


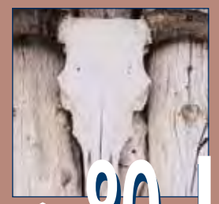


I-80 landscape and aesthetics corridor plan

CORRIDOR PLAN

NEVADA DOT

UNLV

I-80 FROM VERDI TO WEST WENDOVER & US 95 FROM WINNEMUCCA TO MCDERMITT

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

August 5, 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-80 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
JEFF 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-80 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:

Battle Mountain Band
Churchill County
City of Elko
City of Carlin
City of Fernley
City of Lovelock
City of Reno
City of Sparks
City of Wells
City of West Wendover
City of Winnemucca
Da Ka Doiyabe Resource Conservation and Development
Economic Development Authority of Western Nevada
Elko Chamber of Commerce
Elko County
Eureka County
Fernley Chamber of Commerce
Great Basin Community College
Humboldt County
Humboldt River Ranch Association
Keep Truckee Meadows Beautiful
Lander County
Lovelock Paiute Tribe
Lyon County
McDermitt, Desert Inn
National Park Service
Nevada Department of Transportation, District 2
Nevada Department of Transportation, District 3
Nevada Division of Forestry
Nevada Division of State Parks
Nevada Land Conservancy
Nevada Statewide Tree Council
Newmont Mining Corporation, Western Nevada Operations
Northern Nevada Development Authority
Pershing County
Pyramid Lake Paiute Tribe
Regional Transportation Commission of Washoe County
Reno-Sparks Chamber of Commerce
Reno-Sparks Convention & Visitors Authority
Reno-Sparks Indian Colony Planning Department
Scenic Nevada
Sierra Club - Toiyabe Chapter
South Fork Band Te-Moak Tribe
Sparks Chamber of Commerce
Storey County
Tahoe-Pyramid Bikeway
Te-Moak Tribe of Western Shoshone Indians, and Elko Band
Trails West
Truckee Meadows Community College
Truckee Meadows Regional Planning
Truckee Meadows Tomorrow
University of Nevada Cooperative Extension
U.S. Army Corp of Engineers
U.S. Bureau of Land Management
U.S. Department of Transportation - Federal Highway Administration
U.S. Fish & Wildlife Service
Washoe County
Wells Band Te-Moak Tribe
Western Trails Research Association
Winnemucca Convention and Visitors Authority
Winnemucca Indian Colony

ACKNOWLEDGEMENTS

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I-80 CORRIDOR PLAN SUMMARY AND USER'S GUIDE

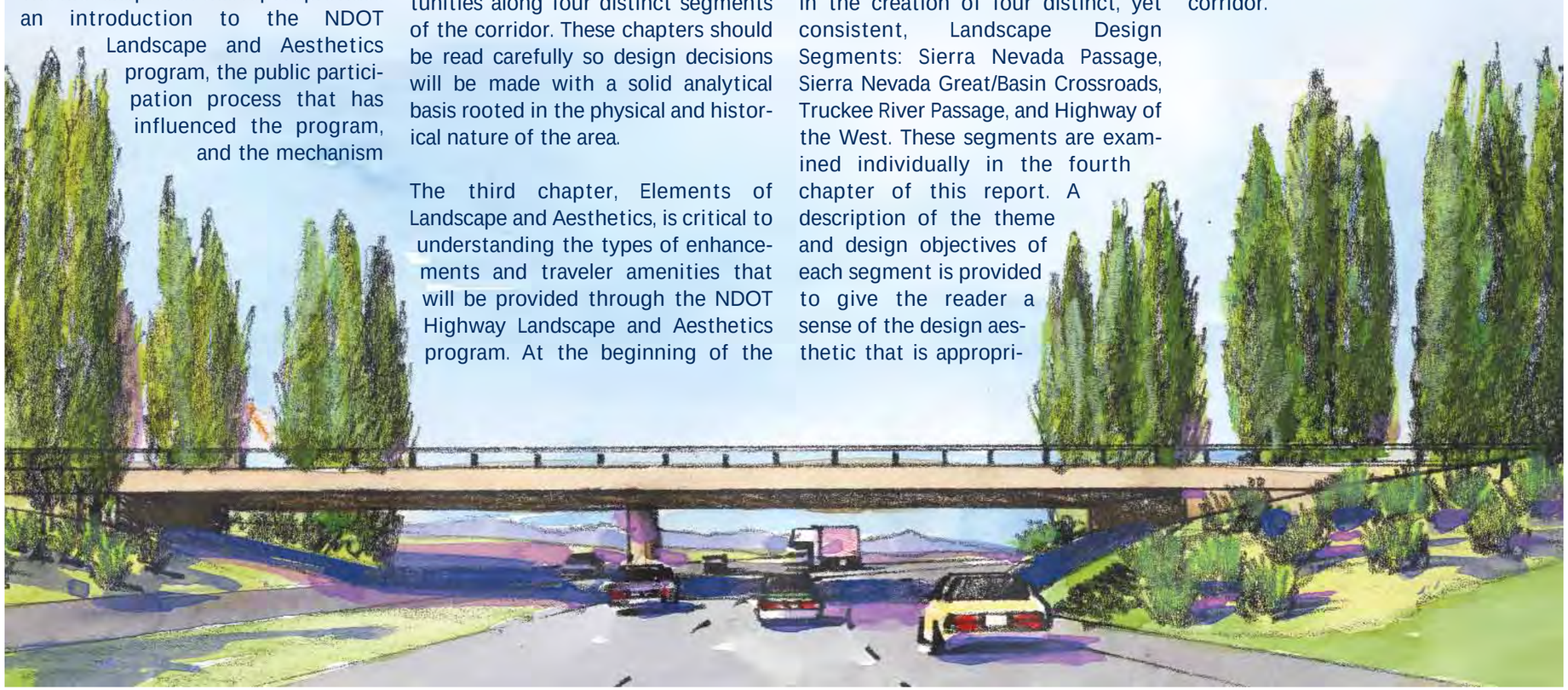
This plan illustrates a detailed vision for the landscape and aesthetics of the I-80 corridor. This vision synthesizes historic, current, and future conditions into a comprehensive guide to improve the visual appearance of the I-80 Urban and I-80 Rural highway corridors from the California stateline at Verdi to the Utah border at West Wendover and US 95 from Winnemucca to McDermitt.

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-80 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 four 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 Highway 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-80 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-80 corridor resulted in the creation of four distinct, yet consistent, Landscape Design Segments: Sierra Nevada Passage, Sierra Nevada Great/Basin Crossroads, Truckee River Passage, and Highway of the West. These segments are examined individually in the fourth chapter of this report. A description of the theme and design objectives of each segment is provided to give 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, structures, hardscape types, and their 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, facility planning, and design. The final chapters describe funding and project priorities for each segment of the I-80 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-80:

- *Refer to the section beginning on page 3.1 to determine 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 4.9 for design objectives and intended future context.*
- *Refer to pages 4.13, 4.21, 4.29, and 4.47 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 the description of funding and costs.*
- *Refer to the section beginning on page 7.1 for project priorities.*

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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-80 Landscape and Aesthetics Corridor Plan (Corridor Plan)* has been developed. This plan includes landscape and aesthetic recommendations for all of I-80 from the California border at Verdi to the Utah border at West Wendover, and also includes US 95 from Winnemucca north to the Oregon border at McDermitt. The overall corridor is divided into two sections: the I-80 Urban study area and the I-80 Rural study area. The I-80 Urban study area extends from the California border at Verdi to a mile east of Fernley. The I-80 Rural study area continues from Fernley east to the Utah border and includes US 95. These study areas provide opportunities to present information and issues specific to the different sections. 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-80 corridor and associated highways, particularly as they relate to adjacent cities, communities, and neighborhoods. The *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 dialogue at every stage of planning and development, engaging communities in helping to develop a plan with local support.

Separate public involvement meetings were held for the I-80 Urban and the I-80 Rural study areas. Separate Technical Review Committees (TRC) represented local interests and knowledge for each study area. The rural study area was further divided into two groups—a western group that held TRC and public meetings in Winnemucca and an eastern group that held TRC and public meetings in Elko.

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:

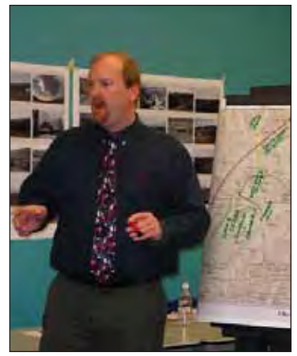
1. Identification of issues and concerns of each community.
2. A method, strategy, and action plan to address community concerns.
3. Opportunities for the public to express their level of support for the *Corridor Plan.*
4. Release of full information about the *Corridor Plan* through public meetings,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

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

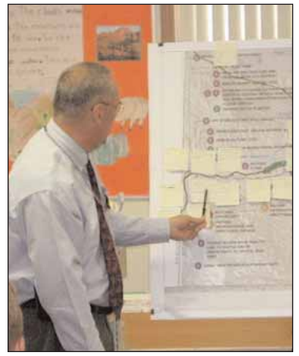
- A Technical Review Committee (TRC), composed of a broad range of stakeholders, contributed significant local agency and community knowledge.
- The public was able to identify issues, ask questions, and provide input at six public meetings—two in each location.
- A fact sheet was widely distributed to provide general information about the *Corridor Plan.*
- The public was able to visit a corridor planning website to learn more about the 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 ensure the recommendations outlined in this *Corridor Plan* reflect the ideas and suggestions of local community members.

(2)



(3)



(4)

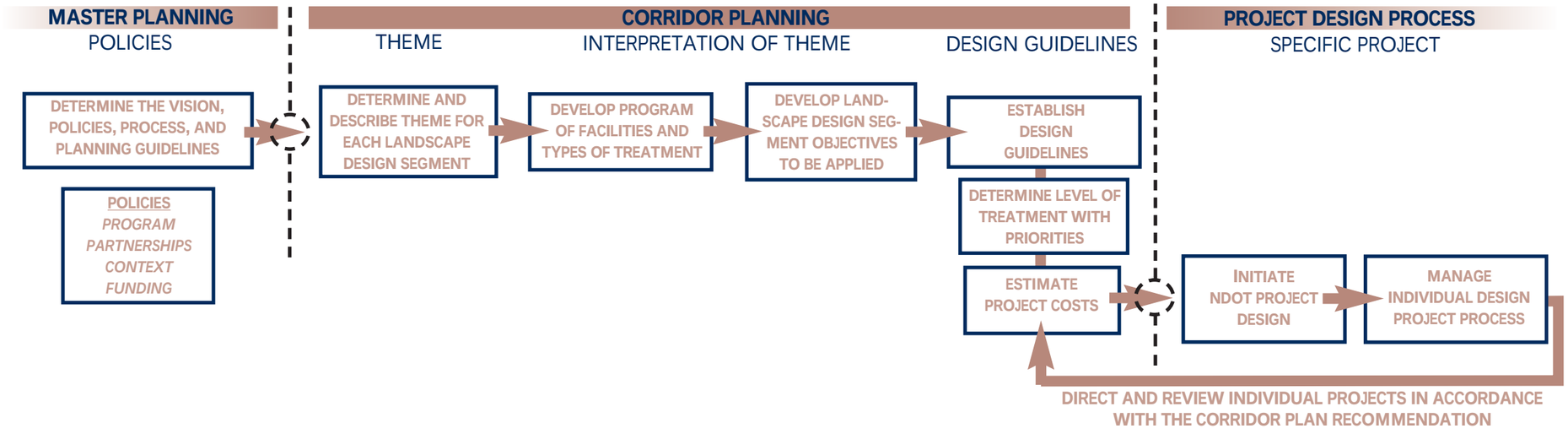
(5) From the inception of the corridor planning process a Technical Review Committee provided knowledgeable input, ideas, and comments on the plan. Workshops have involved stakeholders and community members.

CORRIDOR DESIGN MANAGEMENT

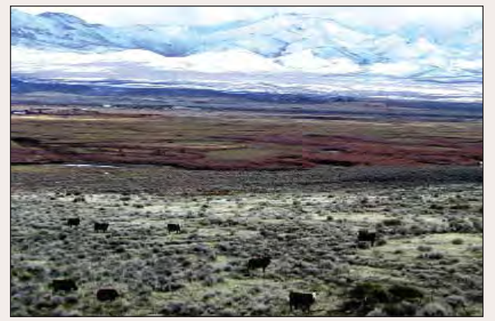
The *I-80 Landcape and Aesthetics Corridor Plan* is a design management tool for NDOT and others who will ultimately design specific highway projects. This plan establishes a context for future projects and, through its recommendations, programs, and description of the intended result, guides the Landscape and Aesthetic program for the I-80 corridor.

Prior to the design of a specific highway project, which may be a new facility, upgraded facility, 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 over-arching 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) The guidelines will help to direct design decisions throughout the corridor, but they will have particular importance in areas that are positioned to undergo significant growth and change.



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

(3) The management plan for the corridor includes suggestions about the preservation of specific segments that will enhance the overall character of the highway.

(1) River corridors and adjacent vegetation patterns provide scenic interest while traveling along western I-80.

Image courtesy of John B. Walker.

(2) The view of various farmsteads, located along the rural portion of I-80, is composed of architecture and vegetation with unique cultural meaning.

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 Analysis
- Priority Projects
- Funding and Partnerships

Background Information provides an overview of important data related to the I-80 corridor. This section summarizes past, present, and future community growth along the corridor; describes land ownership patterns; briefly outlines water resource availability for northern 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) and environmental analysis that was conducted, and offers an overview of opportunities and constraints along the I-80 corridor. Sections with information specific to the different study areas are separated into the I-80 Urban and I-80 Rural study areas. A complete inventory of data and analysis of opportunities and constraints is included in the following reports:

- *NDOT I-80 Urban Landscape and Aesthetics Corridor Plan: Technical Report Volume One - Background Information*
- *NDOT I-80 Rural Landscape and Aesthetics Corridor Plan: Technical Report Volume One - Background Information*
- *NDOT I-80 Urban Landscape and Aesthetics Corridor Plan: Opportunities and Constraints*
- *NDOT I-80 Rural Landscape and Aesthetics Corridor Plan: Opportunities and Constraints*

All 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, a road service program, a native wildflower program, an invasive and noxious weed control program, an outdoor advertising program, and a scenic highway designation program.

Landscape Design Segments section describes the four main design segments: the Sierra Nevada Passage, the Sierra Nevada/Great Basin Crossroads, the Truckee River Passage for the I-80 Urban study area, and the Highway of the West for the I-80 Rural study area. 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 Analysis 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 the costs associated with the level of treatments 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

Northern Nevada's historic settlement is tied to travel. A majority of communities along the I-80 corridor were located along the California Emigrant Trail or served as stopping points for the railroad. However, settlement patterns and future growth differs for the I-80 Urban and I-80 Rural study areas.

I-80 Urban Study Area

The majority of growth in the greater Reno-Sparks area has occurred just in the last 100 years. At the time of this report, spring of 2005, Washoe County is estimated to grow at 1.7%. Fernley and Lyon County growth rates had an average annual rate of approximately 12% from 2002-2003. If similar trends continue, Lyon County would have a population of 74,000 by the year 2024.

Settlement patterns along the urban area of the I-80 corridor are characterized by intense urban and suburban development and growth through the greater Reno-Sparks area. The Truckee Meadows appears to be a single, urbanized area with new development on the fringe areas. In addition, Fernley is developing into a significant industrial boomtown in northern Nevada. A growing number of industrial complexes are located along the eastern edge of town.

I-80 Rural Study Area

Along the rural portion of the corridor, communities are characterized by low density residential development with small commercial centers. Communities include Lovelock, Winnemucca, Battle Mountain, Elko, Wells, West Wendover, and McDermitt. Each town has similar development and settlement patterns. Commercial development is typically located within close proximity to the highway, and traditional neighborhood developments with gridded street patterns form the town's infrastructure. Mining, agriculture, ranching, and tourism each play an economic role and influence the rate of growth for the individual towns. On average these communities have a slow growth rate, and according to census data Elko County had a negative growth rate of 2.6% between 2000 and 2003. Outside of the communities outlined here, settlement along I-80 and US-95 remains rural and is characterized by homesteads and/or ranches surrounded by agricultural and open range land.

ANTICIPATED URBAN CHANGES

I-80 Urban Study Area

Within Reno, Sparks, and Fernley, growth and land use development have been significant and will continue to influence the I-80 corridor. The anticipated urbanized changes over the next 20 years most likely to influence the urban study area will occur in the Verdi planning area within Washoe County, the City of Reno, the City of Sparks, and the City of Fernley. The City of Reno will annex land west of Reno up to and including Verdi. Under an existing development plan, residential and commercial suburban growth would extend along the I-80 corridor from Reno's current boundaries into Verdi. This residential and commercial growth will likely replace the current natural landscape and foothill gateway.

I-80 Rural Study Area

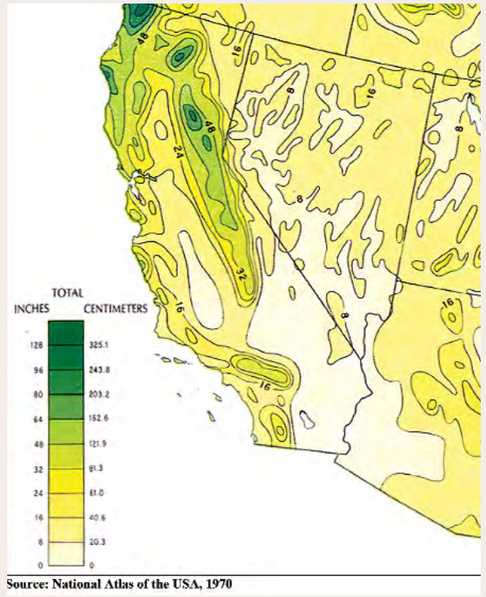
Growth and land use development have been cyclical, reflecting the economic swings of the mining industry. In fact, in most recent years some small settlements, such as Lovelock and Battle Mountain, have experienced an overall decline in population as a result of the reduction of mining and related jobs. Significant efforts have been made in communities, such as Winnemucca and Elko, to improve job opportunities and expand tourism with the towns. However, due to the population swings characteristic of Nevada's rural areas, future population estimates for the communities within the rural study area are difficult to project. Visual impacts will primarily be related to industrial and mining development along the corridor.

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 northern Nevada, land is managed by BLM, U.S. Forest Service (USFS), Bureau of Indian Affairs (BIA), and private landowners. The rural land adjacent to I-80 (outside of NDOT's right-of-way) belongs to the BLM and private landowners. The land within the urbanized Reno-Sparks area and from the border of California to the eastern edge of Sparks is under private ownership. The USFS and BLM manage portions of the landscape in the hills and mountains seen from the road. From the eastern edge of Sparks to Fernley, I-80 traverses a mixture of BLM and private

Total Increase in Population 2003 to 2024	
Carson City	10,408
Churchill County	10,734
Clark County	1,130,334
Douglas County	16,049
Elko County	-2,003
Esmeralda County	-193
Eureka County	-58
Humboldt County	-2,631
Lander County	-1,971
Lincoln County	1,543
Lyon County	33,037
Mineral County	-2,211
Nye County	21,014
Pershing County	181
Storey County	-603
Washoe County	109,645
White Pine County	-1,621
State Total	1,328,916

(1) Population projections per Nevada State Demographer, 2004.



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

lands. Around Fernley, I-80 passes through the southern tip of the Pyramid Lake Indian Reservation. The small Nevada towns along I-80 are primarily under private land ownership.

Land ownership affects land use and the visual character of the landscape. Public agencies such as BLM and the USFS 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 Reno-Sparks area, NDOT may have little influence over the visual character of the landscape outside of the right-of-way. NDOT may have influence over the visual character of public lands adjacent to the right-of-way because of the possibility of interagency agreements. The land ownership pattern that follows the I-80 corridor is a checkerboard pattern because of century-old agreements between railroads and the U.S. government.

WATER RESOURCE AVAILABILITY

The availability of adequate water resources and delivery systems is a significant issue and may constrict developable lands. This is a major issue, and particularly pertinent at the time of this report due to the extended drought period.

I-80 Urban Study Area

Water resources for the majority of the urban study area are administered by the Truckee Meadows Water Authority (TMWA). The 1997 Regional Water Management Plan indicates that the adequacy of Truckee River water rights to meet future demands of the growing Reno-Sparks area is a constraint for development. The conversion of water rights is expected to be exhausted between 2018-2048. The TMWA is embarking on the creation of a Water Resource Plan for 2005-2025, which will influence landscape amenities and the types of plant species now used in developments.

I-80 Rural Study Area

Communities throughout the rural study area are located great distances from one another. Therefore, adequate infrastructure for water distribution is a limiting factor for development along the corridor. Agriculture and mining are the largest water users in Nevada's rural areas. Domestic users generally obtain their water supply from private wells, springs, and/or small community water systems. As in Nevada's metropolitan areas, the uncertain water resource availability will require water-wise design for landscape aesthetic projects.

COMMUNITY SETTLEMENT PATTERNS

Throughout history, people everywhere have developed attachments to various geographic locations, characterized by 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."

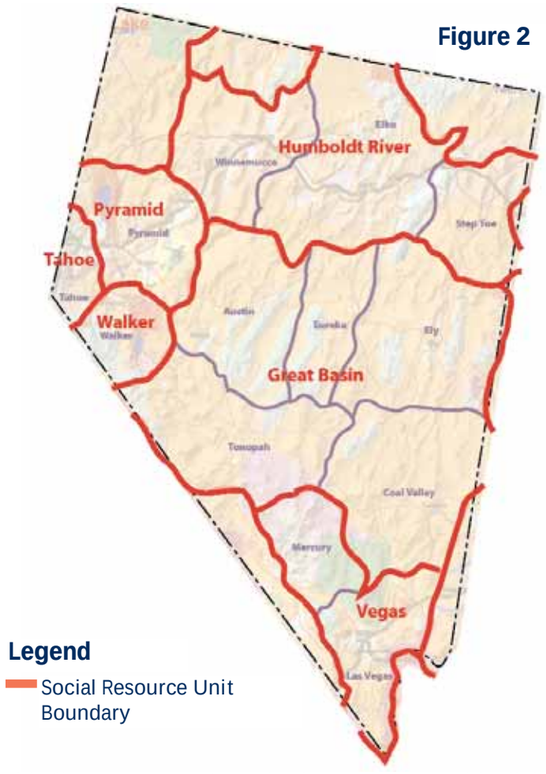
The geography of settlement along Nevada's I-80 corridor has been studied and mapped. The Human Geographic Map of Nevada, included in Figure 2, is based on the published result and definitions of the boundaries (Kent and Schultz, 1993, map updated in 2000.) Social Resource Units are defined as the aggregation of small units characterized 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 districts that represent the boundaries within which people already mobilize to protect their social, economic, and social environment (see Figure 2). This group dynamic, known as place-based knowledge, creates and facilitates ownership-in-issue resolution, project planning and implementation, public participation, and public policy development.

TRAVEL AND TOURISM PATTERNS

Northern Nevada provides a host of tourism and travel opportunities ranging from indoor activities, such as gaming or attending conventions, to outdoor recreation, such as hiking or hunting. The I-80 corridor's two study areas each offer unique tourism opportunities.

Figure 2



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

I-80 Urban Study Area

The Nevada Commission on Tourism coined the urban study area from California to Wadsworth the "Reno-Tahoe Territory." Fernley, and its immediate surroundings, are referred to as the "Pony Express Territory." Almost half of the visitors to the Truckee Meadows classify their trip as vacation or pleasure. Entertainment and recreation opportunities can be found at one of many casinos, at golf courses, or along the Truckee River. Reno and Sparks also serve as a staging ground, or jumping off points, to other popular tourism destinations such as Lake Tahoe, Pyramid Lake, and Virginia City.

Of the 4.9 million visitors to the Truckee Meadows (2002), over 70% of the visitors travel annually by car along the I-80 corridor. The majority of travelers' destinations is within Reno and Sparks. Less than one percent of visitors are passing through to other destinations, and many decide on which attractions to visit only after they have arrived.

I-80 Rural Study Area

The majority of the I-80 rural study area is dominated by a western culture and is aptly named "Cowboy Country Territory" by the Nevada Commission on Tourism. Communities such as Lovelock, Winnemucca, Battle Mountain, Carlin, Elko, Wells, and West Wendover all have ties to the cowboy lifestyle, and outdoor recreational opportunities are prevalent. Native American and other cultures, such as Basque and Hispanic, create a rich diversity and add to the corridor's character. Tourism and recreational amenities include gaming, golfing, hunting, and other outdoor activities, as well as visiting historical towns, mining facilities, and museums. Towns also serve as a home base for travelers touring the nearby State and Federal recreation areas. In addition, local community events such as the National Cowboy Poetry Gathering in Elko and the Humboldt County Fair and Stampede in Winnemucca draw visitors from across the nation.

I-80 is a vital connection and travel route to communities along the rural study area. Although air travel is accommodated in a few communities, the majority of travelers utilize the interstate as a means of arrival. Providing travel information at rest areas, welcome centers, and viewpoints is vital to improve the compatibility between local communities and the highway.

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 ecoregions—the Great Basin, Mojave Desert, Columbia Plateau, and Sierra Nevada. Of these, the Great Basin, Sierra Nevada and Columbia Plateau ecoregions are part of the I-80 corridor. The Great Basin covers about 48 million acres (68% of the state) and consists of a series of depressions, flats, dry lakes, marshy salt pans, and sinks that are scattered between ribbons of mountain ranges. The Truckee River is a major river in the I-80 urban study area, and the Humboldt River is a major river in the I-80 rural study area. Numerous perennial and ephemeral creeks and smaller rivers originate in the high elevation ranges and flow down from the mountains. A multitude of springs are located in the lower valleys (Nevada Natural Resources Status Report, 2002).

Vegetation Communities

The physiographic region primarily influencing vegetation along I-80 is the Great Basin of northern Nevada. In general, most of the land along the highway is arid, with the exception of irrigated agricultural fields and areas where rivers and streams sustain pockets of riparian vegetation that includes willows, alders, dogwoods, and cottonwoods. Some areas of salt marsh do not provide fertile grounds for the establishment of vegetation. The majority of I-80 traverses areas of sagebrush and salt desert scrub throughout the lower elevations and pinyon and juniper woodlands in the mountain ranges. The extreme western portion crosses pine forests, and riparian communities are found along rivers and perennial and intermittent streams. Throughout the Reno-Sparks area there is little native vegetation within the right-of-way.

The most prevalent vegetation community found along I-80 is the sagebrush/grass/rabbitbrush that includes Wyoming big sagebrush (*Artemisia tridentata var. wyomingensis*), big basin sagebrush (*Artemisia tridentata tridentata)*, and black sagebrush (*Artemisia nova*) at lower elevations. Higher elevations include big basin sagebrush (*Artemisia tridentata tridentata var. vaseyana*) and low sagebrush (*Artemisia arbuscula* and *Artemisia longiloba*).

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.

Much of the land surrounding the I-80 corridor is part of the Great Basin, and this land provides appropriate habitat for large mammals. Mule deer is the most

(1) Salt desert scrub plant community is adjacent to portions of the I-80 corridor.

(2) The I-80 Corridor passes through a variety of plant communities ranging from salt desert scrub to pinyon and juniper woodlands.

(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 and creates a focus on high visual quality.

common wild ungulate found in Nevada today, with a population of more than 145,000, (NDOW, 2000). Elk are currently found in several locations in northeastern and central Nevada. Elk habitat exists throughout the Ruby and Pequop Mountains and the East Humboldt Range that is bisected by the I-80 corridor near Elko, Wells, and West Wendover. The majority of the rural portion of the I-80 corridor is in close proximity to antelope habitat. There are approximately 16,000 Pronghorn antelope in the state. However, the number has declined over the last several decades due to over-hunting, habitat conversion, and competition with livestock. Habitat is located north of Reno throughout the Spanish Springs Valley and north of Stead. Bighorn sheep are one of the most distinctive and easily recognizable desert animals. A small habitat area is located east of Lovelock in the Stillwater Range, and other Bighorn sheep populations are located throughout the state.

Wildlife movement corridors are composed of contiguous habitat that provides shelter and food sources for resident and migratory wildlife species. Deer corridors cover a large area from the Nevada/California border towards Mogul. Throughout the majority of the rural study area, deer corridors parallel and cross the highway. Numerous movement corridors are located throughout the rural study area. There are no documented wildlife movement corridors that cross I-80 around highly developed areas in Reno and Sparks. An antelope corridor follows the Truckee River from Wadsworth to Pyramid Lake, and wildlife have been observed crossing I-80 through the Truckee River Canyon.

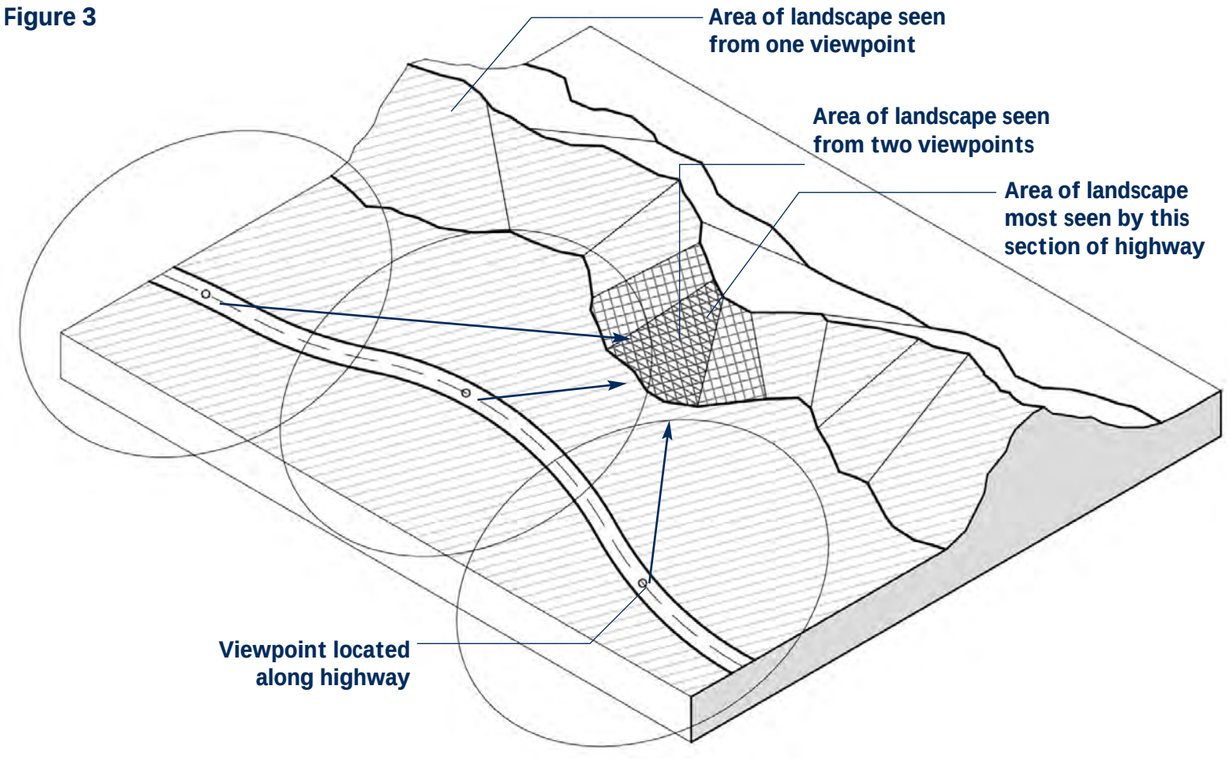
VIEWSHEDS AND DISTANCE ZONES

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 in a Geographic Information Systems (GIS) program. All areas that are visible from the highway are combined to create the viewshed. Distance Zones are delineated through a process developed by the USFS that relates the detail and importance of distance to the driver on the highway.

Viewsheds and Distance Zones along the I-80 corridor are shown on the maps beginning on page 2.5. Darker shading corresponds to areas that can be seen more often from points along the highway (Figure 3). 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.

Figure 3



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

VISUAL ANALYSIS

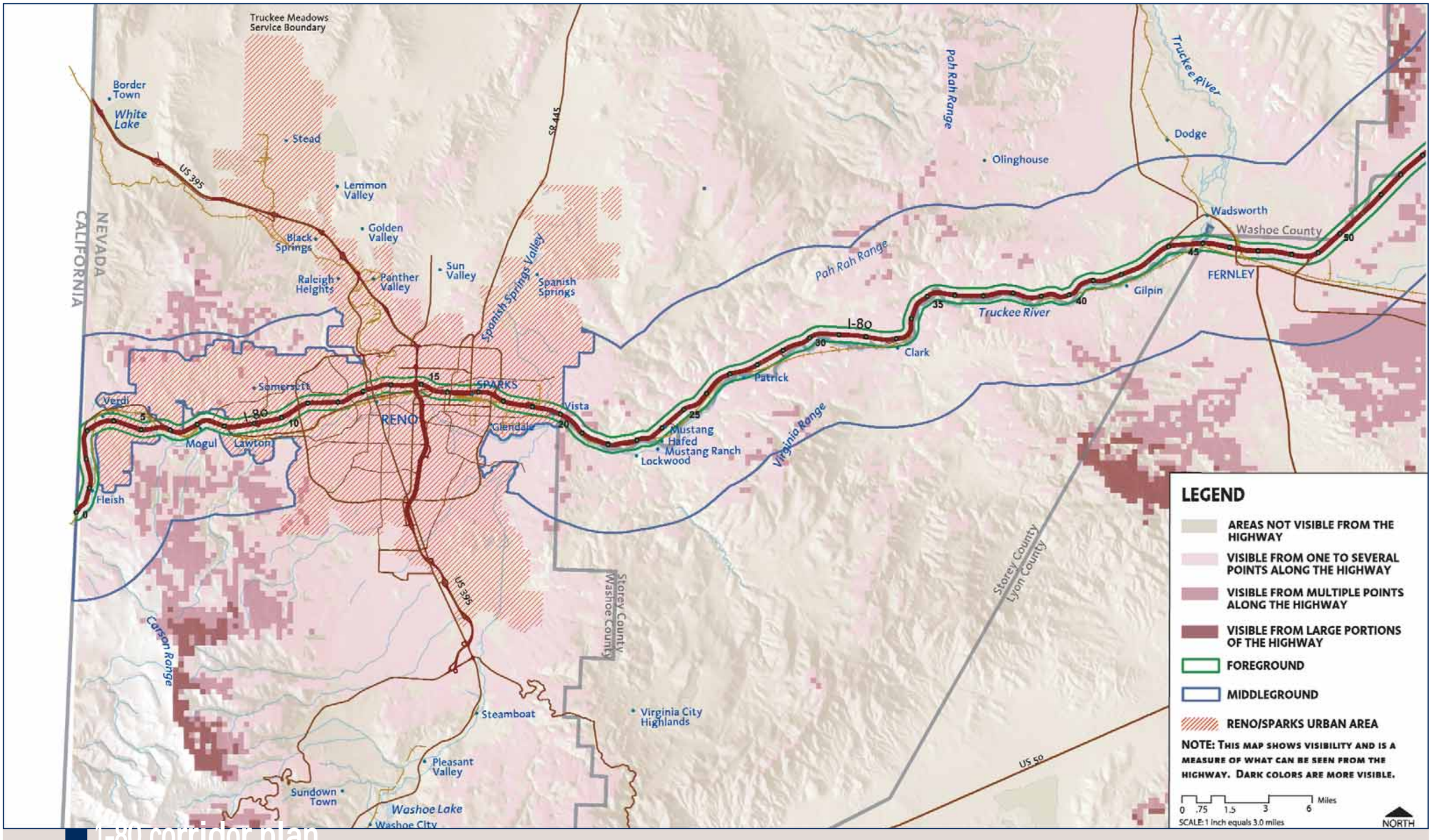
A visual analysis was conducted along the I-80 corridor to evaluate existing views from the highway and rank them relative to their quality. Scenic features are identified and highly visible landforms, such as mountain ranges and unique cliffs, are located. This analyisis is shown on Maps F-J: Visual Analysis. The landscape was divided into *intrinsic landscape districts* based upon spatial characteristics defined by topography. Areas of highest scenic value include:

- The Carson Mountain Range, southwest of Reno
- The Truckee River Canyon
- The West Humboldt Mountain Range and Lone Mountain
- Paradise Valley
- Basin and Range transition scenery

ENVIRONMENTAL ANALYSIS

The landscape of northern 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-80 corridor. Unique features visible from the highway or that influence the highway were mapped (see Environmental Analysis Maps K-O on pages 2.16-2.20). Environmental features provide an opportunity to create pull-offs to view the feature, preserve natural systems, and enhance wildlife movement corridors.

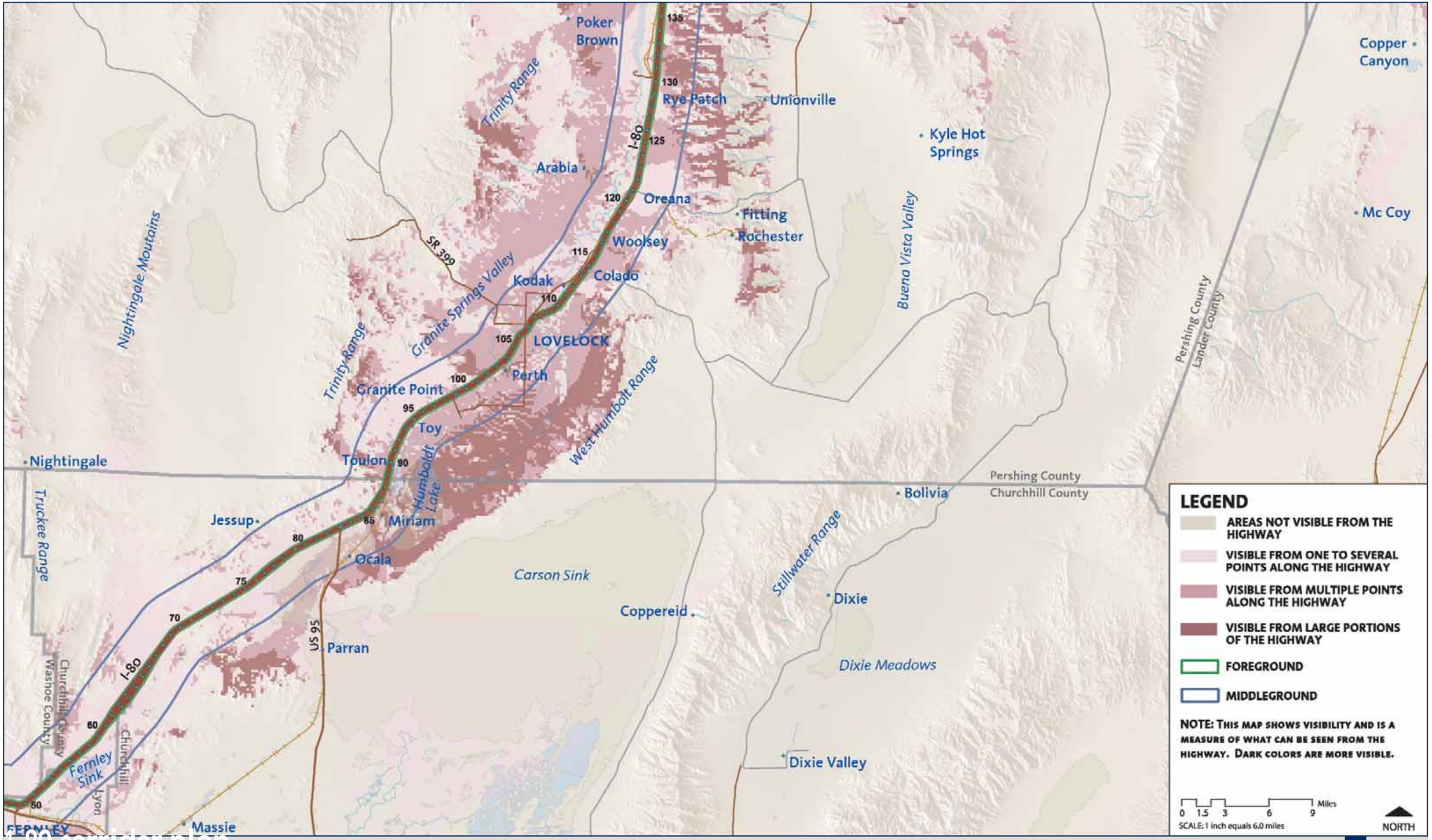
Public agency coordination is essential to maintain visual and environmental quality management. This may affect land use decisions, facility placement, and environmental standards utilized on adjacent lands.



MAP A 2.6

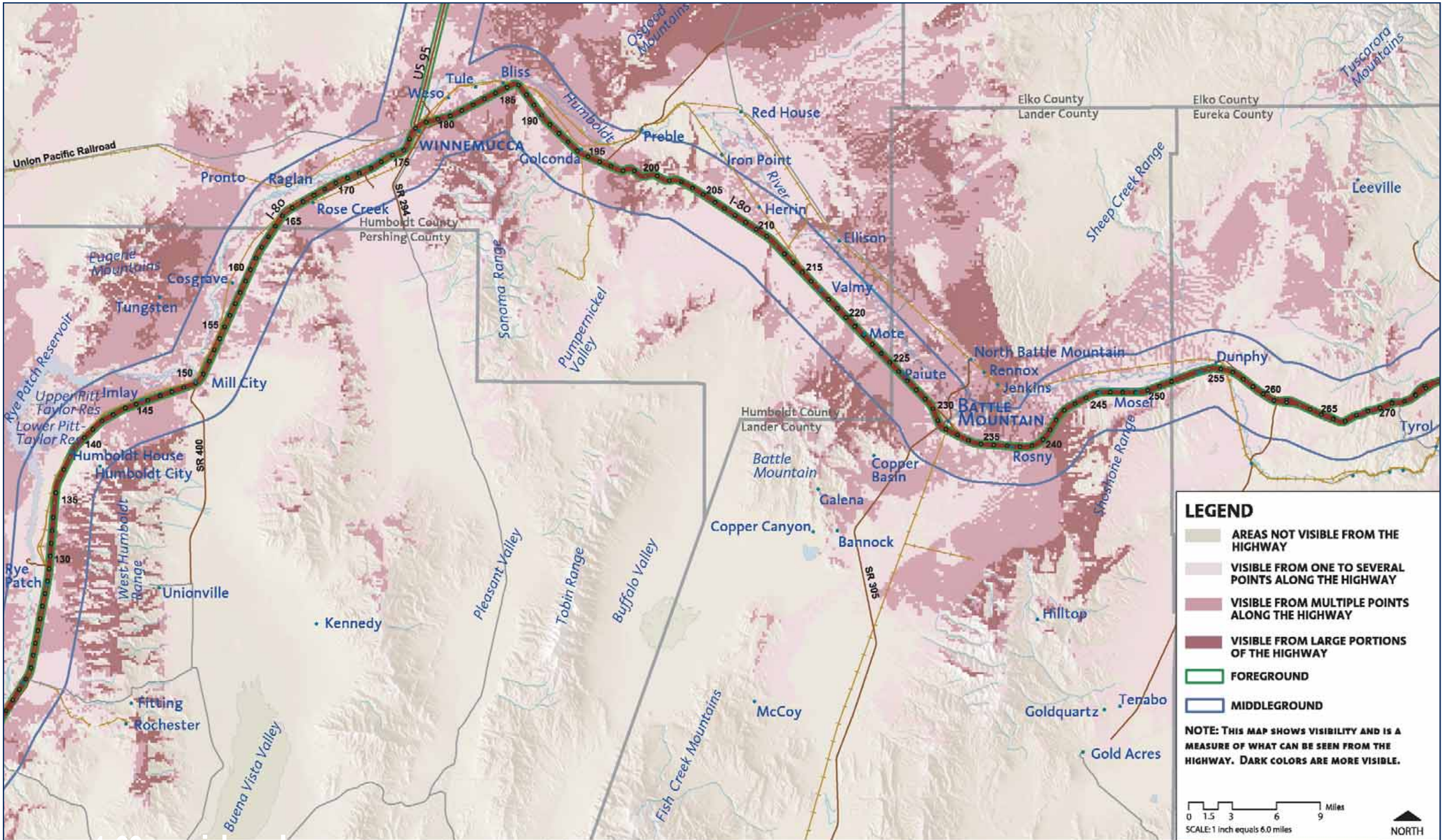
VIEWSHED AND DISTANCE ZONES

I-80: VERDI TO FERNLEY



VIEWSHED AND DISTANCE ZONES

I-80: FERNLEY TO RYE PATCH



LEGEND

- AREAS NOT VISIBLE FROM THE HIGHWAY
- VISIBLE FROM ONE TO SEVERAL POINTS ALONG THE HIGHWAY
- VISIBLE FROM MULTIPLE POINTS ALONG THE HIGHWAY
- VISIBLE FROM LARGE PORTIONS OF THE HIGHWAY
- FOREGROUND
- MIDDLEGROUND

NOTE: THIS MAP SHOWS VISIBILITY AND IS A MEASURE OF WHAT CAN BE SEEN FROM THE HIGHWAY. DARK COLORS ARE MORE VISIBLE.

0 1.5 3 6 9 Miles

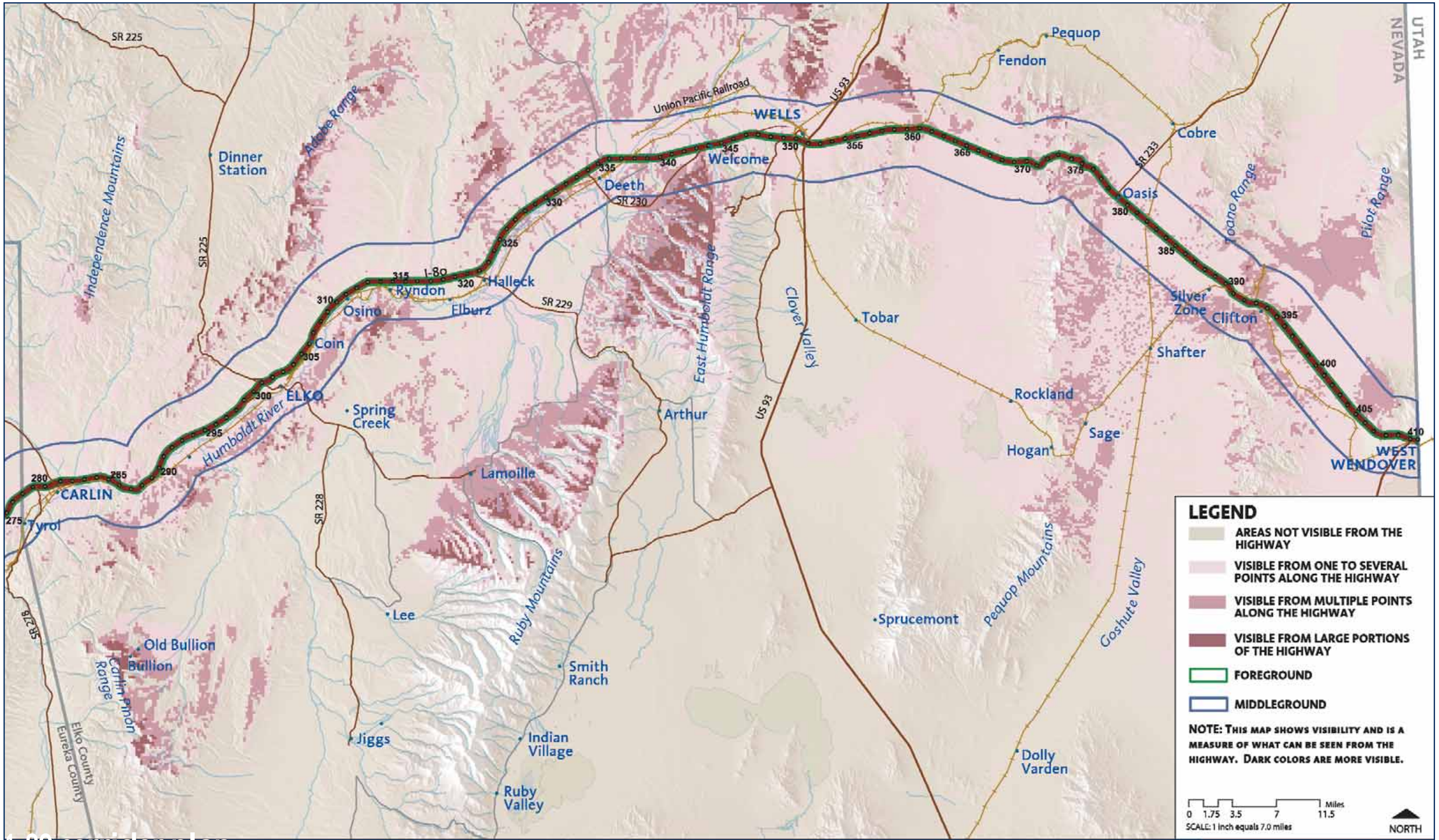
SCALE: 1 inch equals 6.0 miles

NORTH

MAP C 2.8

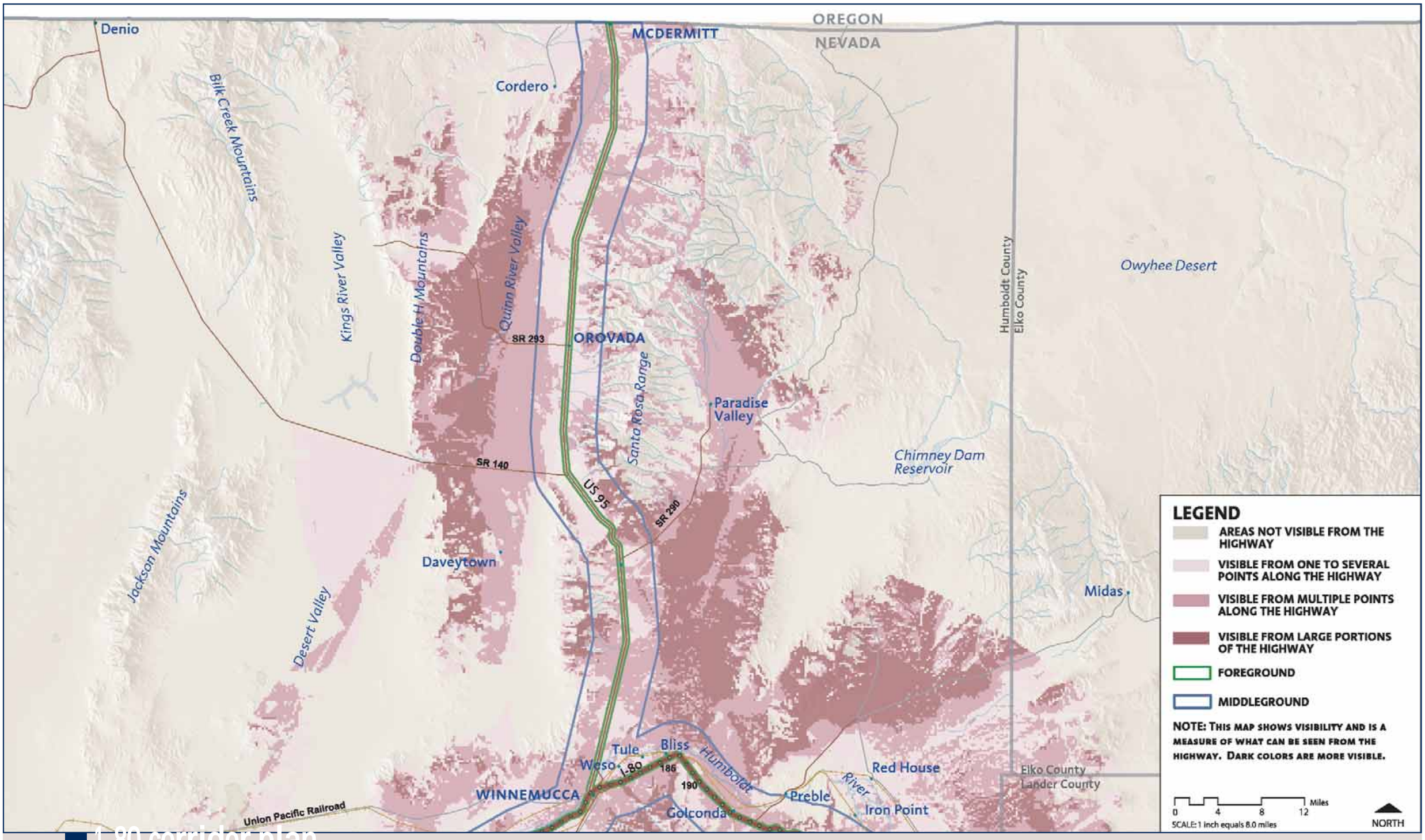
VIEWSHED AND DISTANCE ZONES

I-80: RYE PATCH TO TYROL



VIEWSHED AND DISTANCE ZONES

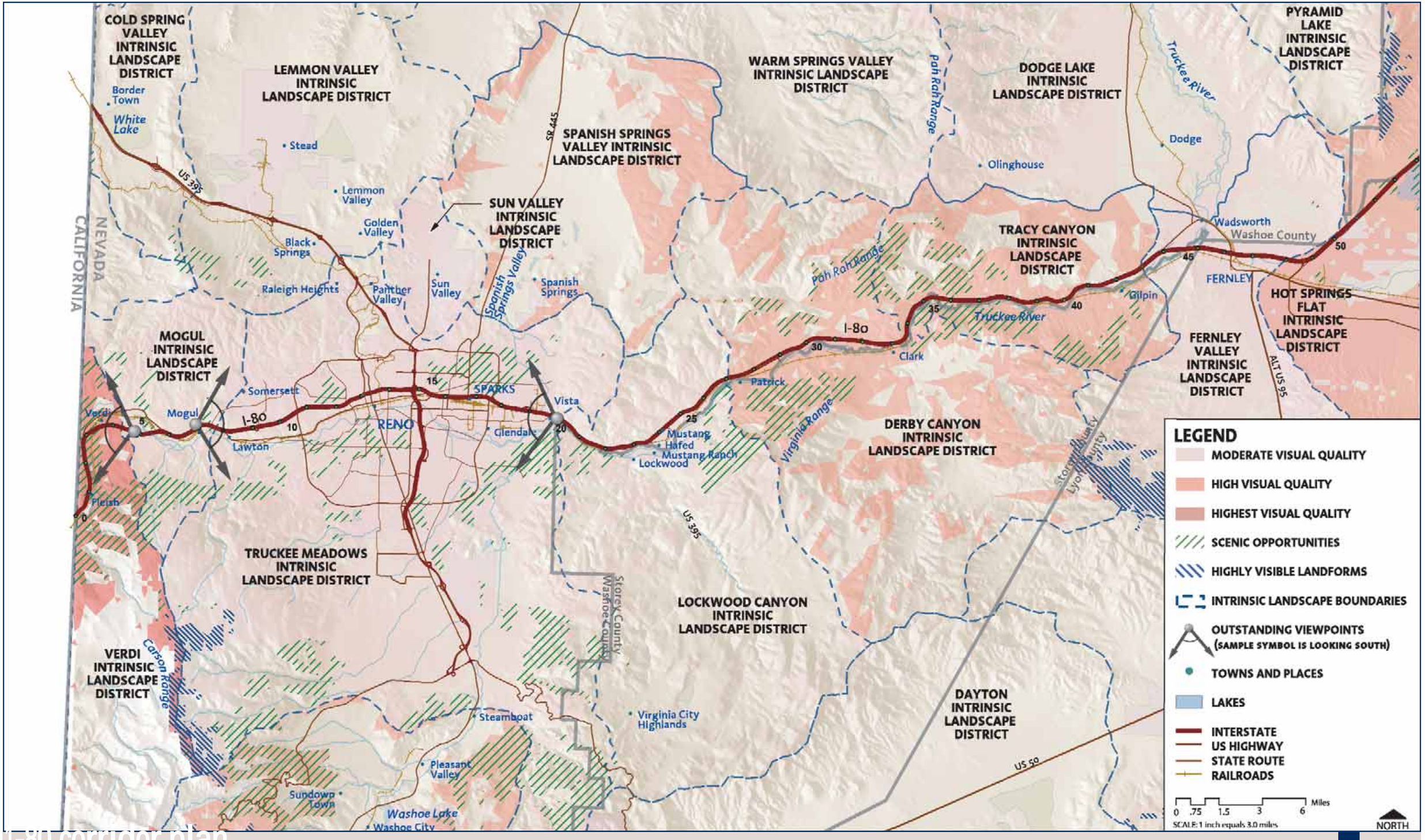
I-80: TYROL TO WEST WENDOVER



MAP E 2.10

VIEWSHED AND DISTANCE ZONES

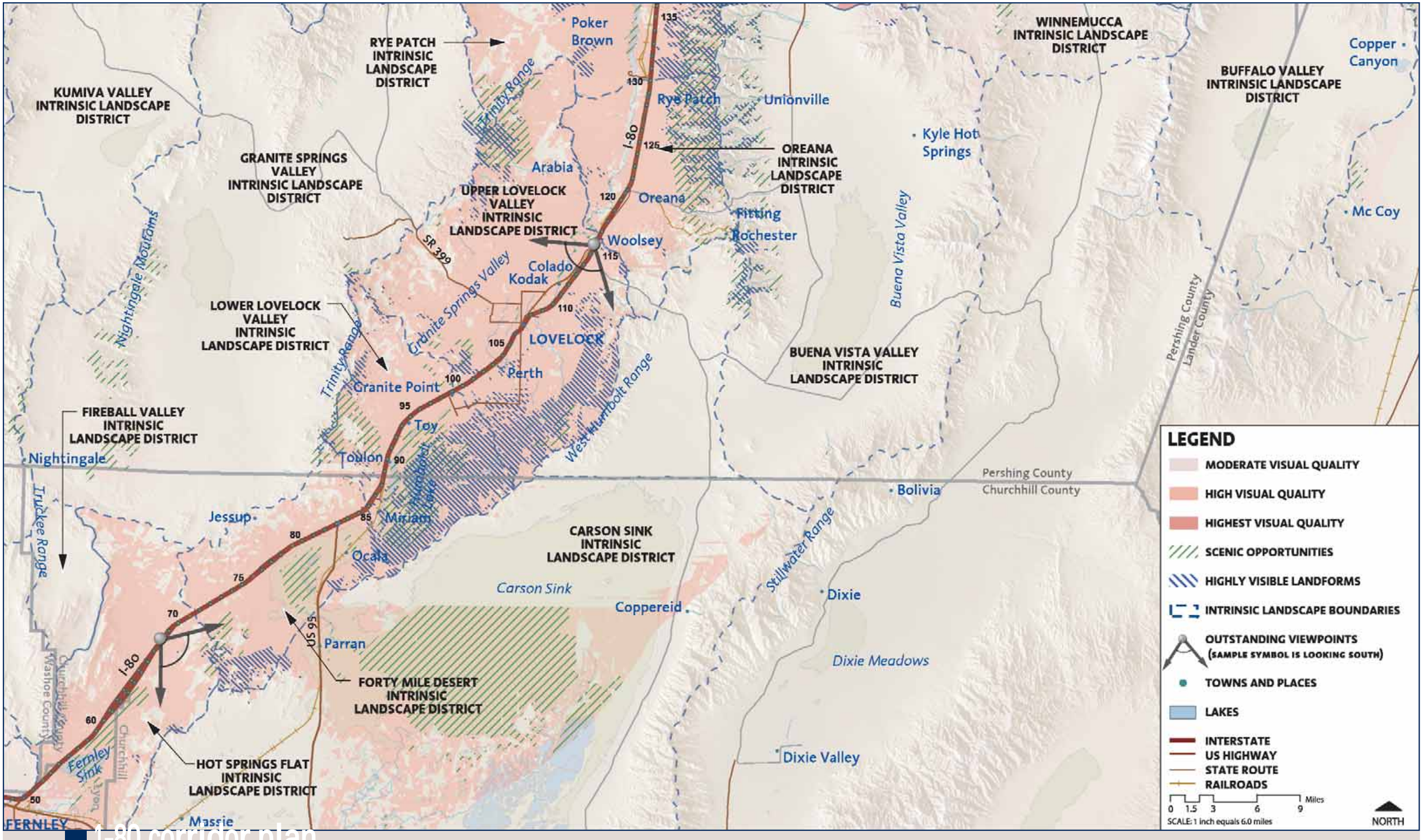
US 95: WINNEMUCCA TO MCDERMITT

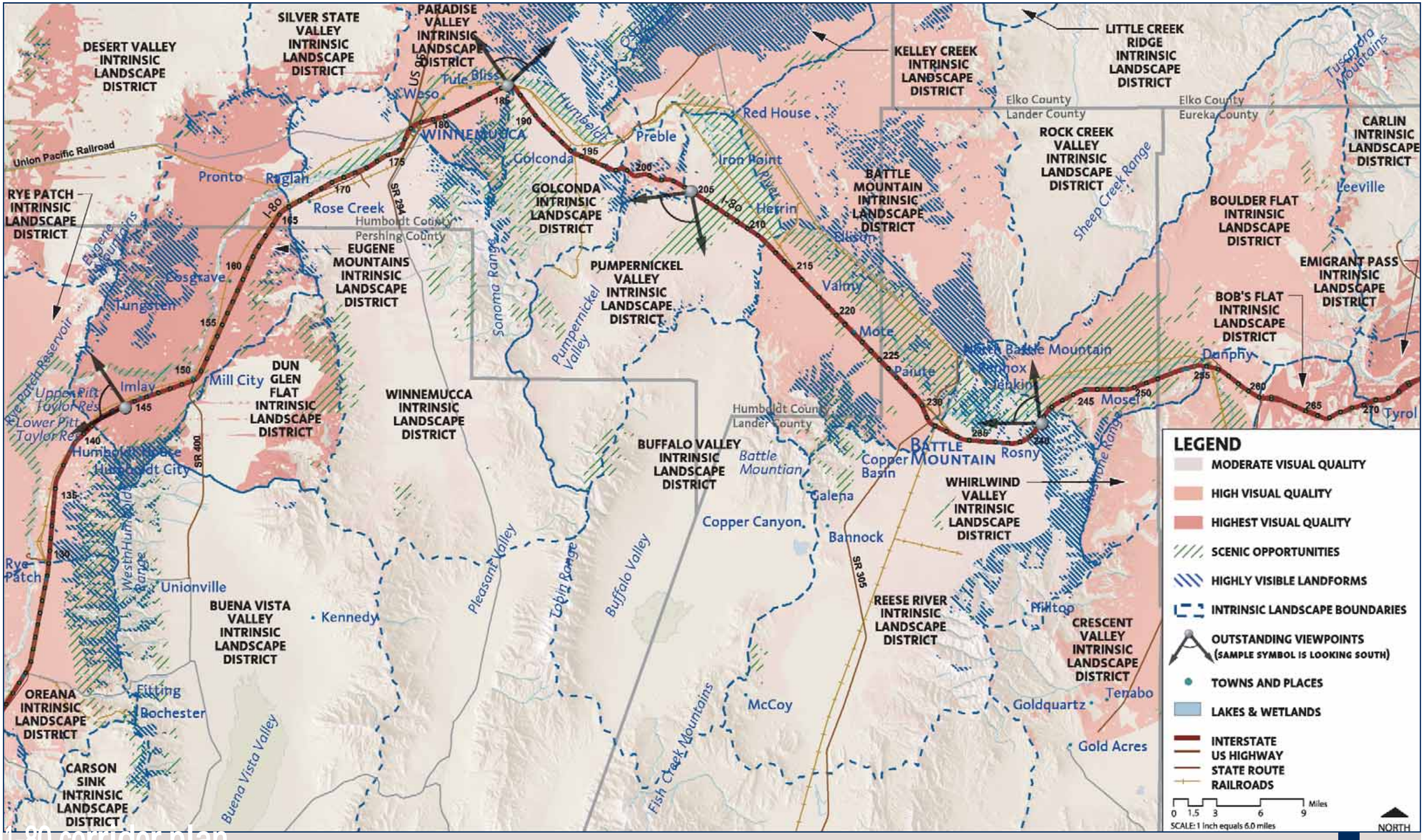


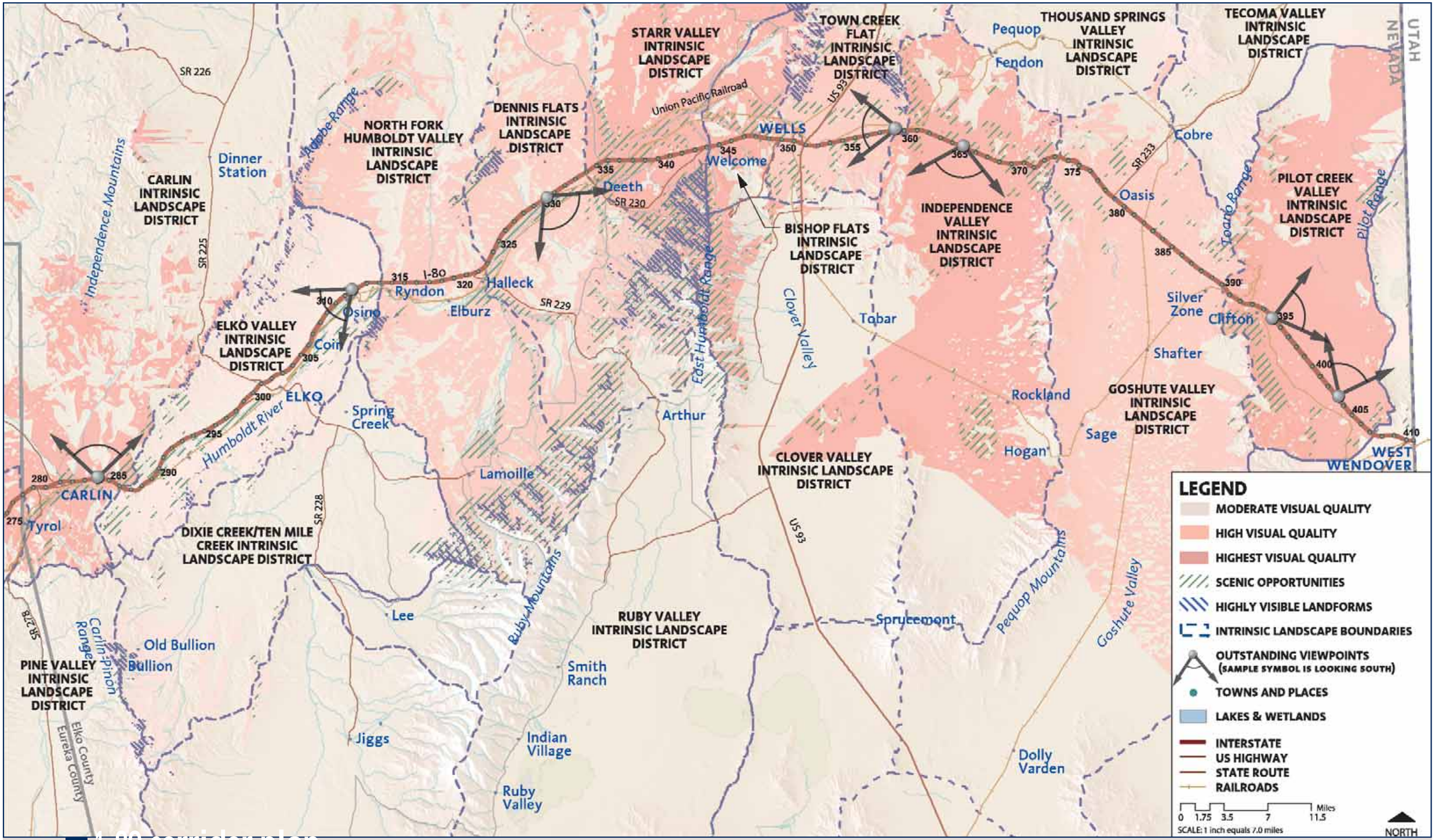
VISUAL ANALYSIS

I-80: Verdi to Fernley

MAP F 2.11


RYE PATCH INTRINSIC LANDSCAPE DISTRICT
KUMIVA VALLEY INTRINSIC LANDSCAPE DISTRICT
GRANITE SPRINGS VALLEY INTRINSIC LANDSCAPE DISTRICT
UPPER LOVELOCK VALLEY INTRINSIC LANDSCAPE DISTRICT
LOWER LOVELOCK VALLEY INTRINSIC LANDSCAPE DISTRICT
OREANA INTRINSIC LANDSCAPE DISTRICT
WINNEMUCCA INTRINSIC LANDSCAPE DISTRICT
BUFFALO VALLEY INTRINSIC LANDSCAPE DISTRICT
BUENA VISTA VALLEY INTRINSIC LANDSCAPE DISTRICT
FIREBALL VALLEY INTRINSIC LANDSCAPE DISTRICT
CARSON SINK INTRINSIC LANDSCAPE DISTRICT
FORTY MILE DESERT INTRINSIC LANDSCAPE DISTRICT
HOT SPRINGS FLAT INTRINSIC LANDSCAPE DISTRICT
Poker Brown
Rye Patch
Unionville
Kyle Hot Springs
Copper Canyon
Arabia
Oreana
Fitting
Rochester
Mc Coy
Woolsey
Colado
Kodak
LOVELOCK
Perth
Granite Point
Toy
Toulon
Nightingale
Jessup
Miriam
Ocala
Parran
Coppereid
Dixie
Dixie Meadows
Dixie Valley
Bolivia
Massie
FERNLEY
Pershing County
Churchhill County
Lander County
Washoe County
Trinity Range
Nightingale Mountains
Granite Springs Valley
Buena Vista Valley
Stillwater Range
Carson Sink
Fernley Sink
Truckee Range
Humboldt Lake
West Humboldt Range
I-80
SR 399
US 95
135
130
125
120
115
110
105
100
95
90
85
80
75
70
60
50
LEGEND
MODERATE VISUAL QUALITY
HIGH VISUAL QUALITY
HIGHEST VISUAL QUALITY
SCENIC OPPORTUNITIES
HIGHLY VISIBLE LANDFORMS
INTRINSIC LANDSCAPE BOUNDARIES
OUTSTANDING VIEWPOINTS
(SAMPLE SYMBOL IS LOOKING SOUTH)
TOWNS AND PLACES
LAKES
INTERSTATE
US HIGHWAY
STATE ROUTE
RAILROADS
0 1.5 3 6 9 Miles
SCALE: 1 inch equals 6.0 miles
NORTH

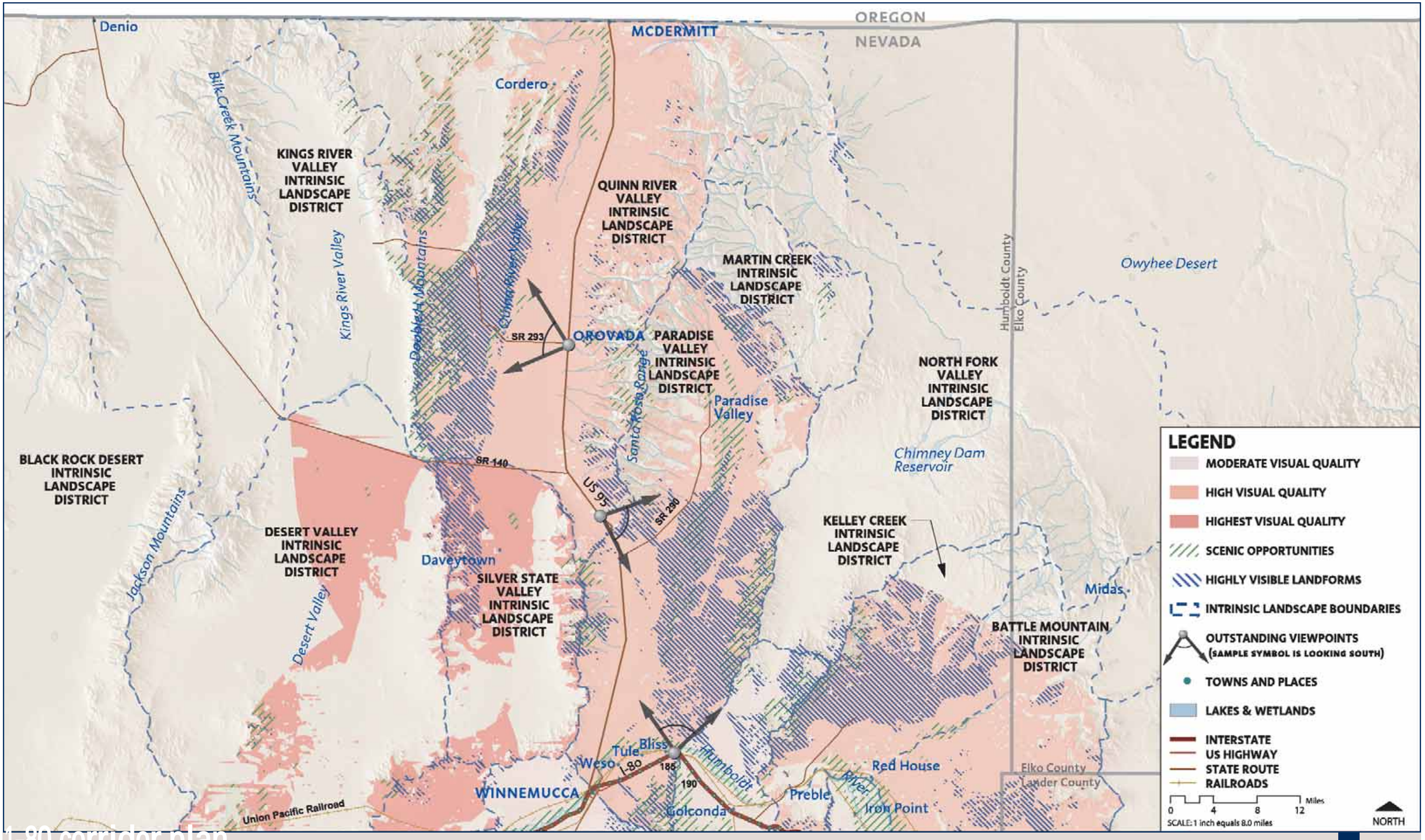

DESERT VALLEY INTRINSIC LANDSCAPE DISTRICT
SILVER STATE VALLEY INTRINSIC LANDSCAPE DISTRICT
PARADISE VALLEY INTRINSIC LANDSCAPE DISTRICT
KELLEY CREEK INTRINSIC LANDSCAPE DISTRICT
LITTLE CREEK RIDGE INTRINSIC LANDSCAPE DISTRICT
ROCK CREEK VALLEY INTRINSIC LANDSCAPE DISTRICT
CARLIN INTRINSIC LANDSCAPE DISTRICT
BOULDER FLAT INTRINSIC LANDSCAPE DISTRICT
EMIGRANT PASS INTRINSIC LANDSCAPE DISTRICT
BOB'S FLAT INTRINSIC LANDSCAPE DISTRICT
RYE PATCH INTRINSIC LANDSCAPE DISTRICT
EUGENE MOUNTAINS INTRINSIC LANDSCAPE DISTRICT
GOLCONDA INTRINSIC LANDSCAPE DISTRICT
PUMPERNICKEL VALLEY INTRINSIC LANDSCAPE DISTRICT
BATTLE MOUNTAIN INTRINSIC LANDSCAPE DISTRICT
DUN GLEN FLAT INTRINSIC LANDSCAPE DISTRICT
WINNEMUCCA INTRINSIC LANDSCAPE DISTRICT
BUFFALO VALLEY INTRINSIC LANDSCAPE DISTRICT
WHIRLWIND VALLEY INTRINSIC LANDSCAPE DISTRICT
REESE RIVER INTRINSIC LANDSCAPE DISTRICT
CRESCENT VALLEY INTRINSIC LANDSCAPE DISTRICT
BUENA VISTA VALLEY INTRINSIC LANDSCAPE DISTRICT
OREANA INTRINSIC LANDSCAPE DISTRICT
CARSON SINK INTRINSIC LANDSCAPE DISTRICT
WINNEMUCCA
Weso
Fule
Bliss
Red House
Preble
Golconda
Iron Point
Herrin
Elison
Valmy
Mote
Paiute
North Battle Mountain
Argenta
Dunphy
Mosel
Tyrol
Pronto
Raglan
Rose Creek
Cosgrave
Tungsten
Imlay
Mill City
Upper Pitt Taylor Res
Lower Pitt Taylor Res
Rye Patch Reservoir
Humboldt Junction
Humboldt City
Rye Patch
Unionville
Kennedy
Fitting
Rochester
Battle Mountain
Copper Basin
Galena
Copper Canyon
Bannock
Rosny
Pinto
McCoy
Goldquartz
Tenabo
Gold Acres
Union Pacific Railroad
I-80
US 95
SR 294
SR 400
SR 305
Humboldt County
Pershing County
Elko County
Lander County
Eureka County
Humboldt County
Lander County
Eugene Mountains
Sonoma Range
Pumpernickel Valley
Sheep Creek Range
Tuscarora Mountains
Battle Mountian
Pleasant Valley
Tobin Range
Buffalo Valley
Fish Creek Mountains
Buena Vista Valley
Humboldt Range
Shoshone Range
LEGEND
MODERATE VISUAL QUALITY
HIGH VISUAL QUALITY
HIGHEST VISUAL QUALITY
SCENIC OPPORTUNITIES
HIGHLY VISIBLE LANDFORMS
INTRINSIC LANDSCAPE BOUNDARIES
OUTSTANDING VIEWPOINTS
(SAMPLE SYMBOL IS LOOKING SOUTH)
TOWNS AND PLACES
LAKES & WETLANDS
INTERSTATE
US HIGHWAY
STATE ROUTE
RAILROADS
0 1.5 3 6 9 Miles
SCALE: 1 inch equals 6.0 miles
NORTH



MAP I 2.14

VISUAL ANALYSIS

I-80: TYROL TO WEST WENDOVER



VISUAL ANALYSIS

US 95: Winnemucca to McDermitt

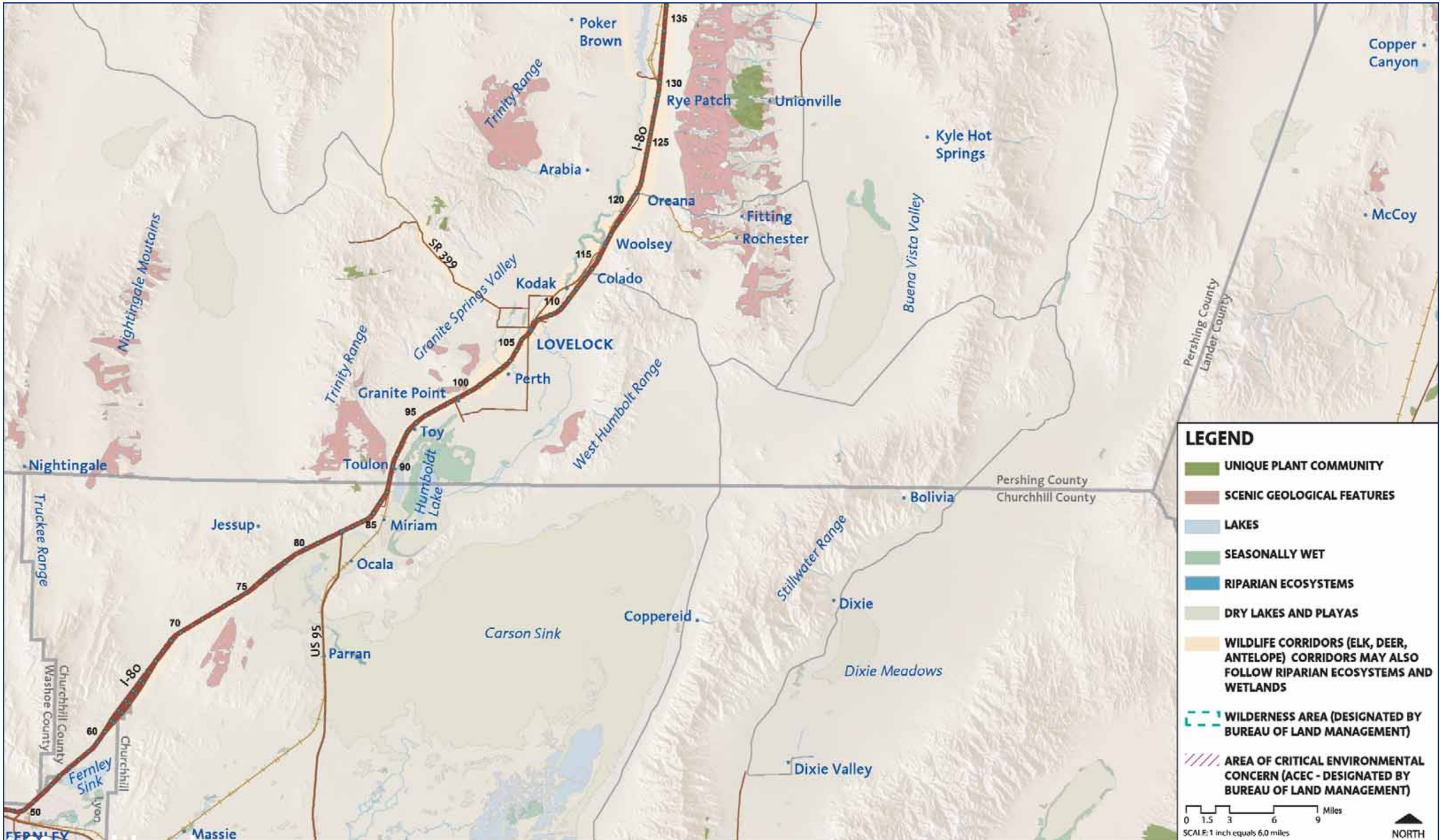
MAP K 2.16

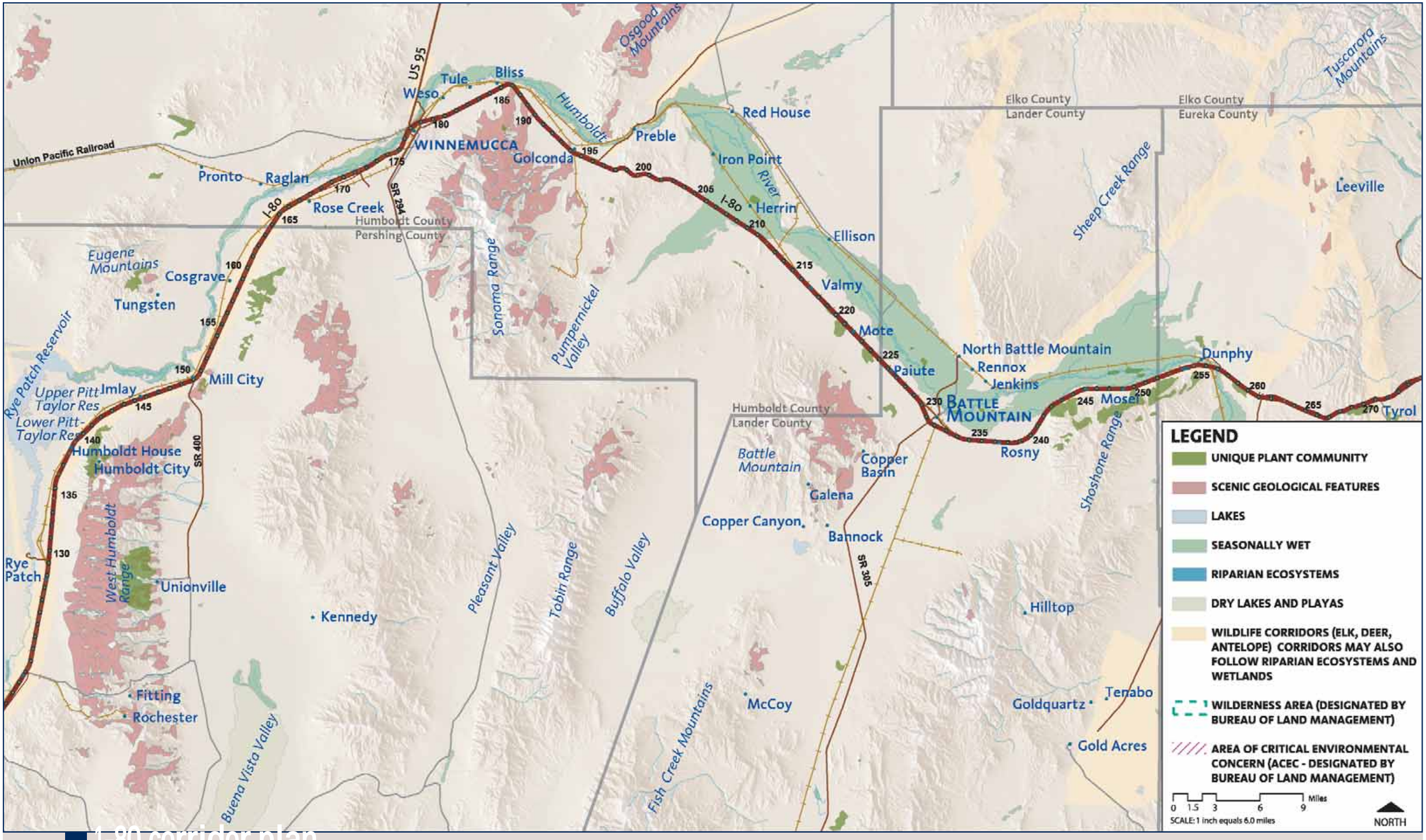
ENVIRONMENTAL ANALYSIS

I-80: VERDI TO FERNLEY

ENVIRONMENTAL ANALYSIS

I-80: Fernley to Rye Patch



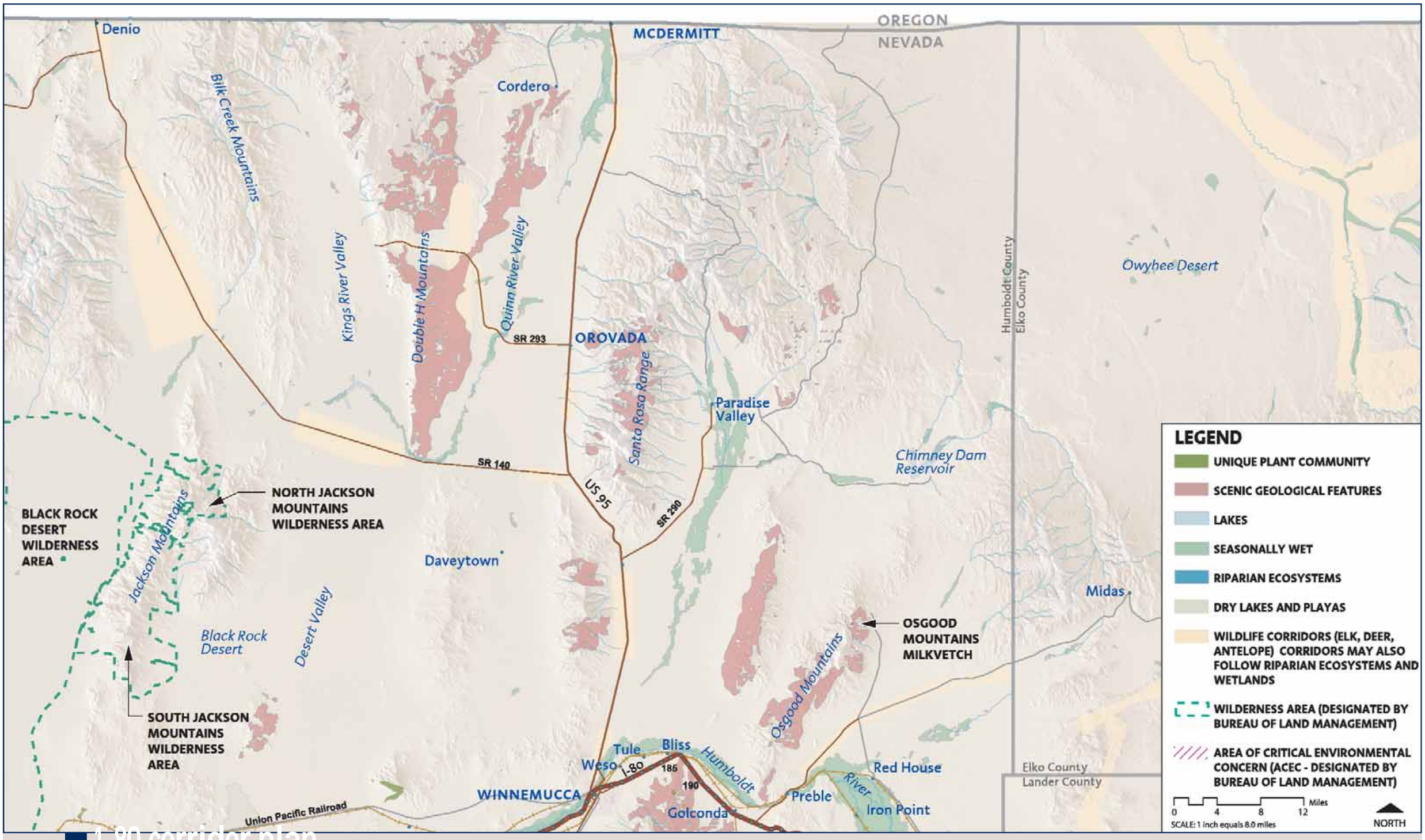


MAP M 2.18

ENVIRONMENTAL ANALYSIS

I-80: Rye Patch to Tyrol


WILDLIFE CORRIDOR
Union Pacific Railroad
SR 225
Adobe Range
Independence Mountains
Dinner Station
WELLS
Welcome
Deeth
SR 230
US 93
Pequop
Fendon
Cobre
SR 233
Oasis
Toano Range
Pilot Range
UTAH
NEVADA
I-80
Ryndon
Halleck
Elburz
SR 229
Osino
Coin
East Humboldt Range
Clover Valley
Tobar
Silver Zone
Clifton
Shafter
Rockland
Sage
Hogan
WEST WENDOVER
ELKO
Humboldt River
Spring Creek
Arthur
Lamoille
CARLIN
Tyrol
SR 228
Lee
Ruby Mountains
Sprucemont
Pequop Mountains
Goshute Valley
Old Bullion
Bullion
Carlin-Pinon Range
Elko County
Eureka County
Smith Ranch
Jiggs
Indian Village
Ruby Valley
Dolly Varden
LEGEND
UNIQUE PLANT COMMUNITY
SCENIC GEOLOGICAL FEATURES
LAKES
SEASONALLY WET
RIPARIAN ECOSYSTEMS
DRY LAKES AND PLAYAS
WILDLIFE CORRIDORS (ELK, DEER, ANTELOPE) CORRIDORS MAY ALSO FOLLOW RIPARIAN ECOSYSTEMS AND WETLANDS
WILDERNESS AREA (DESIGNATED BY BUREAU OF LAND MANAGEMENT)
AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC - DESIGNATED BY BUREAU OF LAND MANAGEMENT)
0 1.75 3.5 7 11.5 Miles
SCALE: 1 inch equals 7.0 miles
NORTH



MAP O 2.20

ENVIRONMENTAL ANALYSIS

US 95: WINNEMUCCA TO MCDERMITT

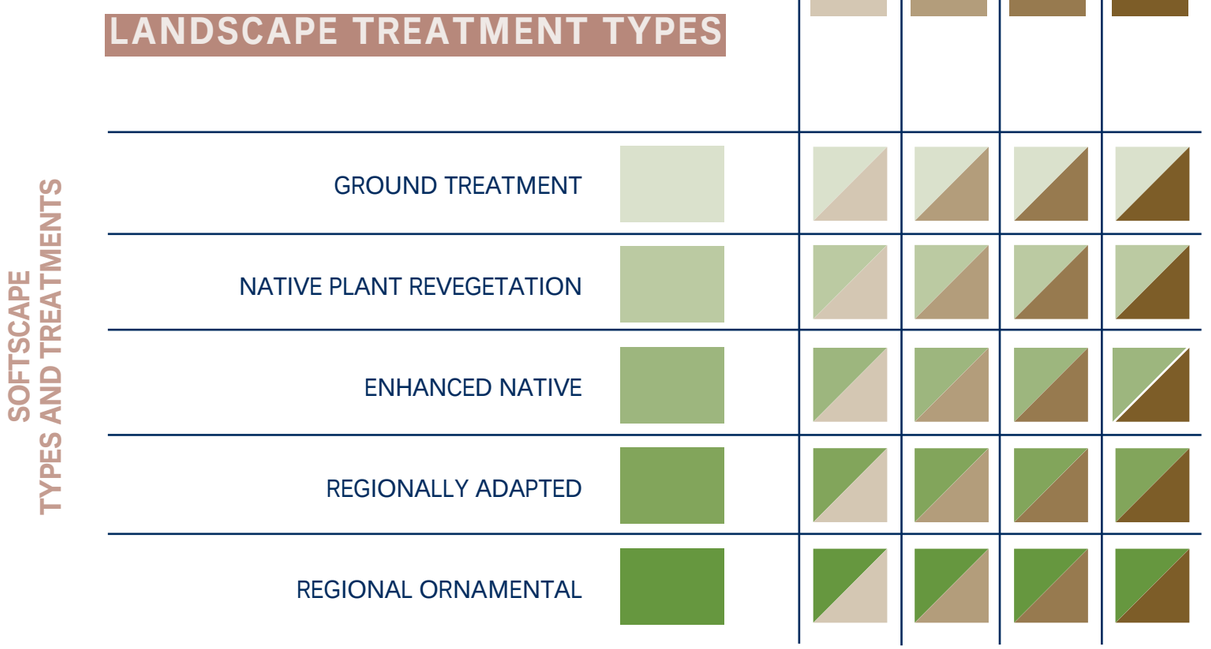
ELEMENTS OF LANDSCAPE AND AESTHETICS

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 from the standard type to those with landmark quality 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 4.

Figure 4



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 will 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 are 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

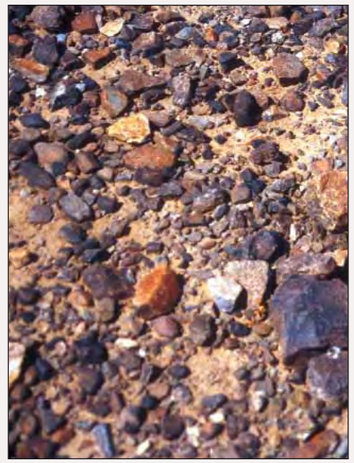
The following softscape treatments are descriptive planting types that define the design intent for future projects. These treatments are compositions of plant materials that include trees, shrubs, perennials, grasses, and ground treatments. The descriptions and photographic examples define the specific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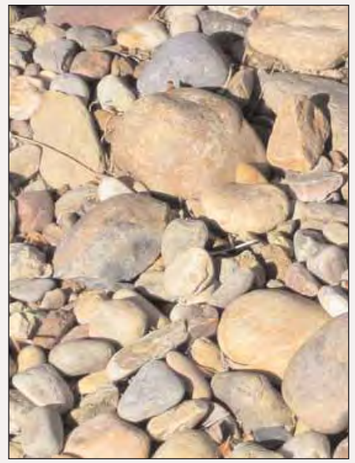

(3)


(4)

NATIVE PLANT REVEGETATION SOFTSCAPE

Returning roadway construction disturbance back to its native desert condition requires the use of a native Great Basin plant palette. This palette includes native communities such as the Sagebrush/Rabbitbrush or Pinyon/Juniper. 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.

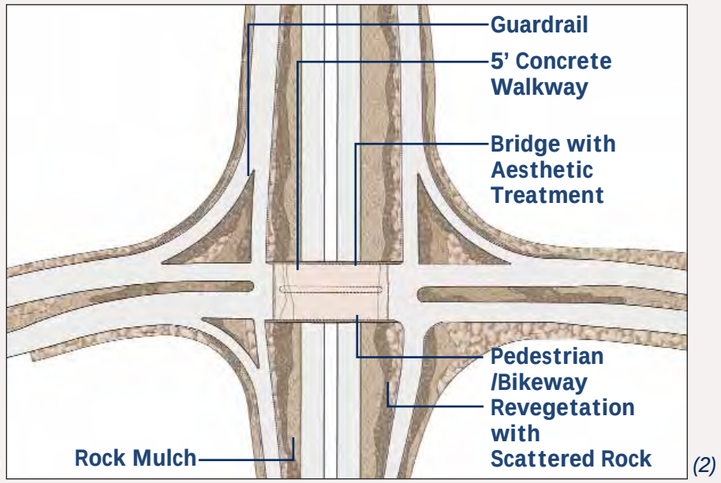
Total Cost: $1.15 - $1.35 sf L & A Cost: $0.00 sf


(1)

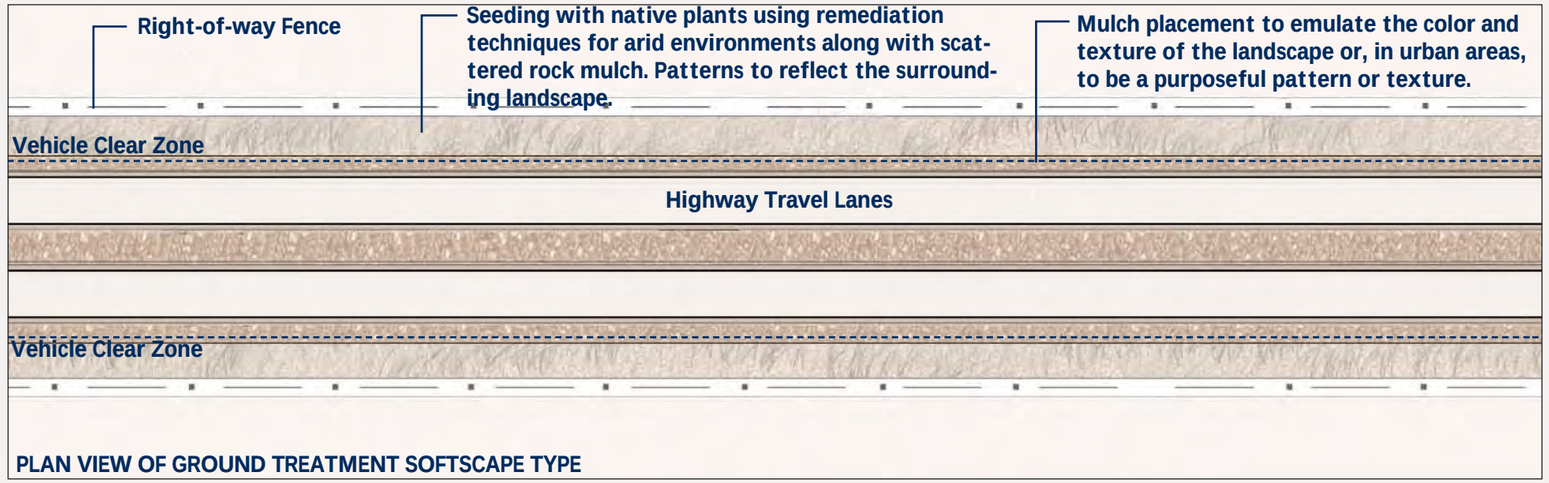

(2)


(3)

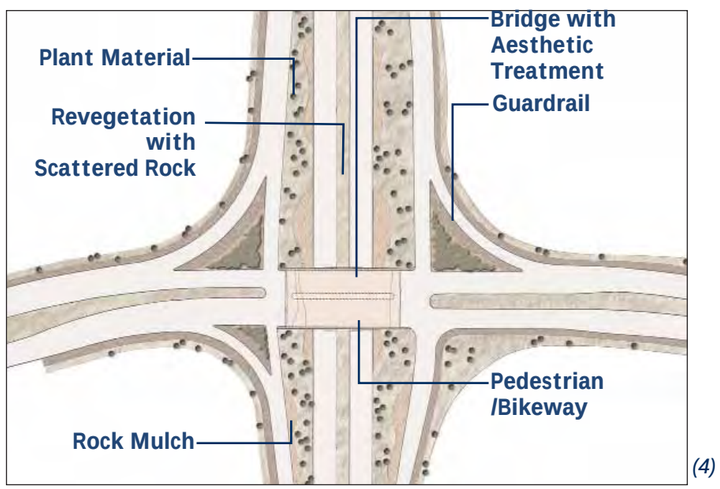
Note: These photographs are illustrative examples of the softscape types and treatments.



(1)

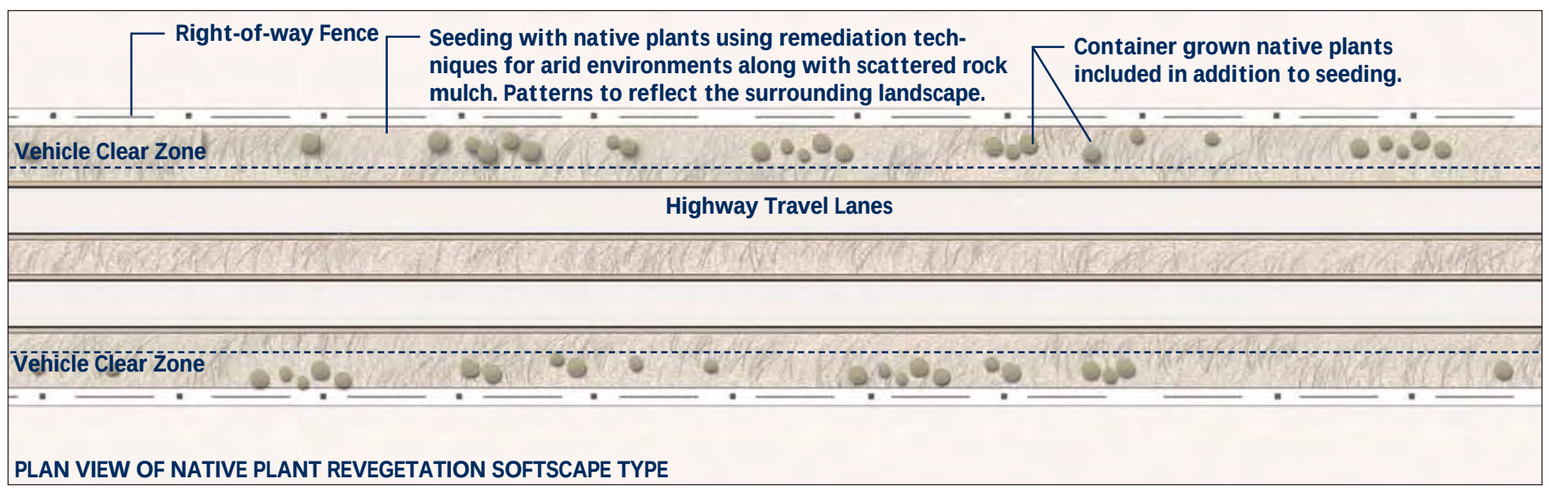


(2) PLAN VIEW OF GROUND TREATMENT SOFTSCAPE TYPE



(3)

PROTOTYPICAL INTERCHANGE



(4) PLAN VIEW OF NATIVE PLANT REVEGETATION SOFTSCAPE TYPE

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 Great Basin/Sierra Nevada revegetation plant palette, providing greater coverage and plant densities along with scattered native rock mulch. Adapted trees are used to increase vertical diversity. Special ground treatments are included for drainage and erosion control such as rip-rap and soil stabilizers. Supplemental 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

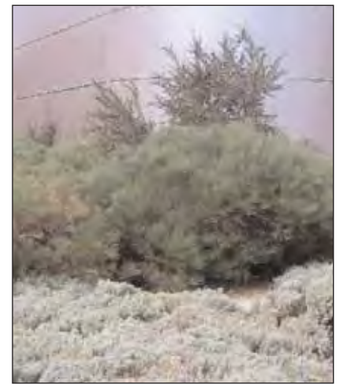
Combinations of Great Basin plants and those from other dry land environments form this landscape palette. Plants are combined in greater density and with layers of overstory trees, understory shrubs or perennials, and scattered native rock mulch. The expanded plant palette includes plants selected for form, seasonal change, special texture, and color. Great Basin 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. Ornamental softscape introduces taller and denser plant materials such as landmark deciduous trees similar in form to cottonwoods and poplars. Regional ornamental softscapes include shade from overstory trees, contain a wide variety of form and color, and create dynamic contrasts to the arid landscapes of naturally occurring plant species, along with scattered 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.

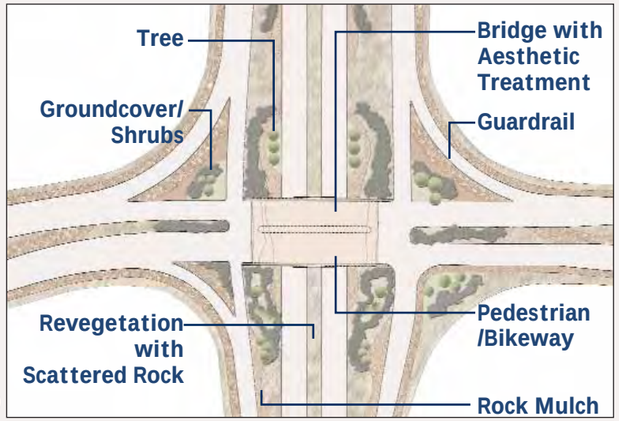
Total Cost: $3.50 - $6.00 sf L & A Cost: $2.35 - $4.85 sf


(1)

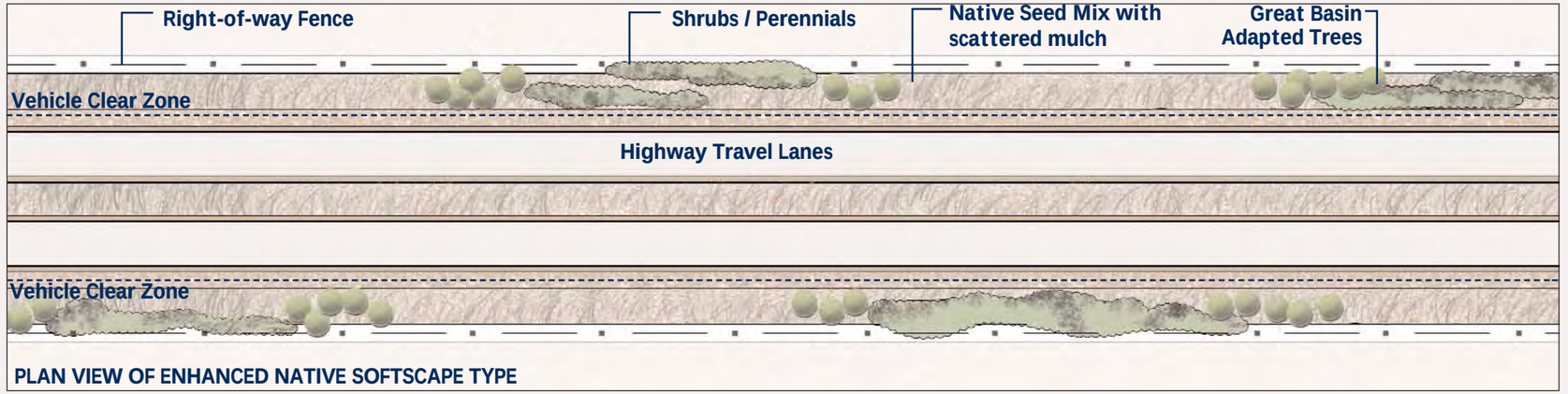

(2)


(3)

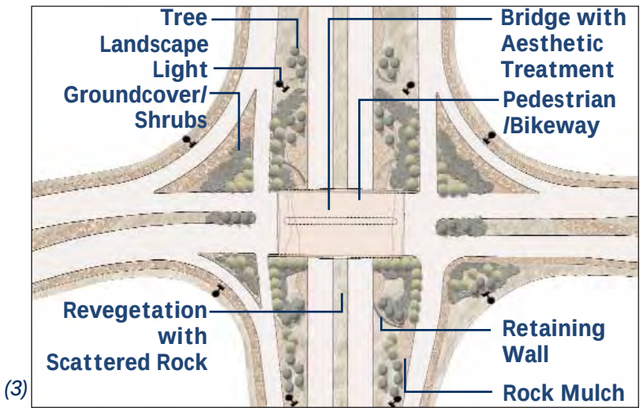
Note: These photographs are illustrative examples of the softscape types and treatments.



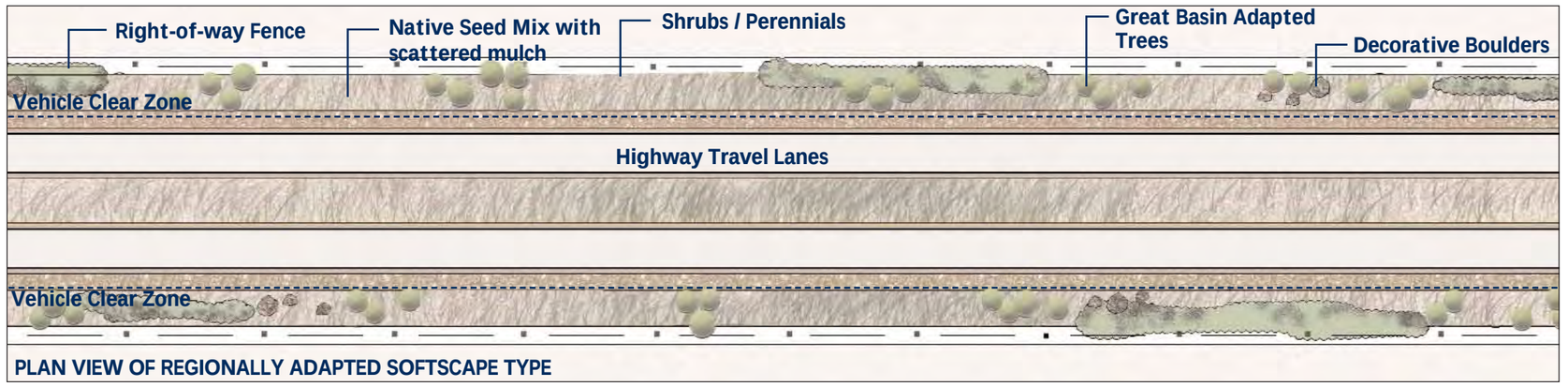
(1)



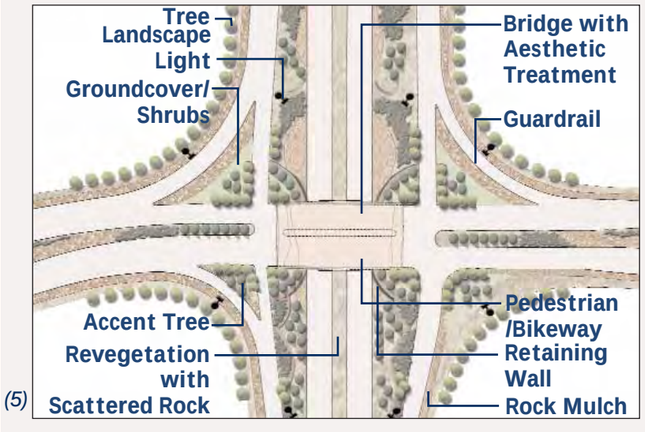
(2) PLAN VIEW OF ENHANCED NATIVE SOFTSCAPE TYPE



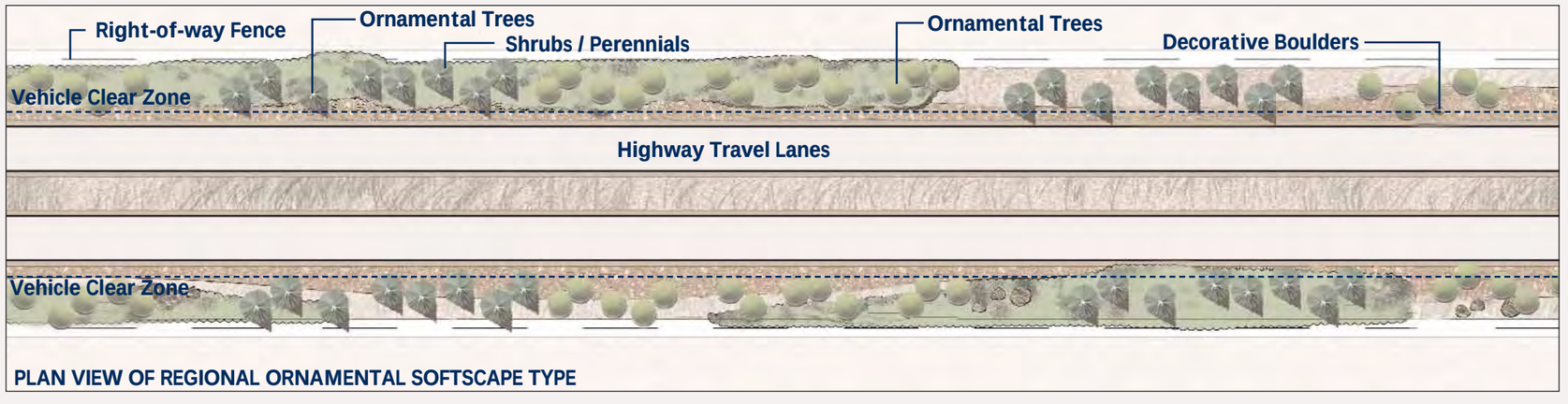
(3)



(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

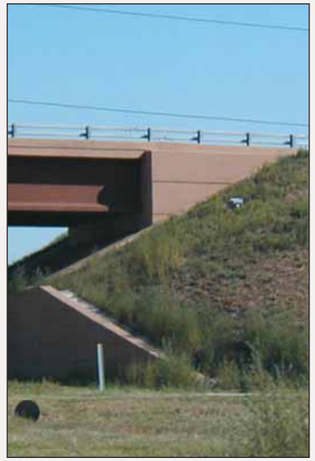
The following classifications are a common language for aesthetics of highway facility design. The treatments included are for bridges, retaining walls, acoustic walls, pedestrian crossings, railings, barrier railings, lighting, and transportation art.

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)

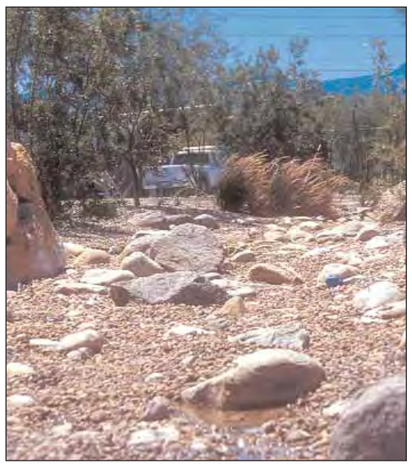

(4)

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


(1)


(2)


(3)


(4)

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)

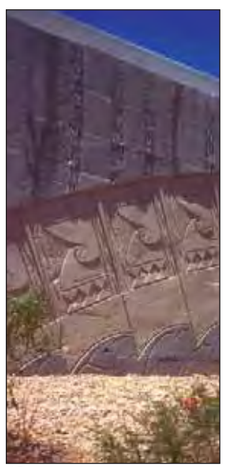

(4)

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 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)

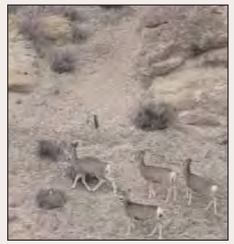

(2)


(3)


(4)


(5)

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



(1) Wildlife Viewing

(2) Ghost Town: Metropolis

(3) Pilot Peak was an important landmark for Emigrant Trail travelers.

(4) Railroads helped shape communities along I-80.

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 recognizable pictorials that are specific to the special point of interest. Federal Highway Administration (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, logging flume, Comstock Lode, ghost towns, explorers, emigrant trails, etc.
- Wildlife Viewing Areas
- Flora
- Geographic Features
- Geological Places of Interest
- Landmarks
- Cultural Resources
- Museums

Specific areas of interest in I-80 corridor include, but are not limited to:

- Truckee River
- California Emigrant Trail
- Mount Rose
- Virginia City
- Pyramid Lake
- Lake Tahoe
- Reno Downtown
- Victoria Square
- University of Nevada
- Derby Diversion Dam
- Forty-mile Desert
- Applegate-Lassen Cutoff Trail
- Rye Patch State Recreation Area
- Wild Horse State Reservoir
- South Fork State Recreation Area
- Humboldt River
- Humboldt Toiyabe National Forest
- Unionville (silver mining)
- Ruby Mountains Wilderness
- Pilot Peak
- Wendover Air Force Auxiliary Field
- Metropolis (ghost town)

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 illustration 7, page 3.9).

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 feature iconic symbols, descriptions, and a directional arrow (see illustration 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 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 illustration 9).

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 Deer (Viewing Area)

(2) Sign for Mining Area

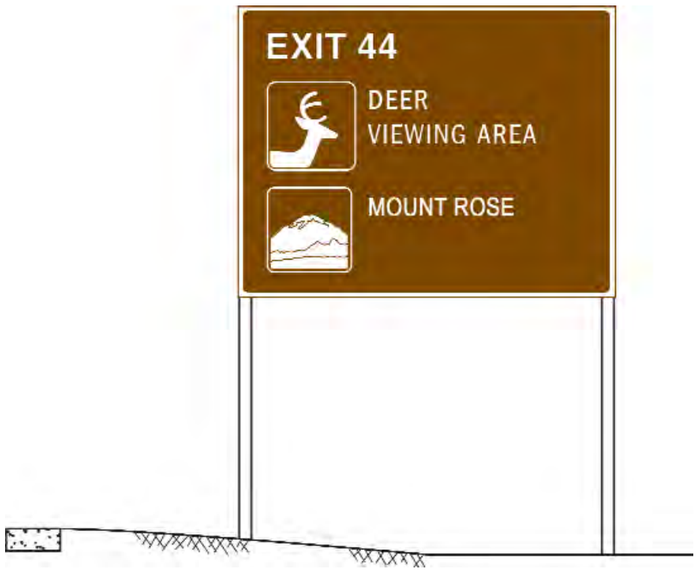
(3) Sign for Truckee River

(4) Sign for Historic Rail

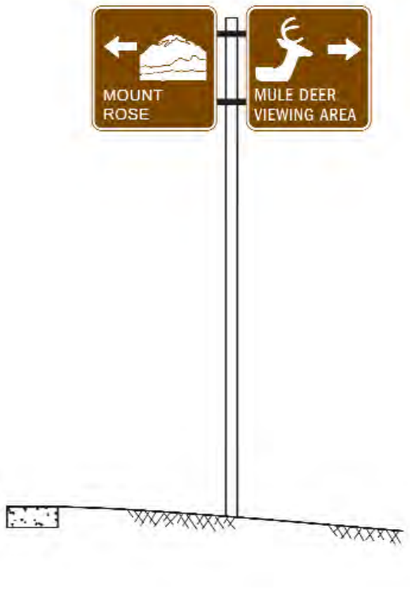
(5) Sign for Humboldt River

(6) Sign for Mount Rose

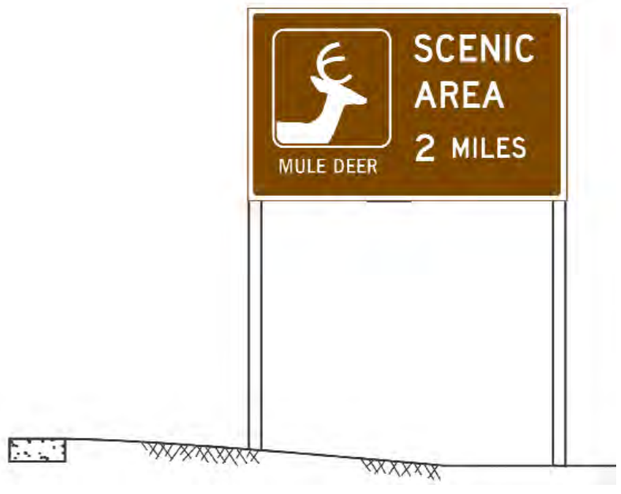
CUSTOM SIGN ICONIC SYMBOLS



(7) Sign for exit to area of interest or town

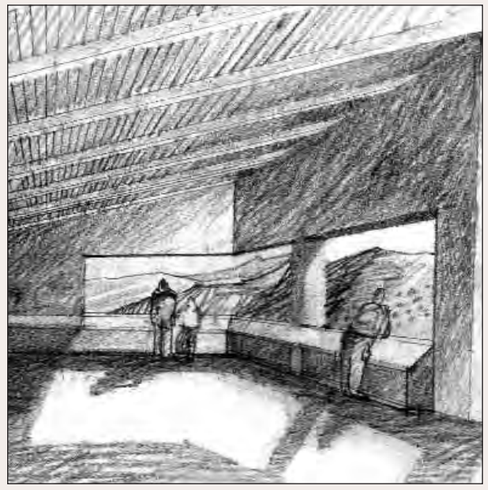


(8) Place name sign on a state or county road



(9) Sign for scenic area or outlook pull-off

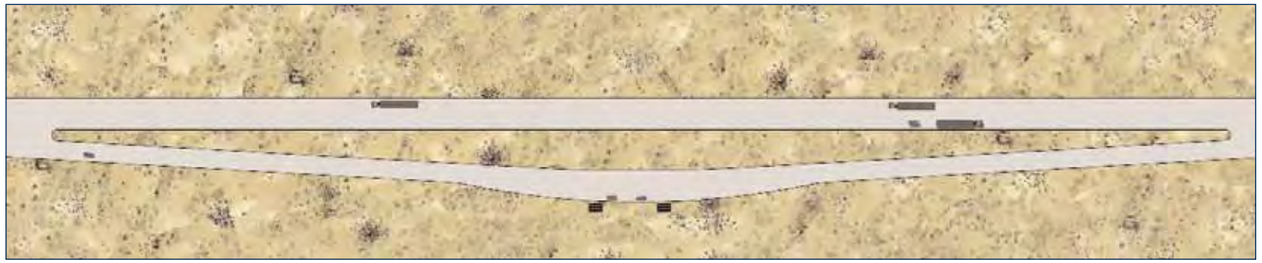
(1) This illustration depicts facilities that would make up the elements of a basic rest area.



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

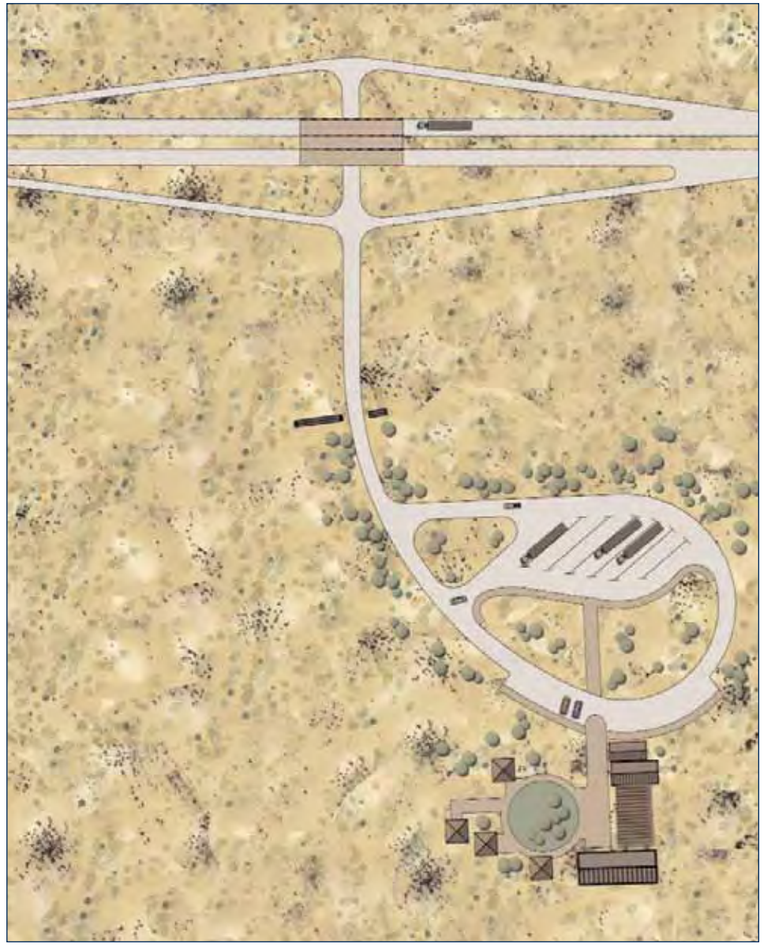
ROAD SERVICES PROGRAM

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 facing page (3.11) 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 pages 5.6 and 5.7 in the Design Guidelines chapter.



(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	Landscape 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 types • Standard hardscape type	• Site-specific interpretive signage • Toilets/no running water (where associated with truck pull-offs) • Trash containers • Limited car and recreational vehicle parking • Limited/temporary truck parking	• Scenic overlooks • Located according to travelers' needs and unique 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 types • Standard to accentuated hardscape types	• Located according to travelers' needs and unique site features • Site-specific interpretive signage • Toilets/no running water • 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) • Limited/temporary truck parking (if conditions permit)
BASIC REST AREA	Basic rest areas are located throughout the state offering site specific interpretive information. They have limited rest room 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 enroute.	• Enhanced native softscape type • Standard to accentuated hardscape types	• Located according to traveler's needs and unique site features • Site-specific interpretive signage • Toilets/no 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 & waste dispensers • 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 area 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 • Statewide 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 & waste dispensers • Shade canopy (vegetation or structure) • Telescopes/viewfinders

Image courtesy of Ronald J. Taylor.

(1) The Sagebrush Steppe along I-80 provides a continuous plant palette and reduces the maintenance costs associated with roadsides.

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 has adopted two programs to promote the use 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 wildflowers plantings. In addition to improved aesthetics, native forbs and grasses 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.

A revegetation study conducted by the University of Nevada supports the use of forbs and grasses along highway right-of-ways. A list of forbs and grasses that are appropriate to specific regions and ecosystems and require “little or no maintenance…(and) create defensible space for wildfire along the highway corridors” was provided (Tueller, Post Noonan, 2002). As part of the wildflower program, these suggested plants should be utilized with others that do not create a fire hazard or overly attract wildlife.

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 addressed in a revegetation program 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.

“Nevada’s Coordinated Invasive Weed Strategy”, produced by the University of Nevada, also identifies additional species that have the potential to negatively impact Nevada’s environmental quality. NDOT’s continued coordination with the Nevada weed action committee provides an organized effort for invasive and noxious weed control.

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.
- Making recommendations for site and soil preparation.
- Including site appropriate revegetative practices.

OUTDOOR ADVERTISING

Outdoor advertising, specifically billboards, provides opportunities for businesses, community groups, and other organizations 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 a result, community groups are committed to the restriction 0f new billboards and the removal of 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 to 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 the limitation of signage that is visible and intended to be read from the roadway to include only:

- 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
- 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 of the HBA is the allowance of billboard construction in areas zoned for commercial and industrial uses, 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 conflict with the State's standards for denoting scenic byways and to 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

Removal of 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.

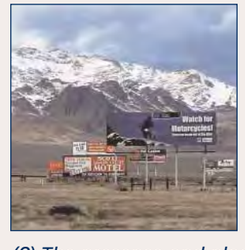
Although control of outdoor advertising seems daunting, there are regulations that provide restrictions to billboard construction. NRS 405.050 allows counties to deny permits for billboards that may “measurably destroy the natural beauty of the scenery or obscure a view of the road ahead.” Additionally,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

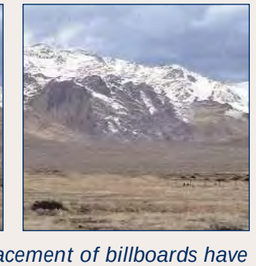
The Role of Local Government

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 state’s highways. Important viewsheds and scenic corridors may be designated within the county and land use regulations can be developed that discourage or prohibit outdoor advertising.

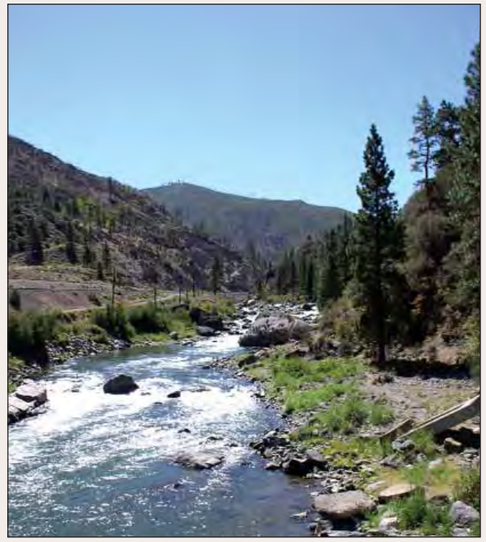
(1) Existing outdoor advertising in a natural landscape setting has a significant negative effect on the visual quality of the state’s highways.

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





(3) The presence and placement of billboards have a significant negative impact on the visual quality of the corridor. Outdoor advertising should be carefully controlled to preserve existing vistas and reduce visual clutter.



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

(2) Scenic byway signage coordinates with byways designated 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, including two National Scenic Byways and one All-American Road. Prominent byways that may be accessed from I-80 include Mount Rose Highway (SR 441), a National Scenic Byway; Pyramid Lake Road (SR 445); Angel Lake Road (SR 231), and Lamoille Canyon (SR 227).

According to the FHWA, scenic roadway designation 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 existing State or local controls. 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 NDOT, the Nevada Commission on Tourism, and the FHWA. Tourism related facilities such as visitor centers, rest areas, and the place name signage program can be coordinated with informational materials to create an integrated roadway 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 may be expanded with 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 USFS Scenic Byways programs focus on roads less frequently traveled that lead to back country or wilderness. They include 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 is established on a statewide level and 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 of the other three programs.

Local groups and agencies nominate and manage scenic byways and local tourism routes. The "Scenic Byway" designation 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 BLM. 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 that are not available with basic designation. 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 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 that this designation occur in areas of high scenic quality to limit the number of billboards and signs that 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 4.12, 4.20, and 4.28).

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 roadside in northern Nevada that its removal may be the single most significant factor in improving the visual quality of the I-80 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 that is made highly visible through signage, and includes 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)

(4)

(5) The anti-littering campaign's promotional materials need to grab the attention of motorists and residents. An edgy and provocative campaign will keep the issue of litter very visible to travelers.

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