highway's design and its features. Respecting adjacent communities and creating a coherent visual environment that builds unity into the urban fabric is key to the success of the urban highway system. The highway should provide a composition of focused punctuation at important places and transitional edges compatible to surrounding urban communities.

SOFTSCAPE TYPES AND TREATMENTS

The following softscape treatments are descriptive planting types that define design intent for future projects. These treatments are compositions of plant materials that include trees, shrubs, perennials, grasses, and ground treatments. The descriptions and photographic examples define the specific softscape types that may be utilized in a section of the corridor.

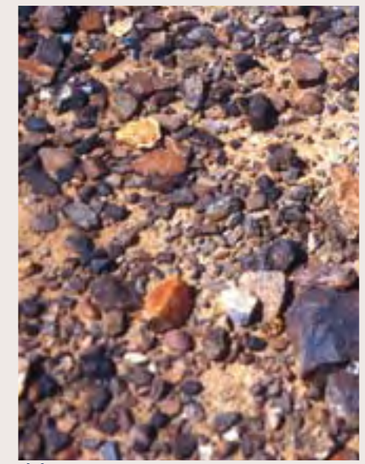
GROUND TREATMENT SOFTSCAPE

Erosion control and dust control are a major function of all ground treatments along the roadway. Rock mulches should be used beneath all softscape treatments, including native seed and container-planted natives and/or ornamentals. Uniform applications of rock mulch or variable sizes of stone and textures are available to match the existing environment. Example palettes are derived from natural patterns found in playas, foothills, or ephemeral drainages. In urban settings, various forms of aesthetic rock treatments are used to create patterns and textures. Irrigation is not included in this treatment. Soil stabilizer may be used in conjunction with these methods.

Total Cost: $1.15 - $1.35 sf L & A Cost: $0.00 sf

(1)

(2)


(3)

(4)

NATIVE PLANT REVEGETATION SOFTSCAPE

Returning roadway construction disturbance back to its native desert condition, requires the use of a native southern Mojave plant palette. This palette includes native communities such as the Creosote Bush/Bursage or Blackbrush. The spacing and frequency of Native plant distributions is sparse, and individual plants are widely separated by scattered native rock mulch. Temporary irrigation may be needed to assure plant establishment, however this softscape type does not rely on permanent irrigation. Preparation techniques such as roughening grade for seed siting and amendments like top soil and mulch are required to enrich soil and protect against winds. Along with seeding, some mature plants may be used to provide an established plant community character.

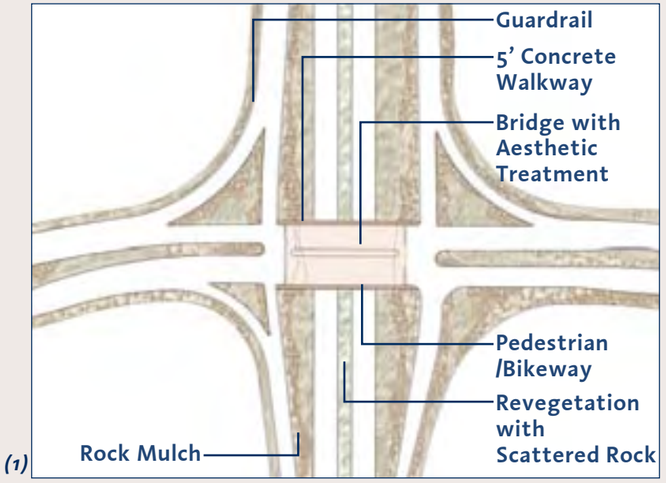
Total Cost: $1.15 - $1.35 sf L & A Cost: $0.00 sf

(1)

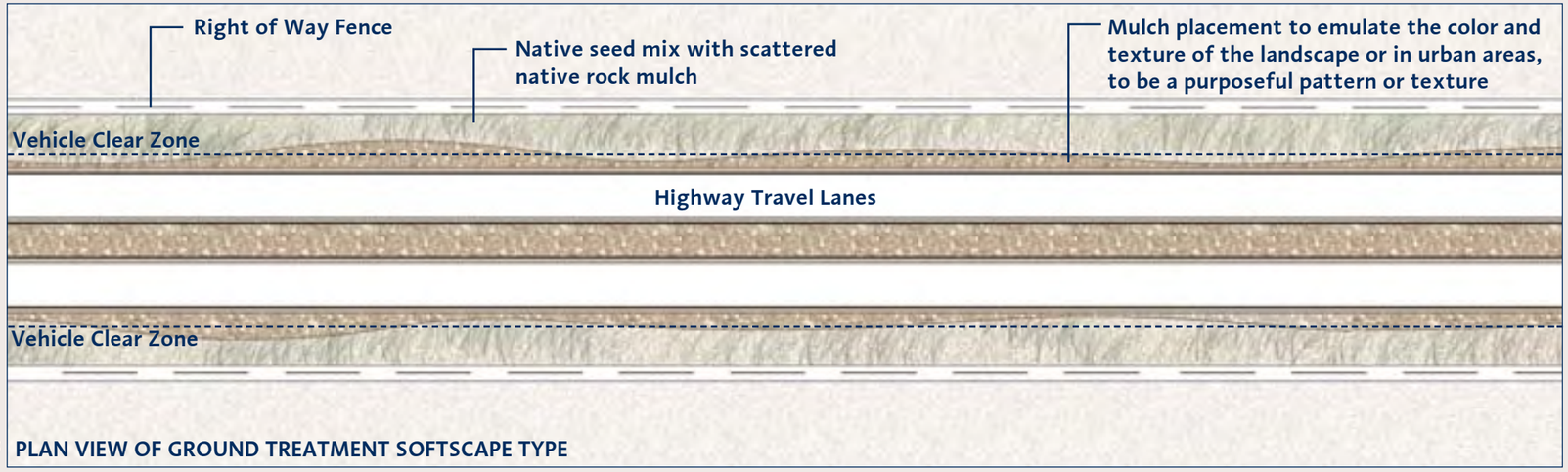
(2)

(3)

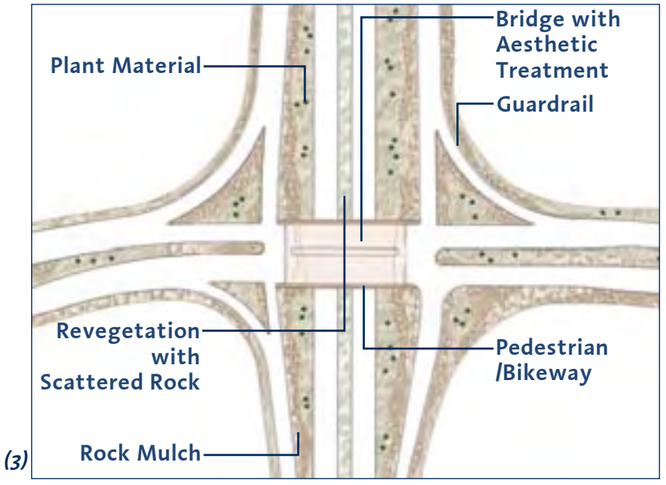
Note: These photographs are illustrative examples of the softscape types and treatments.



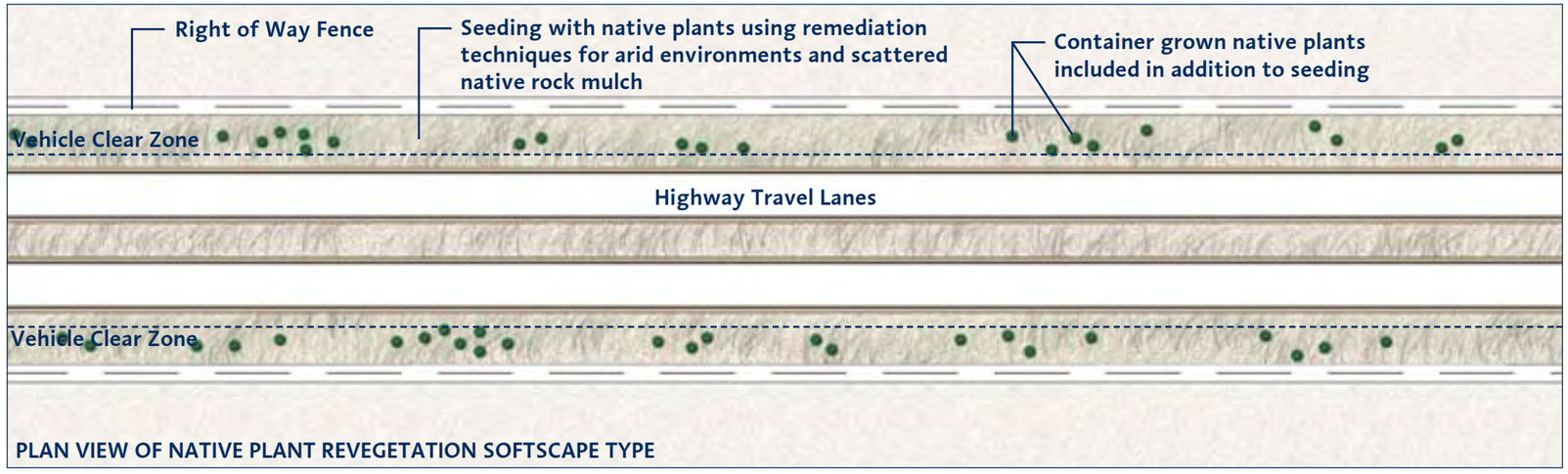
(1)



(2) PLAN VIEW OF GROUND TREATMENT SOFTSCAPE TYPE



(3)



(4) PLAN VIEW OF NATIVE PLANT REVEGETATION SOFTSCAPE TYPE

PROTOTYPICAL INTERCHANGE

PROTOTYPICAL INTERSTATE HIGHWAY DESIGN SEGMENT

SOFTSCAPE TYPES AND TREATMENTS

ENHANCED NATIVE SOFTSCAPE

This treatment accentuates change by introducing more types and species of plants to the southern Mojave revegetation plant palette organized in greater coverage and plant densities, along with scattered native rock mulch. Adapted trees increase vertical diversity. Special ground treatments are included for drainage and erosion control such as rip-rap and soil stabilizers. Supplemental drip irrigation is required to assure plant survival.

Total Cost: $1.40 - $1.60 sf L & A Cost: $0.25 sf

(1)

(2)

(3)

REGIONALLY ADAPTED SOFTSCAPE

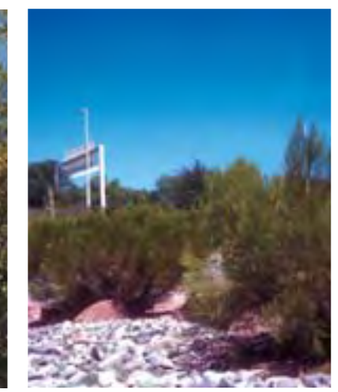
Combinations of Mojave Desert plants and those from other dry land environments, such as the Sonora region, form this landscape palette. Plants are combined in greater density with layers of overstory trees and understory shrubs or perennials, and scattered native rock mulch. The expanded plant palette includes plants selected for form, seasonal change, special texture, and color. Desert-adapted plants in this softscape type offer a desert garden quality and provide a full array of enriched landscape character. Drip irrigation to individual plants is required for this softscape type.

Total Cost: $2.25 - $2.75 sf L & A Cost: $1.10 - $1.60 sf

(1)

(2)

(3)


(4)

REGIONAL ORNAMENTAL SOFTSCAPE

Regional Ornamental softscape is delineated by a high diversity of plant species, including those which are imported to this region. This treatment introduces taller and denser plant materials such as pine species and palm trees. Regional Ornamental areas include shade from overstory trees, a wide variety of form and color, and create dynamic contrasts to the arid landscapes of naturally occurring plant species, along with scattered native rock mulch. Patterns of plants and compositions of arrangements are not derived from naturally occurring communities. Rather, they are intended to be landscapes of cultural meaning. Drip irrigation systems are required for individual plants.

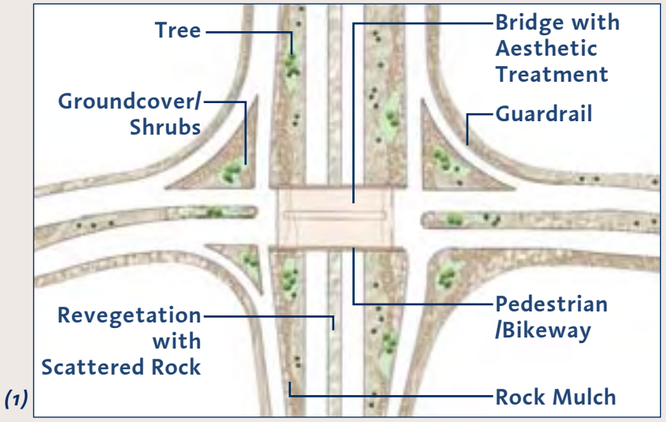
Total Cost: $3.50 - $6.00 sf L & A Cost: $2.35 - $4.85 sf

(1)

(2)

(3)

Note: These photographs are illustrative examples of the softscape types and treatments.



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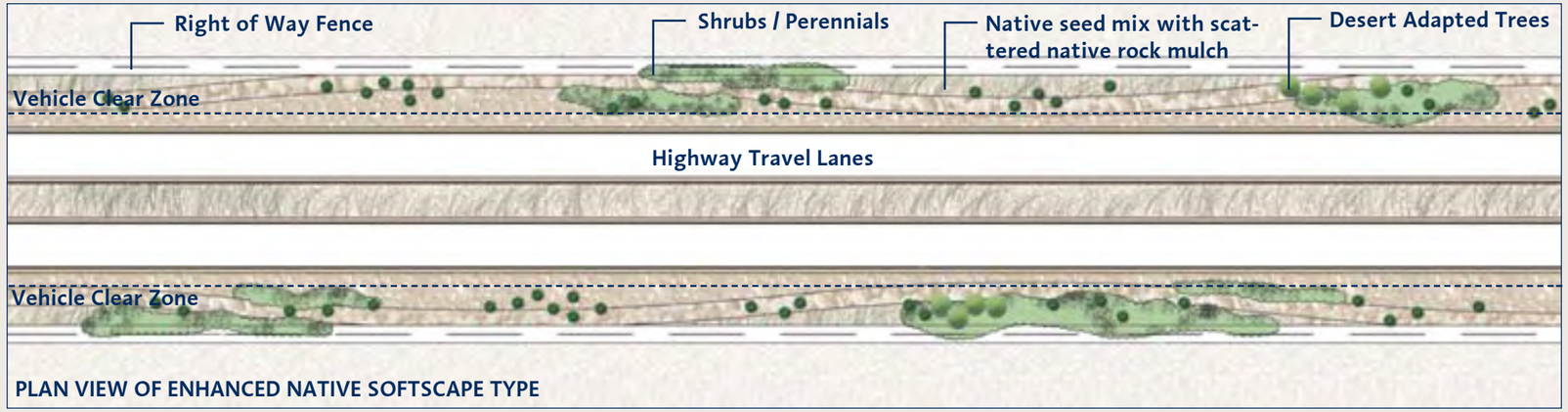
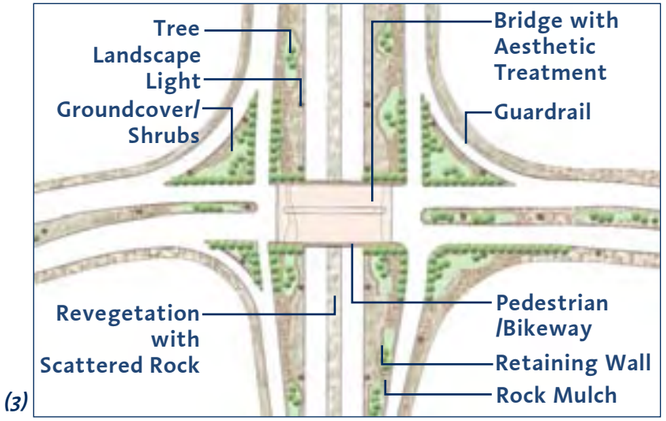
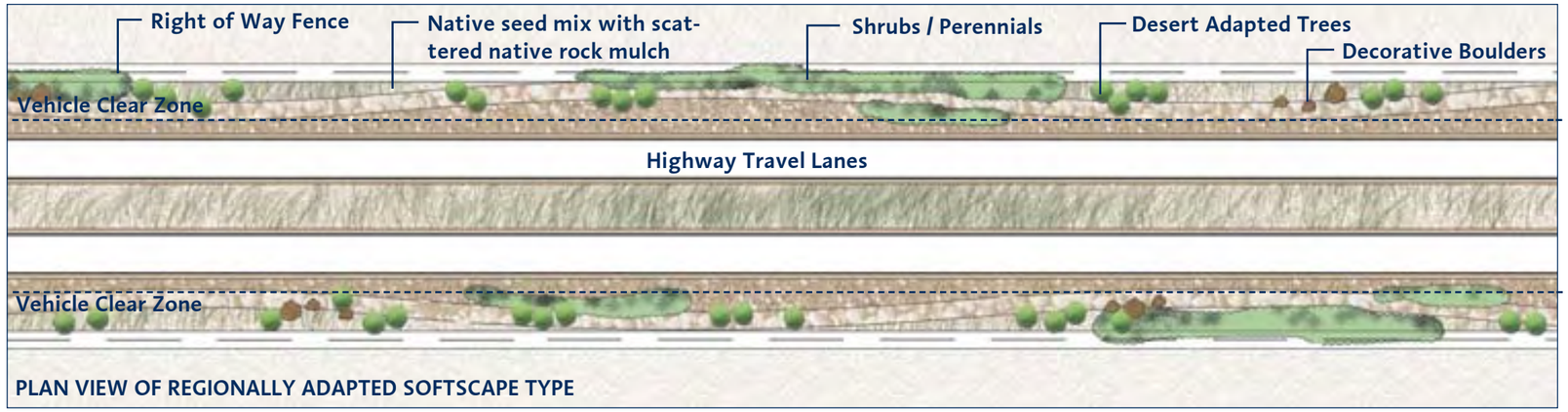


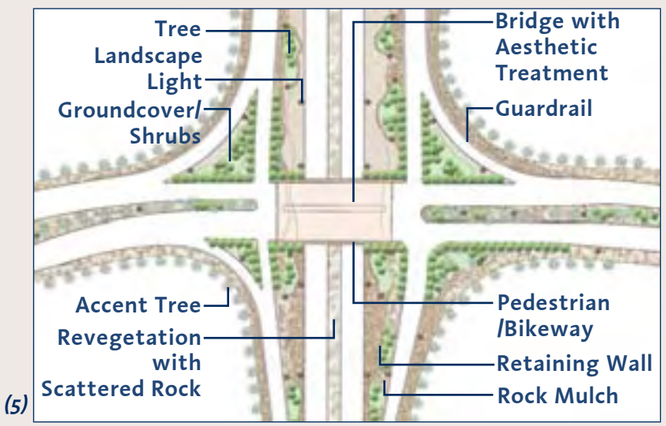
(2) PLAN VIEW OF ENHANCED NATIVE SOFTSCAPE TYPE



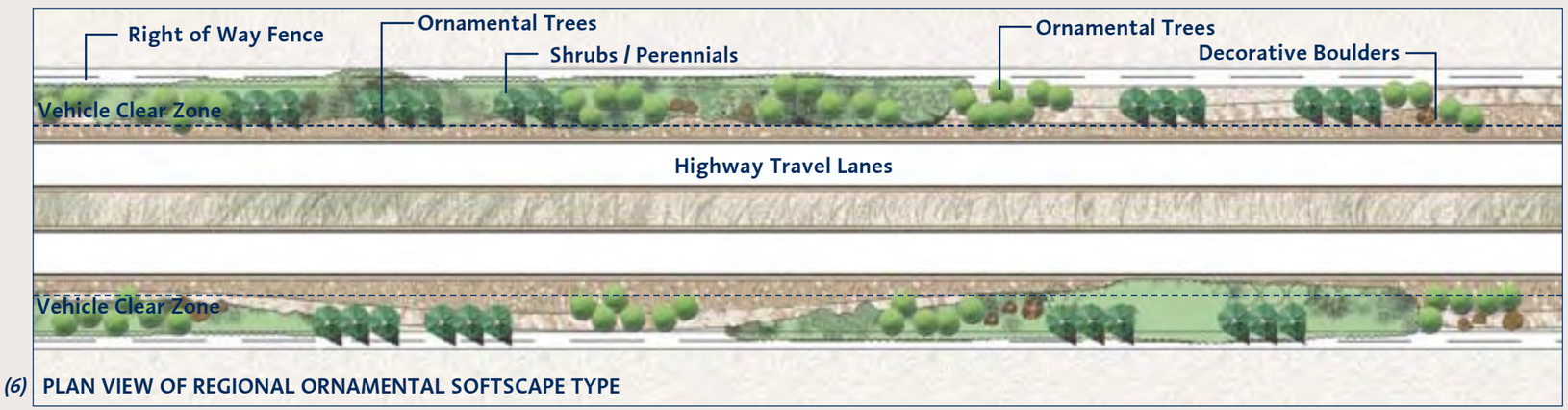
(3)



(4) PLAN VIEW OF REGIONALLY ADAPTED SOFTSCAPE TYPE



(5)



(6) PLAN VIEW OF REGIONAL ORNAMENTAL SOFTSCAPE TYPE

PROTOTYPICAL INTERCHANGE

PROTOTYPICAL INTERSTATE HIGHWAY DESIGN SEGMENT

Note: Refer to Cost Analysis pages 6.1 - 6.5 for more information on these illustrations.

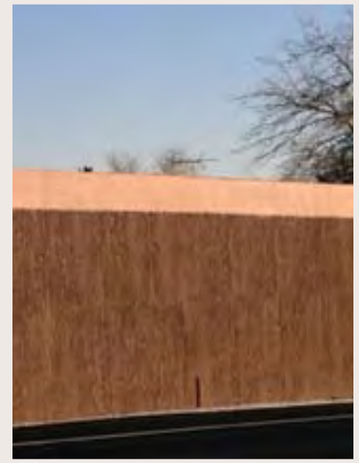
STRUCTURES AND HARDSCAPE TYPES AND TREATMENTS

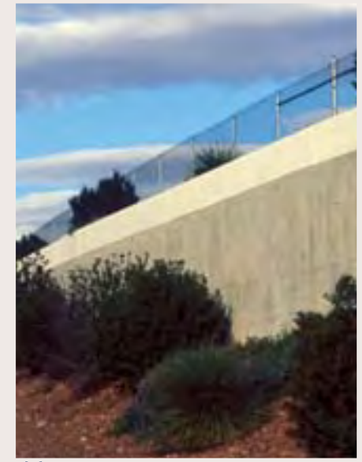
The following classifications are a common language for the aesthetics of highway facility design. The treatments included are for bridges, retaining walls, acoustic walls, pedestrian crossings, railings, barrier railings, lighting, and transportation art.

STANDARD STRUCTURES AND HARDSCAPE

A standard treatment is simple, straightforward and functional. Attention to color and proportion can improve aesthetic quality without increasing cost. Standard structures are economical in their design and satisfy the requirements of vehicle movement, but elaborate little on the establishment of design character or place-making. A regular maintenance program for trash and graffiti removal is imperative. A stained finish on concrete or a painted finish on steel are the standard NDOT surface treatments.

Total Cost: $110 - $115 sf L & A Cost: $0 sf


(1)

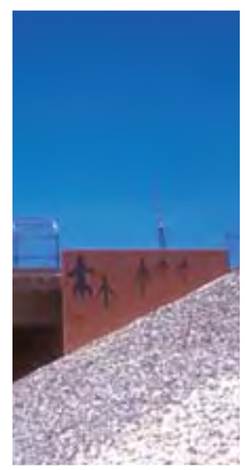

(2)

(3), (4), (5)

ACCENTUATED STRUCTURES AND HARDSCAPE

This type of treatment builds place character and enhances appearance by adding special accents and finishes to built structures. A unified system of materials and textures define corridor pattern design. Transportation art may be applied and upgraded finishes and colors for structures are included. Decorative rock for drainage or aesthetics is included. Special contour grading is used to create desired land shape, and drainage features that harvest water may be features of the hardscape design.

Total Cost: $125 - $135 sf L & A Cost: $15 - $25 sf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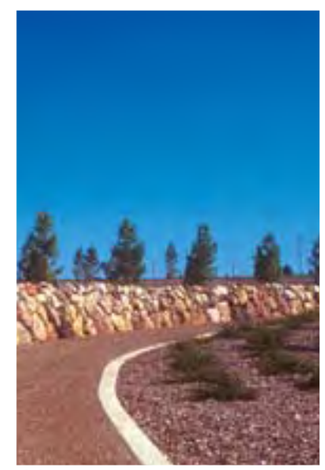

(3)

(4)

(5)

Note: These photographs are illustrative examples of the structures and hardscape types and treatments.

FOCAL STRUCTURES AND HARDSCAPE

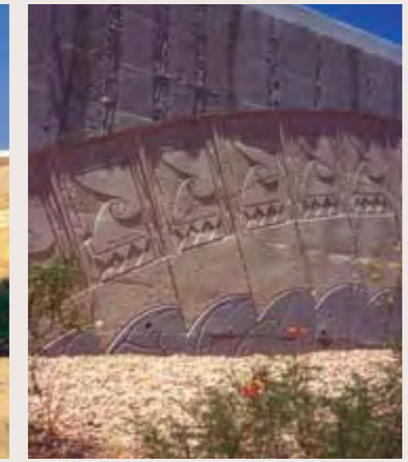
Focal structures and hardscape type treatments provide a singular expression for a project with a specific design character. Structures are constructed of self-weathering materials, integrated color or textural finishes, and may include the use of form liner imprints on structural surfaces. Patterns may be created by using multiple surfaces. Barrier rails utilize custom construction and include designs that are artistically incorporated into the structure elevating engineering to an art form. Upgraded lighting includes lighting with decorative elements serving both a functional and aesthetic purpose.

Total Cost: $170 - $185 sf L & A Cost: $60 - $75 sf

(1)

(2)

(3)

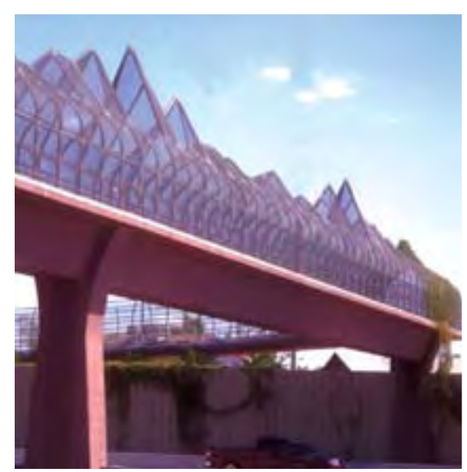

(4)

LANDMARK STRUCTURES AND HARDSCAPE

Landmark, the most enhanced level of structures and hardscape treatments, truly explores the possibilities of the place. Landmark treatment calls attention to custom features and highlights unique elements. Extensive aesthetic treatments are used on all bridge structures, retaining walls, acoustic walls, barrier rails, and pedestrian crossings. Special significance is exhibited through importance is imparted with one-of-a-kind form liner treatments on structural surfaces. Transportation art is prominent and evocative in subject and composition. Elaborate lighting includes special effects for night time beyond what may be necessary to provide for safety.

Total Cost: $210 - $250 sf L & A Cost: $100 - $140 sf

(1)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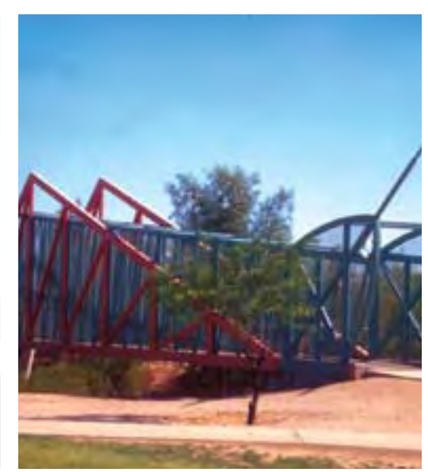
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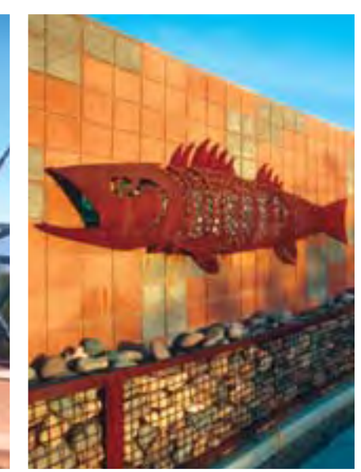

(4)

Note: These photographs are illustrative examples of the structures and hardscape types and treatments.

(1) Image of Hoover Dam.

(2) Image of Desert Bighorn Sheep.

(3) Image of Virgin Peak.

(4) Image of Goodsprings: Ghost Town.

NEVADA PLACE NAME SIGN PROGRAM

As part of the Elements of Landscape and Aesthetics, a new statewide place name and point-of-interest sign program distinctive to the State of Nevada will be designed to better connect people to places.

Benefits of the Program

The State of Nevada is a large geographic area with diverse and sometimes well-hidden features. The sign program will provide clear and consistent direction from the corridors to scenic areas, points-of-interest, historical sites, and local attractions. The signs will welcome visitors and inform residents, drawing attention to these important assets and affirming the rich history and physical attributes of the State while stimulating local economies. The sign program will encourage visitors and residents to gain a better understanding of the history, culture, and geology of the state. The signs, consistent in color and material will unify the roadway. Place name signs will be of high quality and will be as durable as other standard highway signs.

How the Program Will Work

Utilizing the current Federal Manual on Uniform Traffic Control Devices (MUTCD) as a base, a customized and distinctive set of iconic symbols specific to Nevada will be designed for use on standardized directional and identification signs. To insure uniformity and consistency, a state managed and controlled policy manual for the signs will be implemented. The manual will be referred to as the Nevada Place Name Sign Manual. The program will be promoted through informational brochures available at welcome centers, identification on state maps, and other locally based advertisements. Symbols used to provide directions and mark points of interest will be a recognizable pictorial and specific to the special point of interest. FHWA approval for the Nevada Place Name Sign Program will be gained prior to installation.

Eligibility

With a state managed and controlled program, an initial inventory of categories common to the state, as well as features specific to each interstate corridor, will be established and approved by NDOT. After the initial inventory is confirmed, state and local entities will be permitted to apply for inclusion based on specific criteria.

Anticipated Categories

Possible categories for sign icons common to the State of Nevada include, but are not limited to:

- Historical Features and Sites such as railroads, mines, mining towns, ghost towns, explorers, and immigrant trails.
- Wildlife Viewing Areas
- Flora
- Geographic Features
- Geological Places of Interest
- Landmarks
- Cultural Resources
- Museums

Specific areas of interest in I-15 corridor include, but are not limited to:

- Hoover Dam
- Virgin River Recreational Lands
- Moapa River Indian Reservation
- Las Vegas Motor Speedway
- Valley of Fire State Park
- Las Vegas Strip and Downtown
- Las Vegas Dunes Recreation Area
- Nellis Air Force Base
- Red Rock Canyon National Conservation Area
- Sloan Canyon National Conservation Area
- Old Las Vegas Mormon Fort State Park
- Spring Mountain Ranch State Park
- Lost City (Museum of Archeology)
- Goodsprings
- Virgin Peak
- University of Nevada, Las Vegas
- Sam Boyd Stadium

Associated Cost

The sign program is expected to have a direct economic benefit to smaller communities and local attractions. Through increased tax revenue, the State will recognize a tangible return on its investment. Partnering with businesses is possible through sponsorship providing partial cost offsets.

Signs Included in the Program

Exit to Area of Interest or Town

This primary sign type will be used as an informational listing located in advance of interstate exits. It will illustrate iconic symbols and descriptions as well as the interstate exit number (see Figure 6).

Signs will be post-mounted and use reflective graphics/lettering on a metal panel in accordance with applicable FHWA safety standards. A maximum of four (4) symbols will be used on each sign. Written descriptions are required to accompany iconic symbols.

Directional Sign On State or County Road

This secondary sign type will be used as an informational listing located on state or county roads or intersections. It will illustrate iconic symbols and descriptions as well as a directional arrow (see Figure 7).

Signs will be post-mounted and use reflective graphics/lettering on a metal panel in accordance with applicable FHWA safety standards. A maximum of four (4) symbols to be used on each sign-one (1) per panel. Written descriptions are required to accompany iconic symbols.

Scenic Area or Outlook Pull-off

This sign type will be located prior to pull-offs, illustrating iconic symbols and descriptions as well as the distance to the pull-off (see Figure 8).

Signs will be post-mounted and use reflective graphics/lettering on a metal panel in accordance with applicable FHWA safety standards. A maximum of two (2) symbols to be used on each sign. Written descriptions are required to accompany iconic symbols

(1) *Sign for Desert Bighorn Sheep (Viewing Area).*

(2) *Sign for Mining Area.*

(3) *Sign for Hoover Dam.*

(4) *Sign for Virgin Peak.*

(5) *Sign for Historic Rail.*

(6) *Sign for Ghost Town.*

CUSTOM SIGN ICONIC SYMBOLS

FIGURE 6.
Exit sign to area of interest of town.

FIGURE 7.
Place name sign on state or county road.

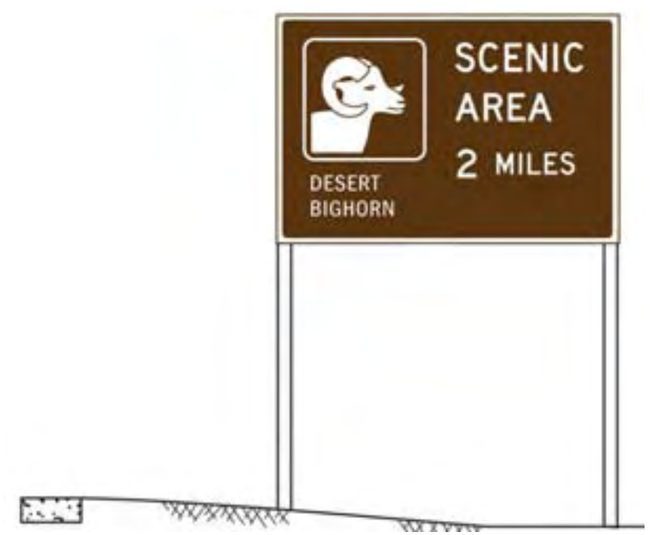
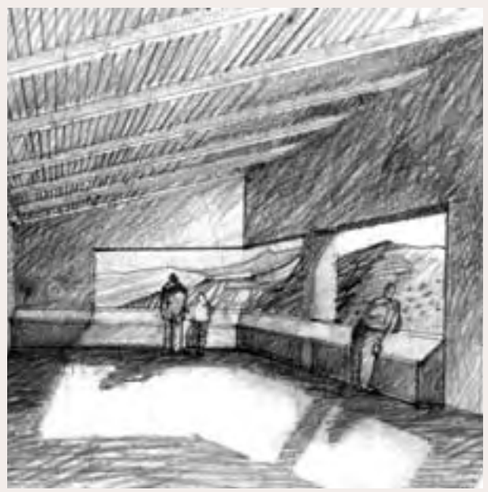


FIGURE 8.
Scenic area sign of outlook pull-off.

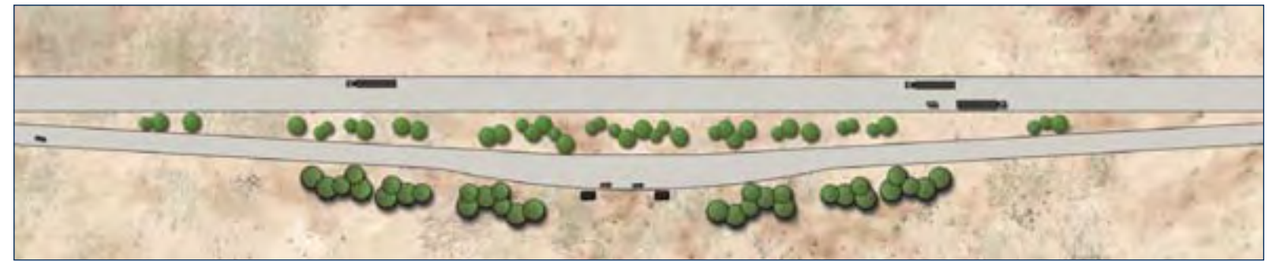
ROAD SERVICES PROGRAM

Road services are an important part of the experience along any roadway corridor. They are even more critical in areas of Nevada where long distances separate developed areas. The road service matrix on the opposite page describes varying levels of service stops that could be included in the corridor. From the limited softscape treatment and program of the Roadside Pull-Off to the landmark quality of the Welcome Center, these service areas will provide travelers with designated spaces to rest, interpret history and geography, and discover information about nearby activities and communities. Additional information regarding rest areas and road services is described on page 5.5 in the Design Guidelines chapter.

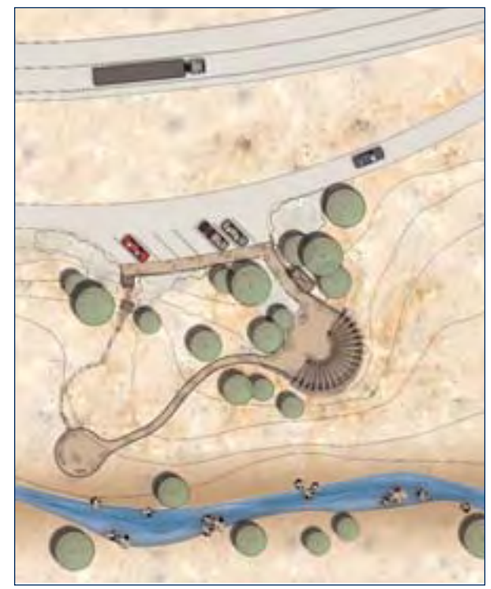
(1) *This illustration depicts facilities that would make up the elements of a basic rest area.*



(2) *This illustration reveals how to take advantage of scenic vistas by controlling views with window cut-outs integrated within the rest area structure.*



(3) *This illustration depicts facilities that would make up the elements of a roadside pull-off.*



(4) *This illustration depicts facilities that would make up the elements of a viewpoint and point of interest site.*

(5) *This illustration depicts facilities that would make up the elements of a complete rest area.*

ROAD SERVICES PROGRAM

	Description	Softscape Treatment	Program Elements	
ROADSIDE PULL-OFF	Roadside pull-offs provide facilities for drivers to exit the highway for a brief period. Facilities that respond to the landscape character and minimal parking are provided to accommodate the abbreviated stay. (Referred to as "Rest Stop" under former NDOT naming conventions.)	• Native Plant Revegetation to Enhanced Native Softscape Type • Standard Hardscape Type	• Site-specific interpretive signage • No toilets or running water • Trash containers • Limited car and Recreational Vehicle parking • Handicap accessible • Scenic overlooks • Located according to travelers' needs and unique site features	• Shade canopy (vegetation or structure)
VIEWPOINTS AND POINTS OF INTEREST	Viewpoints and points of interests present opportunities to view unique vistas, special natural resources, historical features, or cultural landmarks. Interpretive elements are integrated into the site design, and Place Name Signage and Travel Information elements are provided to establish the relationship between highway and place. Typically, the length of stay is short and parking is limited. Travelers are provided with a detailed look at the site or point of interest.	• Native Plant Revegetation to Enhanced Native Softscape Type • Standard to Accentuated Hardscape Type	• Located according to travelers' needs and unique site features • Site-specific interpretive signage • Toilets with running water only where available • Handicap accessible • Picnic tables and shade structures • Trash containers • Paved car and Recreational Vehicle parking • Telescopes/viewfinders	• Nature walks or short trails • Seating areas • Shade canopy (vegetation or structure)
BASIC REST AREA	Basic Rest Areas are located throughout the state offering site specific interpretive information. They have limited restroom facilities which may or may not include running water depending on availability. Typically, these rest areas are located to take advantage of scenic views, unique historical, cultural or environmental features, and to provide travelers' resting places en route.	• Enhanced Native Softscape Type • Standard to Accentuated Hardscape Type	• Located according to traveler's needs and unique site features • Site-specific interpretive signage • Toilets with running water only where available • Emergency call box • Handicap accessible • Picnic tables and shade structures	• Trash containers • Paved car and Recreational Vehicle parking • Paved truck parking • Nature walks or short trails • Seating Areas • Shade canopy (vegetation or structure) • Local community information
COMPLETE REST AREA	Complete Rest Areas are located at 60 mile intervals throughout the state and are typically situated outside of developed areas. They feature modern facilities along with interpretive information on regionally significant cultural and historical sites. Complete Rest Areas also provide travelers with picnic facilities and include children's play areas and pet areas.	• Regionally Adapted Softscape Type • Accentuated to Focal Hardscape Type	• Regional interpretive signage • Running water and flushing toilets • Emergency call box and telephones • Drinking fountains • Vending machine services (at manned sites) • Handicap accessible • Picnic tables and shade structures • Trash containers • Bicycle storage units	• Recreational Vehicle dump station • Paved car and Recreational Vehicle parking • Paved truck parking • Telescopes/viewfinders • Interpretive and overlook features • Children's play area • Pet rest facilities • Shade canopy (vegetation or structure) • Local community information
GATEWAY REST AREA	As entryways, the gateway facilities convey first and last impressions and identity. Special features may be incorporated into the design to highlight the area through design interpretation of the place, and gateways may be associated with any level of rest stop in the listing. The incorporation of local community information regarding amenities, events and interpretative elements, improves the interface between the highway and the communities it serves.	• Regionally Adapted Softscape Type • Focal Hardscape Type	Program elements are consistent with the type of Road Service Area provided. Specific elements include: • Regional services information • Interpretation of regional sites and features • Information on regional recreational attractions	
WELCOME CENTER	Welcome Centers are located along major entry routes to the state. They offer introductions to the state where travelers can have access to useful travel information. Welcome Centers include a staffed information kiosk.	• Regionally Adapted Softscape Type • Landmark Hardscape Type	• Located at major entry routes to state • Informational Services • Staffed visitor center • State-wide interpretive signage • Running water/flushing toilets • Emergency call box and telephones • Drinking fountains • Vending machine services • Handicap accessible • Picnic areas and shade structures	• Trash containers and Recycle Containers • Bicycle storage units • Paved car and Recreational Vehicle parking • Paved truck parking • Improved trails • Children's play area • Pet rest facilities • Shade canopy (vegetation or structure) • Telescopes/viewfinders

(1) *Naturally occurring Mojave desert wildflowers have visually striking displays that can be developed within a corridor as part of a wildflower program.*

(2) *Baileya multiradiata - Desert Marigold is a key specimen in the natural heritage of the I-15 corridor.*

NATIVE WILDFLOWER PROGRAM

Inspired by a vision of native plant species along rights-of-way to enhance the beauty and connectivity to the land, the Federal Highway Administration adopted two programs to promote the uses of forbs and grasses that naturally occur in a particular region, state, or ecosystem. In 1987, the Surface Transportation and Uniform Relocation Assistance Act (STURAA) required that at least one-quarter of one percent of funds expended for any Federal-aid highway system landscape project be utilized for native wildflower plantings. In addition to improved aesthetics, native wildflowers can also provide:

- Reduced maintenance requirements for established native plants in comparison with non-native species.
- Reduced roadside fire hazards.
- Reduced use of herbicides when native plants are successfully established.
- Improved erosion control through drought-tolerant species.
- Improved relationship between the highway corridor and the regional character of the landscape.

INVASIVE AND NOXIOUS WEED CONTROL

Introduction of invasive species can deteriorate economic and environmental quality and cause harm to human health. Invasive species decrease diversity and are strong competitors to native species. The Nevada State Department of Agriculture has identified a list of noxious weeds that should be recognized and eliminated in revegetation programs along the corridor. The list can be referenced at the following site and is also listed in the Technical Appendix A.
www.agri.state.nv.us/nwac/nv_noxweeds.htm

Due to the frequency of invasive weeds along the corridor, control measures need to be factored into new landscape design projects including following the best procedures and management practices for successful revegetation. Examples of these procedures include:

- Tailoring revegetation procedures to specific plant community types.
- Recommendations for site and soil preparation.
- Site appropriate revegetative practices.

OUTDOOR ADVERTISING

Outdoor advertising, specifically billboards, provide businesses, community groups and other organizations opportunities to inform travelers along the interstate about the various establishments and available services. However, billboards impact the visual quality of the highway because they obstruct views of scenic features and the natural landscape. As result, community groups are committed to restrict new and remove existing billboards from areas near and within their communities.

The Highway Beautification Act

The Highway Beautification Act (HBA) was passed in 1965 with the intent to control billboard construction along Federal-aid highways and provide methods for removal of billboards that do not conform to state and local ordinances. The law, under Section C, defines effective control of billboards as limiting signage that is visible and intended to be read from the roadway to only include informational and directional signs pertaining to distinctive natural, scenic, or historical attractions; on-site real estate signs; on-site business signs; landmark signs associated with historic, natural, or artistic purposes; and free coffee signs promoted by nonprofit organizations.

Limitations

In the almost 40 years since the passage of the HBA, few non-conforming billboards have been removed and many more have been constructed due to exclusions in the law. Enforcement is difficult because of Section G of the law, which requires cities and counties to pay just compensation to owners for billboard removal. Although the federal government is required to contribute 75% of the compensation, many communities do not have the funds to pay the 25% requirement and their ability to use local land use controls to restrict construction was removed. Additionally, the federal government has stopped providing money for billboard removal (Brinton, 2001).

A second limitation in the HBA is the allowance of billboards to be constructed in areas zoned commercial and industrial, as well as in unzoned areas with commercial or industrial uses. The provision also acknowledges that the State has authority over the zoning laws. It is this entitlement that allows the State to implement zoning regulations that increase the difficulty of controlling billboards. Communities may specifically zone an area along the highway as commercial, or the outdoor advertising structure may be built on a parcel that has an obscure commercial use.

The third provision allows designated scenic byways to be segmented and excluded from federal control. The amendment to the HBA, passed by Congress in 1995 with the National Highway System Designation Act, allows states to exclude portions of a scenic byway that conflicts with the state's standards for denoting scenic byways and utilize only local restrictions for billboard control. Therefore, areas of lower scenic quality continue to become more unattractive and reduce the overall scenic character of the byway.

Nevada Statutes

Removing billboards in Nevada became more difficult in 2001 due to the Nevada Revised Statute (NRS) 278.0215. The regulation prohibits the use of amortization - a method used by many states - for sign removal and further defines the methodology to determine "just compensation" as including the uniqueness of the property as well as the income generated from the sign rather than the traditional cost approach. This revision creates a cost prohibitive solution to sign removal.

Although control of outdoor advertising seems daunting, there are regulations that provide restrictions to billboard construction. NRS 405.050 allows counties to deny permits for billboards that may "measurably destroy the natural beauty of the scenery or obscure a view of the road ahead". Additionally, the statutes give the Director of NDOT the ability to require the removal of any sign that is a traffic hazard.

The Role of Local Government

Cities and counties have the ability to regulate the location and to a limited degree the type of billboard erected within their jurisdiction. The development of design standards that address height, size, color and context in which the billboards are located is a valuable method of directing outdoor advertising. The visual impact of billboards in the rural landscape is much greater than the impact generated by billboards in an urbanized location. The choices local communities make to regulate the location of billboards can reduce the scenic impact of billboards and improve the visual quality along the states highways. Important viewsheds and scenic corridors may be designated within the county and land use regulations can be developed that discourages or prohibits outdoor advertising.

(1) *Existing outdoor advertising in a natural landscape setting has a significant negative effect on the visual quality of the state's highways.*

(2) *At many points in the corridors, multiple outdoor advertising billboards are located adjacent to the right-of-way.*

(1) Federal designation of scenic byways can contribute to the successful resolution of the conflict between outdoor advertising and scenic resources.

(2) Designated scenic byways can be identified on state maps.

SCENIC HIGHWAY DESIGNATION

Twenty-one scenic byways have been designated in Nevada since legislation established the state's Scenic Byways program in 1983. Prominent byways that may be accessed by I-15 include the South Las Vegas Strip, Downtown Las Vegas Boulevard from Washington Avenue to Sahara Avenue, Red Rock Road (SR 159), Valley of Fire Road and White Domes Road in the Valley of Fire State Park area, and Kyle Canyon Road (SR 157).

According to the Federal Highway Administration (FHWA), the designation as a scenic roadway has four significant benefits: preservation, promotion, pride, and partnerships. Preservation of vistas, roadside scenery, and historic buildings can be facilitated through the program. The Highway Beautification Act of 1965 prohibits new billboards along designated scenic byways that are interstate, part of the National Highway System, or federally-aided primary roads. The National Highway Designation Act of 1995 amends the law and allows portions of the byway to be segmented if sections of the roadway fail to meet the criteria set for a scenic byway. These segments are controlled by local regulations rather than the stricter federal billboard controls. This exception allows new billboards to be erected, subject only to whatever state or local controls are in place. The preservation of scenic quality can also be facilitated through the use of scenic or conservation easements. In addition to preserving the landscape character, these measures also provide the participating entity with a one-time tax deduction equal to the foregone value of the use of the land.

Scenic byways are promoted through the Nevada Commission on Tourism and the FHWA. Tourism related facilities such as visitor centers, rest areas, and Place Name Signage program can be coordinated with informational materials to create an integrated system. Local awareness about the roadway is increased through the scenic designation. Enhanced pride attracts volunteers who want to help craft the story of the byway and share in making it a vital component of the community.

Opportunities for Partnerships

Finally, the opportunity for partnerships can be expanded with the scenic designation. Public and private partnerships may be formed to make the goals of the byway a reality. The America's Byways Resource Center provides technical assistance and joins with the FHWA to provide seminars and workshops to further facilitate the partnering process.

The scenic roadway plan consists of federal, state, and local programs that provide methods for roadways to be eligible for scenic designation in Nevada.

- The federal BLM Back Country Byways and U.S. Forest Service Scenic Byways plans focus on roads less frequently traveled that lead to back country or wilderness areas, including paved, unpaved and four-wheel drive roads.
- The Nevada Scenic Byways program focuses on roadways that are accessible year-round to the average motorist. The program identifies, promotes, and protects the state's most exceptional roadways. These byways must provide access to recreational areas or historic sites.
- The Local Tourism Routes program allows communities to promote special roadways and other modes of travel (like boat, balloon and train rides, bicycling or rafting trips) that do not fit under any other programs.

Local groups and agencies nominate and manage scenic byways and local tourism routes. The designation "Scenic Byway" is reserved for routes approved by NDOT. The Director of NDOT makes the final designation after review and approval of the road by the State Scenic Byways Committee which is composed of representatives from NDOT, the Nevada Commission on Tourism, the Nevada Division of State Parks, and the US Bureau of Land Management. The Nevada Commission on Tourism is responsible for the Local Tourism Route program. It reviews and approves all promotional material to ensure that the "Scenic Byway" designation is not used for local tourist routes

Levels of Designations Available

Two levels of scenic byway designation are available: basic or advanced. Byways of both classifications are placed on state tourism maps, in visitor information packages and in other scenic byway promotional materials. The state prepares and distributes a brochure about the byway. Routes with an advanced designation are eligible for federal and state funds not available with only basic designation. However, the advanced designation requires a corridor management plan and has a five year re-certification obligation.

Interstate highways have not been included in the state program thus far, because a prime objective of the program is to encourage travelers to take non-interstate routes through the state as a means of increasing the tourism economic base of rural communities.

Nevada Scenic Designation

The Director of NDOT may establish a “Scenic Designation” for any section of highway right-of-way, including interstates. The *Corridor Plan* recommends this occur in areas of high scenic quality to limit the number of billboards and signage which obstruct views. Areas of high visual quality recommended for this designation have been identified on the Specific Corridor Features map for each Landscape Design Segment (pages 4.6, 4.18, and 4.26).

ANTI-LITTERING CAMPAIGN AND SIGNAGE

Fast food containers, plastic drink bottles, trash bags, and rusty kitchen appliances found along the roadside impact the scenic quality of the Nevada landscape and negatively affect the experience of the traveler. In fact, so pervasive is litter along the road in southern Nevada, that it may be the single most significant factor in improving the visual quality of the I-15 corridor. A statewide anti-littering campaign would represent a significant step towards cleaning up Nevada's highways and interstates. The campaign should be advertised in an edgy and straight-forward fashion to command the attention of residents and travelers. Similar to the "Don't Mess with Texas" anti-littering campaign, this program has the potential to become a marketing concept for the state of Nevada. The program would be promoted through several modes of communication including roadway signage, magazine advertisements, and bumper stickers.

Distribution of campaign materials would be focused at travel-oriented locations such as statewide welcome centers, rest areas, and truck stops. Coupled with the promotional materials, an "Adopt-A-Highway" program would engage the residents of Nevada and allow them to take an active role in keeping their highways clean and beautiful. This plan recommends the implementation of an anti-littering campaign made highly visible through signage, easily distributed collateral materials, and an active volunteer clean-up program.

(1) Highway graphics and signage posted along the highway where trash accumulation is the most significant will be part of the anti-trash program.

(2)

(3)

(5)

(7) An edgy and provocative campaign will keep the issue of litter very visible to travelers.

Image courtesy of Maria Arango

(8) Trash clean-up enhances the scenic quality of the corridor.

LANDSCAPE DESIGN SEGMENTS

Landscape Design Segments define areas of similar characteristic in which the same major design theme is applied. Topography, plant communities, and urban development influence how the segments are delineated. Within Landscape Design Segments, sub-segments are identified where there are changes in landscape or cultural dimensions that influence the design application. These detailed sub-segments represent districts that have the same design intent as the overall theme, but may display different design interpretations, plant selections, or other features.

Theme of Landscape Design Segments

Each design theme provides a unifying concept throughout the design segment. Each theme, as described below, is intended to be the overarching idea that will guide future design projects and interpretations.

1. Gateway to Nevada's Excitement

From the Nevada state line at Primm to Sloan, the arrival sequence into Nevada and the Las Vegas Valley is anticipated. Nevada has excitement to offer travelers including entertainment, culture, history, and natural features. This is the theme for this highway segment; a celebration of the gateway to Nevada.

The gateway or portal to the state provides an opportunity to inform visitors about the land, people, and history of Nevada. The inclusion of both a gateway feature at the state boundary and a welcome center, located east of Primm, suggest the importance of the most traveled section of highway in Nevada.

The welcome center will have additional significance as a stop for the proposed California-Nevada Super Speed Train. Utilizing magnetic levitation (MAGLEV) technology, the train could connect Anaheim with Las Vegas at speeds of more than 300 miles per hour. The Welcome Center at Primm has the opportunity to become a vibrant entrance to Nevada rooted in the desert landscape and the state's history.

The highway corridor is a sinuous and continuous ribbon, subtlety uniting the landscape, with scenic open vistas and legacy-quality restoration techniques from the Welcome Center to Jean. Further along the corridor, where growth and expansion are expected in the future, the segment will be managed carefully to retain its Desert character. Color tones of highway structures are muted and contain hues similar to those found in the desert. Design of highway features, such as bridges and barriers, will be simple and the landscape will rely on native plant vegetation or enhanced native planting throughout. This segment provides a passage into Nevada's excitement.

2. Dynamic Desert Metropolis

The layers of the Las Vegas Valley unfold just north of Sloan, the natural geographic gateway to the expansive Las Vegas Valley. This dynamic desert metropolis is an immense and expanding city. The corridor segments, making up 132 miles of Interstate, will shape the city's character and design. At the center lies the Las Vegas Resort corridor, a 24/7 landscape punctuated by lights. To effectively announce the Las Vegas strip, emphasis will be placed on interchanges that provide access to this novel entertainment district. Other major intersections including I-15 and I-215 south, I-15 and I-515, and I-15 and I-215 north will receive design attention appropriate to their importance as major points of intersection. Integrating regional trail system segments so they co-exist with highways and bridge adjoining areas now separated by highways, will allow the system to be an alternative regional access transportation route.

Softscape types for the corridor segment include Enhanced Native to Regional Ornamental. The hardscape types range from Accentuated to Landmark according to their importance along this segment. Art expression within and along the highway will be most effective if it is evocative and engaging for travelers.

3. Mojave High Desert

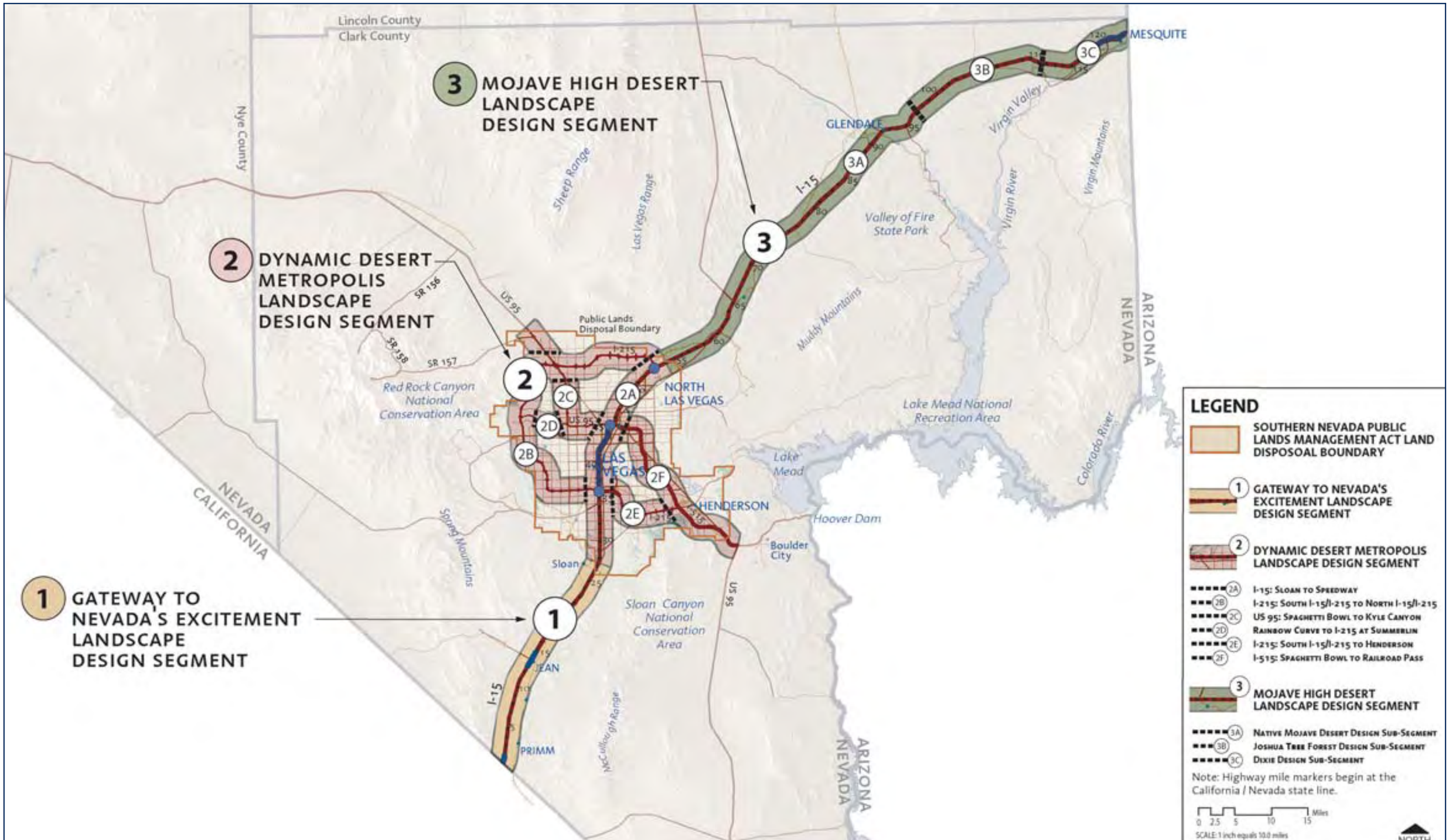
The Mojave High Desert Segment begins where the Las Vegas Valley recedes. The increasingly dramatic landscape of high peaks and desert mesas retraces the historic route of the Old Spanish Trail. Toward the Arizona border, the Virgin River Valley is a prominent feature of the landscape leading to the northerly I-15 gateway into Nevada at Mesquite.

The highway provides access to the Nevada outback and other significant recreational resources including the Valley of Fire, Lost City, and Lake Mead. An elevated highway loop to the Valley of Fire is proposed, providing a rest stop which includes interpretive opportunities of the natural history of the region. Design interpretation for this corridor provides visitors a welcome to the state, highlights recreational access and opportunity, announces communities with simple gateways and utilizes native planting to reconnect lands disturbed by the highway to the desert.

(1) *The Gateway to Nevada's Excitement Landscape Design Segment begins at the California-Nevada state line at Primm and extends to the geographic entry to the Las Vegas Valley near Sloan.*

(2) *Dynamic Desert Metropolis Landscape Design Segment includes the urban Interstate routes of Las Vegas and US 95 from State Route 157 in the north to Railroad Pass in the south.*

(3) *The Mojave High Desert Landscape Design Segment extends from the north edge of the Las Vegas Valley to Mesquite at the Nevada-Arizona state line.*



MAP H 4.2

1-15 corridor plan

LANDSCAPE DESIGN SEGMENTS

I-15 CORRIDOR

LANDSCAPE DESIGN SEGMENT DESCRIPTIONS

The I-15 corridor is divided into three Landscape Design Segments (Gateway to Nevada's Excitement, Dynamic Desert Metropolis, and Mojave High Desert) whose overall design themes are described above. This section examines each Landscape Design Segment individually and further refines its character and features. The following information is provided for each of the three Landscape Design Segments:

- Design objectives for the sub-segments.
- Map that shows the overall segment, its sub-segments, and important road service sites.
- Section diagram that reveals the topographic character of the segment and provides more detailed descriptions of its features.
- Map that identifies additional program opportunities in each segment.
- Design interpretation for each segment.

OPPORTUNITIES AND CONSTRAINTS

The opportunities analysis identifies specific locations of physical opportunities, and areas where new design guidelines may be applied to establish the framework for the *I-15 Corridor Plan* recommendations. Opportunities for the I-15 corridor are separated into two categories: (1) physical improvement opportunities, and (2) design guideline opportunities. Within each of these categories, the opportunities are further organized under five major headings including:

1. Community
2. Travel and Tourism
3. Natural Resources and Wildlife
4. Views and Landmarks
5. Roadway Practices and Structures

The many opportunities are further refined and are shown in the Specific Corridor Features Maps (page 4.6, 4.18, and 4.26).

Constraints identified along the I-15 corridor include:

- Lack of land within the right-of-way
- Limited economic resources
- Reliance on partnerships to fund retrofit projects
- Limited water resources and arid climate
- Sensitive natural resources

GATEWAY TO NEVADA'S EXCITEMENT

The Gateway to Nevada's Excitement Landscape Design Segment provides a stimulating entrance to Nevada and imparts a feeling of anticipation while maintaining a connection to the desert landscape that surrounds it. It is divided into three sub-segments each with their own character and purpose along the corridor: Statewide Gateway, Preserved Desert Landscape Character, and Managed Landscape of Desert Character.

DESIGN OBJECTIVES

Statewide Gateway

- Mark the passage from California into Nevada and provide a symbolic entry into the state.
- Create a visually prominent gateway and render the entry into the state a notable experience.
- Convey the identity of Nevada.
- Emphasize the sequence of arrival and signify the importance of the gateway as a welcome to travelers by fully spanning the northbound approach.
- Compose the gateway to be vivid night or day and extend the anticipation of approach for several miles.
- Separate the gateway and welcome center from other development in Primm, encouraging a presence of their own.
- Provide accessibility to travel services, immediate information, and statewide travel planning opportunities at the welcome center.
- Connect travelers with the natural landscape surrounding Primm through interpretive exhibits at the Welcome Center.

Preserved Desert Landscape Character

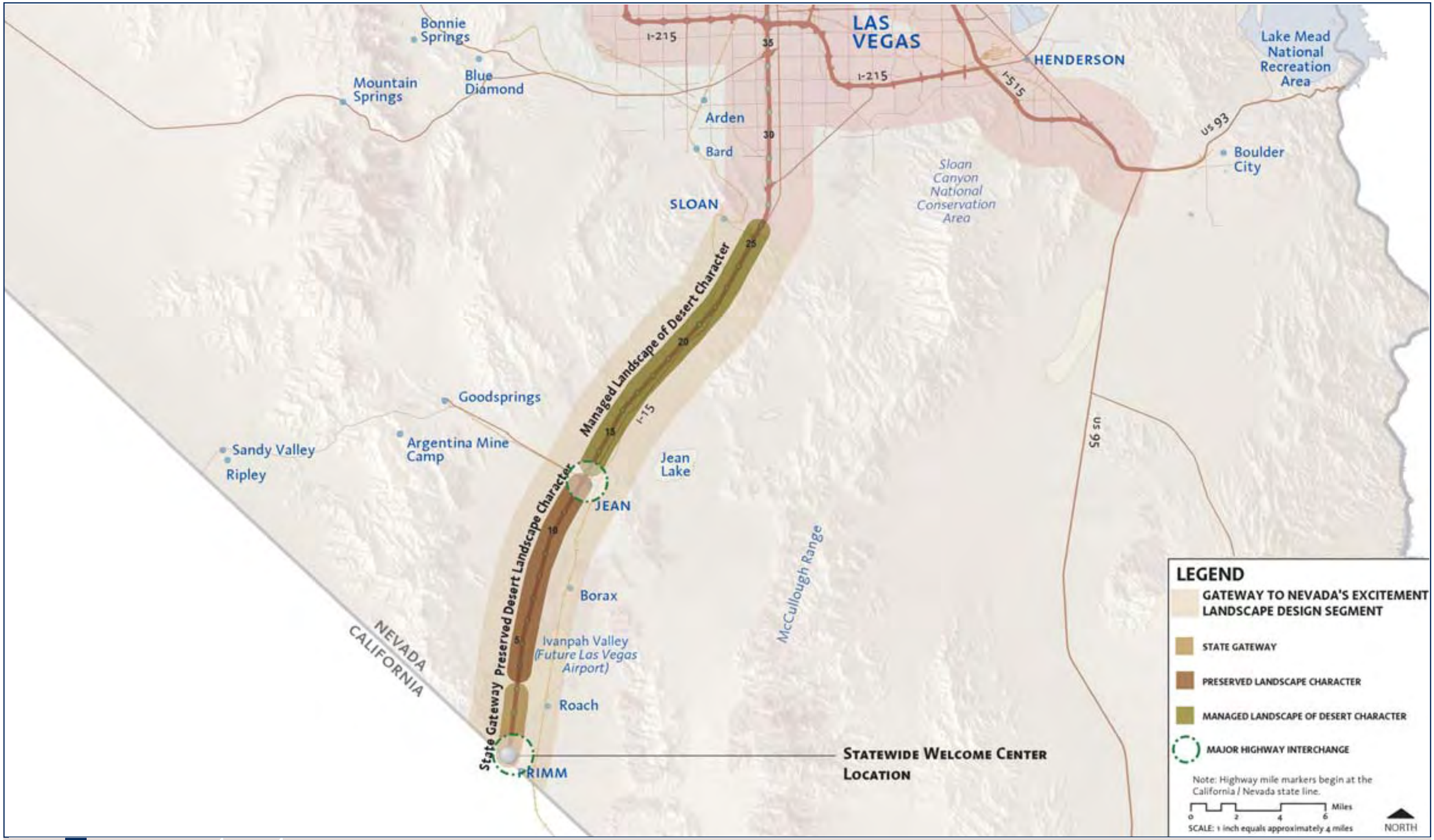
- Respect the context that surrounds the highway and deliberately use design and applied guidelines to incorporate the highway into the landscape.
- Preserve scenic views of distant mountain ranges, the Mojave Desert, and lake beds.
- Apply scenic designation to manage the structure and placement of advertising and land use so it is secondary to the natural landscape.
- Blend highway facilities into the Mojave Desert using naturalized grading and drainage design and native plant revegetation.
- Use uniform and consistent colors for highway structures that will harmonize with those found in the natural landscape.
- Retrofit existing facilities with color applications and utilize staining techniques to blend disturbed lands.

Managed Landscape of Desert Character

- Plan for a future design context that will integrate expected growth, major facilities, and development within this segment.
- Maintain the desert character in conjunction with new urbanization and growth.
- Expand the right-of-way to 800' to create adjacent space for naturalized earth forms and native revegetation planting. Avoid using retaining or acoustic structures.
- Apply design criteria that maintain the palette of the Mojave Desert including landform, native revegetation, natural drainage management, and color.
- Require design continuity to establish a uniform corridor treatment.
- Create highway structures that are well proportioned, simple in their design expression, uniformly applied throughout the segment, and utilize colors harmonious with the desert palette.

Segment 1 Keymap

(1) *The introduction to Nevada at the welcome center can convey civic presence and architecture powerfully responsive to the desert.*



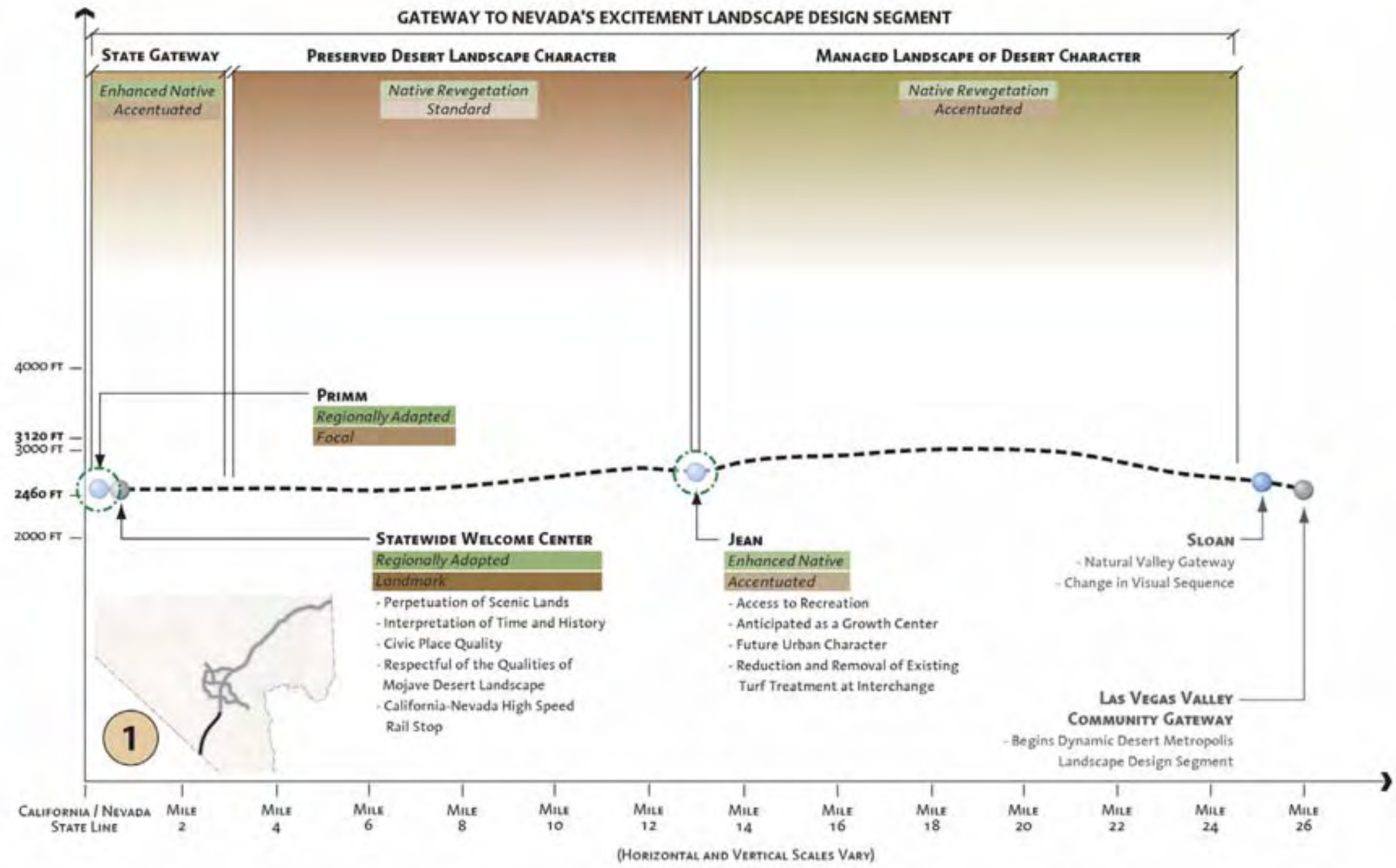
MAP 1A

4.4

I-15 corridor plan

I-15: PRIMM TO SLOAN

GATEWAY TO NEVADA'S EXCITEMENT LANDSCAPE DESIGN SEGMENT



Softscape Type/Treatment

Structures and Hardscape Type/Treatment

DESIGN OBJECTIVES

Statewide Gateway

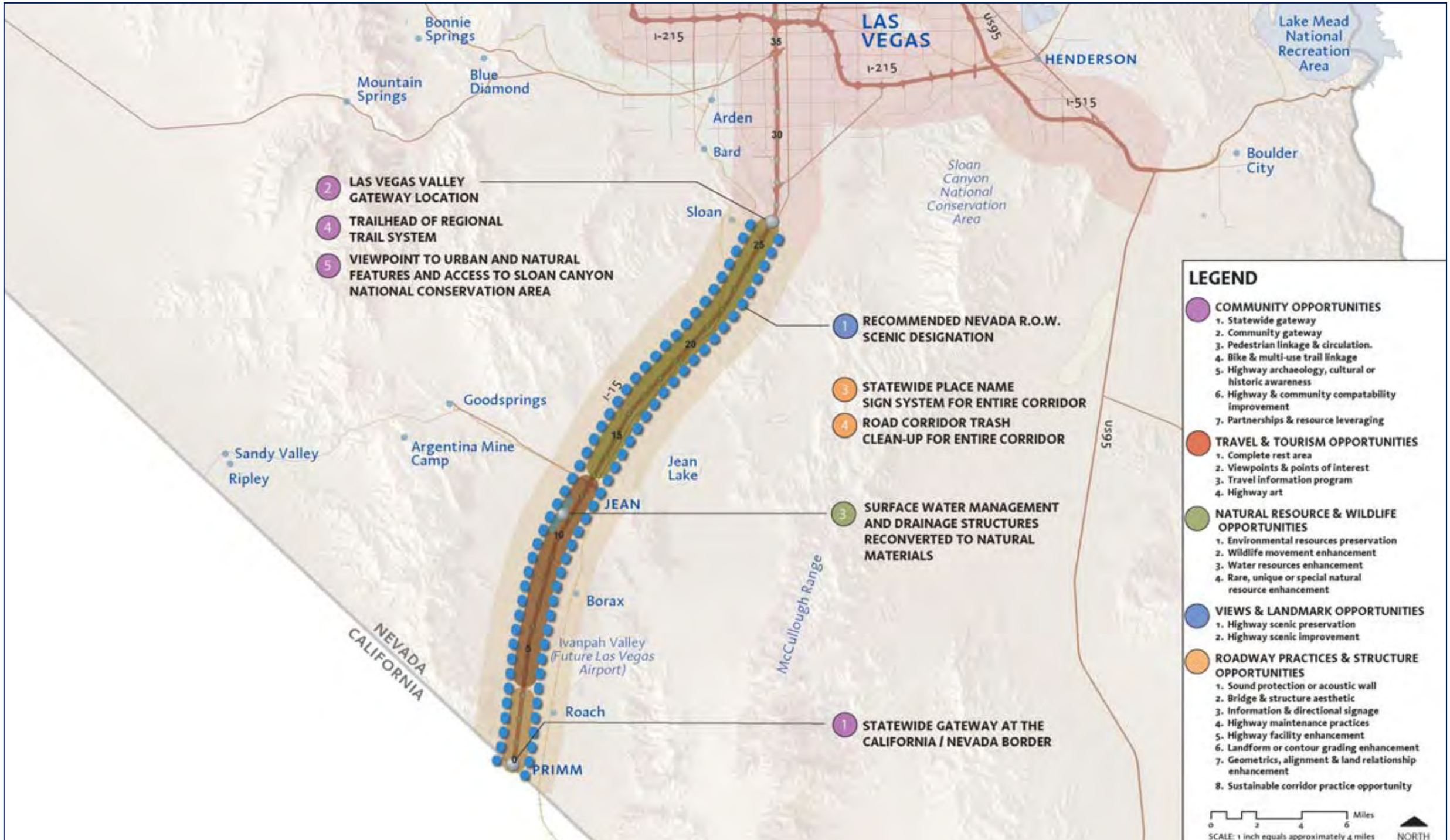
1. Mark the passage from California into Nevada and provide a symbolic entry into the state.
2. Create a visually prominent gateway and make the entry into the state a notable experience.
3. Convey the identity of Nevada.
4. Emphasize the sequence of arrival and signify the importance of the gateway as a welcome to travelers by fully spanning the northbound approach.
5. Make the gateway vivid at night or day and extend the anticipation of approach for several miles.
6. Separate the gateway and welcome center from other development in Primm to allow for a presence of their own.
7. Provide accessibility to travel services, immediate information, and statewide travel planning opportunities at the welcome center.
8. Use the welcome center to connect travelers with the natural landscape surrounding Primm.

Preserved Desert Landscape Character

1. Respect the context that surrounds the highway and deliberately use design guidelines to make the highway part of the landscape.
2. Preserve scenic views of mountain ranges in the distance, middle ground of the Mojave Desert, and lake beds in the foreground.
3. Apply scenic designation to manage the structure and placement of advertising and land use so it is secondary to the natural landscape.
4. Blend highway facilities into the Mojave Desert using naturalized grading and drainage design and native plant revegetation.
5. Use uniform and consistent colors for highway structures that will harmonize with those found in the natural landscape.
6. Retrofit existing facilities with application of color to structures and oxidation staining techniques to disturbed lands.

Managed Landscape of Desert Character

1. Plan for a future design context that will integrate expected growth, major facilities, and development within this segment.
2. Maintain the desert character in conjunction with new urbanization and growth.
3. Expand the visual area of the right-of-way to create adjacent space to allow for naturalized earth forms, native revegetation planting, and the avoidance of retaining or acoustic structures.
4. Apply design criteria that maintain the palette of the Mojave Desert including landform, native revegetation, natural drainage management, and color.
5. Require design continuity to establish a uniform corridor treatment.
6. Create highway structures that are well-proportioned, simple in their design expression, uniformly applied throughout the segment, and utilize colors harmonious with the desert palette.



MAP 1B

I-15: PRIMM TO SLOAN - SPECIFIC CORRIDOR FEATURES

GATEWAY TO NEVADA'S EXCITEMENT LANDSCAPE DESIGN SEGMENT

DESIGN INTERPRETATION SUMMARY

Interpretation of the segment's design themes will occur when the individual project design is undertaken. The corridor plan establishes the direction for design to be completed at the project level. Examples of interpretation are included to illustrate forms that could be used to accomplish the design objectives stated. Examples are from other locations for the proposed program type.

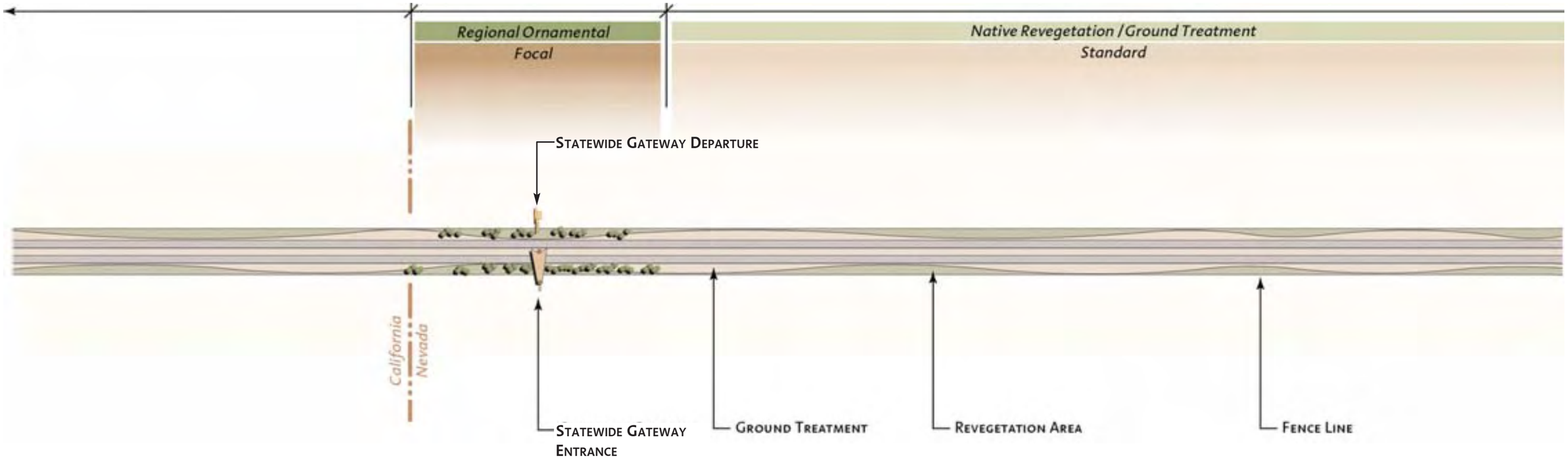
(1), (2) *Management to retain desert character will rely heavily on landform, planting, and space allowed in the corridor.*

(4) *The statewide welcome center could include distinctive desert form architecture that places value on interior and exterior space.*

(3) *Design of bridges and hardscape, color of structures, and the consistent application of landscape composition will fulfill a roadway connected to the desert landscape of this segment.*

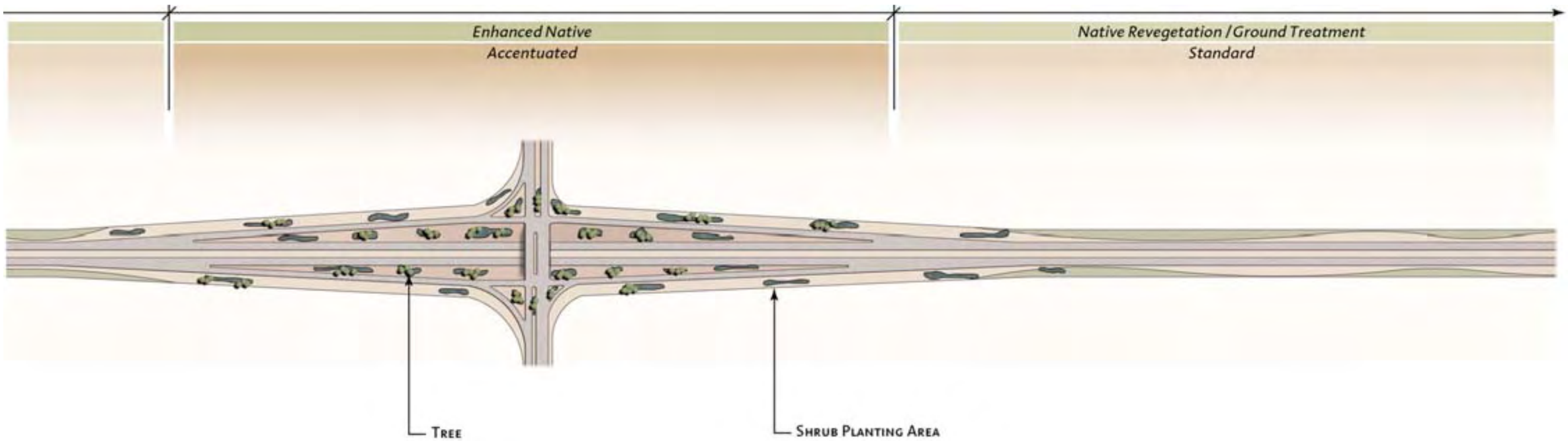
(5) *The preservation and presentation of scenic desert landscapes is an important objective of the Gateway to Nevada's Excitement corridor. This example uses an architectural window to make the view more vivid.*

GATEWAY TO NEVADA'S EXCITEMENT



(1) *Existing gateway.*

(2) *The Statewide Gateway at Primm is a civic announcement and welcome to the state. Spanning the northbound travel lane will create a notable entry and is the first opportunity to establish the "Gateway to Nevada's Excitement."*



(1) *Native Revegetation with areas of Enhanced Native softscape will structure the corridor in the section from the stateline through Sloan.*

Segment 2 Keymap

***(1)** This is an example of the existing character of "Mature Landscape" sections.*

***(2)** This is an example of "Flamboyant Resort Corridor."*

DYNAMIC DESERT METROPOLIS

The Dynamic Desert Metropolis is the most complex Landscape Design Segment comprised of the following six sub-segments:

- 2A: I-15: Sloan to Speedway
- 2B: I-215: South I-15/I-215 to Speedway
- 2C: US 95: Spaghetti Bowl to Kyle Canyon
- 2D: Rainbow Curve to Summerlin
- 2E: I-215: South I-15/I-215 to Henderson
- 2F: I-515: Spaghetti Bowl to Railroad Pass

These sub-segments are further divided by unique design objectives that are described below and are keyed to the different sub-segments where they occur. Additional design objectives, specific to a sub-segment, are described in their respective section diagram.

DESIGN OBJECTIVES

Las Vegas Valley Gateway (2A)

- Select the Las Vegas Gateway location based on geographic location, land form, and its transitional characteristics into the valley.
- Announce the entire valley as a place rather than any one community.
- Make the gateway visually vibrant, dynamic, new, and monumental in its design. Identify the nature and character of the valley at the point of arrival.
- Make the gateway primarily a viewpoint to the valley and next a trailhead for Sloan Canyon National Conservation Area.

Urban Background (2A, 2B, 2C, 2D, 2E, 2F)

- Create a corridor landscape that is unified, continuous and patterned to emphasize simplicity.
- Create a continuous linear visual composition without discontinuity between project segments. Emphasize consistency in landscape materials and application.

Flamboyant Resort Corridor (2A)

- Announce the entry to the Las Vegas strip and the entertainment district of the city.
- Establish a gesture that is dynamic and bold in its expression.
- Emphasize the importance of nighttime arrival.
- Define at the major interchanges accessing the "Resort Corridor," the importance of the attraction as defined by intense, edgy, and over-the-top design, reconfirming the landmark status of this arrival.

Redevelopment (2A, 2C)

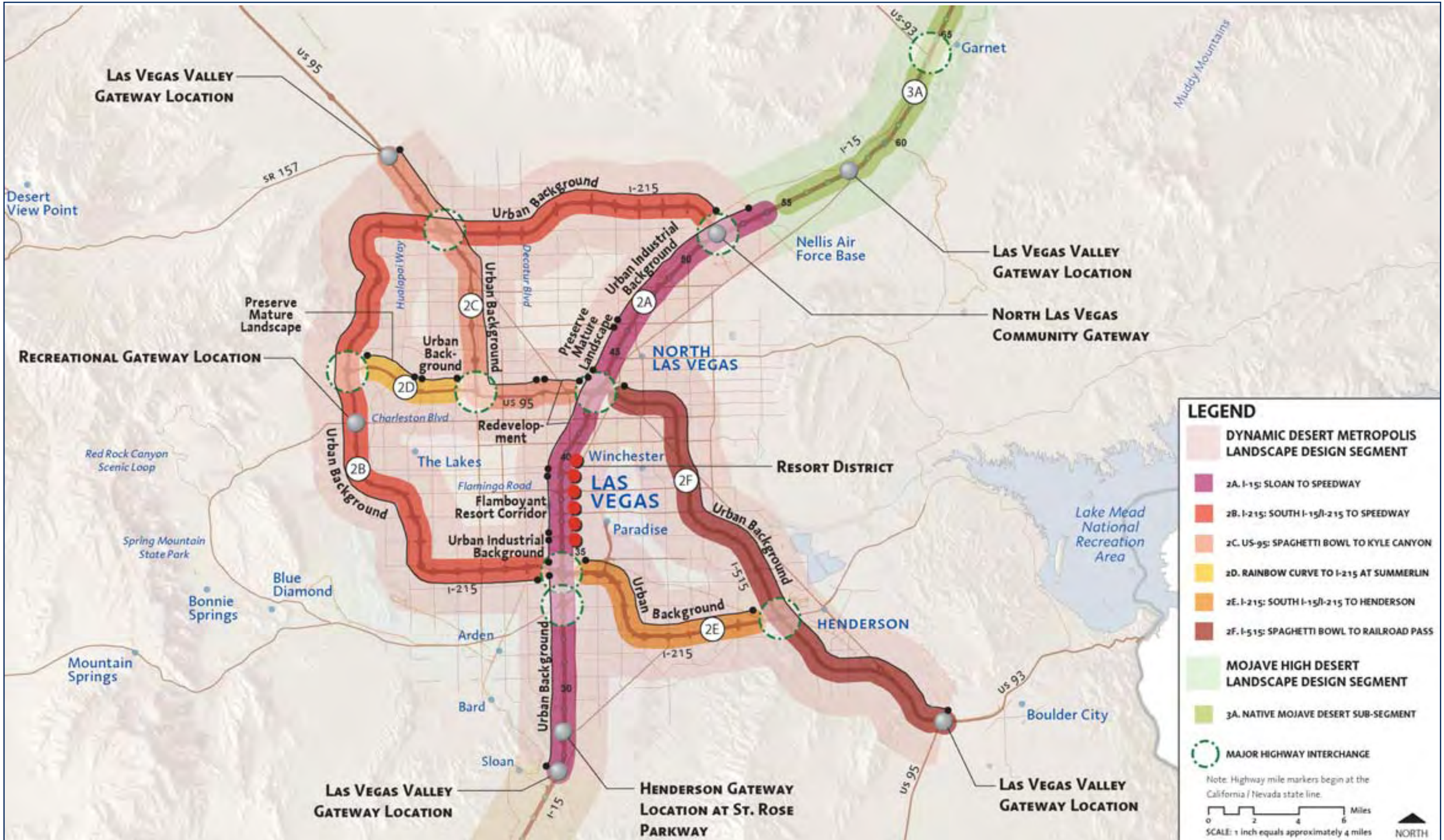
- Incorporate additional right-of-way into the corridor. Landscape design should anticipate the interface edges that may result from redevelopment.
- Utilize a unified material and plant palette to connect and simplify individual projects.
- Use landscape composition to soften both highway structures and adjacent urban edges.

Preserve Mature Landscape (2A, 2D)

- Preserve the existing landscape of overstory tree planting.
- Replace turf grass within the corridor and remodel the irrigation system from an area spray system to a drip system to water individual plants.

Urban Industrial Background (2A)

- Create a corridor landscape that is unified, continuous and patterned to emphasize simplicity.
- Emphasize vertical landscape materials and use them consistently throughout the corridor.



LAS VEGAS METROPOLITAN AREA

DYNAMIC DESERT METROPOLIS LANDSCAPE DESIGN SEGMENT

DESIGN OBJECTIVES

Las Vegas Valley Gateway

1. Select the Las Vegas Gateway location based on geographic location, land form, and its transitional characteristics into the valley.
2. Announce the entire valley as a place rather than any one community.
3. Make the gateway visually vibrant, dynamic, new, and monumental in its design. Identify the nature and character of the valley at the point of arrival.
4. Make the gateway primarily a viewpoint to the valley and secondarily, a trailhead for Sloan Canyon National Conservation Area.

I-15 @ Sloan to I-215 Interchange

1. Change the nature of the interstate and establish an urban character to compose areas of emphasis or quiet background.
2. Create a calm, consistent, harmonious, and seamless corridor space. The objective is a continuous landscape which brings together disparate visual fragments of city and highway features.
3. Provide, primarily with landscape planting, a compatible relationship with adjacent land uses with screening of the road view to knit together the corridor.
4. Provide re-coloring of existing highway features to soften and edit dissonant features into linear visual continuity.
5. Utilize planting to soften existing structures.

Flamboyant Resort Corridor

1. Announce the entry into the Las Vegas strip and the entertainment district of the city.
2. Establish a gesture that is larger than life, dynamic and bold in its expression.
3. Emphasize the importance of nighttime arrival.
4. Define at the major interchanges accessing the "Resort Corridor," the importance of the attraction as defined by intense, edgy, and over-the-top design, reconfirming the landmark status of this arrival.

Redevelopment

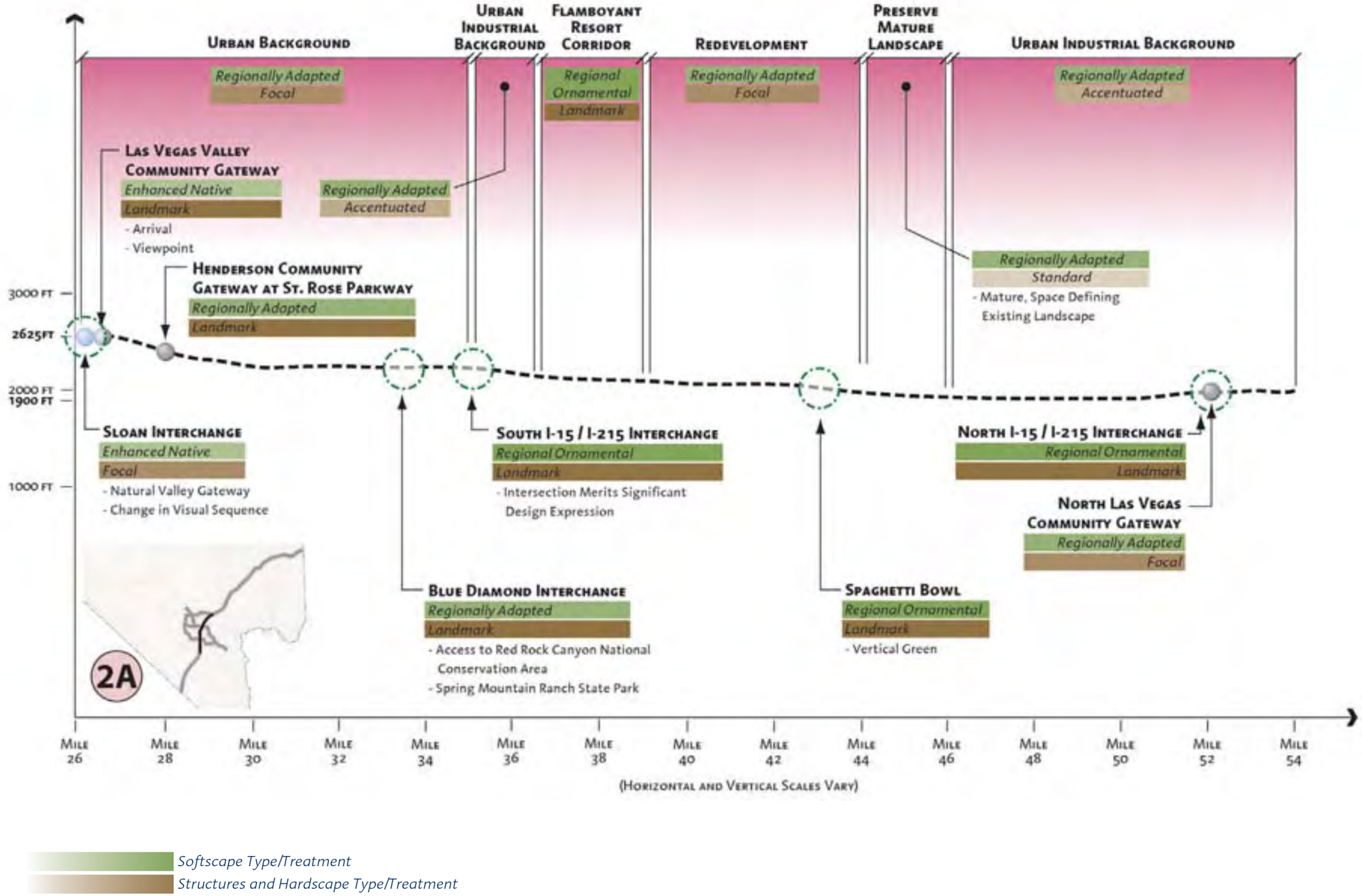
1. Incorporate additional right-of-way into the corridor. Landscape design should anticipate the interface edges that may result from redevelopment.
2. Utilize a unified material and plant palette to connect and simplify individual projects.
3. Use landscape composition to soften both highway structures and adjacent urban edges.

Preserve Mature Landscape

1. Preserve the existing landscape of overstory tree planting.
2. Replace turf grass within the corridor and remodel the irrigation system from an area spray system to a drip system to water individual plants.

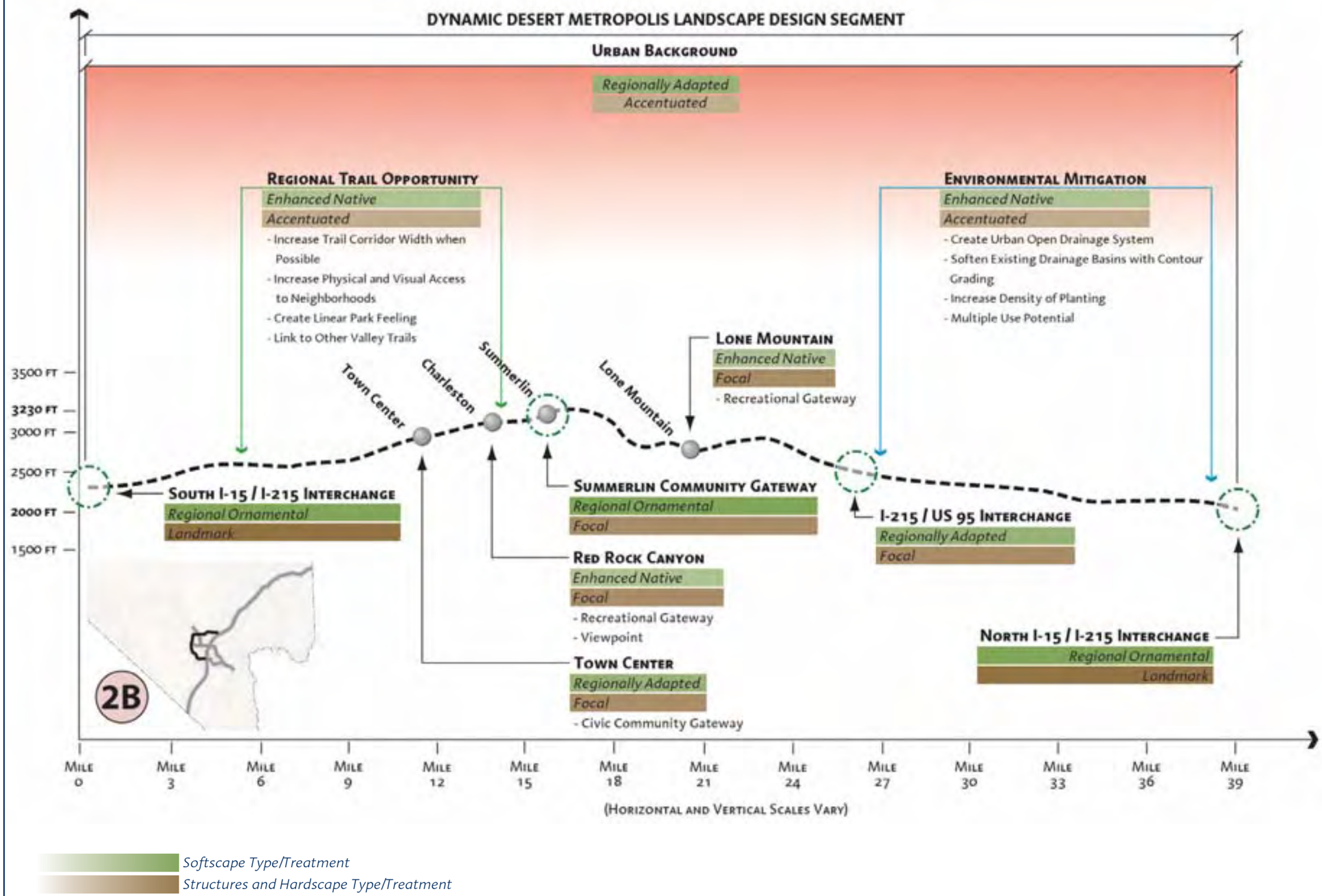
Urban Industrial Background

1. Create a corridor landscape that is unified, continuous and patterned to emphasize simplicity.
2. Emphasize vertical landscape materials and use them consistently throughout the corridor.



I-15: SLOAN TO SPEEDWAY - LONGITUDINAL SECTION

DYNAMIC DESERT METROPOLIS LANDSCAPE DESIGN SEGMENT



DESIGN OBJECTIVES

Urban Background

1. Create a corridor landscape that is unified, continuous and patterned to emphasize simplicity.
2. Create a continuous linear visual composition without discontinuity between project segments. Emphasize consistency in landscape materials and application.

Regional Trail System

1. Improve portions of the regional trail system adjacent to I-215 by increasing trail width, including user amenities, and providing multiple points of linkage to adjacent communities and neighborhoods.
2. Enhance usability of the trail system through special trail corridor sections and access control design to support use for recreation and as an alternative mode of travel.
3. At I-215 and Charleston, create a recreational gateway to the Red Rock Canyon area and utilize this as a trailhead that offers regional trail access.

Environmental Mitigation

1. Recognize regional drainage facilities constructed immediately adjacent to I-215 as a major environmental mitigation design opportunity.
2. Use landscape elements to restore, reshape, and soften the appearance of drainage structures.

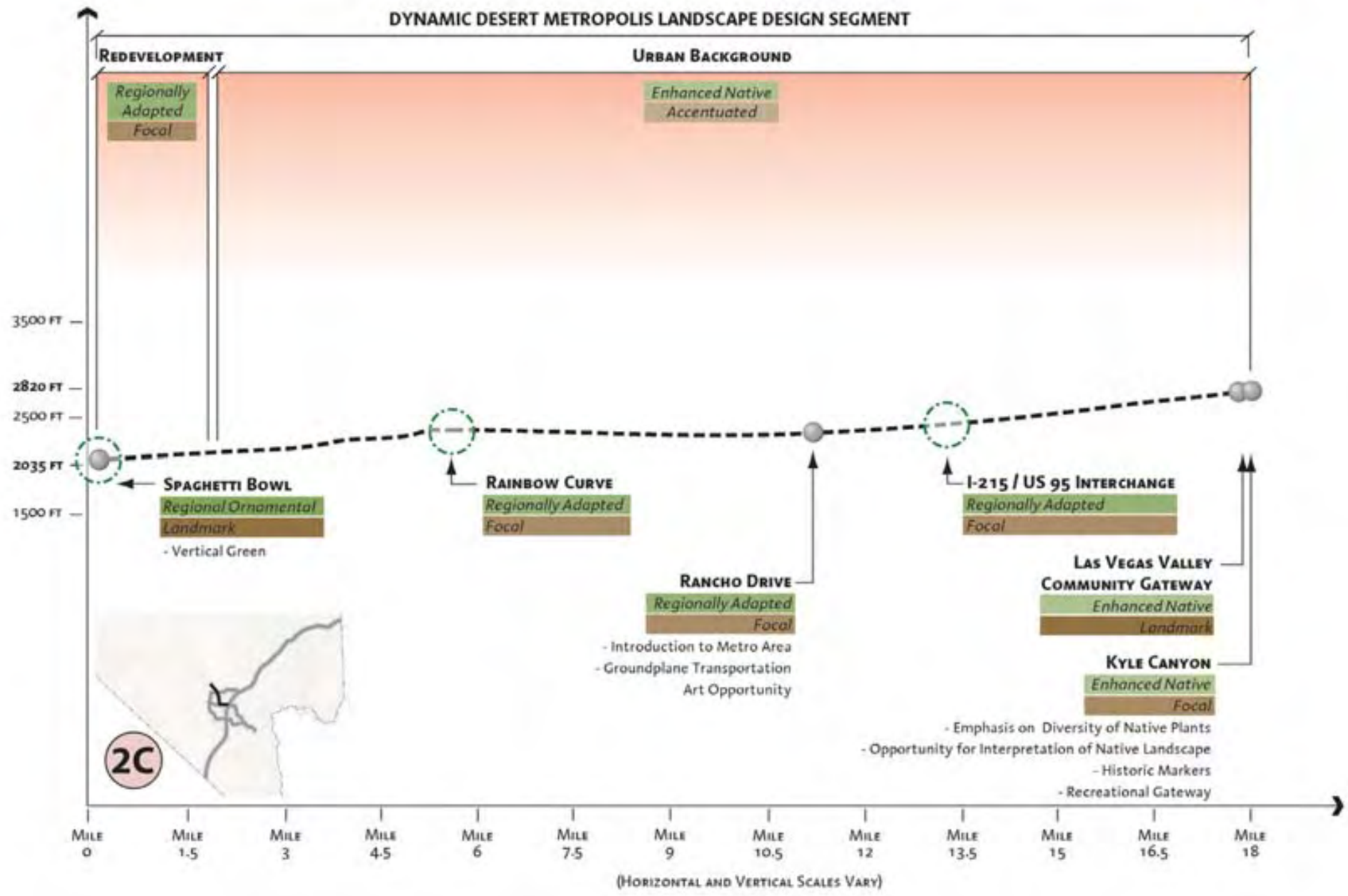
DESIGN OBJECTIVES

Urban Redevelopment

1. Incorporate additional right-of-way into the corridor. Landscape design should anticipate the interface edges that may result from redevelopment.
2. Utilize a unified material and plant palette to connect and simplify individual projects.
3. Use landscape composition to soften both highway structures and adjacent urban edges.

Urban Background

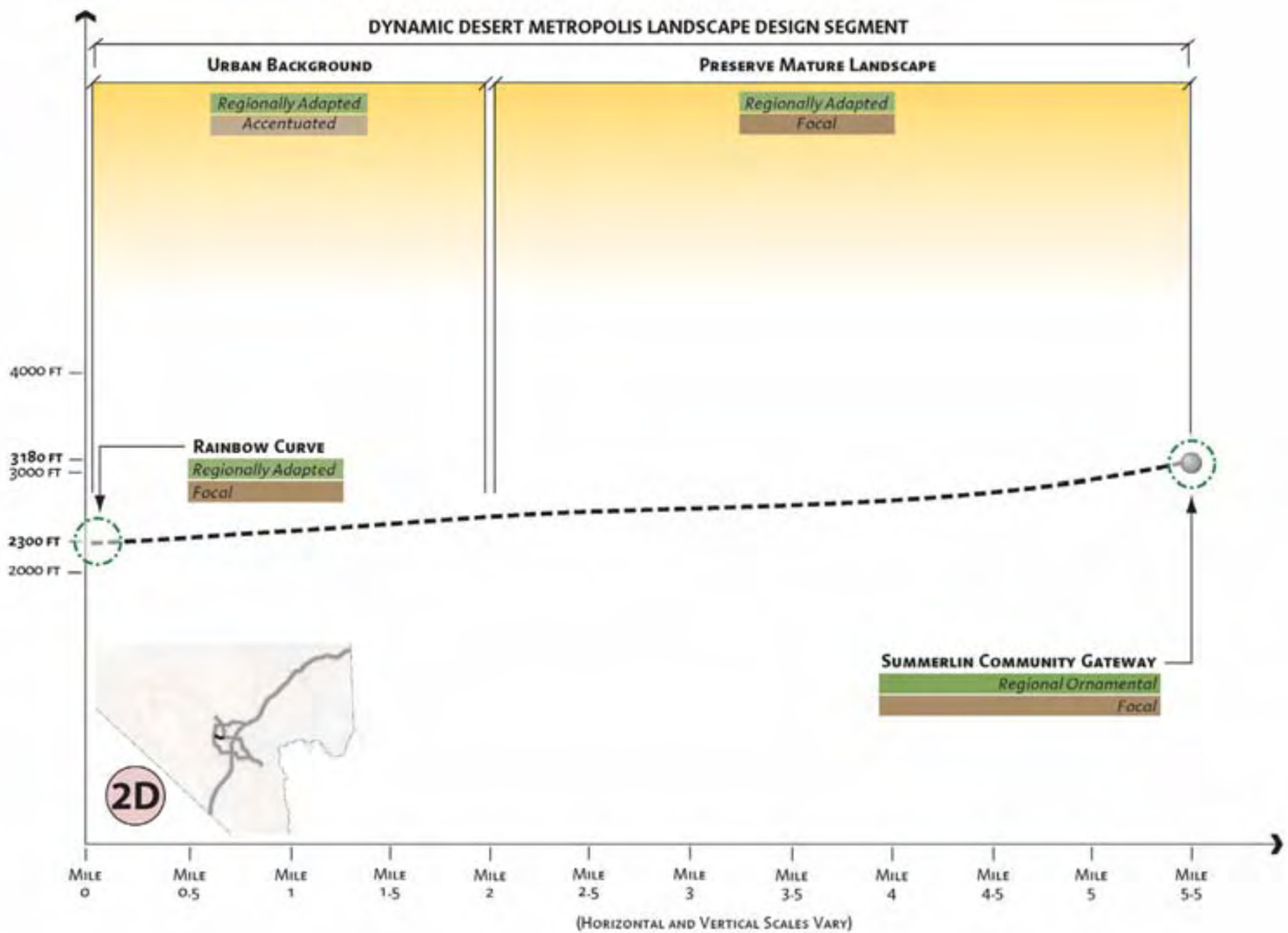
1. Create a corridor landscape that is unified, continuous and patterned to emphasize simplicity.
2. Create a continuous linear visual composition without discontinuity between project segments. Emphasize consistency in landscape materials and application.



Softscape Type/Treatment
Structures and Hardscape Type/Treatment

US 95: SPAGHETTI BOWL TO KYLE CANYON - LONGITUDINAL SECTION

DYNAMIC DESERT METROPOLIS LANDSCAPE DESIGN SEGMENT



Softscape Type/Treatment

Structures and Hardscape Type/Treatment

DESIGN OBJECTIVES

Urban Background

1. Create a corridor landscape that is unified, continuous and patterned to emphasize simplicity.
2. Create a continuous linear visual composition without discontinuity between project segments. Emphasize consistency in landscape materials and application.

Preserve Mature Landscape

1. Preserve the existing landscape of overstory tree planting.
2. Replace turf grass within the corridor and remodel the irrigation system from an area spray system to a drip system to water individual plants.

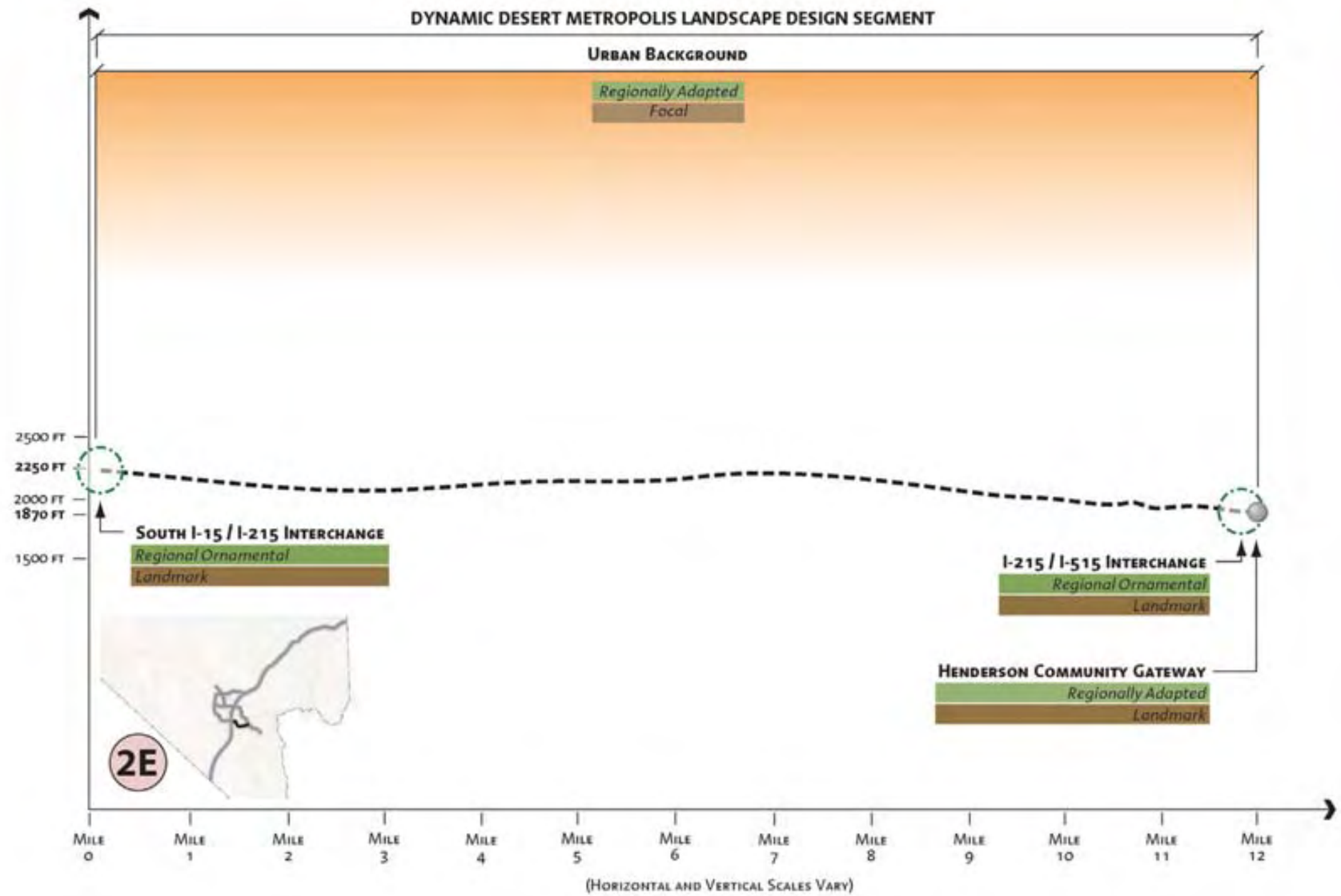
RAINBOW CURVE TO I-215 AT SUMMERLIN - LONGITUDINAL SECTION

DYNAMIC DESERT METROPOLIS LANDSCAPE DESIGN SEGMENT

DESIGN OBJECTIVES

Urban Background

1. Create a corridor landscape that is unified, continuous and patterned to emphasize simplicity.
2. Create a continuous linear visual composition without discontinuity between project segments. Emphasize consistency in landscape materials and application.

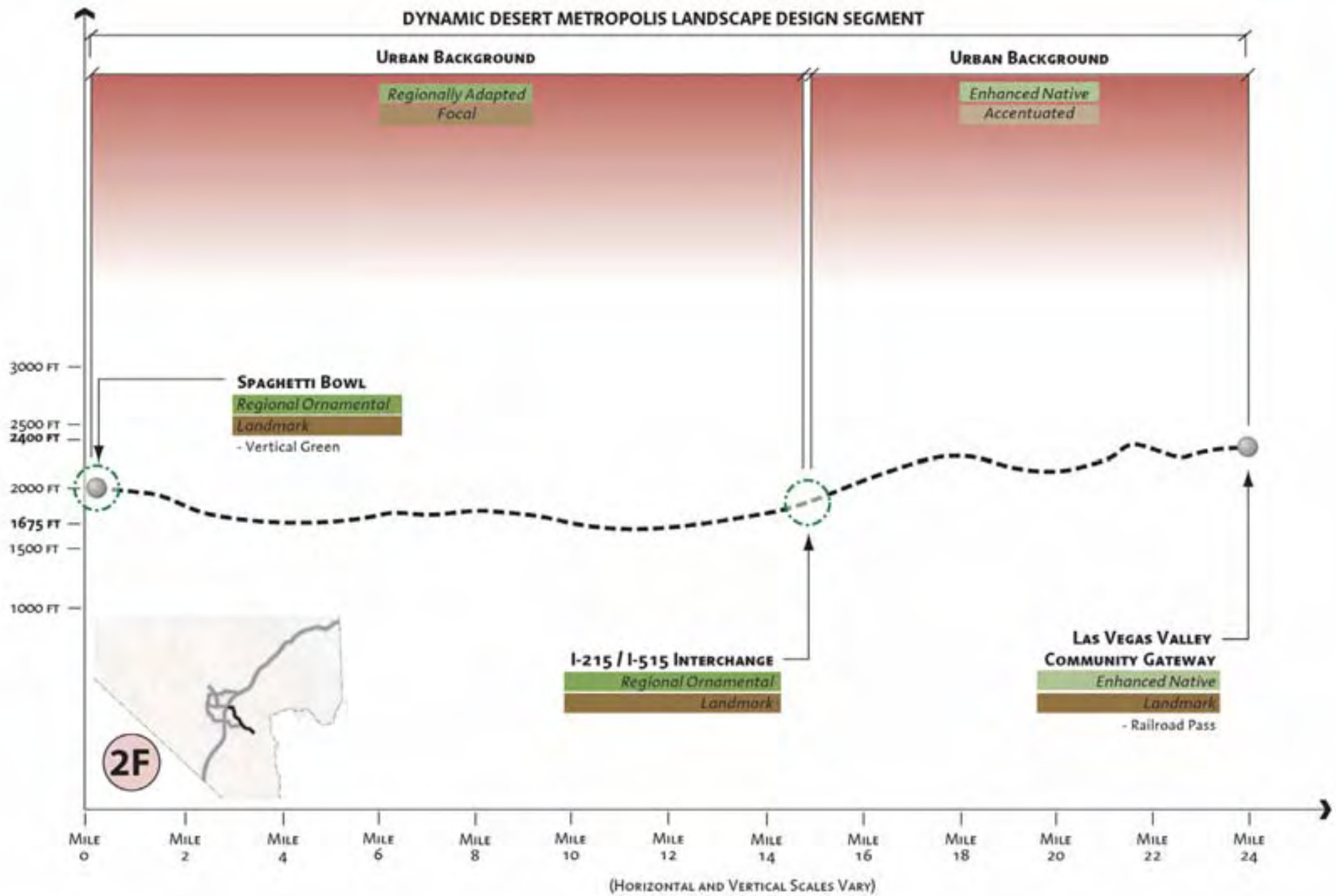


Softscape Type/Treatment

Structures and Hardscape Type/Treatment

I-215: SOUTH I-15/I-215 TO HENDERSON - LONGITUDINAL SECTION

DYNAMIC DESERT METROPOLIS LANDSCAPE DESIGN SEGMENT



Softscape Type/Treatment

Structures and Hardscape Type/Treatment

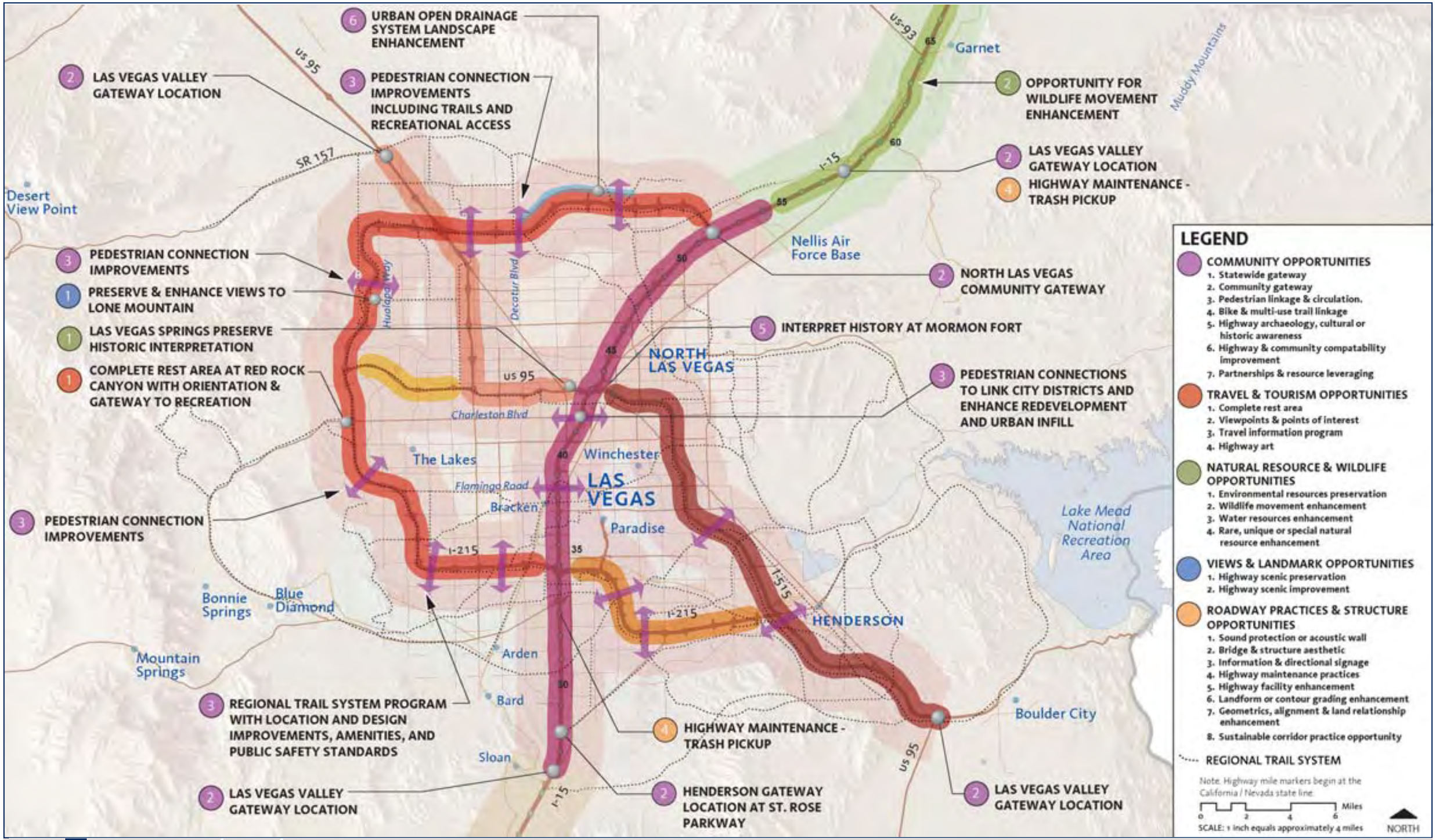
DESIGN OBJECTIVES

Urban Background

1. Create a corridor landscape that is unified, continuous and patterned to emphasize simplicity.
2. Create a continuous linear visual composition without discontinuity between project segments. Emphasize consistency in landscape materials and application.

I-515: SPAGHETTI BOWL TO RAILROAD PASS - LONGITUDINAL SECTION

DYNAMIC DESERT METROPOLIS LANDSCAPE DESIGN SEGMENT



MAP 2B

4.18

1-15 corridor plan

LAS VEGAS METROPOLITAN AREA - SPECIFIC CORRIDOR FEATURES

DYNAMIC DESERT METROPOLIS LANDSCAPE DESIGN SEGMENT

DESIGN INTERPRETATION

(1), (2) *A wide array of landscape interpretations will fit within the corridor segments, from regional ornamental to regionally adapted plant species that portray the design objectives.*

(3) *The Las Vegas Valley Community Gateway should be vibrant and dynamic in character to welcome visitors to the entertainment capital of the world.*

(4) *The urban redevelopment segments should bridge existing and new development with a palette of materials and plants.*

(8) *Designed patterns and descriptions can provide interpretive information as well as artistic intent.*

(9) *The desert climate can take advantage of the varied and exciting experience created through vertical sculptural elements and shadow patterns.*

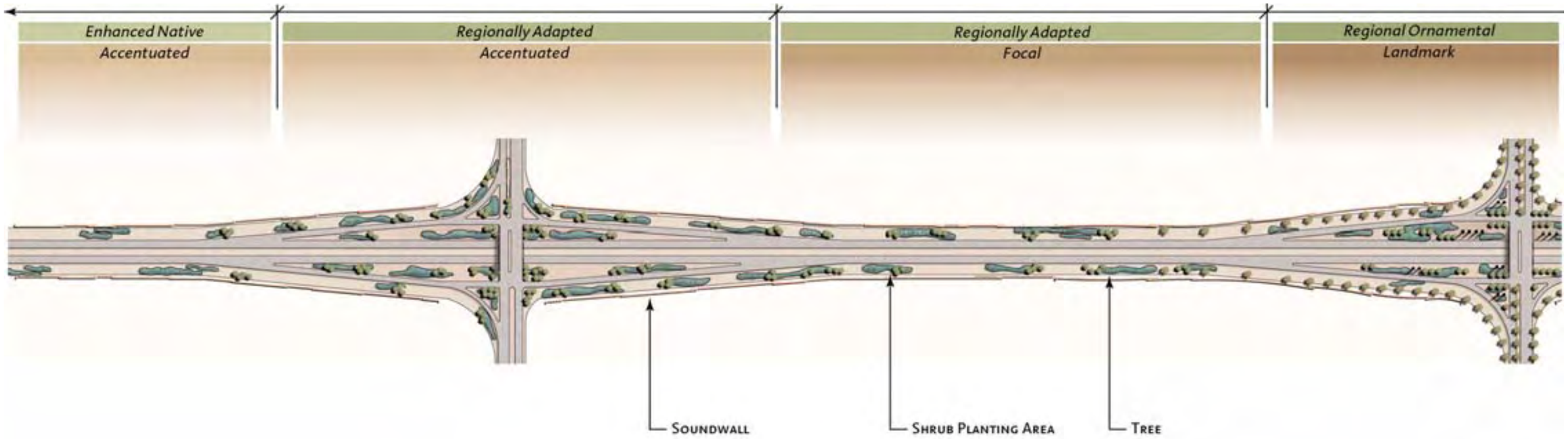
(5) *Planting humanizes structural surfaces and offers a contrast to the urban environment.*

(6) *The Flamboyant Resort Corridor interpretation could include brightly colored elements and bold sculptural forms.*

(7) *Emphasis is placed on lighting to enhance the night-time experience in the Flamboyant Resort Corridor.*

(10) *Murals and other forms of wall art enhance urban character.*

DYNAMIC DESERT METROPOLIS

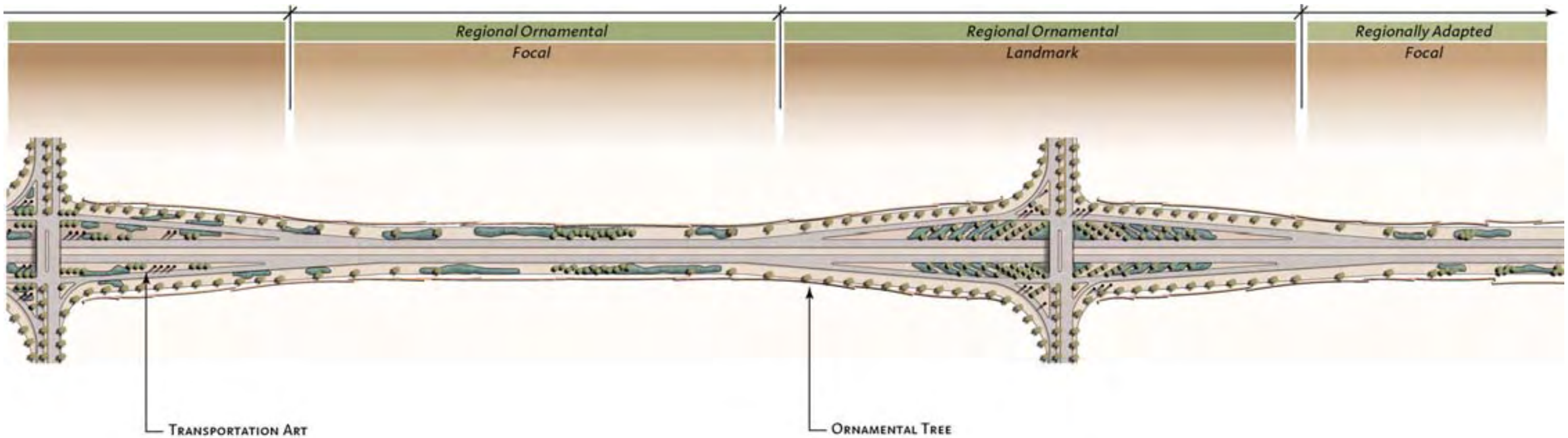


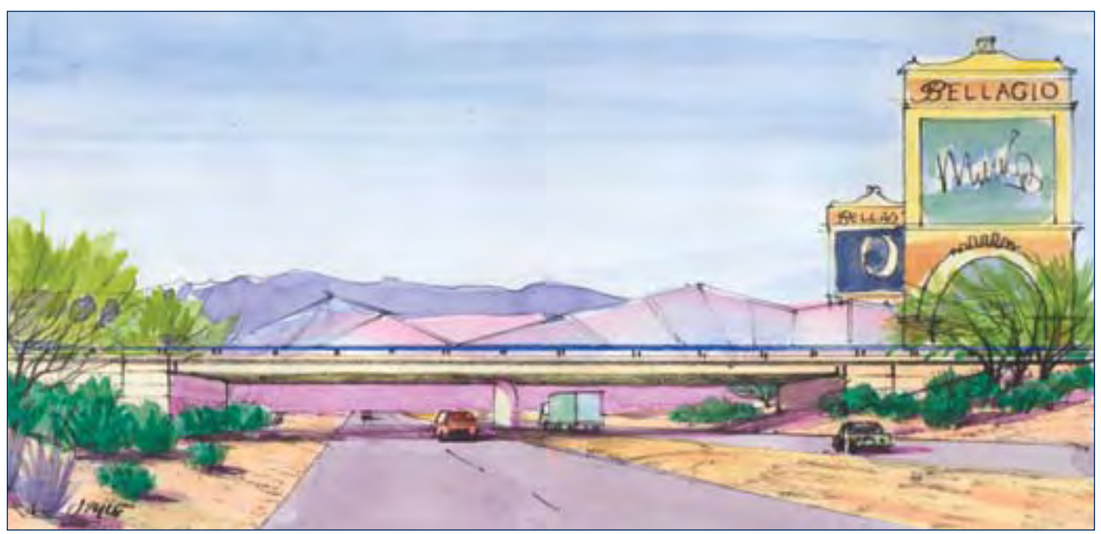
(1) *This is an example of existing conditions at I-215.*

(2) *Interpretation of the Dynamic Desert Metropolis Landscape Design Segment will shape the character of Las Vegas. The Regionally Adapted softscape will replace the barren right-of-way.*

(3) *This is an example of existing conditions at I-215.*

(4) *The visually unattractive right-of-way of this section of corridor should be improved with a Regionally Adapted softscape to diminish the effect of high tension power lines.*





(1) *This is an example of existing conditions along I-15 near the resort corridor.*

(2) *Within the resort corridor, the major entry interchanges will receive Landmark type treatment to fully accentuate the importance of this section of the metropolitan corridor system. Design of bridges and structures are key to expressing these landmark qualities.*

DYNAMIC DESERT METROPOLIS

This series of images shows the sequence of arrival to the resort corridor while traveling along I-15. The photographs reveal the existing conditions, while the sketches represent the landmark quality to be expressed by this section of the corridor.

(1) *This is an example of existing conditions along I-15 approaching the resort corridor. A lack of planting and earthwork exposes several visually disruptive elements such as power lines and light poles.*

(3) *High mast lighting, slope paving, and inconsistent materials currently detract from the visual quality of the resort district.*

(2) *Artistic landform and Regional Ornamental plantings will be used to screen undesirable elements and create an exciting arrival to the resort corridor.*

(4) *Custom lighting treatments, terraced earthwork, and simplified materials will connect the I-15 corridor to the rest of the resort experience.*

MOJAVE HIGH DESERT

The Mojave High Desert Landscape Design Segment contains a scenic quality and range of landscapes unique to the I-15 corridor. It is divided into three sub-segments based on topography and the native plant communities found in each area: Native Mojave Desert, Joshua Tree Forest, and Dixie.

DESIGN OBJECTIVES

Native Mojave Desert

- Create a design that recreates the desert landscape.
- Utilize a native plant revegetation landscape type with methods and standards that will successfully create the Mojave landscape within disturbed lands.
- Create a color palette used in highway structures that is complementary to the desert landscape.
- Retrofit existing facilities with application of color to structures and oxidation staining techniques to disturbed lands.
- Create a connection to recreational opportunities with a complete rest stop at the entry into the Valley of Fire and viewpoint rest stop at Moapa.

Joshua Tree Forest

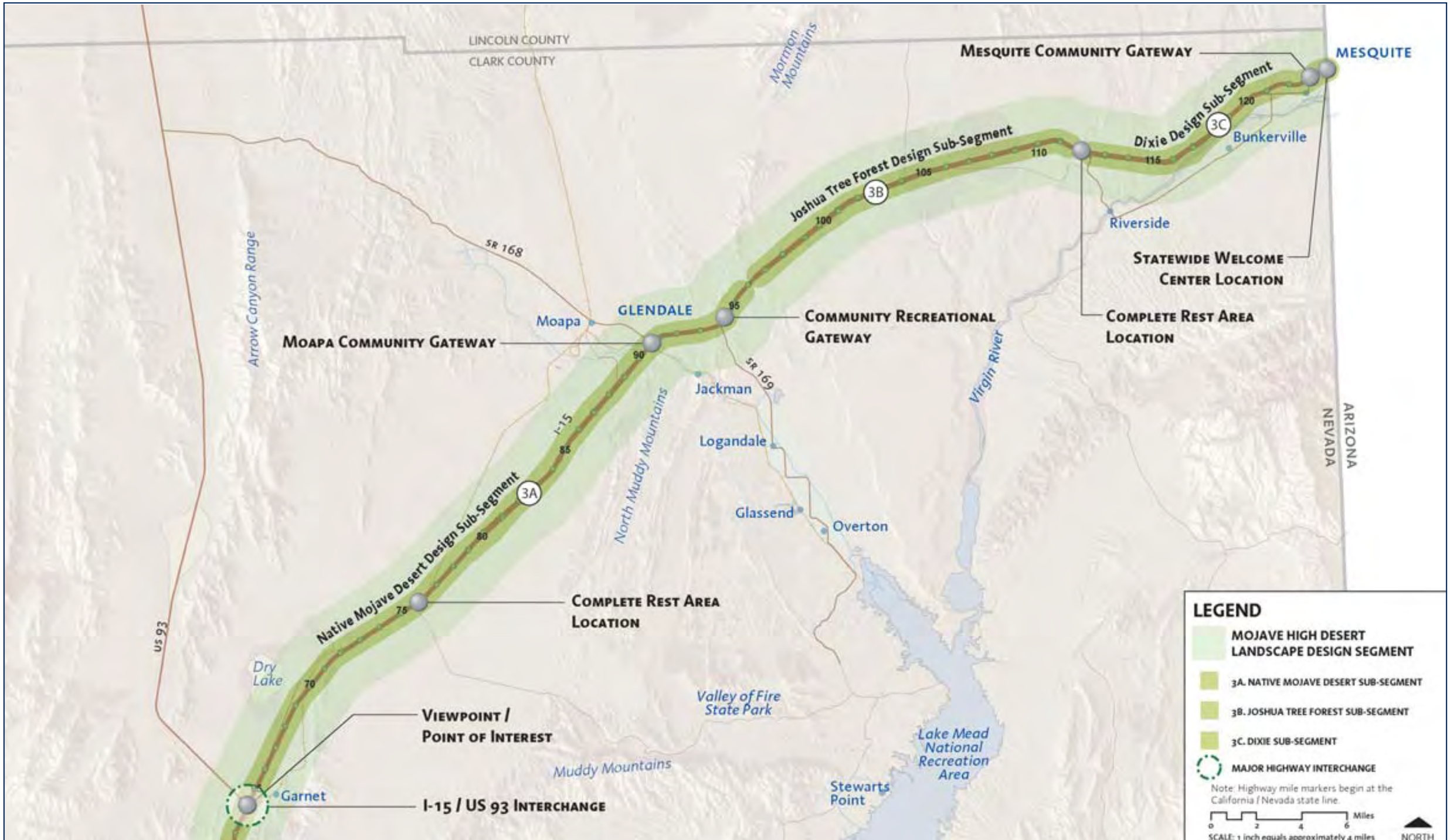
- Preserve vistas and scenic landscape quality within and adjacent to the corridor. Consider scenic designation to preserve an intact natural landscape.
- Apply design criteria to highway design that will maintain the palette of the Mojave Desert including landform, native revegetation, natural drainage structures, and uniform color applications.
- Preserve Joshua trees that may be located within future projects. Use native plant salvage techniques and adopt native plant palettes to include Joshua trees.
- Utilize the statewide signage program to highlight abundant natural features, human events, and wildlife within the corridor.

Dixie

- Acknowledge the statewide welcome center located in Mesquite with a stronger identity and civic place quality. Encourage design that provides more visual prominence, a strong relationship between interior and exterior components, and as a host to state visitors.
- Establish two community gateways into the central business district that are enhanced with signage, Regionally Adapted softscape, and Landmark structures and hardscape.
- Preserve scenic views of the Virgin River Valley from points along the highway in a scenic management area.

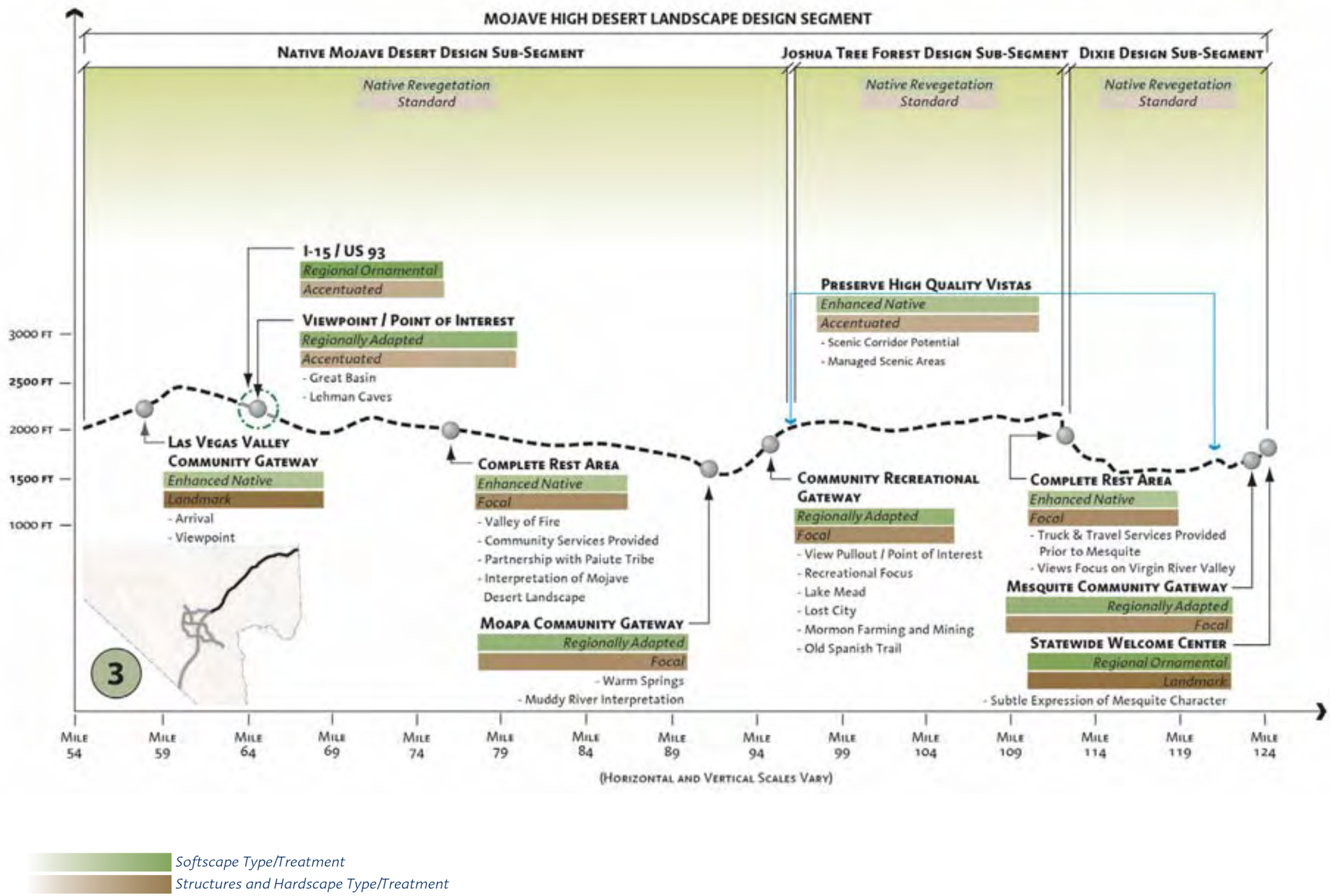
Segment 3 Keymap

(1) *Enhanced Native softscape can define community gateways and provide memorable experiences that resonate with travelers.*



I-15: SPEEDWAY TO MESQUITE

MOJAVE HIGH DESERT LANDSCAPE DESIGN SEGMENT



DESIGN OBJECTIVES

Native Mojave Desert

1. Create a design that blends and recreates the desert landscape.
2. Utilize a native plant revegetation softscape type with methods and standards that will successfully create the Mojave landscape within disturbed lands.
3. Create a color palette used in highway structures that is complementary to the desert landscape.
4. Retrofit existing facilities with application of color to structures and oxidation staining techniques to disturbed lands.
5. Create a connection to recreational opportunities through a complete rest stop at the entry into the Valley of Fire and viewpoint rest stop at Mariposa.

Joshua Tree Forest

1. Preserve vistas and scenic landscape quality within and adjacent to the corridor. Consider scenic designation to preserve an intact natural landscape.
2. Apply design criteria to highway design that will maintain the palette of the Mojave Desert including landform, native revegetation, natural drainage structures, and uniform color applications.
3. Preserve Joshua trees that may be located within future projects. Use native plant salvage techniques and adopt native plant palettes to include Joshua trees.
4. Utilize the statewide signage program to highlight abundant natural features, human events, and wildlife within the corridor.

Dixie

1. Acknowledge the statewide welcome center located in Mesquite with a stronger identity and civic place quality. Encourage design that provides more visual prominence, a strong relationship between interior and exterior components, and functions to host state visitors.
2. Establish two community gateways into the central business district which are enhanced with signage, Regionally Adapted softscape, and Landmark structures and hardscape.
3. Preserve scenic views of the Virgin River Valley from points along the highway in a scenic management area.