

# Corridor Management and Background Inventory

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## SECTION ONE: Introduction

### THE VISION

Nevada has a renewed commitment to landscape and aesthetics for the state's highways. In 2002, the Nevada Department of Transportation (NDOT) adopted the Landscape and Aesthetics Master Plan, raising the bar for context-sensitive design.

*“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.”*

Pattern and Palette of Place, 2002, p. 10-11

Today, it is the policy of the State of Nevada to consider landscape and aesthetics in conjunction with other design factors in all transportation projects. Furthermore, NDOT recognizes that successful projects result when local communities, the public, other permitting agencies, and the private sector participate in the planning, design, construction, and maintenance of transportation projects. Partnerships are imperative 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 US 395, West US 50, SR 28, SR 207, and SR 431 Landscape and Aesthetics Corridor Plan (Corridor Plan) is one of three plans to address Nevada's western highways (Figure 1). This Corridor Plan establishes the vision for landscape and aesthetics for each highway, synthesizing historic, current, and future conditions to improve the visual appearance of each corridor. The Corridor Plan describes the vision, not the promise, for highway landscape and aesthetic treatments and enhancements. Implementation of the vision will be achieved through the combined efforts of local governments, private citizens, civic groups, and the business community.

As shown in Figure 2, the study area for this Corridor Plan includes US 395 from Topaz Lake to the California state line near Border Town, US 50 from Stateline to the Six Mile Canyon Road intersection east of Dayton, and State Routes 28, 207, and 431 around Lake Tahoe. Lake Tahoe is renowned for its scenic beauty and numerous recreation destinations. As a whole, the corridor is one of the most visually stunning settings in Nevada.

The Corridor Plan identifies major design themes and materials to be used in landscape and aesthetic treatments. It also recommends the level of treatment to be applied to highway features in the corridor, providing a broad cost estimate of treatments, and outlining strategies for funding of construction and long-term maintenance.

The Corridor Plan is a method for improving the aesthetic qualities of the state's highways, particularly in relation 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 may be funded from a variety of sources. As a general rule, up to 3% of total highway construction costs on all new construction and capacity improvements may be allocated to landscape and aesthetic treatments. Funding for the retrofit of landscape and aesthetic improvements to existing highways is based on community partnerships and the opportunity for communities to match State funds with a share of local money, Federal monies, 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:

*“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.”*

Pattern and Palette of Place, 2002, p. 12

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. In locations where recommendations exceed NDOT's normal financial responsibility and the community desires an elevated level of aesthetic treatment, NDOT will engage the community to create partnerships to find additional funding.



Figure 1 - Corridors for Nevada's Western Highways



Figure 2 - Study area for this Corridor Plan (US 395, West US 50, SR 28, SR 207, and SR 431 corridor).



(1) The Corridor Plan guides the development of project specific design through established design objectives and design guidelines.

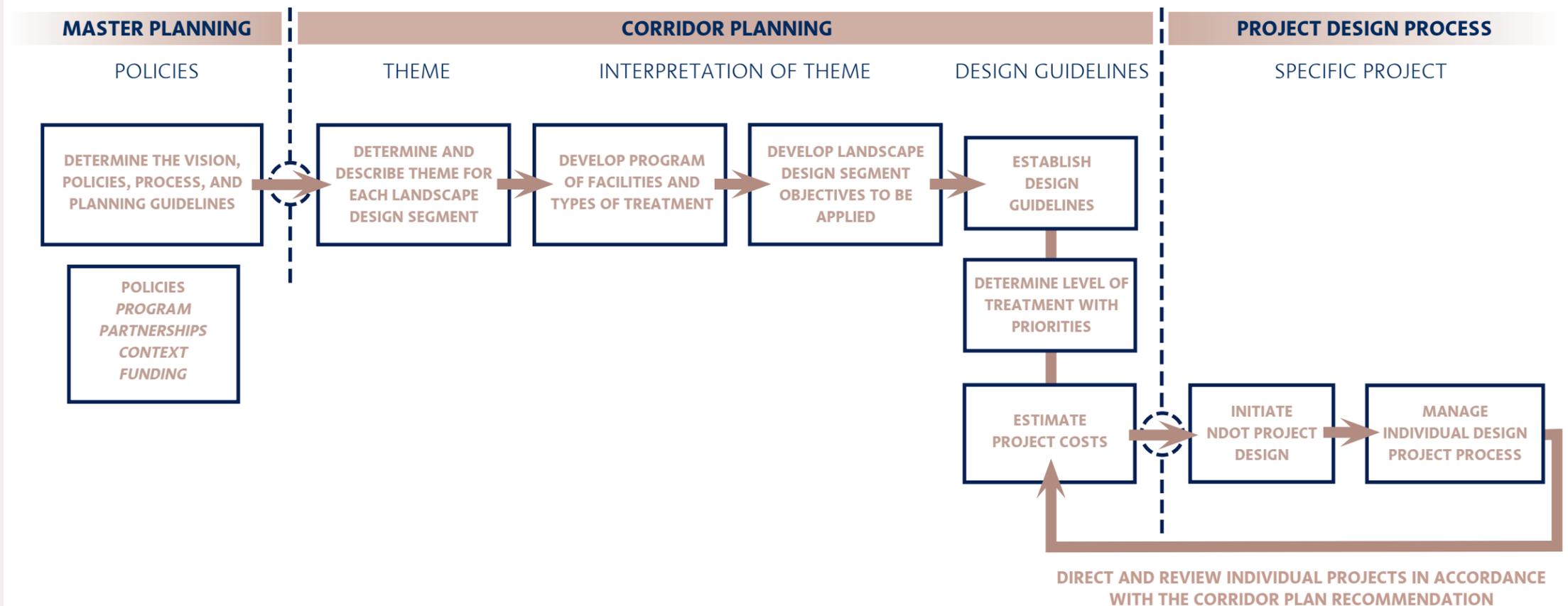
### CORRIDOR DESIGN MANAGEMENT

This plan is a useful management tool for designing highway projects because it provides specific recommendations, programs, and a description of the intended result.

The Corridor Plan establishes a theme or central design idea. Projects within each landscape design segment are guided by a theme, associated design objectives, examples that illustrate interpretation of the theme, and a program of facilities with common definitions. Design guidelines, estimated costs, and project priorities establish the viability of the final Corridor Plan. NDOT will use the Cor-

ridor Plan, as one of the tools, to manage the design of highway projects. And, prior to designing specific highway projects, NDOT and the design consultant should review the Corridor Plan in order to understand how the project level design fits within a particular landscape design segment. Implementation of the designated treatment levels may depend on partnerships and funding opportunities. Overall, the vision and intent of the themes and treatment levels should be considered as the guide throughout the design process. Figure 3, below, outlines the steps that are necessary in order to achieve a desired outcome for this corridor.

Figure 3 – Corridor Design Management



## PUBLIC PARTICIPATION

Early and continuous public involvement has been 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 to develop local support.

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

The public participation process ensured:

1. Identification of issues and concerns of each community.
2. A method, strategy, and action plan to address community concerns.
3. Opportunities for the public to express their level of support for the Corridor Plan.
4. Release of full information about the Corridor Plan through public meetings, the Corridor Plan 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, help establish priorities, ask questions, and provide input at two public meetings.
- A fact sheet was widely distributed to provide general information about the corridor plan.
- The public visited a corridor planning Web Site to learn more about corridor planning activities.
- Individual stakeholder meetings were conducted to ensure that all those who needed to be involved were involved.
- A media relations strategy was developed to encourage even greater participation.

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



**(1)** From the inception of the corridor planning process a Technical Review Committee helped to identify issues and opportunities, shape design objectives and guidelines, and establish priorities based on local knowledge.



**(2)** Public workshops were held to inform and gather input from stakeholders and community members.



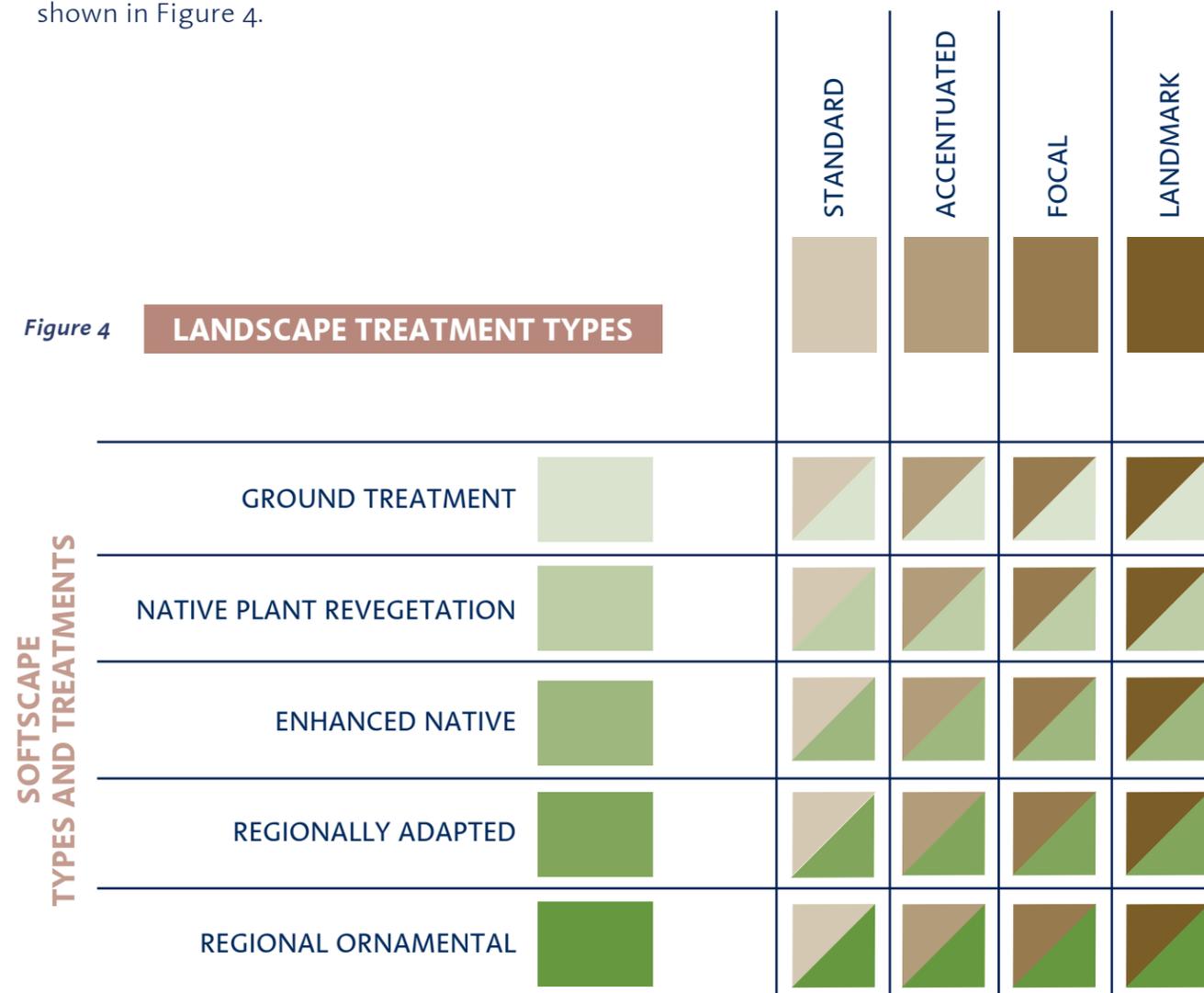
# SECTION TWO: Elements of Landscape and Aesthetics

The Elements of Landscape and Aesthetics provide the framework to define the purpose and intent of highway corridor improvements. These elements, described on the following pages, include varying intensities of softscape and hardscape, statewide signage, rest area facilities, native wildflower program, outdoor advertising concepts, scenic byways, anti-litter campaign, and a Main Street Approach. NDOT currently incorporates some of these elements, however, many others are redefined. In some cases, new facility types are established.

## LANDSCAPE TREATMENT TYPES

A landscape treatment type includes softscape type and a structures and hardscape type. Every section of NDOT rights-of-way has an associated landscape treatment type to define its design character and maintenance requirements. Softscape treatments vary from a simple ground treatment to more elaborate ornamental plant material. Similarly, structures and hardscape treatments range from standard category to landmark quality. Used in combination, these treatment levels 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.

### STRUCTURES AND HARDSCAPE TYPES AND TREATMENTS



### Softscape Types and Treatments

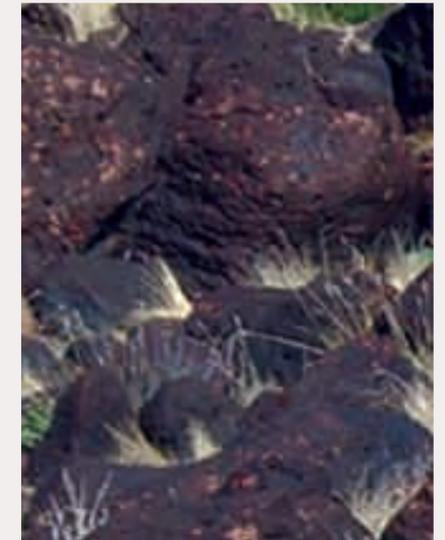
Softscape types and treatments are compositions of plant materials including trees, shrubs, perennials, grasses, and ground treatments. The following descriptions and photographic examples define the specific softscape types that may be utilized in sections of the corridor. Although the treatments require varying levels of irrigation, an overall emphasis has been placed on water conservation. NDOT requires cooperative long-term maintenance agreements with local stakeholders for irrigated landscapes. Plant lists and guidelines are listed in the design guidelines, beginning on page 3.39.

#### Ground Treatment

Ground treatment along the roadway provides erosion and dust control. This treatment includes uniform applications of rock mulch or variable sizes of stone, combined with textures that match the existing environment. Soil stabilizer may be used in conjunction with these methods. In rural areas, palettes are derived from natural patterns found in playas, foothills, or ephemeral drainages. In urban environments, various forms of aesthetic rock treatment are used to create patterns and textures. Irrigation is not included in this treatment.

Total Cost \$1.20 - \$1.40/sf

L&A Cost: \$0.00/sf



#### Native Plant Revegetation Landscape

A palette of native Great Basin or Sierra Nevada plant materials, including sagebrush and manzanita, should be used to reestablish disturbed areas along the roadway. Primary importance is focused on cultivating native communities such as sagebrush or manzanita. Seedlings should be interspersed with mature plantings to establish a plant community character. Plantings should be sparse like natural patterns, and require only temporary irrigation to assure plant establishment. Enriching the soil with mulch and other amendments is required, and preparation techniques include roughening grade for seed siting and amending the soils with mulch and topsoil.

Total Cost: \$1.20 - \$1.40/sf

L&A Cost: \$0.00/sf



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

**Enhanced Native Landscape**

This treatment introduces a greater diversity of plant materials from the Great Basin and Sierra Nevada plant palette. Plants are organized in greater densities, and trees are used to increase vertical diversity. Special ground treatments for drainage and erosion control are included. Drip irrigation is required to assure plant survival.

Total Cost: \$1.50 - \$1.70/sf

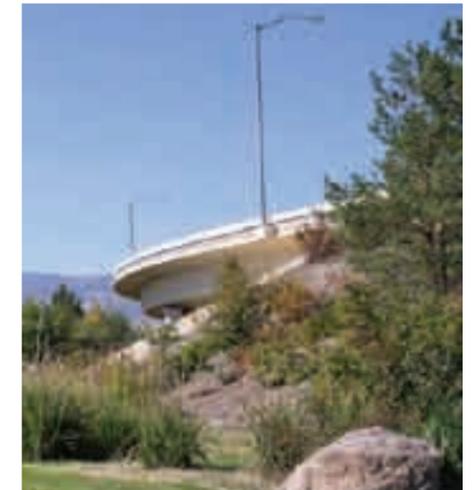
L&A Cost: \$0.30 - \$0.50/sf

**Regionally Adapted Landscape**

Combinations of Great Basin and Sierra Nevada plants and those from other dry land environments form this landscape palette. A greater density and variety of plant materials are combined to create a layering effect. Trees provide a distinct overstory, while shrubs and perennials form a thick understory. Plants are selected for color, texture, seasonal change, and form. For this landscape type to survive, drip irrigation to individual plants is required.

Total Cost: \$2.40 - \$2.90/sf

L&A Cost: \$1.20 - \$1.70/sf

**Regional Ornamental Landscape**

Regional ornamental landscape includes a diversity of plant species, some of which are imported to this region. Ornamental landscape introduces taller and denser plant materials. The regional ornamental landscape includes shade, varieties of form, and color. It provides a dynamic contrast to the arid landscapes of naturally-occurring plant species. In the regional ornamental landscape, vegetation patterns and compositions are designed to reflect aesthetic and cultural qualities. Zoned drip irrigation systems are required.

Total Cost: \$3.70 - \$6.50/sf

L&A Cost: \$2.50 - \$5.30/sf



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

### Structures and Hardscape Types and Treatment

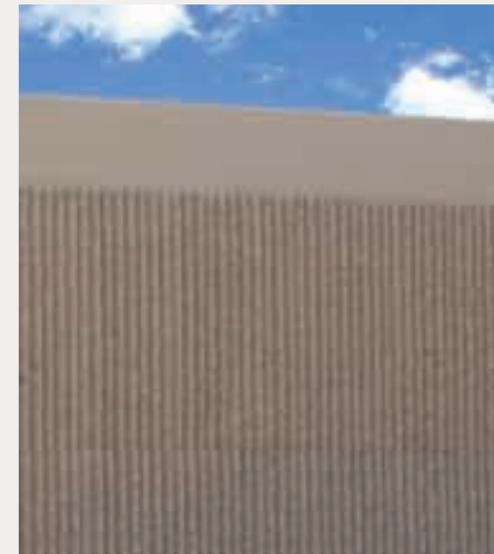
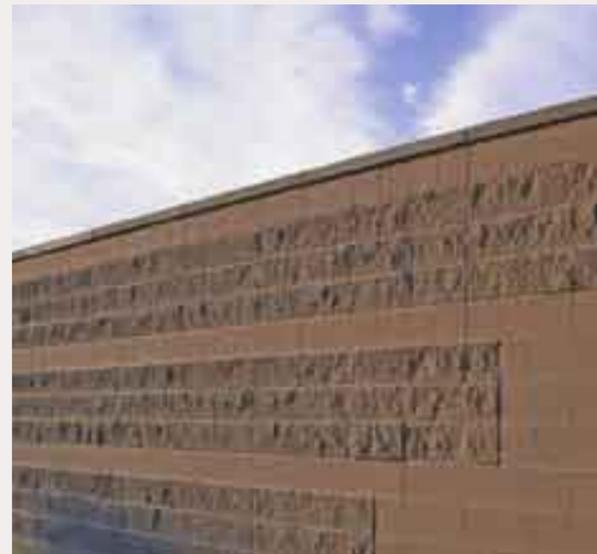
The following classifications define the common language of highway facility design. Bridges, retaining walls, noise walls, pedestrian crossings, pedestrian fencing, railings, barrier railings, lighting, and transportation art are included in these classifications.

#### Standard Structures and Hardscape

Standard treatment is simple and functional. Color and proportional adjustments improve aesthetic quality. Standard structure design is economical and satisfies vehicle movement requirements. However, it does little to establish design character or place-making. NDOT standards for surface treatment and lighting include painted finishes, fractured fin formliners, and overhead poles with cobra head illumination or high mast area lighting. Regular trash and graffiti removal maintenance programs are necessary.

Total Cost: \$115- \$120/sf

L&A Cost: \$0/sf

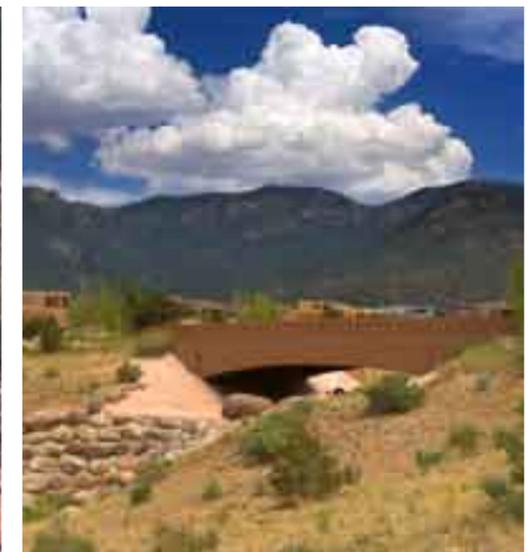


#### Accentuated Structures and Hardscape

Corridor pattern design is defined by a unified system of materials and textures. Adding accents and special finishes to built structures facilitates and enhances place-making. These elements can include transportation art and the application of high quality finishes and color to highway structures. Drainage details and water harvesting techniques can be enhanced through the use of decorative rock and contour grading.

Total Cost: \$132- \$142/sf

L&A Cost: \$17 - \$27/f



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

**Focal Structures and Hardscape**

Focal structures and hardscape treatments facilitate the expression of a specific design character. Structures consist of self-weathering materials, integrated color or textural finishes, and may include detailed formliners on structural surfaces. Patterns consist of a motif-based multi-surface design. Barrier rails utilize custom construction and include designs that are artistically incorporated into the structure, ultimately elevating an engineered form to a work of art. Upgraded lighting elements combine form and function to include lower height standards and decorative elements.

Total Cost: \$180- \$195/sf

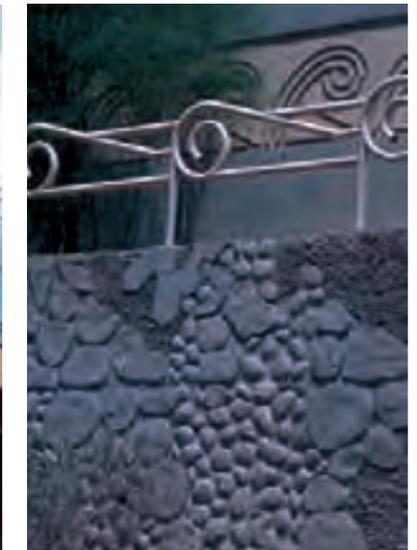
L&A Cost: \$35 - \$80/sf

**Landmark Structures and Hardscape**

Landmark treatments give attention to unique elements. Extensive design treatments are used on bridge structures, retaining walls, acoustic walls, barrier rails, and pedestrian crossings. Unique form liner treatments on structural surfaces denote the special importance of the place. Subject and composition, combined with placement, denote the importance of transportation art. Elaborate lighting provides special nighttime effects.

Total Cost: \$225- \$270/sf

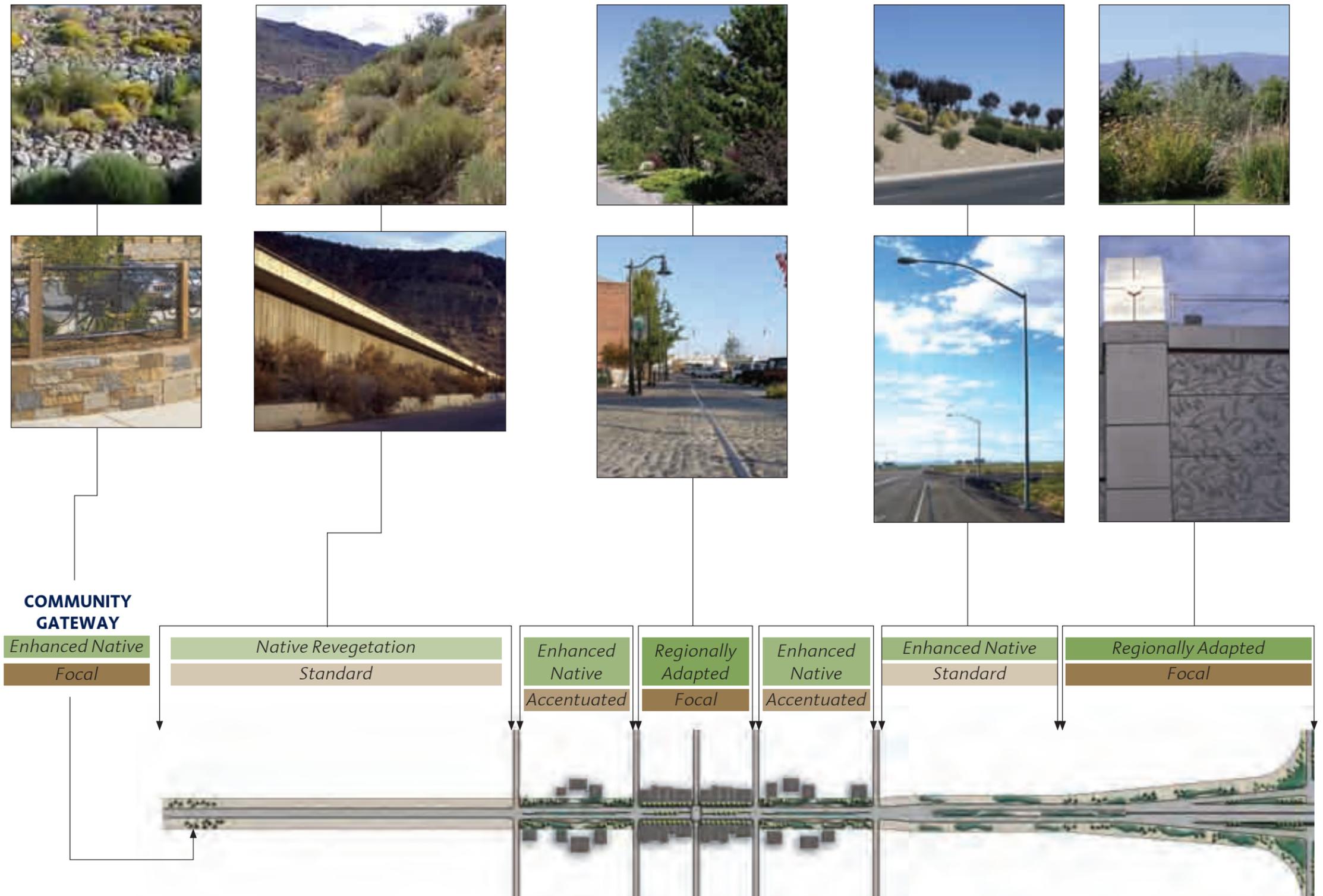
L&A Cost: \$110 - \$155/sf



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

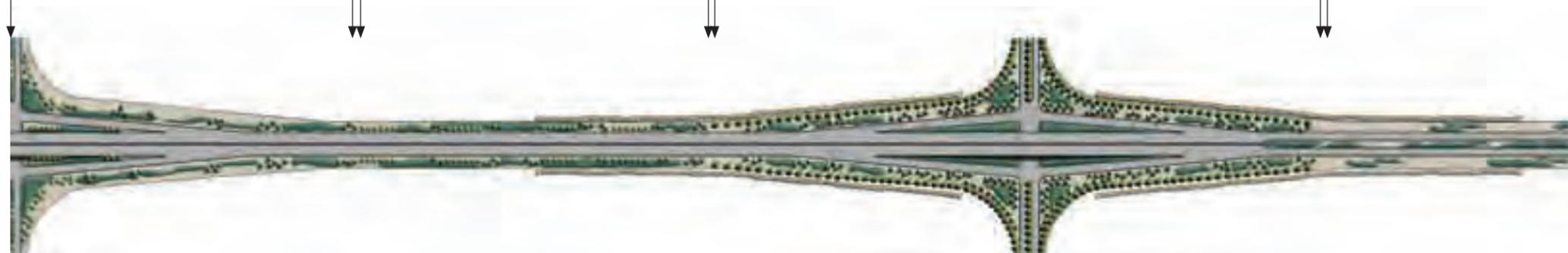
The following figure illustrates how varying degrees of softscape treatments and structures and hardscape treatments may be appropriately applied over a section of the corridor.

Figure 5 – Application of Landscape Treatment Types





Regionally Adapted Focal  
Regional Ornamental Accentuated  
Regional Ornamental Landmark  
Enhanced Native Accentuated





(1) Nevada has a variety of special resources of interest to visitors. Interpretation of these features can enhance the appreciation and understanding of the area.



(2) Iconic signage clearly directs travelers to unique resources and destinations, such as historic features and ghost towns.



(3) The place name sign program may be coordinated with local interpretive efforts and audio programs to increase effectiveness.



## STATEWIDE PLACE NAME SIGN PROGRAM

A statewide place name and point-of-interest sign program better connects people to places.

### Benefits of the Program

The state of Nevada is a large geographic area with diverse and oft-hidden features. The sign program will provide clear and consistent direction from the corridors to scenic areas, points-of-interest, historical sites, and local public attractions. Signs will welcome visitors and inform residents. In addition to stimulating local economies, signage will draw attention to these important assets, reaffirming the rich history and physical attributes of the state. The sign program will encourage visitors and residents to better understand the history, culture, and geology of the state.

### How the Program Will Work

Utilizing the current Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices (MUTCD) as a guide, a family of iconic symbols specific to Nevada will be designed for use on standardized directional and identification signs (see illus. 1 on following page). To ensure uniformity and consistency, the state will implement a policy manual for the signs, referred to as the Nevada Place Name Sign Manual. Program promotion will occur via informational brochures available at welcome centers, specific identification on state maps, and locally-based advertisements. Recognizable icons will demarcate points of interest and directional symbols. FHWA approval for the Statewide Place Name Sign Program is mandatory prior to installation. The program will work in conjunction with “Watchable Wildlife,” an organization that utilizes signage and guide books to facilitate wildlife viewing areas. Watchable Wildlife, an exist-

ing, separately run program addresses signage for wildlife viewing.

An audio and multimedia interpretative program will be developed with the sign program. This program will provide signage and audio interpretation of Nevada’s history and natural features to travelers. In order to ensure the success of the program and reduce the confusion created by multiple programs, it will coordinate with interpretive programs that groups, such as Nevada Silver Trails, are currently completing.

### Eligibility

Under a state managed and controlled program, NDOT will establish and approve an initial inventory of categories common to the state, including features specific to each highway corridor. Iconic imagery will be created to represent the general categories. After the initial inventory is confirmed, state and local entities can apply for inclusion based on specific criteria.

### Anticipated Categories

Categories for sign icons common to the state of Nevada could include, but are not limited to:

- Nevada historic points/landmarks including cultural resources
- Native American resources
- Mountains
- Rivers
- Sand dunes
- Mining
- Railroads
- Historic downtowns
- Ghost towns
- Emigrant trails
- Wildlife viewing areas

The Design Guidelines, page 3.21, list potential interpretive features and guidelines for icon development.

### Associated Cost

The sign program is expected to directly benefit smaller communities and local attractions. Increased tax revenues will give the state a tangible return on its investment. Business partnerships through sponsorships are possible, provided there are partial cost offsets.

### Signs Included in the Program

#### Exit to Area of Interest or Town

This primary sign type is used only on interstates and is included here for informational purposes only. It will be used as an informational listing, located in advance of interstate exits. It will include symbols and descriptions as well as the interstate exit number.

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 symbols will be used on each sign – one per panel. Concise written descriptions are required to accompany iconic symbols.

#### Directional Sign on State or County Road

Used primarily along the highway corridors, this secondary sign type provides information for features located on state or county roads and intersections. It will incorporate symbols and a directional arrow (see illus. 2 on following page).

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 symbols will be used on each sign.

Written descriptions are required to accompany iconic symbols.

**Scenic Overlook or Viewpoint**

This sign type will be located prior to pull-offs, including symbols and descriptions as well as the distance to the pull-off (see illus. 3).

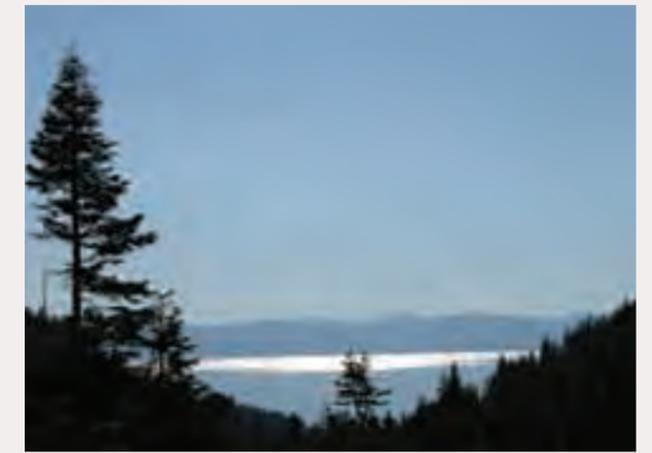
Signs will be post-mounted and use reflective graphics/lettering on a metal panel in accordance with applicable FHWA safety standards. A maximum of two symbols will be used on each sign. Concise written descriptions are required to accompany iconic symbols.

**ROAD SERVICES PROGRAM**

Road services are an important component of any roadway corridor experience. They are even more critical in areas of Nevada where long distances separate developed areas. A complete description of road service facilities and their program components is provided in the Design Guidelines, pages 3.17. These service areas provide travelers with designated spaces to rest, opportunities to interpret history and geography, and discover information about nearby activities and communities.

Two road service facilities of specific importance within the corridor include activity pull-offs and community rest areas. Activity pull-offs provide access to activities adjacent to the highway, and are located in areas where motorists commonly pull over to watch or participate in roadside activities. Activity pull-offs within the Lake Tahoe Basin require particularly innovative design solutions that address complex constraints of narrow rights-of-way, steep terrain, and other TRPA related issues. Agencies within the basin, such as TRPA, may be able to use ideas and concepts from the Corridor Plan to effectively address recreational impacts in the area.

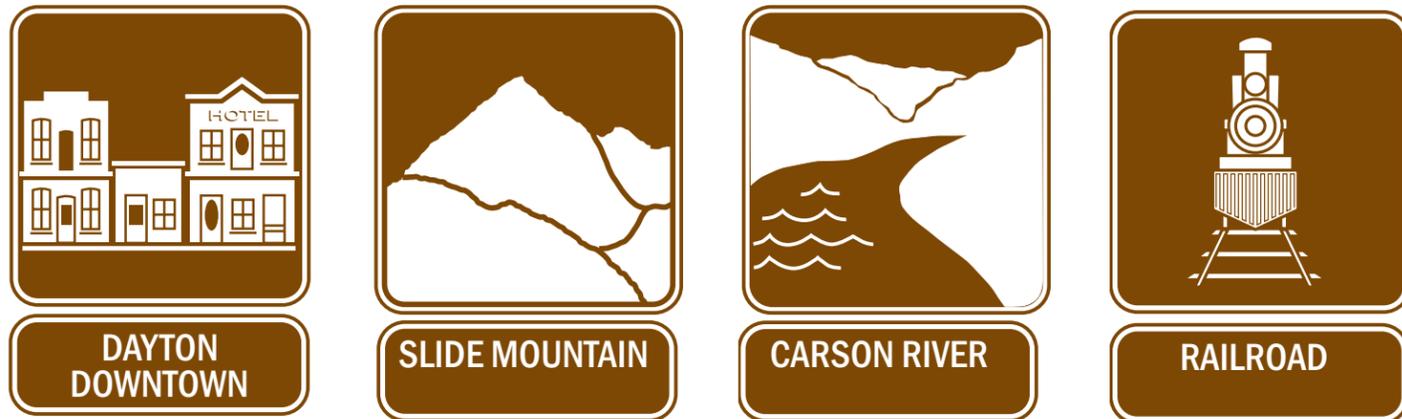
Community rest areas are integrated within the town structure to serve residents and visitors. Community rest areas function like a pocket park or town square, providing a central location for visitors to learn more about local tourism opportunities, piquing their desire to further explore the community. Central locations or areas connected to community centers provide appropriate sites. Partnerships with towns, counties, or other organizations are required to site the facilities outside of the right-of-way.



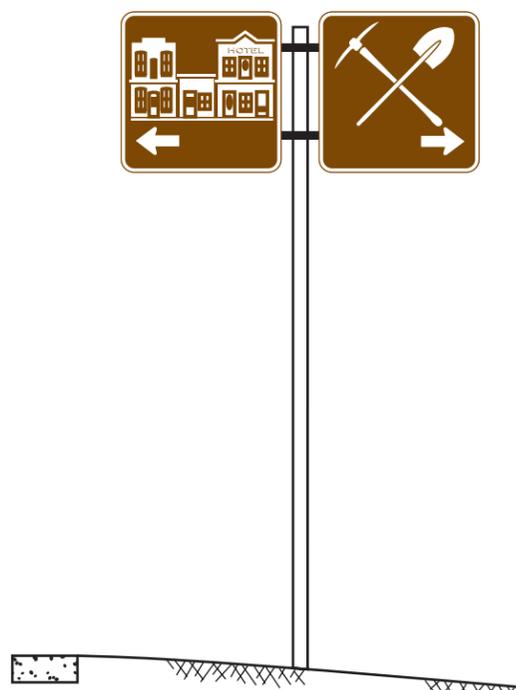
(4) Viewpoints provide organized facilities for observing scenic vistas and points of interest.



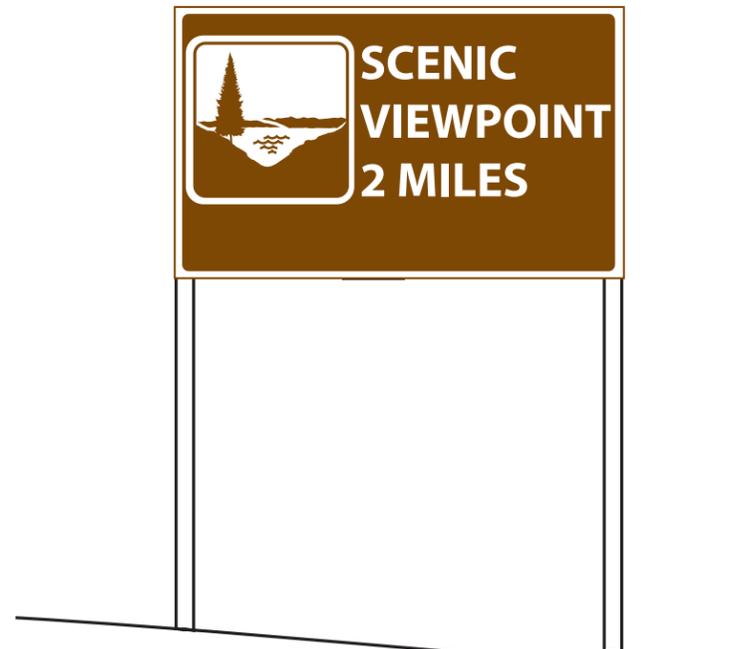
(5) Community rest areas welcome travelers and invite visitors to explore the area. Facilities may be coordinated with existing infrastructure and business locations.



(1) The Statewide Place Name Sign Program uses a family of iconic symbols specific to Nevada to identify features such as railroads, historic buildings, and geographical points of interest.



(2) Directional signs on State or County roads use a family of iconic symbols along with a directional arrow. This type of sign uses a maximum of four symbols.



(3) Signs for a scenic overlook or viewpoint use a maximum of two symbols along with the distance to the pull-off.



(1) The use of naturally-occurring forbs and grasses as part of the Native Wildflower Program emphasizes the area's natural beauty while reducing maintenance requirements, herbicide use, erosion potential, and roadside fire hazard.



(2) Outdoor advertising blocks scenic views and reduces the visual quality of the landscape.

## NATIVE WILDFLOWER PROGRAM

Inspired by the notion that native plant species along rights-of-way can enhance the beauty of the land, the FHWA has adopted two programs to promote the use of naturally-occurring forbs and grasses in a particular region, state, or ecosystem. The Surface Transportation and Uniform Relocation Assistance Act (STURAA) of 1987 requires that at least one-quarter of 1% of funds expended for any Federal-aid highway system landscape project be utilized for native wildflower plantings. The second, voluntary program, "Operation Wildflower", promotes the use of native wildflowers through a cooperative relationship between the National Council of State Garden Clubs and State highway agencies.

In addition, the FHWA recognizes that 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.

The University of Nevada's revegetation report supports the use of forbs and grasses in highway rights-of-way. Forbs and grasses that are appropriate to specific regions and ecosystems require "little or no maintenance... (and) create defensible space for wildfire along the highway corridors" (Tuller, Post, and Noonan, 2002). As part of the wildflower program, plants that do not create a fire hazard or overly attract wildlife should be utilized.

## INVASIVE AND NOXIOUS WEED CONTROL

Invasive species can have devastating effects on a landscape's economic and environmental quality. Invasive species decrease diversity and can out-compete native species. The Nevada State Department of Agriculture maintains a list of noxious weeds that should be contained through a revegetation program along the corridor. The list can be referenced at the following site [www.agri.nv.gov/PLANT\\_NoXWeeds\\_index.htm](http://www.agri.nv.gov/PLANT_NoXWeeds_index.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 are necessary for any new landscape design project. Adhering to best management practices for successful revegetation is a suggested control method. Additional suggested procedures include:

- Tailoring revegetation procedures to specific plant community types.
- Making recommendations for site and soil preparation.
- Including site appropriate revegetative practices.
- Providing for adequate weed maintenance to allow for revegetation establishment.

## OUTDOOR ADVERTISING

Outdoor advertising, specifically with billboards, provides businesses, community groups and other organizations the opportunity to inform travelers of various establishments and available services. Billboards can, however, impact the highway's visual quality by obstructing views of scenic features and the natural landscape. As a result, community groups are committed to restricting new signage, and removing existing billboards from areas adjacent to and within their communities.

### The Highway Beautification Act

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

### Limitations

In the 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 Section G of the law 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 within the HBA is the allowance for billboards to be constructed in areas zoned commercial and industrial, as well as in unzoned areas with commercial or industrial uses. The provision also acknowledges that the State has authority over the zoning laws. This entitlement allows the State to implement zoning regulations that effectively 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. An amendment to the HBA, passed by Congress with the 1995 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 utilize only local restrictions for billboard control. As a result, areas of lower scenic quality become more unattractive and reduce the overall scenic character of the byway.

### Nevada Statutes

Removing billboards in Nevada became more difficult in 2001 due to the Nevada Revised Statute (NRS) 278.0215. The regulation prohibits the use of amortization – a method used by many states – for sign removal. Rather than utilizing the traditional cost approach, it defines the methodology for determining “just compensation” to include

property uniqueness as well as income generation from the sign. This cost-prohibitive revision renders sign removal almost impossible.

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 NDOT Director the authority to remove 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. Although a state must prove their jurisdictional rights to control outdoor advertising on Indian Reservation lands and have a written statement from the State Attorney General, local governments may coordinate with the Bureau of Indian Affairs to determine a course of action to limit the negative visual impacts of billboards. Design standards that address height, size, color, spacing/frequency, and context are a valuable method for directing outdoor advertising. For example, signs can be relocated if they block visual resources. Material choices and architectural detail can be improved to reduce the visual distinction between the sign and the surrounding environment. Communities can regulate the location of billboards to reduce the scenic impact of billboards and improve 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)** Methods for controlling outdoor advertising include signage ordinances that restrict the height, size, and location of billboards. The Director of NDOT has the ability to request the removal of any billboard that poses a safety hazard.



**(2)** Outdoor advertising can be framed by natural materials and landscaping and built into the ground in order to limit scenic distractions.



**(3)** Billboards should consider proximity to road, distance between one to the next, distance from the ground, and overall size in order to lessen negative visual impacts.



**(4)** Outdoor advertising should compliment the adjacent environment while informing travelers of services to come.



**(1)** The Lake Tahoe Basin includes several scenic byways. Additional design guidelines using heightened treatment levels have been developed to protect and enhance the area's high visual quality and significance to state tourism.



**(2)** The visual quality of Carson Valley and Washoe Lake could be preserved through the use of a scenic byway designation. Roadway scenic quality can also be regulated with scenic or conservation easements and partnerships between local, state, and federal agencies.

## NEVADA SCENIC BYWAYS DESIGNATION

Nevada's Scenic Byways program was established in 1983. Since then, twenty-one scenic byways have been designated. Three prominent byways are located within the Tahoe Basin and are included in the corridor study: US 50, SR 28, and SR 431 (see Figure 6 on following page). Brochures and information on the roadways are available through the Nevada Commission on Tourism. In addition to the benefits provided by the designation, the roadways are also subject to design standards established by local governing agencies. The Tahoe Regional Planning Agency (TRPA) and Washoe County have drafted roadway design guidelines that will be reflected in the final Corridor Plan.

According to the FHWA, designating a roadway as scenic has several benefits. These benefits include preservation, promotion, pride, partnership, and specifically, the protection of scenic and roadside vistas, and historic buildings. In addition, the Highway Beautification Act of 1965 prohibits the erection of new billboards along designated scenic byways that are inter-state, a part of the National Highway System, or federally-aided primary roads. The National Highway Designation Act of 1995 amends the law to allow segmentation of portions of the byway, particularly if sections of the roadway fail to meet the scenic byway criteria. The segments in question are then controlled by local regulations only, allowing new billboards to be erected, subject to existing state or local controls. Roadway scenic quality can also be regulated with scenic or conservation easements. These easements preserve landscape character and provide the participating entity with a one-time tax deduction equal to the foregone value of the use of the land.

The Nevada Commission on Tourism and the FHWA are responsible for promoting scenic byways. To facilitate an integrated system, tourism-related facilities such as visitor centers, rest areas, and the Place Name Sign Program should maintain coordinated informational materials. Scenic designation increases local awareness about the roadway, attracting 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

Scenic designation can promote and expand public and private partnership opportunities. For example, America's Byways Resource Center provides technical assistance and, together with the FHWA, can provide seminars and workshops to further facilitate the partnering process.

The scenic roadway plan consists of federal, state, and local programs that provide assistance in achieving scenic designation in Nevada.

- The federal BLM Back Country Byways and US Forest Service Scenic Byways plans focus on infrequently traveled paved, unpaved and four-wheel drive roads that access back country or wilderness areas.
- The Nevada Scenic Byways program focuses on year-round accessible roadways. 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 encourages communities to promote special roadways and other modes of travel (like boat, balloon and train rides, bicycling or rafting trips) that are not included under any other programs.

Local groups and agencies nominate and manage scenic byways and local tourism routes. The designation "scenic byway" is reserved for routes approved by NDOT. The State Scenic Byways Committee (comprised of representatives of NDOT, the Nevada Commission on Tourism, the Nevada Division of State Parks, and the US Bureau of Land Management) reviews and suggests approval, however, it is the NDOT Director who makes the final designation. 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 and 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. Advanced designation requires a corridor management plan and a five year re-certification obligation.

Interstate highways have not been included in the state program primarily because encouraging travel on non-interstate routes increases 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. The Corridor Plan recommends this occur in areas of high scenic quality, specifically Kingsbury Grade (SR 207), Carson Valley, US 395 adjacent to Washoe Lake, and Jacks Valley Road, to limit the number of billboards and signage that obstructs view.

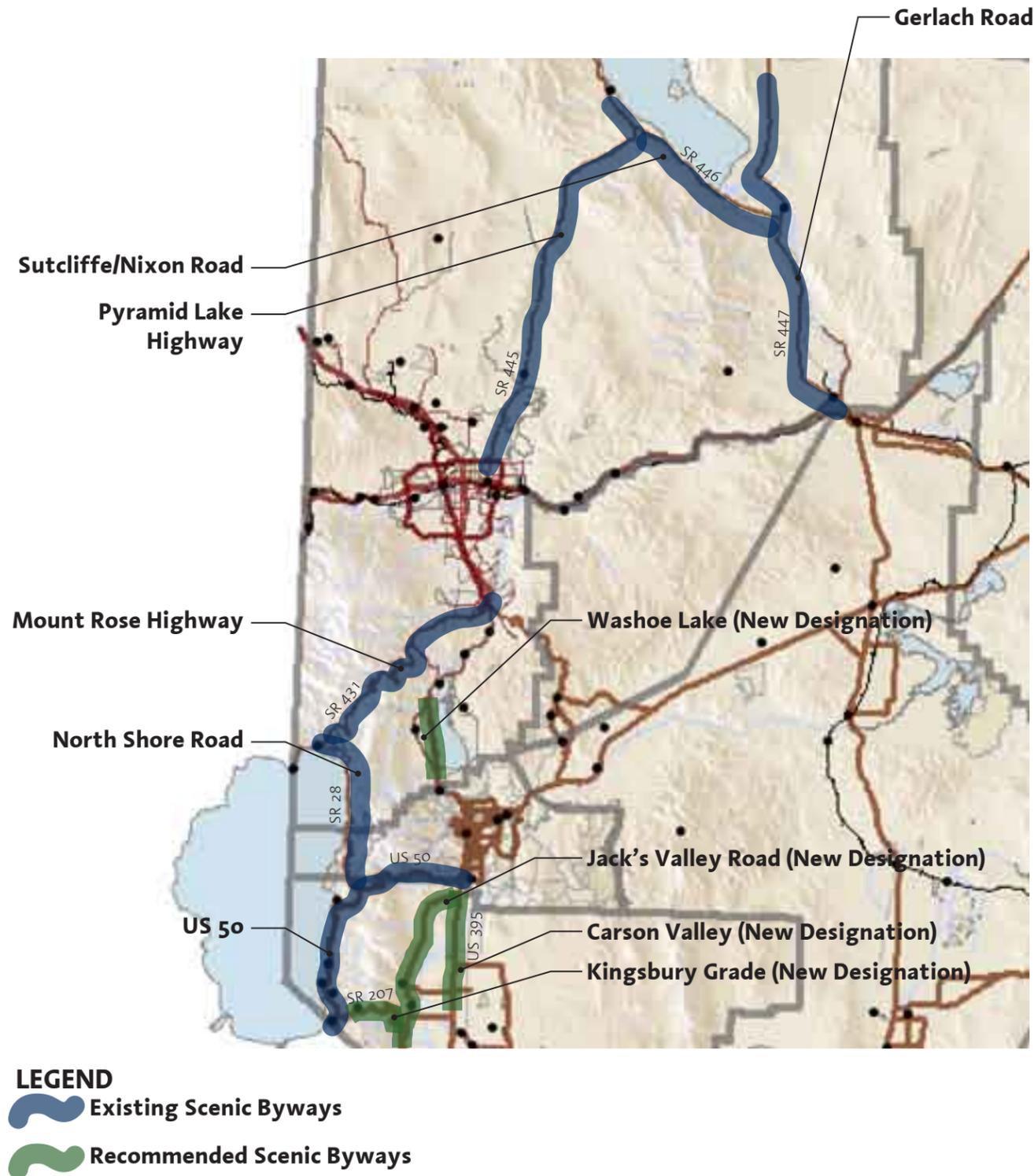


Figure 6 - Existing and Recommended Nevada Scenic Byways in Northern Nevada



(1) Scenic byways should include a specific pictorial graphic that is related to the place, as part of the Statewide Place Name Sign Program.



(2) The Director of NDOT makes the final designations for Nevada scenic byways. Scenic byways receive stricter outdoor advertising controls than other highways, including the removal of billboards in some cases.



(1) The negative visual impact of litter along the highway significantly effects the motorist's experience. Removing and managing litter along the highways is an important topic of the Corridor Plan.

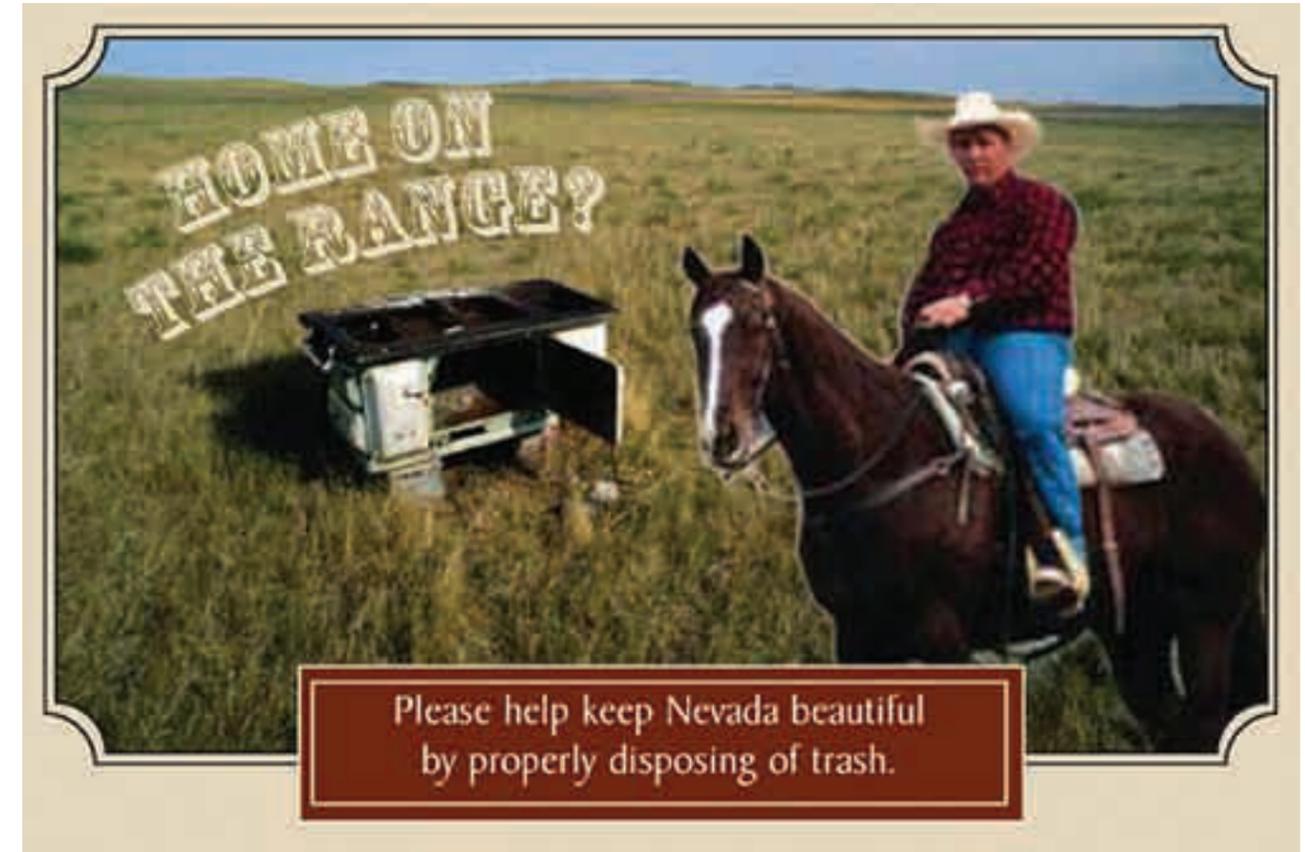


(2) The anti-littering campaign's promotional materials need to grab the attention of motorists and residents. An edgy and provocative campaign will keep the issue of litter very visible to travelers.

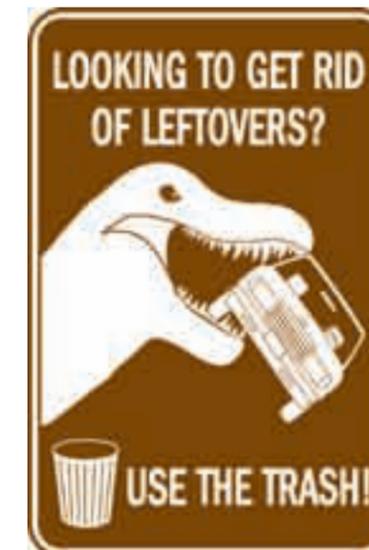
### ANTI-LITTERING CAMPAIGN AND SIGNAGE

Fast food containers, bottles, trash bags, and rusty kitchen appliances found alongside the road are distracting and imply general neglect and disregard for the environment. A statewide anti-littering campaign would represent a significant step towards maintaining and improving Nevada's highways. The campaign should be advertised in such a way as to command the attention of residents and travelers. Similar to the "Don't Mess with Texas" anti-littering campaign, this program could become a marketing showpiece for the state of Nevada. The program would be promoted through roadway signage, magazine advertisements, and bumper stickers.

Distribution of campaign materials would be focused at travel-oriented locations such as welcome centers, rest areas, and truck stops. Coupled with promotional materials, an "Adopt-A-Highway" or "Sponsor-A-Highway" program would engage residents of Nevada, encouraging active participation in maintaining clean and beautiful highways. This plan recommends implementing an anti-littering campaign using highly visible signage, easily distributed collateral materials, and an active volunteer clean-up program.



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



(4, 5, 6) Examples of anti-littering signage.

## MAIN STREET APPROACH

Vibrant main streets are a critical component of all communities. Rural communities are especially dependant upon vital commercial districts. Bisected and altered by the interstate highway system and suburban sprawl, main streets across America have declined both economically and physically, to a point where they are no longer viable community centers. Vacant buildings and declining businesses often line the highway. In some areas, revitalized commercial districts indicate continued community growth.

Main Street Approach, developed by the National Trust for Historic Preservation, assists in revitalizing the older, traditional business districts while simultaneously preserving the history and character of downtowns. The program combines “historic preservation with economic development to restore prosperity and vitality to downtowns and neighborhood business districts.”

The Main Street Approach does not promote a “quick fix.” It is a long-term, comprehensive strategy designed to meet local needs and opportunities. The strategy is based on a four-point approach that includes organization, promotion, design, and economic restructuring. It is a volunteer-based program that relies on community support. Volunteers form the governing board and standing committees, and a paid program manager coordinates and supports the operation.

The National Main Street Center, or the local coordinating agency, provides assistance in the form of technical services, networking, training, and in-

formation. The Center can provide direct fee-for-service technical assistance to cities and towns, both independently and in conjunction with state and citywide main street programs. Revitalization programs funded largely by local sources are more likely to succeed than those relying solely on state or federal funds. The Main Street Program offers educational sessions related to facilitating local support and generating public and private partnerships. Local involvement in, and coordination with, the program helps communities find solutions that work best for them.

The accomplishments of Main Street organizations are many: improving aesthetics and safety of downtown areas, restoring historic buildings, and revitalizing economic viability. The organization identifies potential economic niches, assists with promotional and fund-raising efforts, supports joint marketing efforts among local businesses, encourages and trains new business owners, and finds grants for facade, streetscape, and landscaping improvements. Reduced vacancy rates, and renovation and restoration in the downtown are a few examples of its results.

Physical improvements are quickly evident. Long-term economic improvements may take up to three years to accomplish. However, the program’s impact on communities nationwide is indisputably positive and long-lasting. Communities have experienced net gains in new businesses and job generation, and a surge in local investment. Most importantly, community pride grows as personal involvement in the volunteer-driven program increases.

As an example of the success of this program, seven communities in rural Iowa participated in the program for ten years. On average, each town renovated 97 downtown buildings, gained 24 business starts, and saw \$1.6 million in private sector reinvestment.

Anyone can start a Main Street Program in their community. The first step is to contact the statewide coordinating program for support, technical assistance, training, networking, and encouragement. Because Nevada does not currently have a coordinating program, contact should be made with the National Main Street Center in Washington D.C. A self-initiated program may be created without a state program. The National Main Street Center provides contacts to assist in networking with other independent programs and nearby state programs. Communities are welcome to utilize principles and tools from the Main Street Approach regardless of whether they qualify for the program or wish to follow it exactly. The program incorporates historic preservation with community revitalization. Communities like Goldfield, which was recently designated as a National Historic District, now qualify for more assistance through the program. Additional information can be obtained by visiting the Main Street Program’s web site at [www.mainstreet.org](http://www.mainstreet.org).



**(1)** Main Street Approach uses street trees and other streetscape enhancements to improve the aesthetics and create a safe environment for pedestrians and motorists. Streetscape plantings, accentuated pedestrian crossings, lighting, and banners create a pedestrian friendly environment and invigorate commercial districts.



**(2)** The Main Street Approach is a long-term, comprehensive strategy designed to meet local needs and opportunities. It is a volunteer-based program that relies on community support.

Total Increase in Population 2005 to 2026	
Carson City	22,030
Douglas County	15,956
Lyon County	41,0556
Storey County	1,923
Washoe County	189,404

(1) Population projections per the Nevada State Demographer, 2006.

Annual Population Estimate for 2005	
Carson City	57,104
Douglas County	50,108
Gardnerville	5,165
Minden	2,983
Lyon County	48,860
Storey County	4,012
Virginia City	938
Washoe County	396,844
Reno	206,735
Sparks	85,618

(2) Population estimates per the Nevada State Demographer, 2005.



(3) The anticipated population growth of urban areas and rural areas such as Douglas County may encourage the continued expansion of residential suburban growth, business park development, and neighborhood commercial uses.



## SECTION THREE: Background Inventory

### SOCIAL RESOURCES

#### Community Settlement Patterns and Growth

##### Urban Patterns

Northern Nevada’s historic settlement is tied to travel and mining. The majority of communities throughout the region are located along the California emigrant trail or were established as a result of the Comstock Lode discovery. Historic downtowns, ranches, and railroads serve as reminders of pioneer days and the era of gold and silver discovery. Although glimpses of the past are still visible through the region’s rich heritage, recent and rapid growth and development have left a much more noticeable mark on the landscape.

The corridor passes through a number of counties and cities that have recently experienced significant increases in population. New residents are drawn to Nevada by the high quality of life and the favorable economic conditions, including steady growth in employment opportunities. Service sector jobs, trade, construction, and manufacturing employ the greatest number of people and are experiencing the fastest rate of growth. In addition to these sectors, the Truckee Meadows 2002 Regional Plan outlines that the Greater Reno/Sparks region will encourage and support growth in diversified industries such as clean manufacturing, technology, recreation, eco-tourism, business, and healthcare services.

Trend forecasts indicate continued prosperity for the Reno/Sparks region. Economic diversification, favorable tax climate, and proximity to California have been, and will continue to be, important economic growth factors for the region.

Towns along the corridor range in population from as few as 5,907 people in the City of Dayton to approximately 206,735 in the City of Reno. Though their demographics may, these communities have settlement pattern similarities. In general, the towns and cities within the study area can be classified in one of three categories. Urban areas, such as Carson City and Reno, are host to the region’s government and commercial centers. These cities serve as the population and service center for the northern Nevada region. Due to the recent growth in Carson City and the Reno/Sparks area, quiet agricultural communities such as Dayton, Minden and Gardnerville have transformed into rapidly growing bedroom communities. Over the ten year period between 1990 and 2000, Dayton experienced a 166% increase in its population. The final area is the Tahoe region with its dispersed communities and resort atmosphere. Unlike other cities in the corridor study, the greater Tahoe region is gradually experiencing a decrease in primary resident population and an increase in the second home population. In recent years trends indicate that northern Nevada is seeing an increase in second homeowners as people are leaving the area in search of a lower cost of living.

##### Land Ownership

The State of Nevada contains the highest percentage of federal lands among the contiguous 48 states, almost 83% (BLM, 2000). The Bureau of Land Management (BLM) owns the bulk of the

federal lands with small and large in-holdings by other public agencies and private landowners. In northern Nevada, most land is managed by BLM, US Forest Service (USFS), Bureau of Indian Affairs (BIA), and private landowners. Within urban areas, most land is privately owned, with the exception of land within the Lake Tahoe Basin and the mountains visible from the highway, most of which are owned by the USFS. Land ownership patterns in the state have not changed significantly over the last several decades, and this stability in land ownership has provided a level of visual continuity within the state.

Land ownership affects land use and the visual character of the landscape. Public agencies such as BLM and USFS operate under a multiple-use mandate. To the casual observer, a vast majority of the state may appear vacant and wild, but a closer look reveals that much of Nevada is a working landscape. From the highway, evidence of grazing, mining, power generation, and tourism is found on the multiple-use federal lands. Although NDOT’s jurisdictional influence over the landscape only extends to the edge of the right-of-way, agreements with other public agencies make it possible for NDOT to develop a common vision that will shape visual character and land use decisions for areas adjacent to the roadway as well.

##### Implications to the Corridor

The anticipated changes over the next twenty years most likely to influence the corridor include completion of major roadway facilities such as the Carson City Freeway and I-580, anticipated population growth in urban areas such as Carson City and Reno, and continued expansion of bedroom communities. In general, these changes will encourage residential suburban growth, business

park development, and neighborhood commercial uses. However, the changes may also result in excess road capacity along sections of highway that are bypassed. Reduced traffic pressure may eliminate the need for existing travel lanes and thereby allow for improvements such as multi-use trails and planted medians.

## Travel and Tourism

### Travel Patterns

Northern Nevada is home to many natural and historic treasures. The Nevada Commission on Tourism refers to the area incorporating Reno, Carson City, Dayton, Carson Valley, and Tahoe as the “Reno-Tahoe Territory.” Characterized by both the scenic beauty of Lake Tahoe and the mining history which helped to shape Reno and Carson City, the territory offers numerous opportunities for tourism. A majority of tourists within the Reno-Tahoe Territory begin their trips in the Reno/Sparks area due to the presence of the International Airport.

Travel patterns typically include visiting downtown Reno, Lake Tahoe, and the historic mining town of Virginia City. Therefore, some of the region’s most heavily traveled roads for tourism include US 395 north to I-80 and south from Reno to Carson City, SR 431 to Incline Village, US 50 from Carson City to Stateline, and SR 341 to Virginia City. Commuters regularly travel the highways from Carson Valley to Reno and Tahoe and from Dayton to the Carson/Reno area.

### Overview of Existing Travel Facilities

Highways play an important role in connecting people to their surroundings. Visitor centers, view points, and community signage help travelers understand the natural and cultural features that

render a place unique. State highways can improve their role in promoting and facilitating travel to key local, state, and national tourism destinations. For example, it is not easy for travelers to discern the fact that they are driving along a Pony Express route or through the oldest town in Nevada. Signage notifying drivers of upcoming viewpoints can be more consistent. Signs pointing to historic markers can be updated to provide proper direction to the marker, and the sign color can be modified to minimize the impacts of fading. Enhancements should make markers easier to notice and give the driver advance warning of turn-offs. Marker sites should be reviewed as the surrounding development changes in order to minimize signs in obscure and unattractive locations.

Travel and tourism facilities consist of rest areas and information centers. These facilities can provide both traveler services and information regarding historical, cultural, and environmental features in the region, as well as important information about tourist destinations. Only a few highway services (such as formal rest areas, truck stops, and/or pull-outs) accommodate highway travelers along the corridor. The existing facilities can be improved by taking full advantage of an area’s unique features and incorporating an enhanced overall design and architectural consistency.

### Opportunities to Enhance Travel Facilities

The rest area provided along US 395 near Holbrook Junction is an example of a facility that could incorporate the corridor’s history, regional architectural styles, and environmental features. Throughout the corridor an opportunity exists to present a better image of the state through the design and placement of highway facilities that connect people to the places they are visiting.

Rest areas should be planned and designed in a consistent and comprehensive manner. In the vast rural areas of the highway, travelers can suffer from driving fatigue. Rest areas are an important safety element of highway corridors. One rest area located every hour is typical; however, important historical, cultural, and/or natural site features should also serve as criteria for determining specific rest area locations. Major site features to be considered in the location and design of rest areas include topography, views and vistas, vegetation patterns, cultural or historical features, water elements, geological features, wetlands, and other inherent site and environmental qualities. In addition, there is potential for rest areas and/or viewpoints to be located and designed as part of a larger trail or recreation system, such as a gateway to public lands, parks, and other tourist attractions in the region.

Community rest areas can be developed as part of a partnership with the town. These facilities provide services to travelers and encourage visitors to stop in a town, rather than on its outskirts, to rest.

Adequate rest area facilities should include restrooms, picnic area, pet exercise areas, paved parking, fresh drinking water, interpretive exhibits, and local area information. Viewpoints and points-of-interest within the Lake Tahoe Basin should be properly signed in order to allow travelers to locate safe pull-offs. Regional architecture, sensitive to the mountain and Great Basin environments, should be encouraged for all structures and facilities. In addition, where landscaping is implemented, attention to drought tolerant landscape treatments is not only sensible, but essential to the success of highway landscaping.



(1)



(2)



(3)



(4)

(1),(2),(3),(4) Highways play an important role in connecting people to outdoor recreation opportunities such as skiing, boating, balloon races, and mountain biking.



(5) Rest areas should provide a comfortable separation from the highway. Siting should consider views and vistas, vegetation patterns, cultural or historical features, and other site and environmental qualities.





(1) The Carson River, visible along much of US 50 from Dayton through the Carson Valley, provides recreation opportunities and contributes to the scenic value of the corridor.



(2) Low-water use plant species selected for landscape improvements along roadways help to conserve water. Native vegetation patterns should be used as a reference for landscape design.

## NATURAL RESOURCES

### Water Resources

#### Natural Systems

The primary hydrographic regions underlying the corridor are the Lake Tahoe Basin, the Carson River and Truckee River Basins, and the Western Hydrographic Region. The Lake Tahoe Basin, visible along US 50 near the California state line, is famous for its scenic beauty, clear blue water, and abundant wildlife and recreation opportunities. The Carson River and many small bodies of water and tributaries are visible along much of US 50 from Dayton through the Carson Valley. The Truckee River and its tributaries traverse the eastern Sierra front range from the rim of Lake Tahoe to the river's terminus in Pyramid Lake. Many of the smaller surface water features that are part of this hydrologic system contribute to the scenic value of the corridor, particularly Washoe Lake and the many small creeks that drain eastward from the Sierra Nevada Range. The northern stretch of US 395 from Reno to the California state line crosses the Western Hydrographic Region. This portion of the corridor is characterized by more ephemeral hydrologic features typical of the Great Basin, but also includes Honey Lake, a large shallow lake that serves as a primary water source for small communities in the area.

Much of the corridor lies within the rain shadow of the Sierra Nevada Range. Although the region receives limited rainfall, it benefits from the runoff generated by the substantial precipitation that falls as snow at higher elevations. Most of the runoff is channeled into the Lake Tahoe Basin, however, the Carson River and Truckee River watersheds also receive a portion.

### Water Use Regulations

Due to the limited water availability, significant regulations have been implemented to protect existing water resources and water quality. Water resources for the majority of the urban study area are administered by the Reno/Sparks Truckee Meadows Water Authority. 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 to development. Many communities and water districts have landscape ordinances and policies that focus on water conservation. The corridor plan recognizes the need to promote water conservation through design that incorporates low-water use vegetation. NDOT requires interlocal maintenance agreements with communities in order for irrigation to be used on projects.

### Vegetation

The Vegetation Community information for this report is based on "Mapping Ecosystems Along Nevada Highways and the Development of Specifications for Vegetation Remediation" completed by the University of Nevada at Reno for the Nevada Department of Transportation. The highways within the corridor are situated in the transition zone between the Great Basin and Sierra Nevada ecological communities. The region is characterized by the north-south and often snow-capped mountain ranges bounding adjacent valleys. Pinyon/juniper/sagebrush plant communities occur at higher elevations and Salt Desert Shrub communities occur at valley floors with sagebrush in between. Generally, the land along the highway is arid, with the exception of agricultural fields, areas where rivers and streams are sustaining pockets of riparian vegetation, and pine/fir forested areas in western Nevada near Lake Tahoe.

Sagebrush is the most prevalent type of vegetation. At low elevations the sagebrush communities are dominated by three varieties; Wyoming Big Sagebrush (*Artemisia tridentata* var. *wyomingensis*), Basin Big Sagebrush (*Artemisia tridentata tridentata*), and Black Sagebrush (*Artemisia nova*). Upper elevation sagebrush communities occur at 5,800 feet and are dominated by Mountain Big Sagebrush (*Artemisia tridentata* var. *vaseyana*) with Low Sagebrush (*Artemisia arbuscula*) occurring over ridges and/or passes. Rabbitbrush (*Chrysothamnus* spp.) and Mormon Tea (*Ephedra* spp.) also occur in these plant communities.

Plant communities and native vegetation patterns should be used as a reference for landscape design along the corridor. Understanding these different vegetation community types is critical to the success of revegetation projects associated with highway improvements. Each community has unique soil and hydrologic characteristics that must be considered to ensure successful revegetation.

### Wildlife Habitat and Migration

Nevada is home to a diversity of wildlife. Lack of water, combined with extensive federal government landholdings, renders much of rural Nevada as open and undeveloped, providing excellent wildlife habitat for a number of species.

Availability of quality habitat largely determines the abundance and distribution of all wildlife species. Habitat fragmentation occurs because of the spread of human activities, including road construction. By identifying habitat areas adjacent to the highway and wildlife movement corridors, the corridor plan will serve as a tool for reducing vehicular/wildlife conflicts and preserving exist-

ing wildlife resources. Locations along highways where significant collisions occur are prime candidates for wildlife crossing retrofit projects. Future improvement projects should pay particular attention to the location of existing high quality habitat areas to ensure that wildlife crossings and warning signage can be appropriately located. Throughout the Lake Tahoe Basin, particular attention should be given to retrofitting existing highway facilities that have disrupted wildlife corridors.

The species most commonly associated with vehicular/wildlife collisions within the corridor are deer and bear. Road kill data collected for the corridor indicates conflict areas near Holbrook Junction north of Topaz Lake and along US 50 around Dayton. Black bear habitat includes the foothills of the Sierra Nevada Range and other nearby mountains such as the Carson Range. Additionally, the Lake Tahoe Basin has the second highest density of black bears in North America. Crossing signs are located along US 50 to instruct drivers to be aware of potential bear crossings. Deer are common throughout the corridor, and have been shown to consistently cross a stretch of US 395 between Reno and Carson City.

## ENVIRONMENTAL CONSIDERATIONS

### Mapping of Environmental Features

The landscape of northern Nevada has many special environmental features, including plant communities, rivers, lakes, playas, wildlife, rock outcroppings, cliffs, and mountain ranges. These resources provide opportunities to create viewpoints, preserve natural systems, and enhance wildlife movement corridors.

To assess the environmental features, data was gathered from a variety of sources and analyzed according to its relationship to the corridor highways. Data included in the analysis includes wildlife habitats, lakes and playas, and riparian systems. Additional data obtained from the BLM identifies unique features of significant influence, including: Sand Dunes, Wildlife Refuges, National Conservation Areas, and Areas of Critical Environmental Concern (ACEC). The BLM designated areas as ACEC to preserve areas with unique biological, geological, historical, or scenic features. The boundaries shown are taken from the BLM database.

Wilderness areas and ACEC are specially designated areas that should be carefully considered with all highway construction projects. Stands of pinyon-juniper are unique plant communities that should also be considered as they provide a unique experience along the highway corridor. All stands that are visible from the highway were mapped.

Public agency coordination is essential to maintain environmental and visual quality. Many of the environmental features that should be interpreted or protected are located on land outside of NDOT jurisdiction. Therefore, coordination between public agencies is crucial to creating a cohesive vision that will affect land use decisions, facility placement, and environmental standards utilized on adjacent lands.

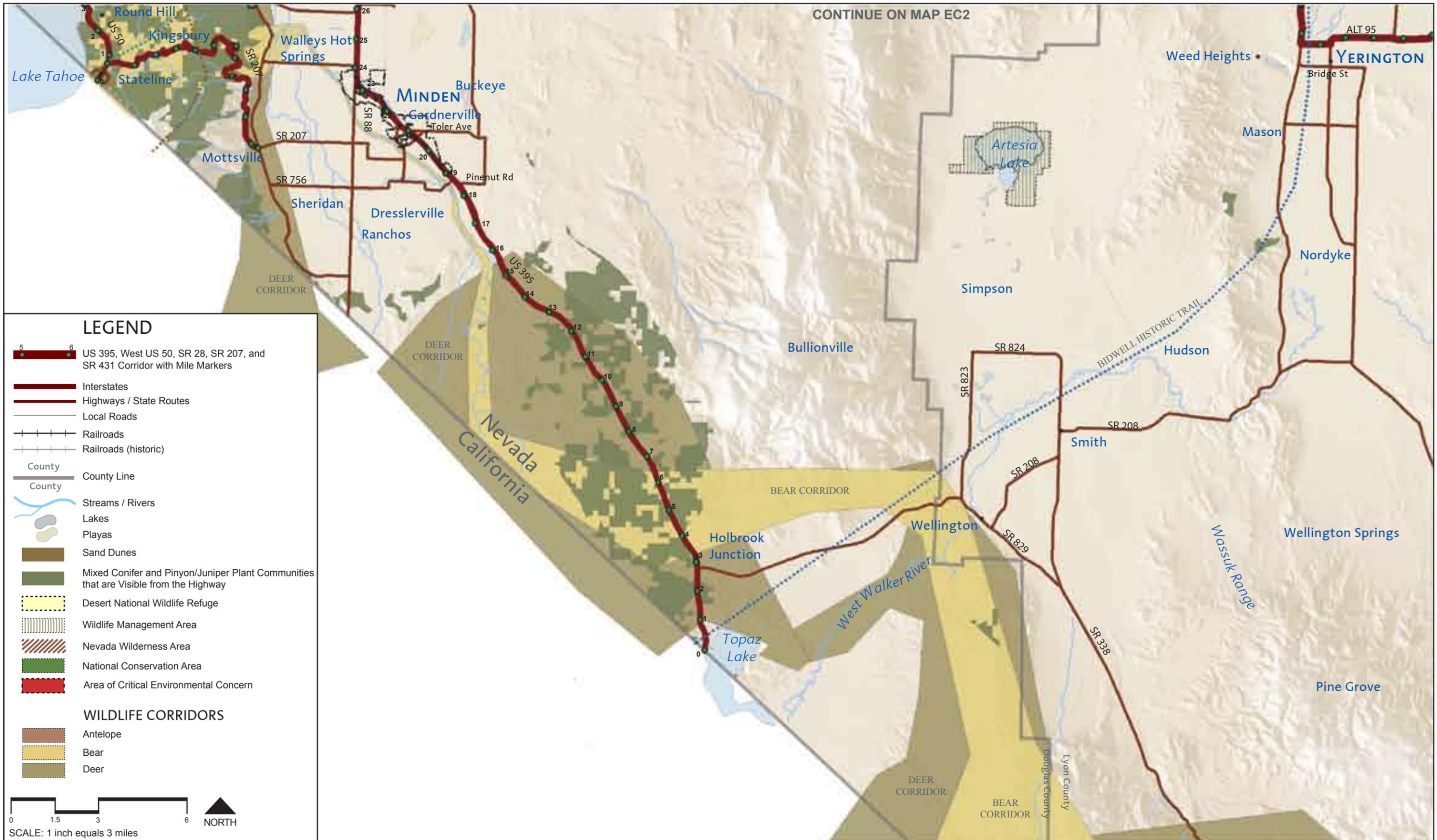
The Tahoe Regional Planning Agency (TRPA) is a bi-state regional environmental planning agency charged with protecting the lake and surrounding environment of the Tahoe Basin. The agency adopted environmental quality standards, called thresholds, as well as ordinances to achieve the thresholds. Consistent coordination with the agency is key to developing a comprehensive project that addresses a range of environmental issues in the highly regulated area.



**(1)** A unique rock outcropping along US 50 to Lake Tahoe adds visual interest to the corridor. It also influences the type of design features that should be considered for use along the highway.



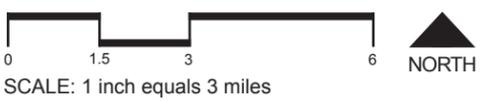
**(2)** Wild horses and many other wildlife species can be found along the corridor. Agency coordination with the Division of Wildlife is critical to providing appropriate crossing structures.



CONTINUE ON MAP EC2

**LEGEND**

- US 395, West US 50, SR 28, SR 207, and SR 431 Corridor with Mile Markers
- Interstates
- Highways / State Routes
- Local Roads
- Railroads
- Railroads (historic)
- County
- County Line
- Streams / Rivers
- Lakes
- Playas
- Sand Dunes
- Mixed Conifer and Pinyon/Juniper Plant Communities that are Visible from the Highway
- Desert National Wildlife Refuge
- Wildlife Management Area
- Nevada Wilderness Area
- National Conservation Area
- Area of Critical Environmental Concern
- WILDLIFE CORRIDORS**
- Antelope
- Bear
- Deer



**MAP EC1**  
**1.24**

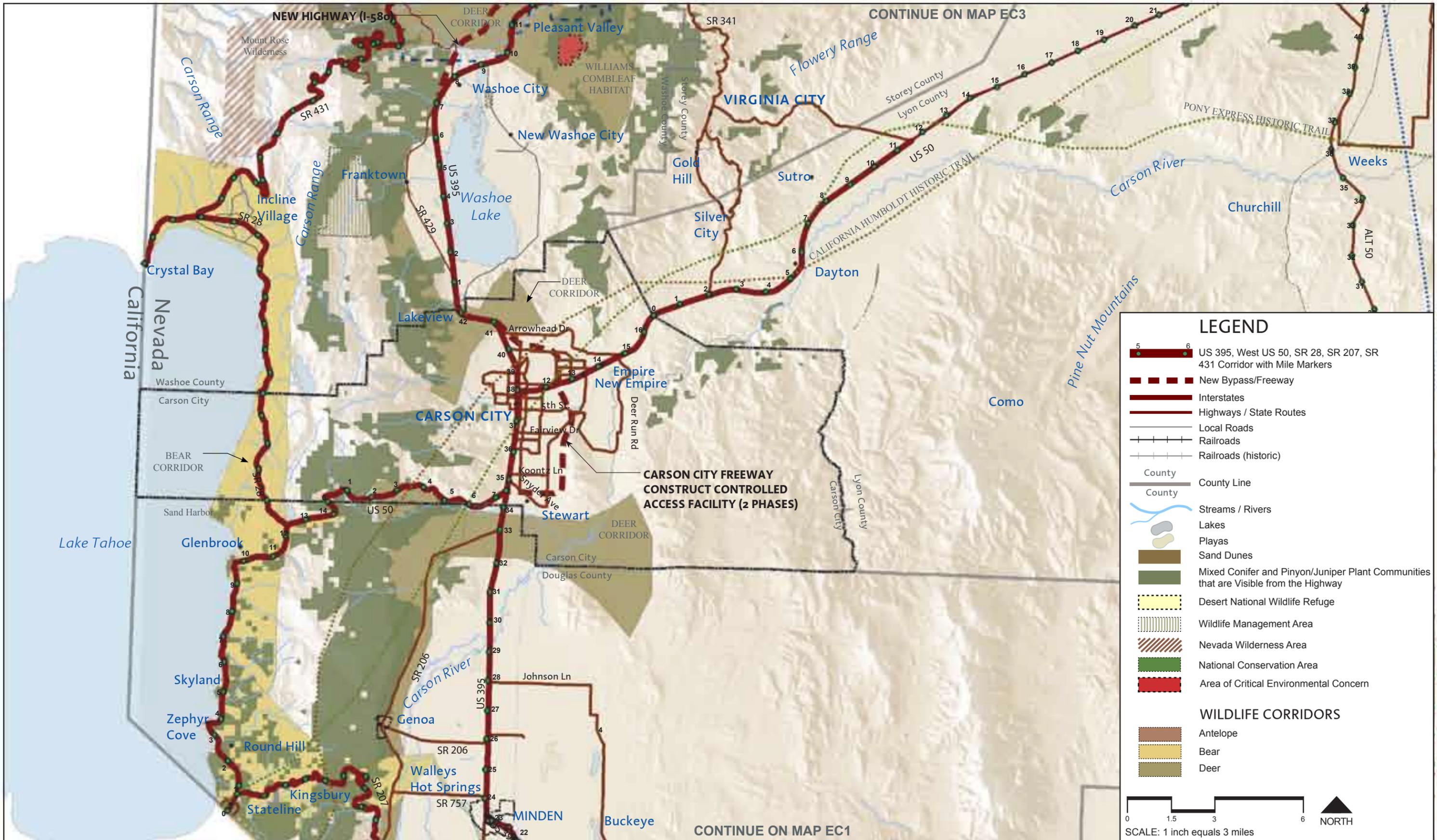
**DESIGN WORKSHOP**  
 PLACES  
 Sand County Studios  
 JW Zunino & Associates  
 CH2MHill

CONSULTANT TEAM

**ENVIRONMENTAL CONSIDERATIONS**  
**TOPAZ LAKE TO MINDEN**

*US 395, West US 50, SR 28, SR 207, and SR 431 landscape and aesthetics corridor plan*





US 395, West US 50, SR 28, SR 207, and SR 431 landscape and aesthetics corridor plan

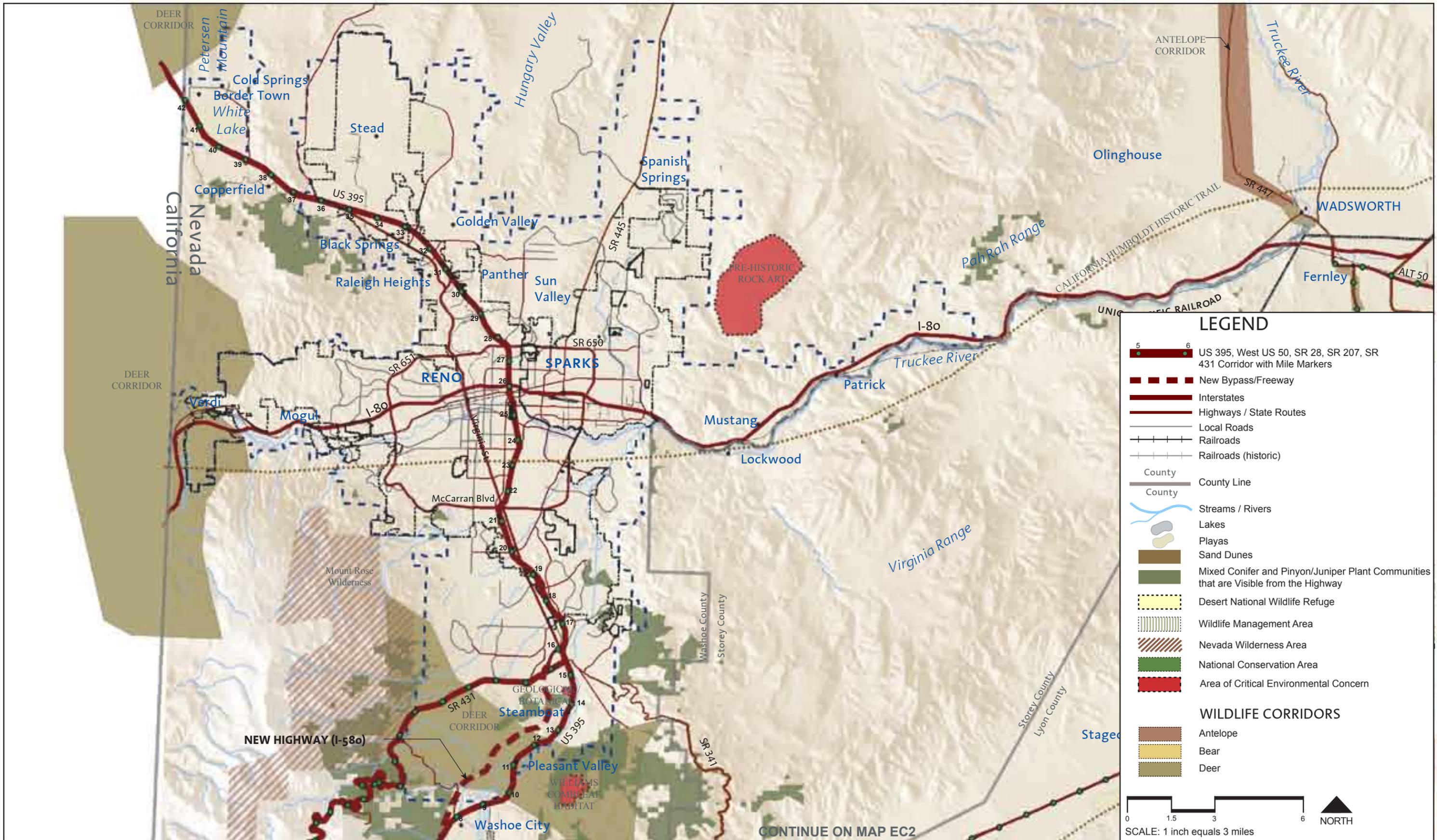


**ENVIRONMENTAL CONSIDERATIONS**  
MINDEN TO WASHOE VALLEY

**DESIGN WORKSHOP**  
PLACES  
Sand County Studios  
JW Zunino & Associates  
CH2MHill

**CONSULTANT TEAM**

**MAP EC2**  
**1.25**



**ENVIRONMENTAL CONSIDERATIONS**  
**WASHOE VALLEY TO BORDER TOWN**

US 395, West US 50, SR 28, SR 207, and SR 431 landscape and aesthetics corridor plan

## VISUAL RESOURCES

## 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. 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.

Areas within a viewshed are perceived by drivers with varying levels of detail. The detail that a driver perceives is related to the distance between the driver and the feature being observed. Distance zones, including foreground zones, middleground zones and background zones, define the traveler's viewing distances. 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. Identifying the portions of a viewshed that are most frequently seen helps determine what portions of the landscape are most critical to establishing the highway's visual character and what areas are most sensitive to change.

## Foreground Zones

Viewers can perceive details such as forms, lines and colors up to a one-quarter mile distance. Changes to the landscape are most significant within the foreground view because they are most immediate to the viewpoint. This zone can be most easily manipulated through the Landscape and Aesthetic Program, in part because it includes the highway right-of-way.

## Middleground Zones

Viewers can perceive details such as forms, lines, and colors in masses located from one-quarter mile to three miles away.

## Background Zones

Background is the area beyond the middleground, extending to the horizon or limit of the area that is seen. For this Corridor Plan, the background extends up to 25 miles from the centerline of the highway. Viewers can perceive broad forms, lines, wide valleys, distant hills, and mountains.

## Viewshed and Distance Zones Mapping

Viewsheds and distance zones along the corridor are shown on the maps beginning on page 1.29. This analysis sets the foundation for visual quality management along the corridor. Darker shading denotes an area that can be seen most often from points on the highway. These areas usually coincide with landscapes of high visual quality and scenic values 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.



(1) This illustration describes the concept of a viewshed and how a viewshed analysis is conducted.



(2) Viewers perceive details such as forms, lines, and color in the foreground zone. This zone, located up to a 1/4 mile distance from the road is the most easily manipulated because it includes the highway right-of-way.



(3) Middleground zones extend from 1/4 mile to 3 miles from the highway. Forms, lines, and color are perceived in masses. Potential development and signage impact these areas.



(4) Background zones extend to the limit of area that is seen. Viewers perceive broad forms, wide valleys, and distant mountains.



**(1), (2)** Scenic resources in the Tahoe Basin include the crystal blue water of the lake and the surrounding forests. Unnatural rock cuts negatively influence the visual quality and can affect a roadway's scenic categorization.

### Scenic Resources

The corridor offers some of the most scenic and diverse views found in the state, ranging from highly developed urban areas to dramatic alpine lakes. Spectacular views occur throughout the drive around the Lake Tahoe Basin and over the high mountain passes. The highways also pass through vast agricultural valleys flanked by dramatic mountain vistas, reinforcing the inherent natural and rugged beauty of the area. The combination of scenic and contrasting landscapes creates a memorable impression for visitors, and provides an indelible sense of identity for those who live in the region.

The Tahoe Basin has unique scenic regulations as part of the Scenic Quality Improvement Program established by TRPA. The program divides the roadway into units that are rated by the visual quality of both natural and man-made environments. Criteria such as unity, vividness, variety and intactness are used to evaluate how well a road unit fits within its surroundings. Sections of road that blend with their surroundings are considered to be in scenic attainment. Those not in attainment can upgrade their rating by making improvements outlined by TRPA. As of the summer of 2006, the following units are not in scenic attainment: Spooner Summit and the Casino Area in Stateline. Recommendations for improvement include enhancing roadcuts, replacing oversized, reflective guardrails, and sensitively designing night lighting. (TRPA 2001 Threshold Evaluation)

### Visual Analysis

A visual analysis was conducted along the corridor to evaluate the viewsheds and rank them relative to their quality. Scenic resources were identified and highly visible landforms, such as mountain ranges and unique cliffs, were located. Verified through site visits, the visual analysis is shown on Maps VA1-VA3. Areas of highest scenic value include:

- Lake Tahoe and its surrounding mountains offer spectacular vistas within a unique landscape. Views to the lake, combined with filtered views through the forest, enhance the traveler experience. Open meadows and granite outcroppings impart an added scenic interest.
- Portions of Carson Valley southwest of Gardnerville are especially scenic because of the contrast of open ranchlands and high mountains.
- Topaz Lake lies on the California border along US 395. The lake provides scenic interest in contrast to the surrounding arid landscape.
- The Carson Range provides a scenic backdrop and enhances the visual quality of the western side of Washoe Valley.
- The open sagebrush country of Washoe Valley is bounded by the Carson Range. Scenic wetlands and ranchlands enhance the visual setting.
- The Carson Range and Virginia Range west and east of Reno are scenic resources of northern Nevada. Attractive evening shadows accentuate the mountain backdrop.



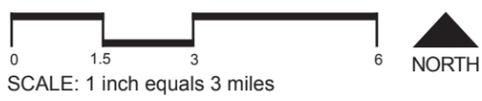
CONTINUE ON MAP VS2

**LEGEND**

- US 395, West US 50, SR 28, SR 207, SR 431 Corridor with Mile Markers
- Interstates
- Highways / State Routes
- Major Roads
- Railroads
- Railroads (historic)
- County
- County Line
- Truckee Meadows Service Area Boundary
- City Boundary
- Streams / Rivers
- Lakes
- Playas

**VIEWSHEDS**

- FOREGROUND DISTANCE ZONE
- MIDDLEGROUND DISTANCE ZONE
- 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

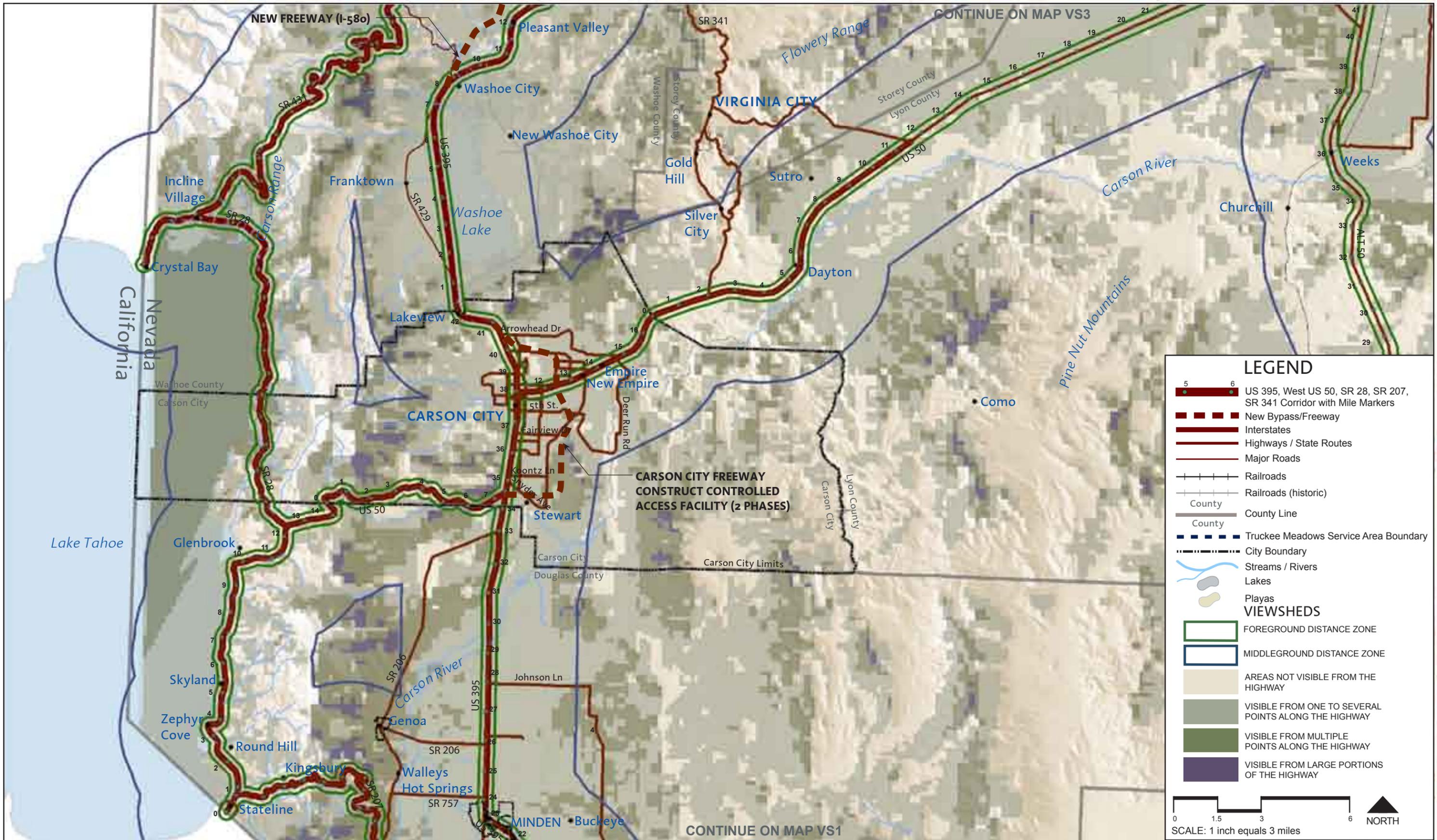


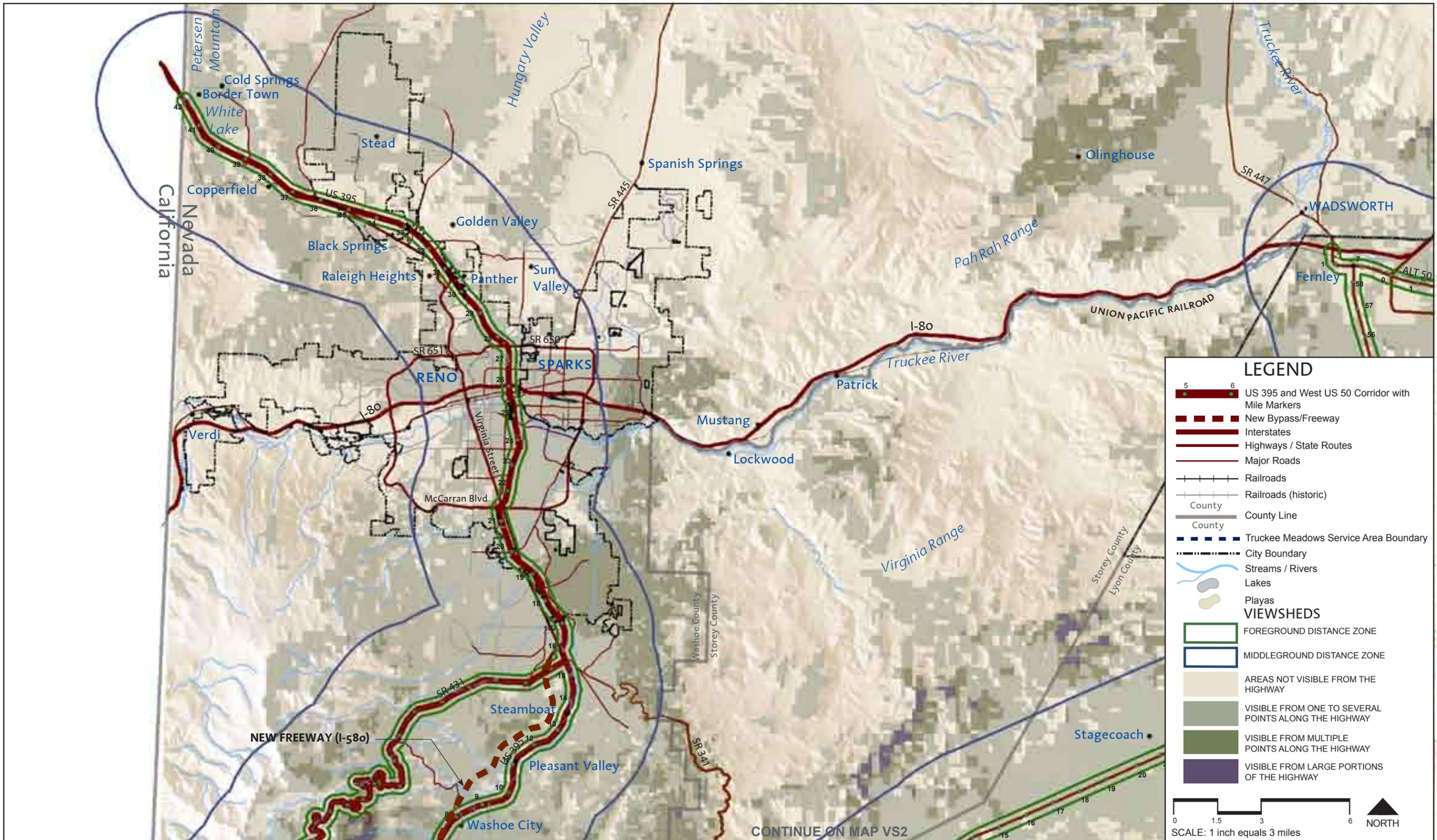
*US 395, West US 50, SR 28, SR 207, and SR 431 landscape and aesthetics corridor plan*



**VIEWSHEDS  
TOPAZ LAKE TO MINDEN**

CONSULTANT TEAM	<b>DESIGN WORKSHOP</b>	<b>MAP VS1 1.29</b>
	PLACES	
	Sand County Studios JW Zunino & Associates CH2MHill	





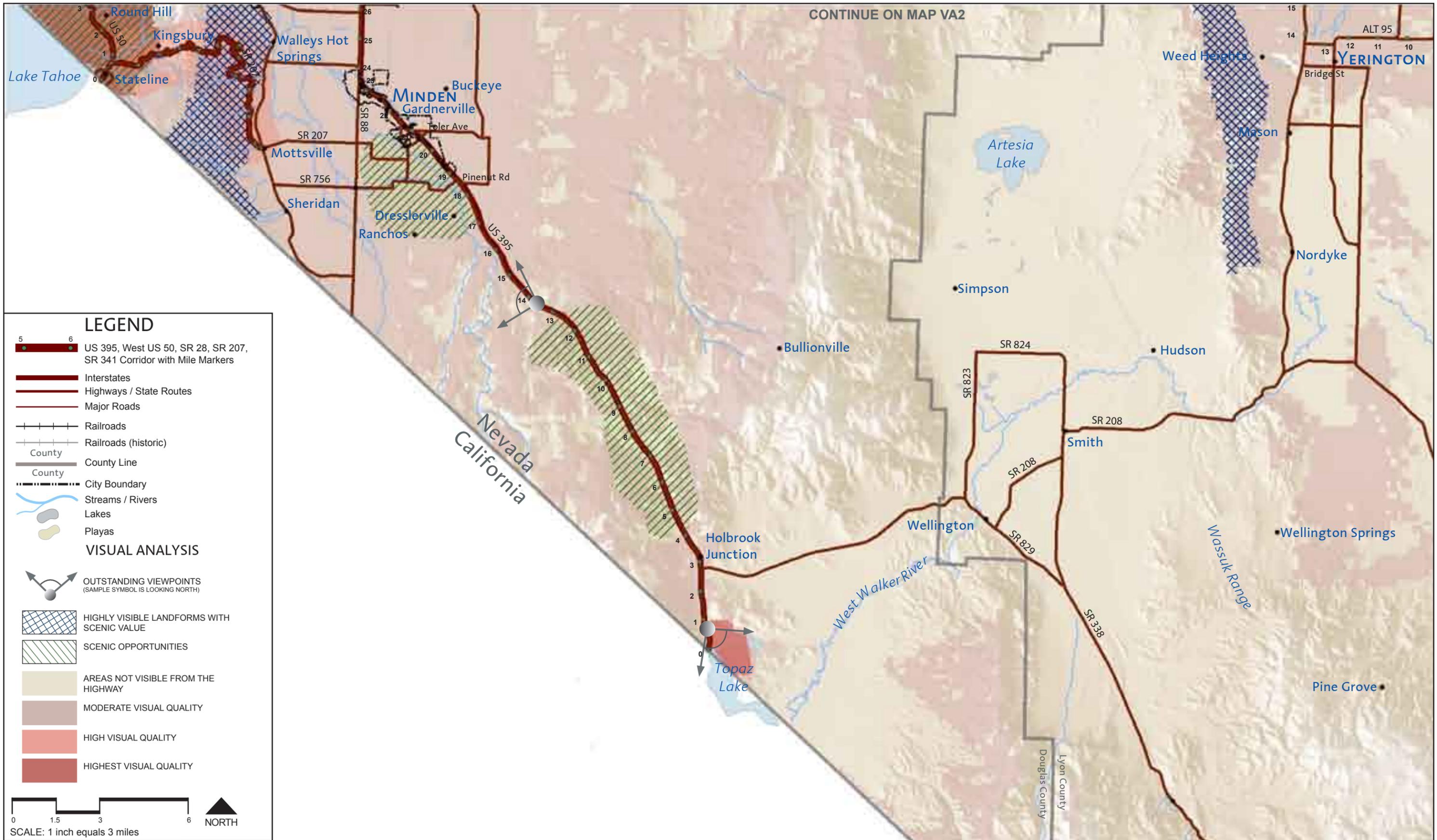
US 395, West US 50, SR 28, SR 207, and SR 431 landscape and aesthetics corridor plan



**VIEWSHEDS**  
**WASHOE VALLEY TO BORDER TOWN**

**DESIGN WORKSHOP**  
 PLACES  
 Sand County Studios  
 JW Zunino & Associates  
 CH2Mhill

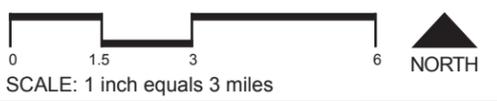
**MAP VS3**  
**1.31**



CONTINUE ON MAP VA2

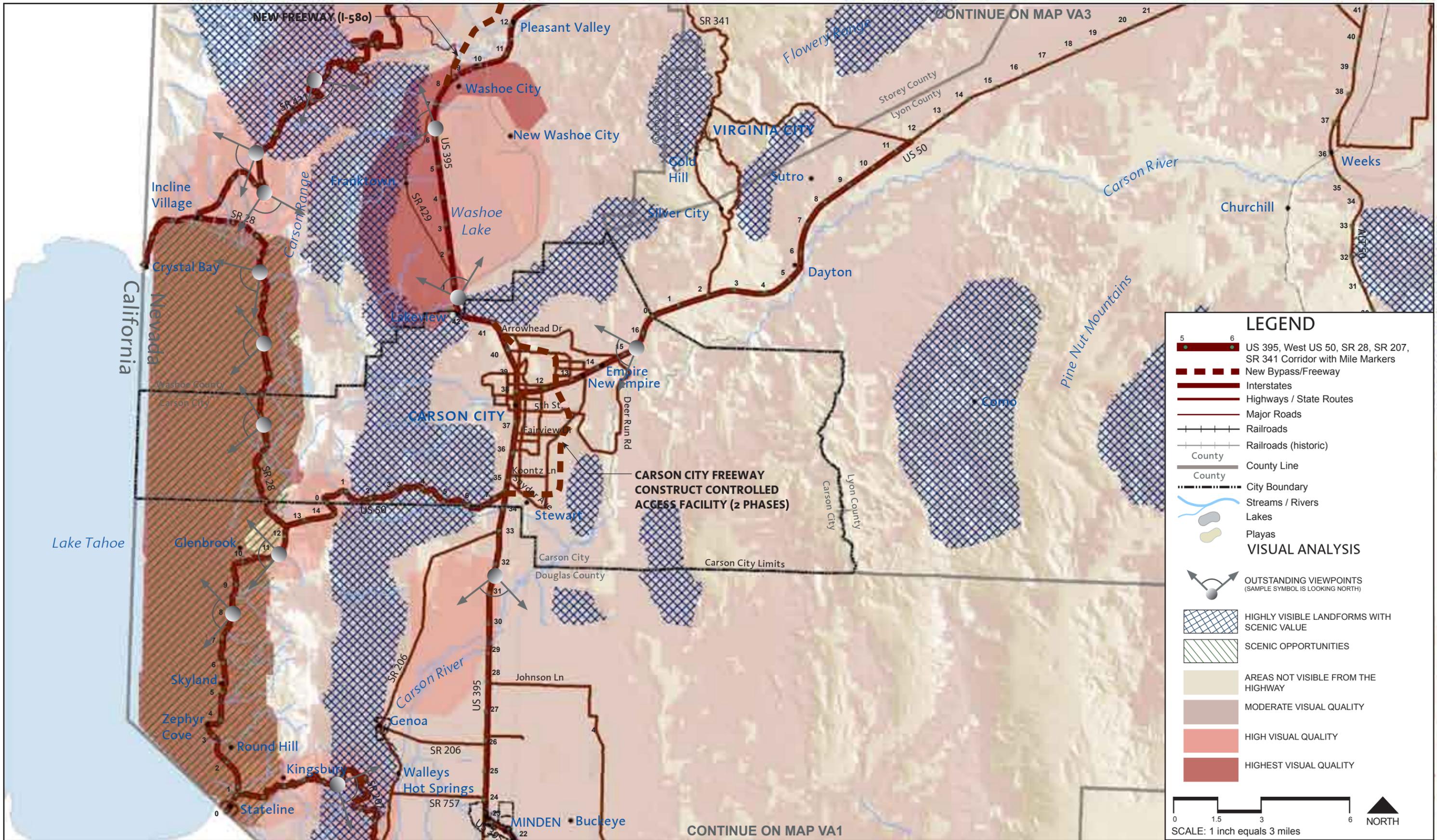
**LEGEND**

- US 395, West US 50, SR 28, SR 207, SR 341 Corridor with Mile Markers
  - Interstates
  - Highways / State Routes
  - Major Roads
  - Railroads
  - Railroads (historic)
  - County
  - County Line
  - City Boundary
  - Streams / Rivers
  - Lakes
  - Playas
- VISUAL ANALYSIS**
- OUTSTANDING VIEWPOINTS (SAMPLE SYMBOL IS LOOKING NORTH)
  - HIGHLY VISIBLE LANDFORMS WITH SCENIC VALUE
  - SCENIC OPPORTUNITIES
  - AREAS NOT VISIBLE FROM THE HIGHWAY
  - MODERATE VISUAL QUALITY
  - HIGH VISUAL QUALITY
  - HIGHEST VISUAL QUALITY

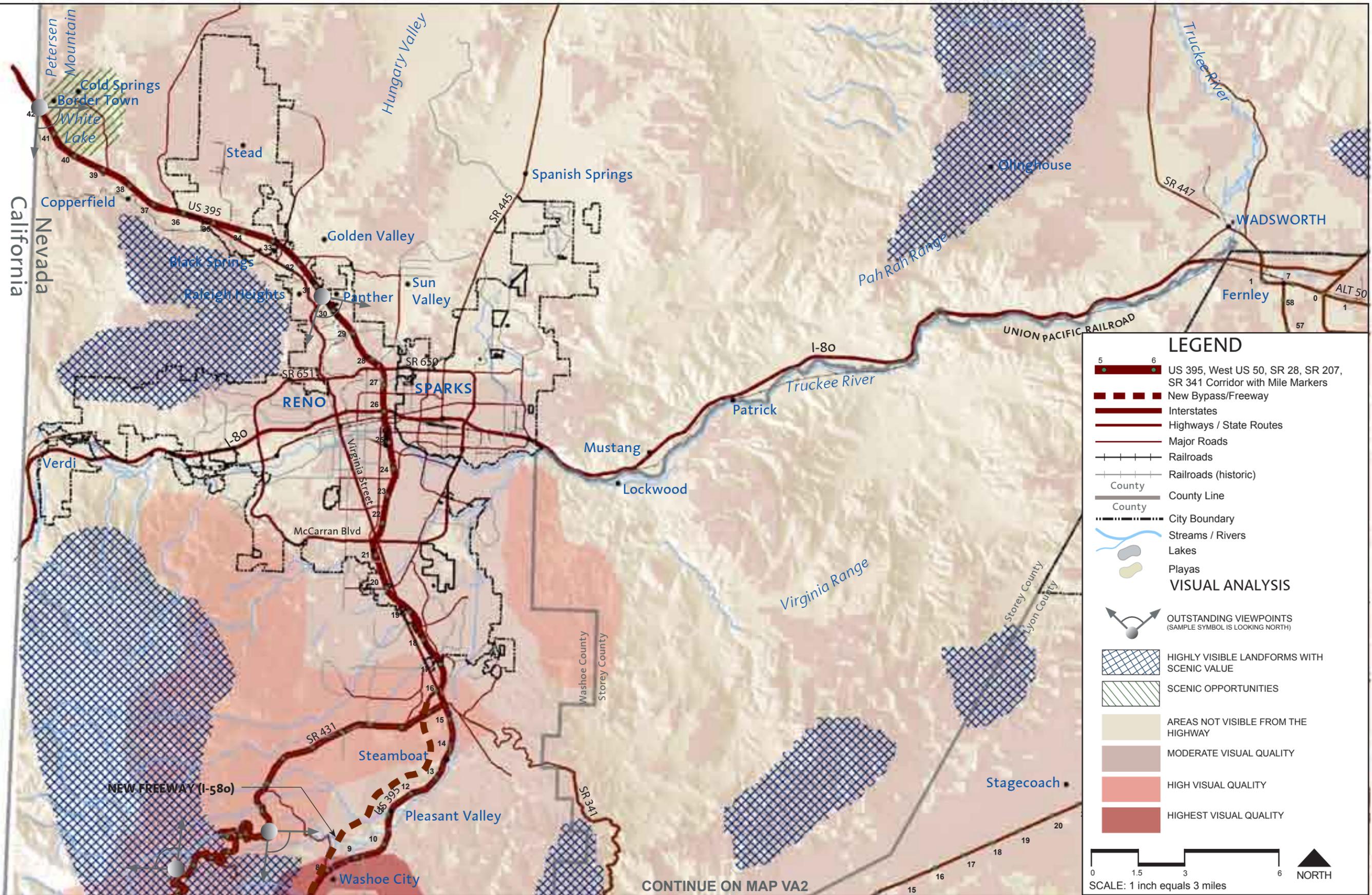


**VISUAL ANALYSIS**  
**TOPAZ LAKE TO MINDEN**

*US 395, West US 50, SR 28, SR 207, and SR 431 landscape and aesthetics corridor plan*

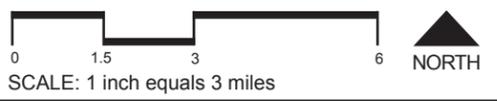


US 395, West US 50, SR 28, SR 207, and SR 431 landscape and aesthetics corridor plan



**LEGEND**

- 5 6 US 395, West US 50, SR 28, SR 207, SR 341 Corridor with Mile Markers
  - New Bypass/Freeway
  - Interstates
  - Highways / State Routes
  - Major Roads
  - Railroads
  - Railroads (historic)
  - County
  - County Line
  - City Boundary
  - Streams / Rivers
  - Lakes
  - Playas
- VISUAL ANALYSIS**
- OUTSTANDING VIEWPOINTS (SAMPLE SYMBOL IS LOOKING NORTH)
  - HIGHLY VISIBLE LANDFORMS WITH SCENIC VALUE
  - SCENIC OPPORTUNITIES
  - AREAS NOT VISIBLE FROM THE HIGHWAY
  - MODERATE VISUAL QUALITY
  - HIGH VISUAL QUALITY
  - HIGHEST VISUAL QUALITY



CONTINUE ON MAP VA2