

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 Pattern and Palette of Place* (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 recommendations of the Master Plan, the US 93, East US 6, and East US 50 Landscape and Aesthetics Corridor Plan (Corridor Plan) addresses Nevada's eastern highways (Figure 2). This plan establishes the vision for landscape and aesthetics for each highway, synthesizing historic, current, and future conditions to improve the visual quality of each corridor. The 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.

The study area for this Corridor Plan includes US 93 from the I-15 interchange to the Idaho state line at Jackpot, US 6 from Warm Springs to the Utah state line, US 50 from New Pass Summit to the Utah state line, and ALT 93.

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 approach is guided by the policy outlined in the 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 2 - Study area for Nevada's eastern highways



(1) The Corridor Plan establishes design concepts and guidelines that shape the design process of specific projects.

CORRIDOR DESIGN MANAGEMENT

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

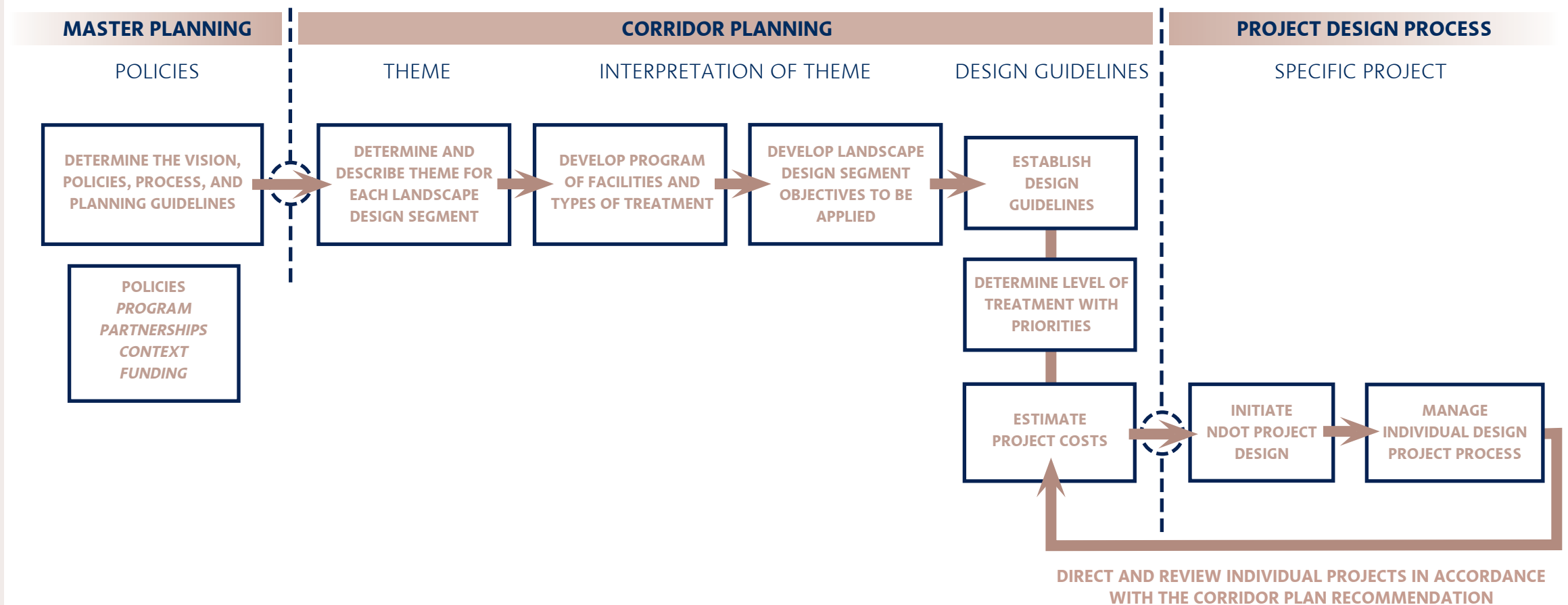
The first portion of the Corridor Plan establishes a theme, or central design idea, for each highway segment (also called a landscape design segment). Projects within each landscape design segment are guided by the theme, associated design objec-

tives, 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 Corridor Plan and are provided as part this report. NDOT will use the Corridor Plan as one of the tools to manage the design of highway projects. Prior to designing specific highway projects, NDOT personnel and the design consultant should review the Corridor Plan in order to understand the de-

sign idea and level of landscape treatment identified for 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 outlines the necessary steps to achieve a desired outcome for this corridor.

Figure 3 – Corridor Design Management



PUBLIC PARTICIPATION

Early and continuous public involvement was critical to the success of the 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:

- Identification of issues and concerns from each community
- A method, strategy, and action plan to address community concerns
- Opportunities for the public to express their level of support for the Corridor Plan
- Release of full information about the Corridor Plan through public meetings, the corridor planning 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 a public open house meeting.
- A fact sheet provided general information about the Corridor Plan.
- The public was able to visit a project web site to learn more about corridor planning activities.

Stakeholders for the US 93, East US 6, and East US 50 corridor were divided into three groups: a southern group held meetings in Caliente, a central group held meetings in Ely, and a northern group held meetings in Wells. Holding three sets of meetings shortened driving times to allow for better participation and representation.

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



(1), (2) 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.



(3) 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 degrees of softscape, structures and hardscape, statewide signage, rest area facilities, native wild-flower program, approaches to address outdoor advertising, scenic byways, anti-litter campaign, and a Main Street Approach. Although NDOT currently incorporates some of these elements, the Corridor Plan redefines them and, in some cases, establishes new facility types.

LANDSCAPE TREATMENT TYPES

Landscape treatment types include a combination of applications for both softscape and structures and hardscape. All sections of NDOT rights-of-way have an associated landscape treatment type to help define their design character and anticipated maintenance level. Softscape treatments vary from simple rock mulches to elaborate ornamental plant material. Similarly, structures and hardscape categories range from standard to landmark. 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 types is shown in Figure 4.

Figure 4 LANDSCAPE TREATMENT TYPES

		STRUCTURES AND HARDSCAPE TYPES AND TREATMENTS			
		STANDARD	ACCENTUATED	FOCAL	LANDMARK
SOFTSCAPE TYPES AND TREATMENTS	GROUND TREATMENT				
	NATIVE PLANT REVEGETATION				
	ENHANCED NATIVE				
	REGIONALLY ADAPTED				
	REGIONAL ORNAMENTAL				

Softscape Types and Treatments

Softscape types and treatments are compositions of plant material 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.

Ground Treatment

Ground treatments along the roadway provide 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.



Native Plant Revegetation Landscape

A palette of native southern Mojave or Great Basin plant material should be used to re-establish disturbed areas along the roadway. The primary focus is to cultivate native communities, such as sagebrush or blackbrush, and their associated grasses. Seedlings should be interspersed with mature plants, such as creosote bush or sagebrush, to establish a plant community character. Plantings should be sparse to mimic natural patterns and may require temporary irrigation to assure plant establishment. Soil enrichment with mulch, topsoil, and other amendments is required. Preparation techniques include roughening grade for seeding applications.



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

Enhanced Native Landscape

This treatment accentuates change by introducing a greater diversity of plant material from the Great Basin or Mojave Desert plant palettes. 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.

**Regionally Adapted Landscape**

Combinations of Great Basin or Mojave Desert plants and those from other dry land environments form this landscape palette. Greater densities and varieties of plant material are combined to create a layered effect. Trees provide a distinct overstory, while shrubs and perennials form a thick understory. Plants are selected for color, texture, seasonal interest, and form. For this landscape type to survive, drip irrigation to individual plants is required.

**Regional Ornamental Landscape**

Regional ornamental landscapes include a diversity of plant species, some of which are imported to this region. Ornamental landscapes introduce taller and denser plant material. 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.



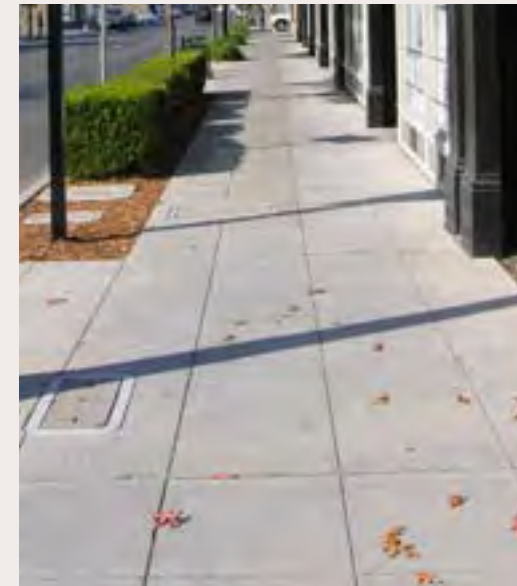
Note: These photographs are illustrative examples of the softscape types and treatments.

Structures and Hardscape Types and Treatment

The following classifications define a common language for the treatment levels used in 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, but does little to establish design character or placemaking. NDOT standards for surface treatment and lighting include painted finishes, vertical rustication formliners, and overhead poles with cobra head illumination or high mast area lighting. Regular trash and graffiti removal maintenance programs are necessary.



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 placemaking. 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.



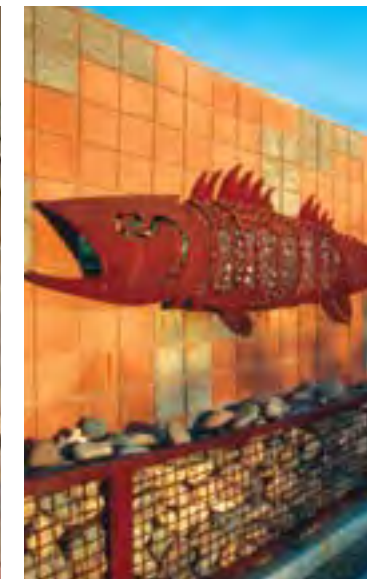
Note: These photographs are illustrative examples of the structures and hardscape types and treatments.

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.

**Landmark Structures and Hardscape**

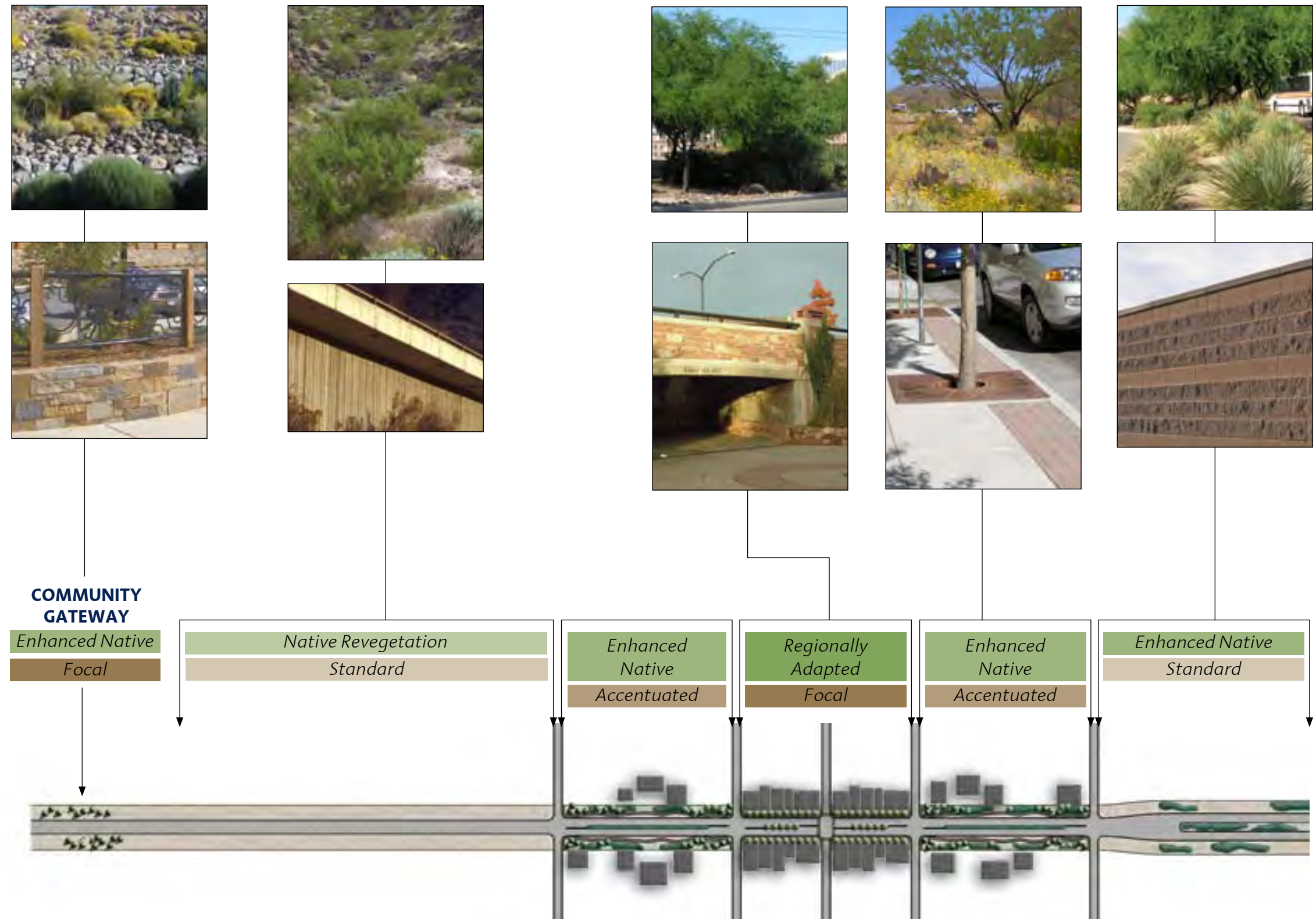
Landmark treatments call attention to unique elements. Extensive design treatments are used on bridge structures, retaining walls, acoustic walls, barrier rails, and pedestrian crossings. Unique formliner treatments on structural surfaces emphasize the special importance of a place. Subject and composition,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



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



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, historic sites, and local publicly owned attractions. Signs will welcome visitors and inform residents. In addition to stimulating local economies, signage will draw attention to these important assets and affirm 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. 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 existing, but separately

run, organization that utilizes signage and guide books to promote wildlife viewing areas.

An audio and multimedia interpretive program will be developed with the sign program. This program will provide travelers with audio interpretation of Nevada's history and natural features.

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 and landmarks, including cultural resources approved for public information
- Native American resources approved for public information (check Native American Grave Repatriation Act and other governing organizations)
- Mountains
- Rivers
- Sand dunes
- Mining
- Railroads
- Historic downtowns
- Ghost towns
- Emigrant trails
- Wildlife viewing areas

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

Interstate Level – 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 or MUTCD 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.

Highway Level – Directional Sign on State Roads

Used primarily along highway corridors, this secondary sign type provides information for features located on state roads and intersections. It will incorporate symbols and a directional arrow (see illus. 2 on page 1.12).

Signs will be post mounted and use reflective graphics/lettering on a metal panel in accordance with applicable FHWA or MUTCD safety standards. A maximum of four symbols will be used on each sign.



(1) Nevada contains numerous special resources of interest to visitors. Interpretation enhances the traveler's appreciation and understanding of the area.



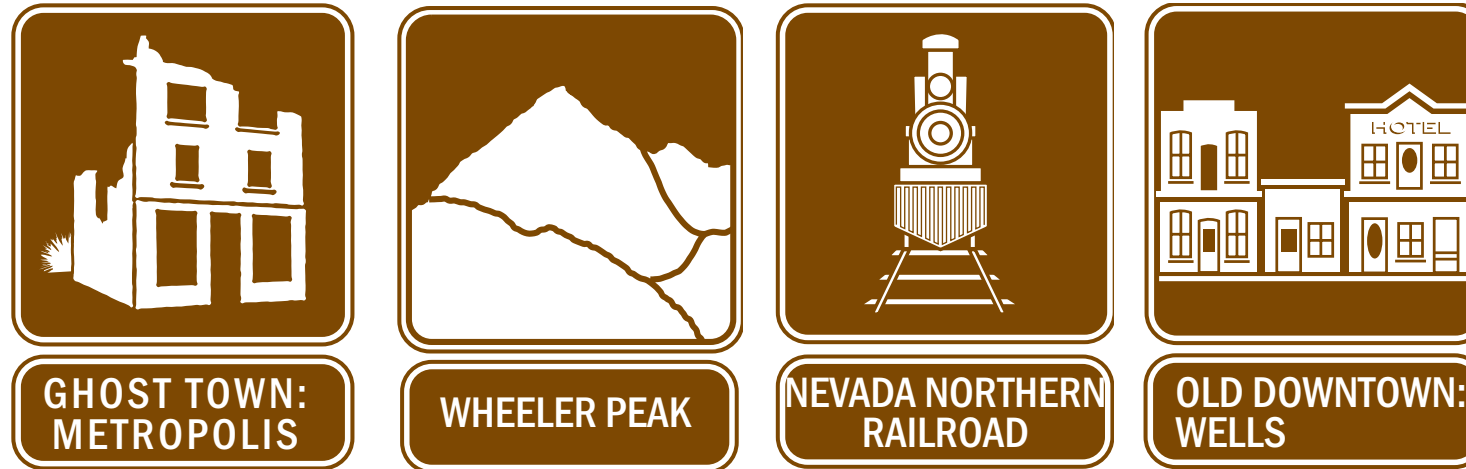
(2) Iconic signage clearly directs travelers to unique resources and destinations, such as areas of geological or recreational interest.

Highway Level – Scenic Overlook or Viewpoint

This sign type will be located prior to pull-offs and includes 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 or MUTCD safety standards. A maximum of two symbols will be used on each sign. Concise written descriptions are required to accompany iconic symbols.



(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 geological points of interest.

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 Rest Areas, Viewpoints, and Pull-offs guidelines on pages 3.14-3.16. These service areas provide travelers with designated spaces to rest, interpret history and geography, and discover information about nearby activities and communities.

Community rest areas are a special type of road service facility that serves several important functions within the corridor and for the community. These facilities are integrated within the town structure to serve residents and visitors. Community rest areas function like a pocket park or town square. They provide 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.



(2) Directional signs on State 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 gateway use a maximum of two symbols along with the distance to the pull-off.

NATIVE WILDFLOWER PROGRAM

Inspired by a vision of native plant species along rights-of-way to 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 landscape project be utilized for native wildflower plantings. The second is a voluntary program called “Operation Wildflower.” It 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 *Mapping Ecosystems along Nevada Highways and the Development of Specifications for Vegetation Remediation (Mapping Ecosystems)* 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” (Tueller, Post, and Noonan, 2002). As part of the wildflower program, plants should be utilized that do not create a fire hazard or overly attract wildlife.

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 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 http://www.agri.nv.gov/nwac/PLANT_NoxWeedList.htm.

Nevada’s Coordinated Invasive Weed Strategy (University of Nevada, 2002) 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 revegetation 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 with opportunities 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.

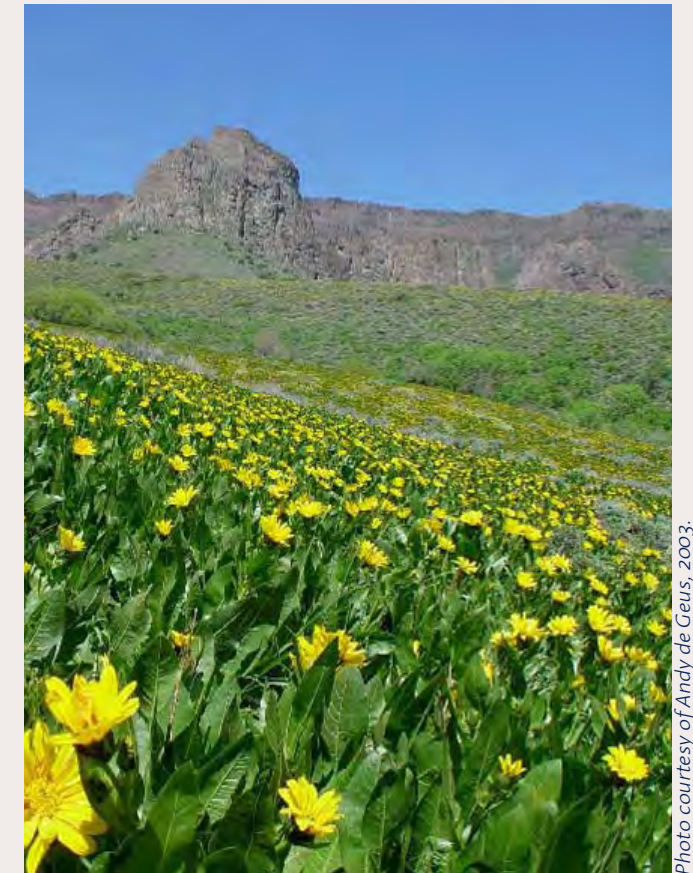
The Highway Beautification Act

The intent of the Highway Beautification Act (HBA) of 1965 is to control billboard construction along federal-aid highways and provide methods for the 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
- “Free coffee” signs promoted by nonprofit organizations

Limitations

In the 40 years since the passage of the HBA, few nonconforming 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



(1) The use of naturally occurring forbs and grasses as part of the Native Wildflower Program enhances the visual quality of roadsides and reflects the area’s natural beauty.

Photo courtesy of Andy de Geus, 2003.



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

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.

A 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. This 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 its 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. Proactively planning for appropriate placement, size, and design of billboards can address the issue before signs are erected.

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.



(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 complement the adjacent environment while informing travelers of services to come.



NEVADA SCENIC BYWAYS DESIGNATION

Nevada's Scenic Byways program was established in 1983. Since then, 21 scenic byways have been designated. US 93 from the SR 318 intersection north to Ely including US 50/US 6 from the US 93 intersection east to the Utah state line is the only byway located within the corridor area. Several Bureau of Land Management (BLM) Back County Byways are accessible from the corridor.

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 HBA prohibits the erection of new billboards along designated scenic byways that are inter-state, a part of the National Highway System, or federal-aid 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 (NCOT) 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 material. 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.

Scenic roadway opportunities consist 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 (USFS) 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 allows communities to promote special roadways and other modes of travel (such as boat, balloon, and train rides and 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. Scenic byway designation is reserved for routes approved by NDOT. The State Scenic Byways Committee, which is comprised of representatives of NDOT, NCOT, the Nevada Division of State Parks (NDSP), and the BLM, reviews and suggests approval. It is the NDOT Director, however, who makes the final designation. NCOT is responsible for the Local Tourism Route program. It reviews and approves all promotional material to ensure that scenic byway designation is not used for local tourist routes.

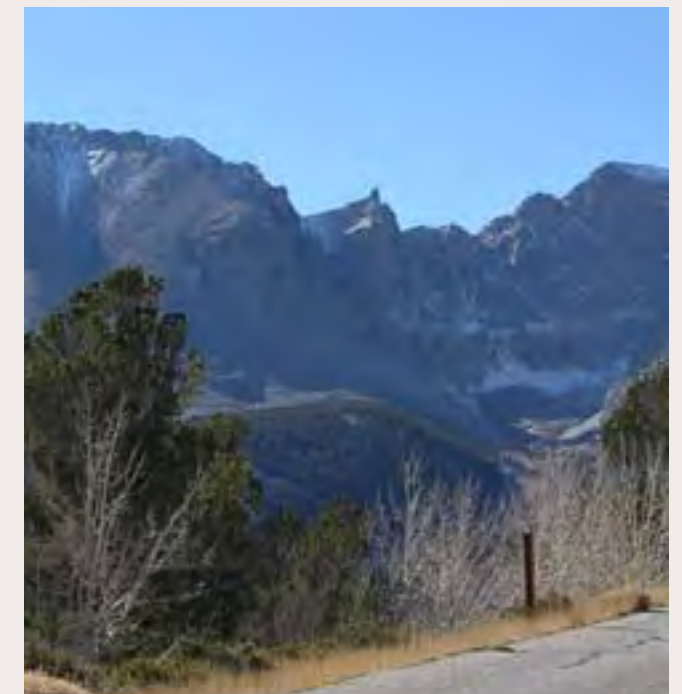
Levels of Designations Available

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 recertification 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.



(1) Scenic byways should include a simple iconographic image that is related to the place, as part of the State-wide Place Name Sign Program.



(2) Roadways designated as scenic byways have greater outdoor advertising controls than other highways, including the ability to remove billboards in some cases.



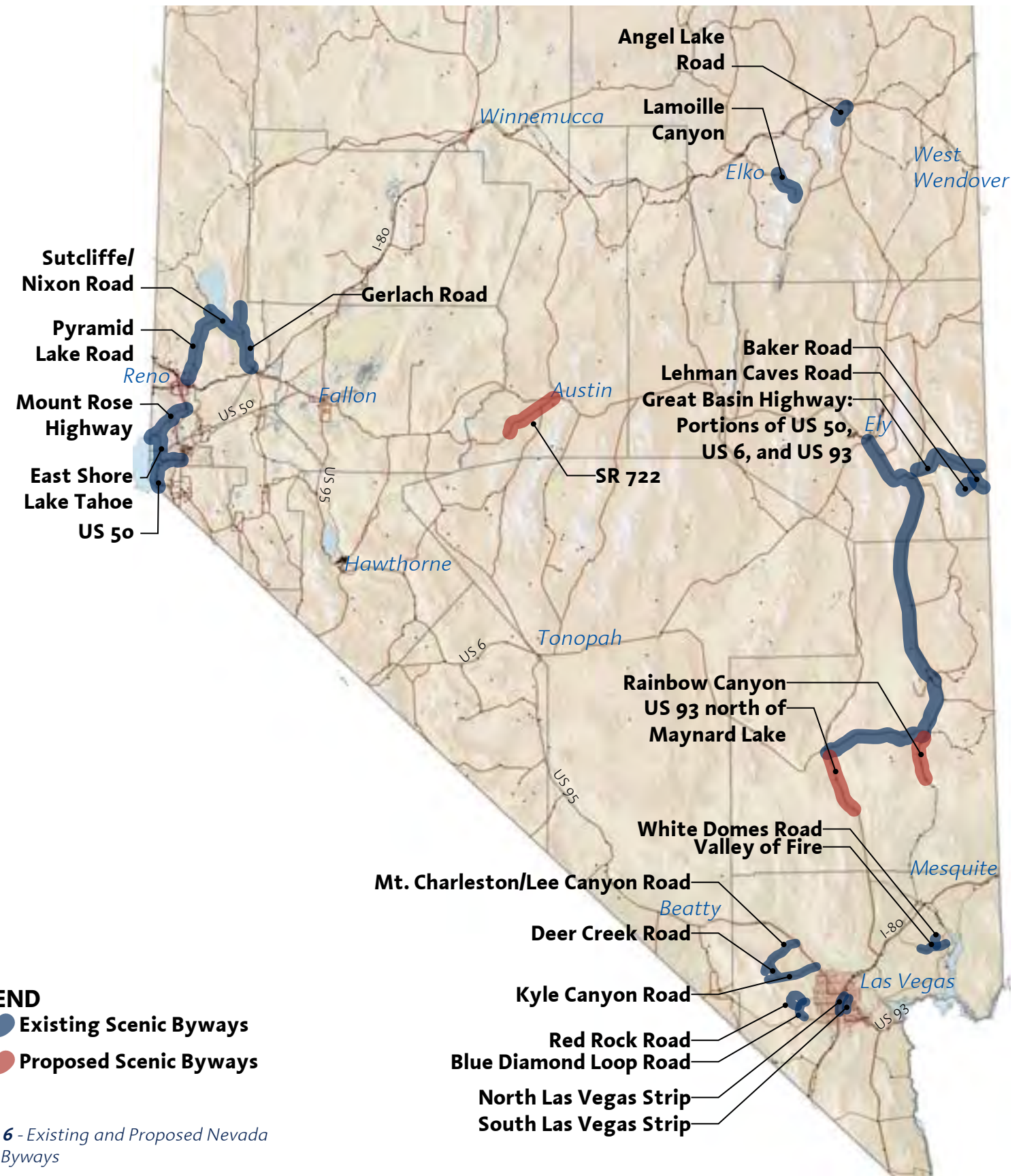
(1) In addition to increasing tourism opportunities, the use of a scenic byway designation provides mechanisms to preserve areas of high visual quality.

Nevada Scenic Designation

The Director of NDOT may establish a scenic designation for any section of highway right-of-way. The Corridor Plan recommends increasing the promotion of the Great Basin Scenic Byway along portions of US 50, US 93, and US 6 and highlighting access to numerous state parks and a national park. Three proposed scenic byways include:

- US 93 from Maynard Lake at the Pahrangat National Wildlife Range to the SR 375/318 intersection north of Alamo
- Rainbow Canyon south of Caliente
- SR 722 south of Austin

These proposed byways are coordinated with current community efforts to designate the highways as scenic.

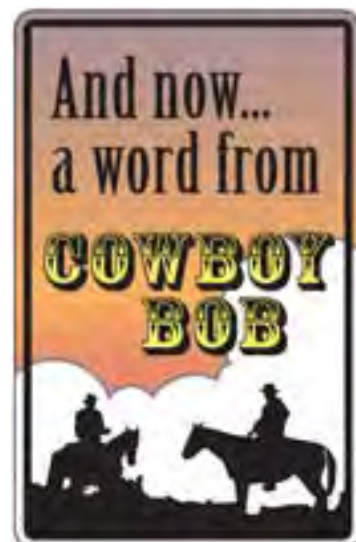


ANTI-LITTERING CAMPAIGN AND SIGNAGE

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.

Anti-litter messages should be part of a coordinated campaign. 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. The signs shown to the right illustrate potential anti-littering concepts. Final design ideas should follow MUTCD or be used as part of signage and collateral material on billboards or at rest areas.

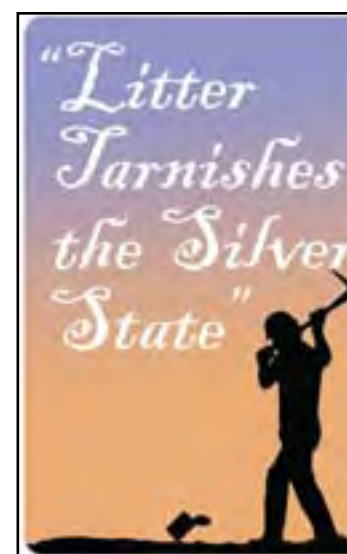
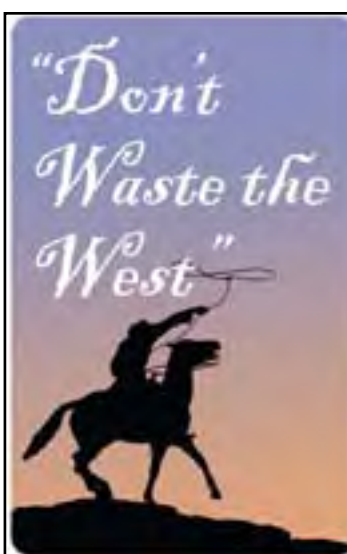
Distribution of campaign materials would be focused at travel-oriented locations such as welcome centers, rest areas, and truck stops. Coupled with promotional materials, an "Adopt-A-Highway," or "Sponsor-A-Highway" program would engage residents of Nevada, encouraging active participation in maintaining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



(1) Recurring character has changing messages reminding travelers to keep the highway litter free.



(2) Recurring character has changing messages reminding travelers to keep the highway litter free.



(3) Signage emphasizes the varied beauty and character of the west while providing anti-litter messages.

(1,2,3) The three examples above illustrate a concept for an anti-littering signage campaign that can be developed around common themes. Design continuity improves driver recognition of the anti-littering message while varying the message also maximizes driver awareness. Motorists are interested to see what the next message will be.



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



(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. Highway graphics and signage posted along the highway where trash accumulates is the most significant part of the anti-trash program.





(1) *The Main Street Approach uses street trees and other streetscape enhancements to improve 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.*

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.

The 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, while 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 information. 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 programs are many: improving aesthetics and safety of downtown areas, restoring historic buildings, and revitalizing economic viability. The program 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. Results include reduced vacancy rates and renovated or restored downtowns.

Physical improvements are quickly evident. Though long-term economic improvements may take up to three years to accomplish, the program’s impact on communities nationwide is indisputably positive and long lasting. Communities have experienced net gains in business development and job creation, with surges in local investment. Most importantly, community pride grows with increased personal involvement in a volunteer-driven program.

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, DC. 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 designated as a National Historic District qualify for more assistance through the program. Additional information can be obtained by visiting the Main Street web site at www.mainstreet.org.

SECTION THREE: Background Inventory

SOCIAL RESOURCES

Community Settlement Patterns and Growth

Urban Patterns

Eastern Nevada’s historic settlement is tied to travel and mining. Many of the region’s communities are located along early pioneer routes or were established as a result of mining discoveries. Over time, mining camps grew into towns and discovery routes grew into wagon roads and, eventually, the Nevada state highways. The towns within the eastern corridor are located in the least populated region of the State. While some areas are expected to experience significant growth because of spin-off from Las Vegas, other communities will face the continuing challenges of the boom and bust mining cycles that have characterized their past.

Corridor settlement remains relatively sparse and populations range from 450 people in the northeast quadrant of Nye County to approximately 4,500 people in the cities of West Wendover and Ely. Although demographics vary, the communities have similar settlement patterns due to their ties to agriculture, mining, and/or gaming. In addition, a traditional neighborhood street pattern and a main street/highway through the center of town are typical. In each county, a small number of communities house the majority of the county’s residents and active commercial centers. Many businesses rely on traffic from US 93 and special event weekends to carry them through the year.

The high percentage of public lands throughout this corridor reduces community growth opportunities by limiting the amount of land available for development. Recent public laws allow the BLM to transfer over 150,000 acres of public lands to state, local, and private entities in Lincoln and White Pine counties (Lincoln County Conservation, Recreation, and Development Act of 2006 and White Pine County Conservation, Recreation, and Development Act of 2006). Transfers of this type would allow private land holdings within Lincoln County to almost double from 148,000 acres to 278,000 acres over the next 10 to 30 years. As of 2007, most of the land available for transfer was located in southeast Lincoln County just north of the town of Mesquite. Along the corridor, land south of Alamo has been sold to develop an industrial park. Within White Pine County, the bill transfers two small parcels of land for the expansion of the industrial park and airport (located north of Ely on US 93) and 3,526 acres located south of Ely on US 93 to the Ely Shoshone Tribe for traditional, ceremonial, commercial, and residential purposes.

Nevada’s history of mining is tied to both the growth and decline of many of the towns along the corridor. The opening and closing of mines has led to population fluctuations in towns like Austin, Eureka, and Ely. Although no longer as significant as it once was, mining constitutes a use of Nevada’s eastern rangeland. The heyday of silver extraction in towns like Pioche and Austin has come and gone, but in Ely mining is still important to the rural economy. Liberty Pit, one of the state’s largest open pit copper mines, continues to operate and its tailings can be seen from miles away along US 50. For many of these towns the prospect of future growth depends more on government-related industries than mining. Addition-

ally, the potential Yucca Mountain Nuclear Waste Repository is a federal facility that could impact local economic and development patterns.

Lincoln County’s potential growth is dramatically different than the rest of the corridor. Las Vegas Valley’s rapid growth is spawning additional development along US 93 in Clark County at Coyote Springs. This new community is under construction and plans to cross the county line with 13,000 acres in Clark County and 30,000 acres in Lincoln County. The 49,000 units planned for Lincoln County could dramatically increase the current population of 4,000 to 200,000 within 20 years.

Land Ownership

The State of Nevada contains the highest percentage of federal lands among the contiguous 48 states, over 86% (BLM, 2000). In addition, several of Nevada’s eastern counties contain some of the highest percentages of federally-owned land in the state. At least 90% of the land in Lander, Lincoln, Nye, and White Pine counties is federally managed. The BLM owns the bulk of the federal lands with small and large in-holdings of other federal and state agencies including the USFS, the US Fish and Wildlife Service (USFWS), and the State of Nevada. Land ownership patterns in the state have not changed much over the last several decades, and this stability in land ownership has provided some level of visual continuity within the state.

Land ownership affects land use and visual character. 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, wide-open, and wild, but a closer look reveals that much of Nevada is a working landscape. From

Annual Population Estimate for 2006	
Clark County	2,079,802
Elko County	48,339
Jackpot	1,293
Wells	1,449
West Wendover	4,871
Eureka County	1,460
Eureka	443
Lander County	5,655
Austin	287
Lincoln County	3,987
Alamo	432
Caliente	1,002
Panaca	558
Pioche	703
Nye County	44,795
Northeast Nye Cnty*	450
White Pine County	9,542
Ely	4,325
McGill	1,145
Ruth	405

(1) Population estimates per the Nevada State Demographer, 2005. *Estimate for northeastern Nye County population taken from Nye County Master Plan.



(2) Eastern Nevada communities have strong ties to the mining industry, and populations have historically fluctuated accordingly. The high percentage of public lands reduces the opportunity for substantial growth, focusing highway management efforts on preservation.





(1) Areas of Clark County and Lincoln County must plan for large population increases and changes in the roadside conditions as planned communities generated from the rapid Las Vegas growth are constructed.



(2) Rest areas typically contain large amounts of paving and distracting barriers that decrease their aesthetic appeal and ability to provide an inviting place for motorists to stop. Corridor Plan guidelines suggest modifications to enhance function and appearance.

the highway, grazing, mining, power generation, and outdoor recreation are evident throughout 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

Over the next 20 years, the anticipated changes most likely to influence the corridor include the development of Coyote Springs within both Clark and Lincoln counties and the disposal of BLM lands for public sale. Existing community services in towns such as Alamo, Caliente, and Pioche will face challenges as they adapt to the growth pressures from the southern region. Corridor aesthetics will be faced with maintaining a consistent natural landscape appearance while responding to large developments.

Travel and Tourism

Travel Patterns

Eastern Nevada offers a rare American West experience with open, untamed landscapes. The Great Basin landscape boasts wide valleys and picturesque mountain ranges interspersed with ranches and historic mining towns. Tourism opportunities include the Great Basin National Park, historic sites, wildlife refuge areas, state parks, archaeological sites, and areas of geological interest. There are also annual celebrations and events in many eastern Nevada towns such as the Silver State Classic Open Road Race and White Pine County Fair. Recreational activities include mountain biking, ATV riding, gaming, geocaching, camping, fishing, and hiking.

US 93, also known as the "Great Basin Highway," connects to US 50 and US 6 and provides access to many eastern Nevada destinations. The majority of visitors travel via automobile since major airport hubs are located between one to two hours away. Tourist stops typically occur as a side trip for travelers rather than a final destination.

NCOT divided the state into five travel territories based upon major regional destinations and county boundaries. The eastern corridors fall mainly within the Pioneer Territory, the Pony Express Territory, and the Cowboy Territory. The southernmost portion of US 93 continues into the Las Vegas Territory.

The Pioneer Territory includes the portions of US 93 and US 6 in Lincoln and Nye counties, respectively. The name refers to the fascinating boom and bust mining history associated with this region, more than any other in the state. Travel opportunities include the Pahrnagat National Wildlife Refuge, the historic mission-style railroad depot in Caliente, and five state parks.

The Pony Express Territory covers US 93, US 6, and US 50 through White Pine, Lander, and Eureka counties. US 50, marketed as "The Loneliest Road in America," parallels the old Pony Express route. Attractions include the historic old west towns of Austin and Eureka, Ely's historic railroad, and the natural splendor of Great Basin National Park.

The Cowboy Territory in northeast Nevada contains Wells, West Wendover, and Jackpot. Gaming attractions in Jackpot and West Wendover draw significant weekend crowds from Idaho and Utah and provide lodging facilities for travelers along US 93 and I-80. South of Wells, US 93 passes

through scenic valleys with panoramic views of the rugged Ruby Mountains.

Overview of Existing Travel Facilities

Highways play an essential role in connecting people to their surroundings. Visitor centers, viewpoints, and signage impact a traveler's first impression of the state and directly influence their overall experience of key local, state, and national tourist destinations. For example, signs allow travelers to recognize that they are driving through historic mining locations. Signage provides valuable information and is a useful way to notify drivers of upcoming viewpoints and cultural and natural features. Currently Nevada uses the following signs to note tourism opportunities:

- Brown-colored public recreation area and facility signage.
- Brown-colored NCOT signs marking "territory" boundaries.
- White and blue historical marker signs indicating the presence of a blue historical sign off the highway.
- Blue-colored scenic byway signs.

Roadside facilities currently consist of rest areas and welcome centers. This is a strategic way for visitors to orient themselves and gain knowledge of interesting places to visit along their journey. These facilities vary in the type of services and information provided. The majority of the corridor's 12 NDOT-managed rest areas provide a picnic table with trash cans. Two facilities have chemical toilets, and the welcome center in West Wendover has running water with flush toilets and travel information.

In addition to the 12 NDOT facilities, the BLM manages two rest areas with shaded picnic tables

and chemical toilet facilities. The presence of several state parks near US 93 also offers opportunities for picnicking and camping with water, restrooms, tables, and grills. Communities also provide places to stop.

Facilities vary in architectural style and site planning. For example, the Jackpot rest area is a good example of a well-sited facility along Salmon Falls Creek. The grade separation from the highway reduces the exposure to traffic movement and reinforces the connection to the natural environment. The more common site planning method currently locates facilities just off the highway with little or no buffer.

Opportunities to Enhance Travel Facilities

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. Existing travel facilities can be improved by taking full advantage of an area's unique features and incorporating an enhanced overall design and architectural consistency.

Rest areas should be planned and designed in a consistent and comprehensive manner. Along lengthy stretches of highway, travelers can suffer from driving fatigue. One rest area located every hour is typical for safety measures; however, important historical, cultural, and/or natural site features should also serve as site planning criteria. Major site features to be considered in the location and design of rest areas include elements such as terrain, views and vistas, vegetation patterns, cultural or historic features, water elements, geological features, and wetlands.

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. Partnerships with federal and state agencies, such as BLM and NDSP, offer creative methods for planning and maintaining facilities as part of a comprehensive system. 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.

Adequate rest area facilities should include restrooms, picnic areas, pet exercise areas, paved parking, fresh drinking water, interpretive exhibits, and local area information based on traveler needs and frequency of use. Regional architecture, sensitive to the Great Basin environment, should be encouraged for all structures and facilities. In addition, where landscaping is implemented, attention to drought-tolerant landscape treatments is essential to success.

Enhancements to historical marker signs should improve legibility and give motorists advance warning of turn-offs. In addition, marker sites should be reviewed every three to five years to monitor changes in the surrounding development and minimize placement of signs in obscure and unattractive locations.

NATURAL RESOURCES

Water Resources

Natural Systems

Nevada's Central Hydrographic Region is the primary region underlying the corridor. It also crosses the hydrographic regions of the Ado, Humboldt, and Snake River Basins. Surface water systems readily visible along the corridor include the lakes and reservoirs of Pahrnagat Valley, McGill Reservoir (north of Ely), and Salmon Falls Creek (south of Jackpot).

Precipitation averages nine inches per year with a few additional inches at higher elevations. Surface waters are typically channeled through a network of ephemeral streams and washes into playas, where the water gradually percolates downward into the water table or is lost to evaporation. Run-off rates throughout are generally less than 0.2 inches per year except in higher portions of the ranges.

For over the past decade, the western United States has been mired in drought. For southern Nevada, which relies on the Colorado River for nearly 90% of its water supply, the drought has potentially serious consequences. In response to these concerns the Southern Nevada Water Authority has sought out alternative water resources to supply the increasing water demands within the Las Vegas valley. One of the plans that could alter the landscape of eastern Nevada is a proposed pipeline that would siphon rural groundwater from high desert basins. The area affected by the proposed project includes Lincoln and White Pine counties. Although this is one of the least populated regions of the country, opponents cite



(1) Separating rest areas from the highway can be achieved through grade or vegetation. Locating facilities in scenic areas enhances their attractiveness. The Corridor Plan suggests simple ways to reorganize amenities to further improve the function of facilities.



(2) Development of community rest areas as part of town improvements increases the number of motorists stopping in towns – an important outcome for rural communities.



(1) Water conservation and use of low-water use plants is mandatory in the arid landscape of Nevada. Highly controversial topics such as exporting water from eastern Nevada to Las Vegas intensifies the need for water conservation.



(2) The Corridor Plan emphasizes maintaining the existing landscape's visual integrity. Use of species from the surrounding plant communities and other plants as recommended by the University of Nevada's "Mapping Ecosystems Along Nevada's Highways and the Development of Specifications for Vegetation Remediation" is the first step towards preserving the scenic quality of Nevada's eastern highways.



the environmental decline of Owens Valley in California as an example of what could happen in rural Lincoln and White Pine counties from the diversion of groundwater to the Las Vegas area.

Water Use Regulations

To address water sustainability issues, a group of rural leaders in central Nevada initiated stakeholder discussions in February, 2005. These discussions resulted in a joint recommendation for the creation of a central Nevada Regional Water Authority that includes all the eastern corridor counties except Lincoln, which is regulated by the Lincoln County Water District.

Due to the limited water availability, highway landscapes should be drought tolerant. NDOT should also coordinate with local jurisdictions and water providers to ensure enough water is available to help establish revegetation efforts. 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 permanent irrigation to be used on projects.

Vegetation

The vegetation community information for this report is based on *Mapping Ecosystems* (Tueller et al., 2002), a resource completed by the University of Nevada for NDOT. The highways within the corridor are situated in the transition zone between the Great Basin and Mojave Desert ecological communities. The vegetation along Nevada's eastern highways falls within two major regions: the Great Basin Desert and the Mojave Desert. Both of these regions fall under the larger clas-

sification of the Great Basin, which is an arid environment consisting of a series of isolated, often snow-capped mountain ranges and intervening valleys.

Extending north from I-15 to the SR 375 junction, the corridor is bounded by the northernmost stretches of the Mojave Desert. The Mojave is a 25,000-square-mile transitional area bridging the Great Basin Desert and the Sonoran Desert. The Mojave is composed of a typical mountain and basin topography with sparse, shrub-dominant vegetation. Lower elevations of the plant community include a profusion of creosote (*Larrea tridentata*). The saltbrush scrub plant community also exists and is dominated by the *Atriplex* species. Although trees are sparse, Joshua trees (*Yucca brevifolia*) occur at higher elevations. Water is scarce, making Pahrnagat Valley stand out in the arid landscape. Here a series of natural springs and lakes create a fertile agricultural oasis, interspersed with pockets of cottonwoods, that extends approximately 40 miles.

North of the US 93/SR 375 junction the landscape becomes more densely vegetated with plants typical of the Great Basin. Although shrubs dominate basin areas, forests of pinyon and juniper cover the higher slopes of mountain ranges. Salt desert shrub sites occur along valley floors. Sagebrush is the most prevalent type of vegetation. At low elevation sagebrush communities are dominated by two varieties: Wyoming big sagebrush (*Artemisia tridentata* var. *wyomingensis*) and basin big sagebrush (*Artemisia nova*). Upper elevation sagebrush communities occur at about 5,800 feet and are dominated by mountain big sagebrush (*Artemisia tridentata* var. *vaseyana*).

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.

The higher elevation mountain big sagebrush, pinyon/juniper/sagebrush, and pine/fir sites typically have the advantage of greater precipitation, deeper soils, and higher organic matter content. These areas, however, are also prone to snow cover and a shorter growing season. Revegetation efforts in these communities generally focus on addition of organic matter, seed drilling, and planting container-grown shrubs. Factors such as temporary irrigation and importing additional topsoil are less important. Lower elevation big sagebrush sites usually require additional soil amendments and temporary irrigation in comparison to their higher elevation counterparts.

Salt desert shrub sites typically require imported topsoil and fertilizers for revegetation due to the low nutrient levels of native soils. Seeding often occurs two years in a row, particularly if temporary irrigation is not used. Mulch is recommended to help maintain soil moisture.

Riparian/agricultural/grass sites generally exhibit good organic matter content and soil moisture, allowing for relatively simple establishment of new plant material. However, noxious weeds, erosion, and periodic flooding can become challenges to successful revegetation.

Wildlife Habitat and Migration

Eastern 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. Designated regions have been established to protect and preserve the ecological, natural, and cultural resources of specified areas. Almost 1.7 million acres (2%) of Nevada's most ruggedly scenic areas is designated wilderness, and another 1.59 million acres are recommended as suitable for wilderness designation by the BLM.

Locations along highways where significant collisions occur are prime candidates for wildlife crossing retrofit projects. Signage currently marks the location of wildlife crossings. Future improvement projects should pay particular attention to the location of high quality habitat areas to ensure that wildlife crossings and warning signage are appropriately located.

Antelope, elk, mule deer, and big horn sheep are the large game species most commonly associated with vehicle-wildlife collisions within the corridor. Collisions, as documented for a four-year span by the Nevada Division of Wildlife (NDOW), are shown on the Environmental Considerations maps. Conflict areas include US 93 near the Pahranaगत National Wildlife Refuge, US 50/US 6/US 93 in the Steptoe Valley of White Pine County around Ely, and US 50 east of Austin and south of Eureka. Most collisions tend to occur around dusk or dawn when animals are looking for food and water or just after a storm. Other species typically involved in incidents are coyotes, raccoons,

birds, black- and white-tailed jack rabbits, desert cottontails, rattlesnakes and the desert tortoise.

Deer collisions along US 93 in Lincoln County occur mostly between mile markers 103 to 115. Deer cross from the low hills west of US 93 into the alfalfa fields east of the highway to feed in the evening hours and return to their resting areas in the early morning hours. Wild horse herds also frequent the area and collisions occur typically between mile marker 80 to 125.

Wildlife species noted in this corridor include antelope, elk, big horn sheep, and mule deer. Mule deer and pronghorn antelope are common in the sagebrush and pinyon-juniper upland habitat. Pronghorn antelope are primarily found in the valleys between mountain ranges in northern and central Nevada. Much of the land east of US 93 from Caliente north to Jackpot is designated as mule deer corridors. Large elk corridors are documented south of Ely, and along US 93 south of Wells and east of the Ruby Mountains. Mule deer migrate from higher elevation forest edges to the lower elevation desert floor during the winter. The corridor also hosts several wildlife management and wildlife refuge areas. The Pahranaगत National Wildlife Refuge is of importance for its habitat and birding opportunities.

Twelve miles south of Ely, the Ely Elk Viewing Area has an interpretive rest stop where the public currently can view elk wintering in the valley from October through April. The elk migrate northeast into the Schell Creek and Egan mountain ranges during the summer. NDOW efforts to disperse elk distributions throughout the area may reduce the number of elk seen and change the use of the viewing area in the future.

ENVIRONMENTAL CONSIDERATIONS

Mapping of Environmental Features

The landscape of central 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 incorporated into the analysis includes wildlife habitats, lakes and playas, and riparian systems. Additional data obtained from the BLM identifies unique features of significant influence, including: wildlife refuges, wilderness areas, and areas of critical environmental concern (ACEC). The BLM designates areas as ACEC to preserve sites with unique biological, geological, historic, or scenic features. The boundaries shown are taken from the BLM database.

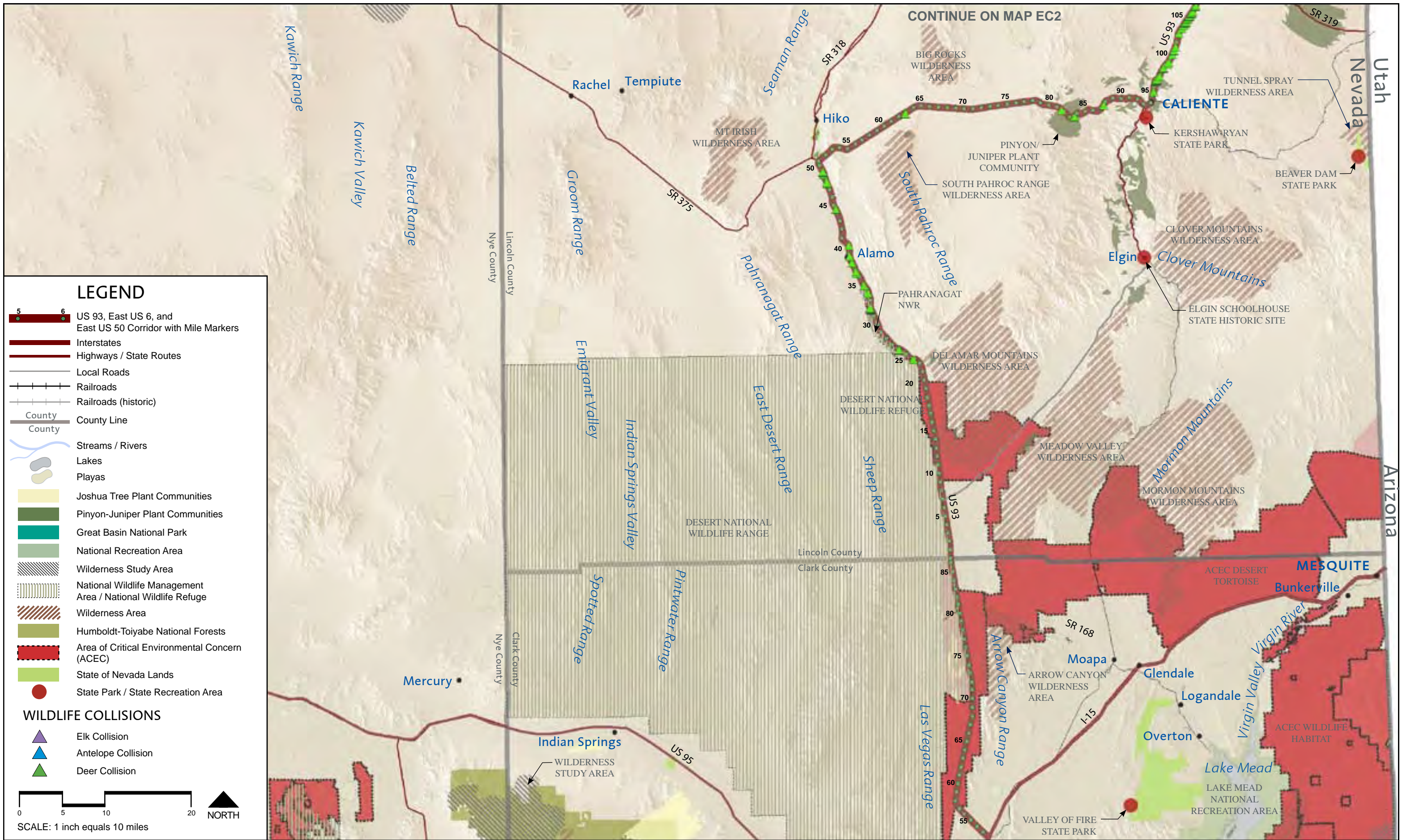
Wilderness areas and ACEC are specially designated regions that should be carefully considered with all highway construction projects. Stands of pinyon-juniper and Joshua trees are unique plant communities that should also be preserved as they provide a unique experience along the highway corridor.



(1) Wilderness areas, areas of critical environmental concern, wildlife management areas, and wildlife refuges parallel the corridor. These designations reflect the importance of habitat conservation and the need for the highway system to consider and plan for wildlife movement.



(2) Antelope and many other wildlife species can be found along the corridor. Agency coordination with the Nevada Department of Wildlife is critical to providing appropriate crossing facilities. Additional partnerships should be created to look for opportunities to improve crossings.



LEGEND

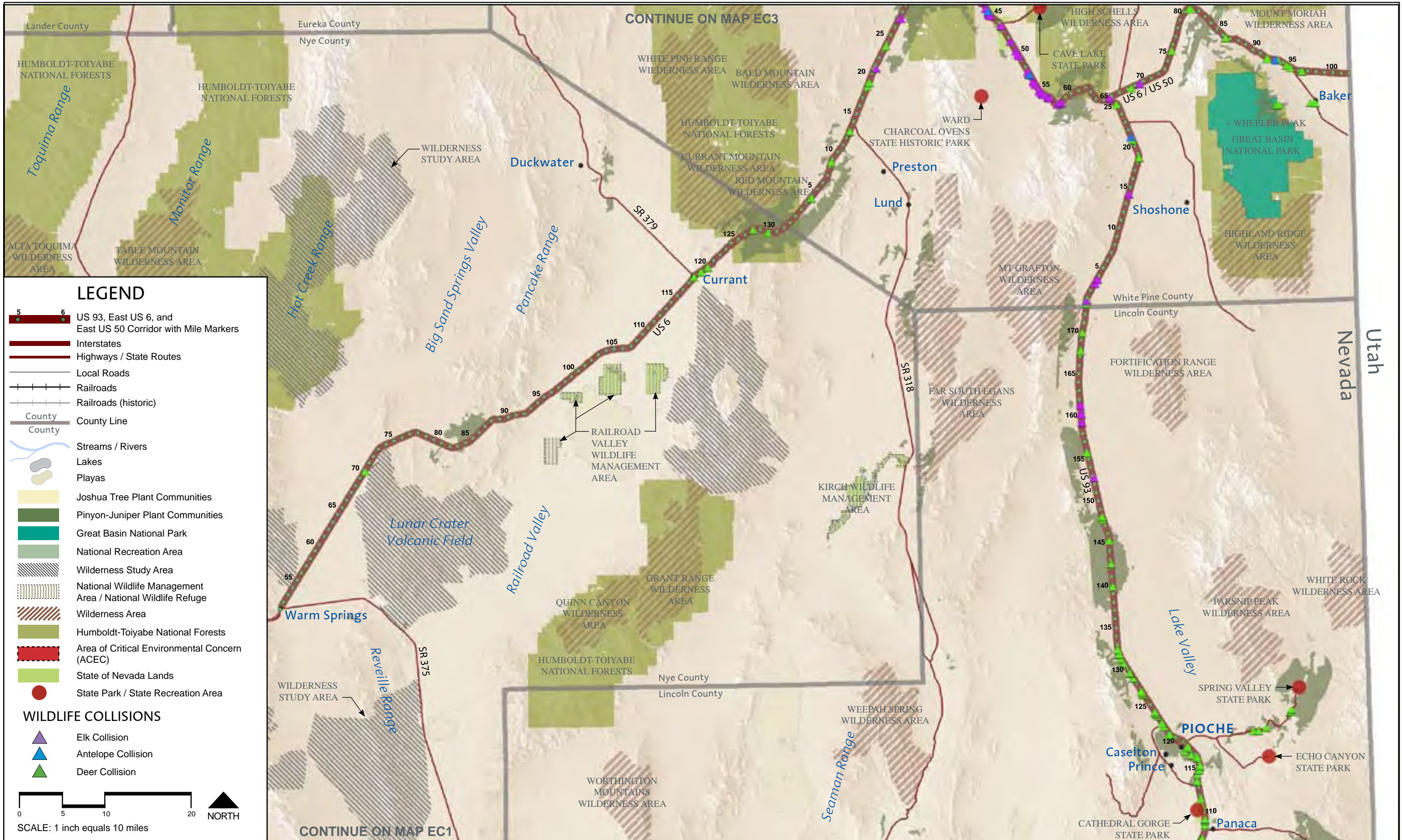
- US 93, East US 6, and East US 50 Corridor with Mile Markers
- Interstates
- Highways / State Routes
- Local Roads
- Railroads
- Railroads (historic)
- County Line
- Streams / Rivers
- Lakes
- Playas
- Joshua Tree Plant Communities
- Pinyon-Juniper Plant Communities
- Great Basin National Park
- National Recreation Area
- Wilderness Study Area
- National Wildlife Management Area / National Wildlife Refuge
- Wilderness Area
- Humboldt-Toiyabe National Forests
- Area of Critical Environmental Concern (ACEC)
- State of Nevada Lands
- State Park / State Recreation Area

WILDLIFE COLLISIONS

- Elk Collision
- Antelope Collision
- Deer Collision

SCALE: 1 inch equals 10 miles

NORTH



LEGEND

- US 93, East US 6, and East US 50 Corridor with Mile Markers
- Interstates
- Highways / State Routes
- Local Roads
- Railroads
- Railroads (historic)
- County Line
- Streams / Rivers
- Lakes
- Playas
- Joshua Tree Plant Communities
- Pinyon-Juniper Plant Communities
- Great Basin National Park
- National Recreation Area
- Wilderness Study Area
- National Wildlife Management Area / National Wildlife Refuge
- Wilderness Area
- Humboldt-Toiyabe National Forests
- Area of Critical Environmental Concern (ACEC)
- State of Nevada Lands
- State Park / State Recreation Area

WILDLIFE COLLISIONS

- Elk Collision
- Antelope Collision
- Deer Collision

SCALE: 1 inch equals 10 miles

NORTH

US 93, East US 6, and East US 50 landscape and aesthetics corridor plan

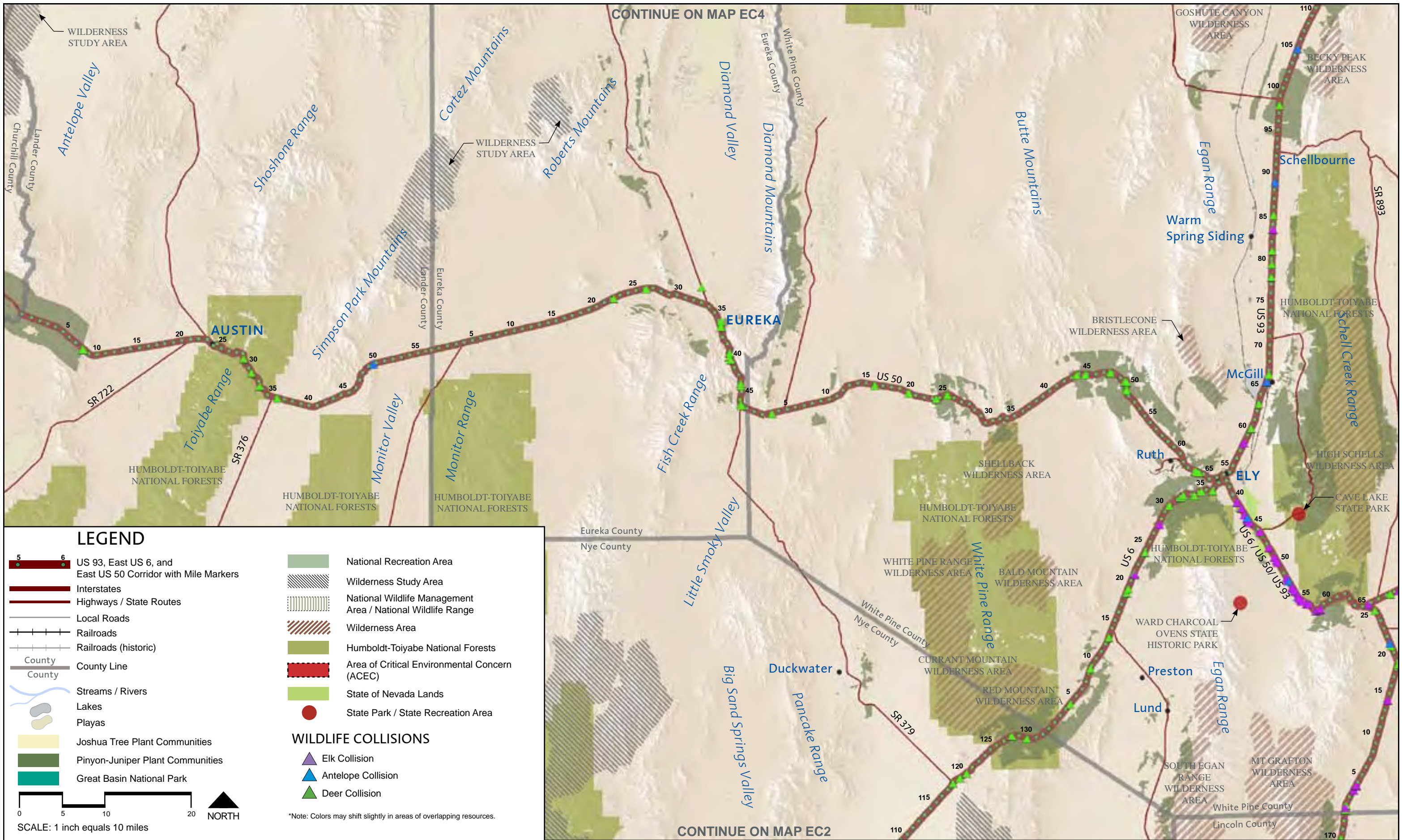


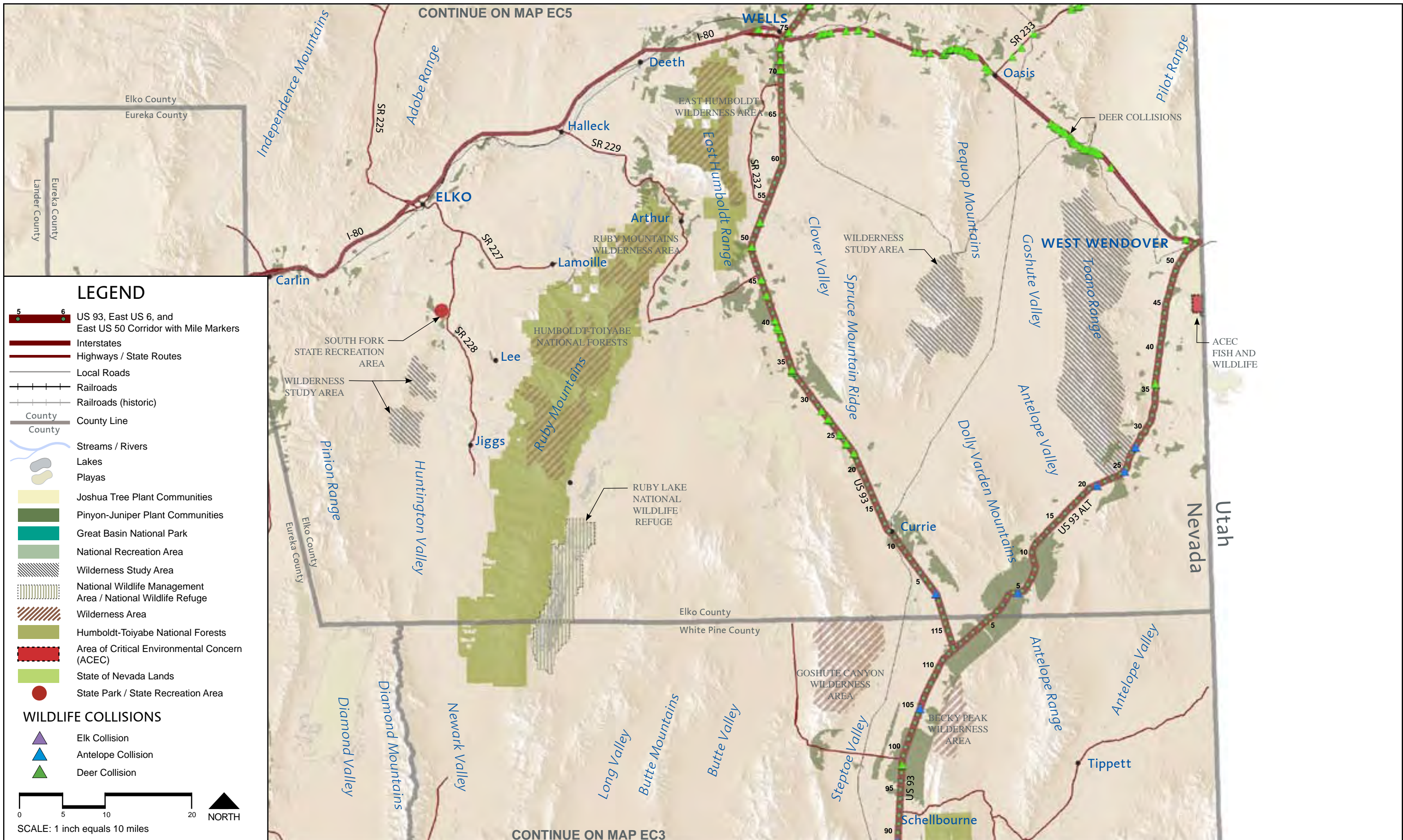
ENVIRONMENTAL CONSIDERATIONS

US 93: PANACA TO US 50/US 6 AND US 6: WARM SPRINGS TO UTAH STATE LINE

DESIGNWORKSHOP
Landscape Architecture Land Planning Urban Design Tourism Planning

MAP
EC2
1.25





US 93, East US 6, and East US 50 landscape and aesthetics corridor plan



ENVIRONMENTAL CONSIDERATIONS
US 93: SCHELLBOURNE TO WELLS AND ALT 93

DESIGNWORKSHOP
Landscape Architecture Land Planning Urban Design Tourism Planning

MAP
EC4
1.27

VISUAL RESOURCES

Visual Analysis

A visual analysis was conducted along the corridor as part of a three-day site visit to evaluate the highway system. Scenic resources were identified and highly visible landforms, such as mountain ranges and unique cliffs, were located. Overall, the corridor is highly scenic in quality with notable areas of special visual interest:

- US 93 through Clark County travels through an open valley bounded by the impressive Las Vegas Range and Arrow Canyon Range.
- Mountain ranges along US 93 north of Hiko are heavily clad with trees. This creates a striking appearance that differentiates them from other mountain ranges in the state.
- Wheeler Peak, the second highest peak in Nevada and the highest peak located entirely within the state, can be seen by motorists traveling north along US 93 from Pioche. Its impressive headwall above a large glacial cirque makes it visually distinct.
- Unique rock outcroppings and vegetation create visual interest just outside of Caliente.
- Salmon Falls Creek crosses under US 93 near Jackpot and provides visual interest and changes in the plant community.
- Historic towns like Austin and Eureka contain attractive buildings. Historic buildings and elements enhance the scenic quality of communities.

Scenic Resources

The corridor passes through vast open stretches of the state. Expansive valleys create a distant backdrop for the wild and rugged landscape that characterizes much of Nevada. High mountain passes, agricultural valleys, and vast desert playas

combine to create a memorable impression for visitors and creates an indelible sense of identity for those who live in the region.

Areas of Future Development

Significant areas of planned growth include Coyote Springs, the Alamo Industrial District, and the Ely Airport expansion. These developments will be visible from the corridor as new construction occurs within a relatively undeveloped landscape. Aesthetic considerations include setting development back from the highway and using native and enhanced native plant material to blend development into the surrounding environment.

Distance Zones

Landscape features are perceived by drivers with varying levels of detail depending upon the distance between the driver and the feature. Distance zones, including foreground zones, middle-ground 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.

Although the distance zones are not delineated on the following maps, the following narrative describes where distance zone boundaries are located in relation to the roadway. Understanding what areas are most clearly seen can guide planning decisions regarding what portions of the landscape are most sensitive to change and what areas are most critical to maintain the highway's visual character. 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.

Foreground Zones

Viewers can perceive details such as forms, lines, and colors within 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 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. Viewers can perceive broad forms, lines, wide valleys, distant hills, and mountains.



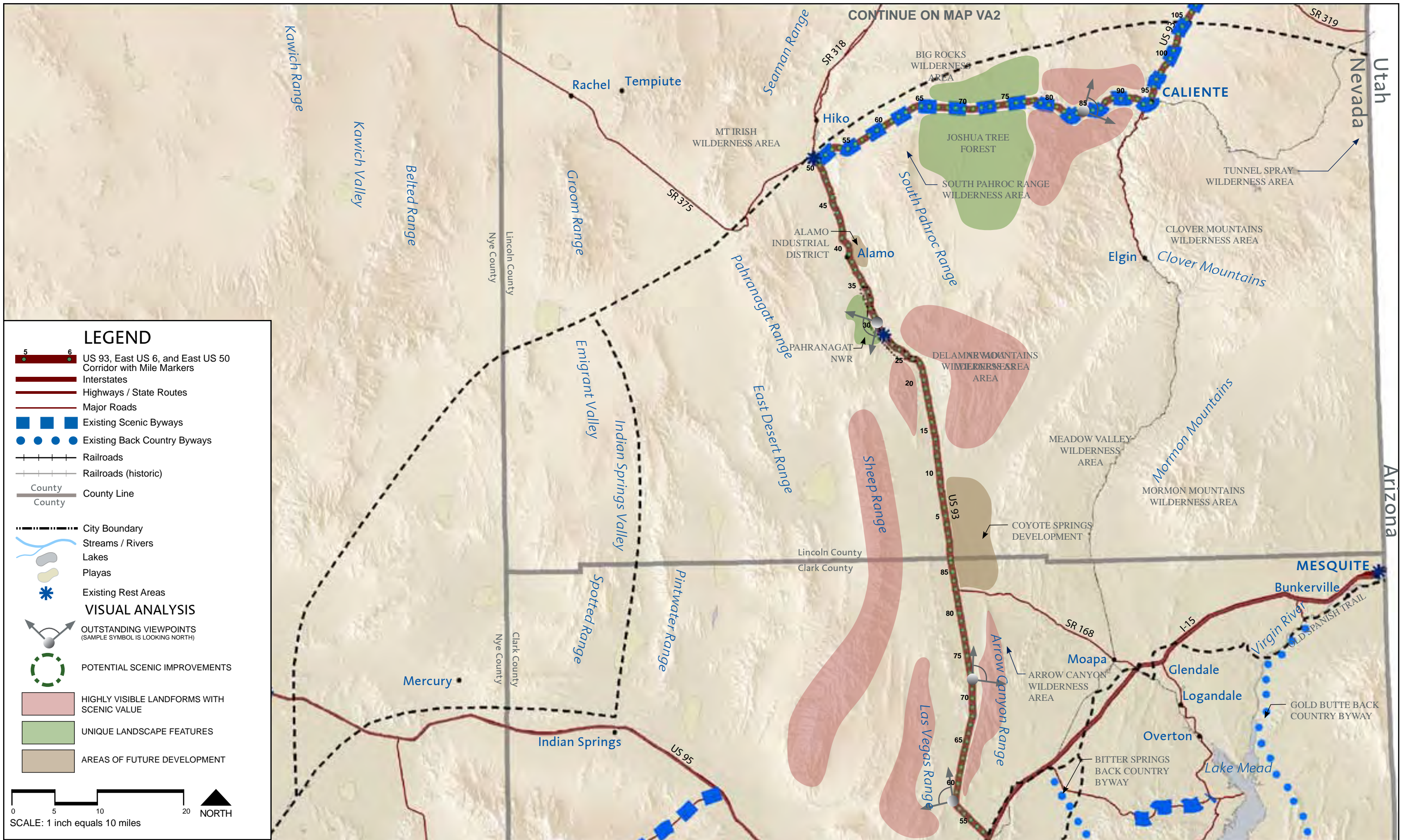
(1) Viewers perceive details such as forms, lines, and color in the foreground zone. Located up to a 1/4 mile distance from the road, this zone is the most easily manipulated because it includes the right-of-way.



(2) 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.



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



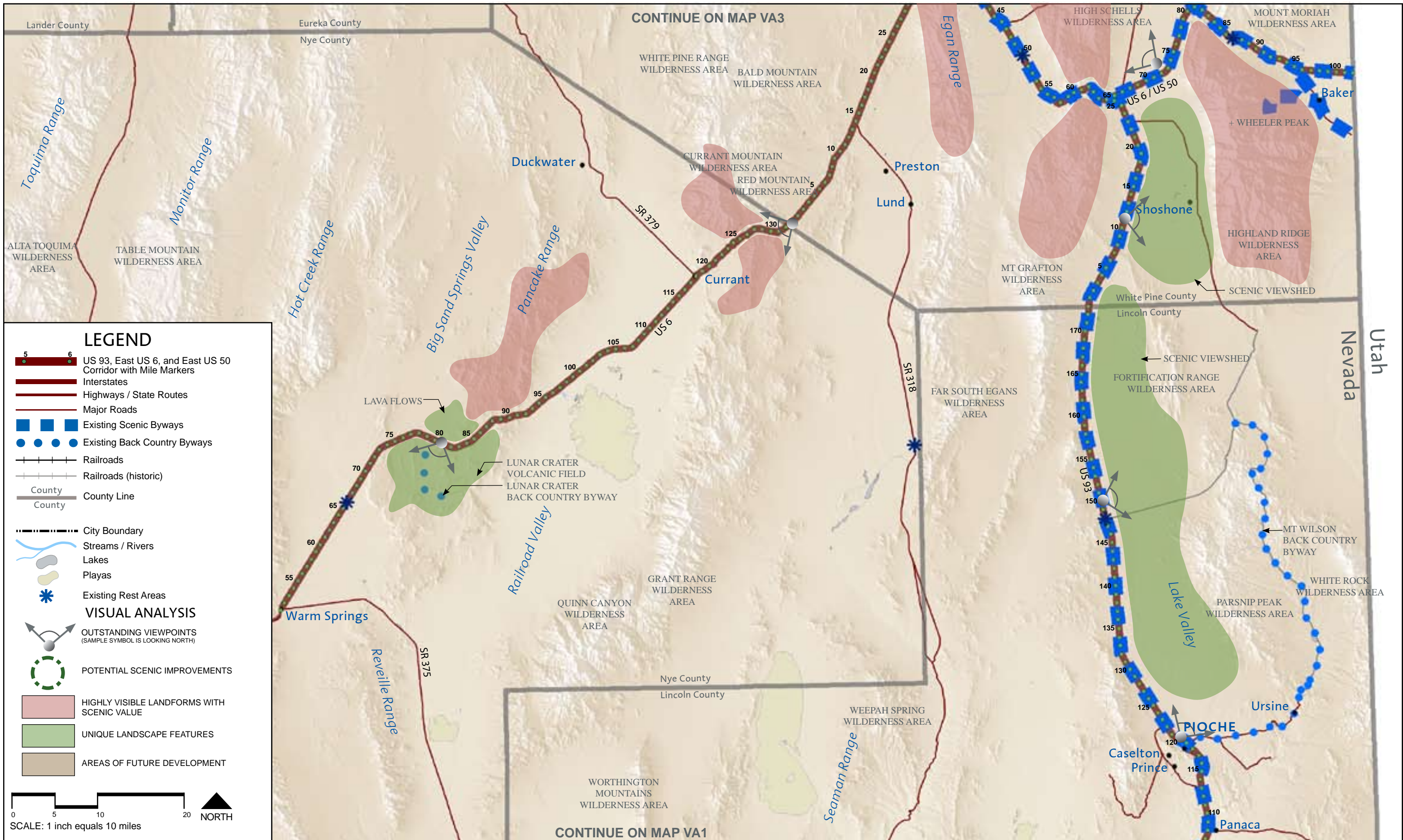
LEGEND

- US 93, East US 6, and East US 50 Corridor with Mile Markers
- Interstates
- Highways / State Routes
- Major Roads
- Existing Scenic Byways
- Existing Back Country Byways
- Railroads
- Railroads (historic)
- County Line
- City Boundary
- Streams / Rivers
- Lakes
- Playas
- Existing Rest Areas

VISUAL ANALYSIS

- OUTSTANDING VIEWPOINTS (SAMPLE SYMBOL IS LOOKING NORTH)
- POTENTIAL SCENIC IMPROVEMENTS
- HIGHLY VISIBLE LANDFORMS WITH SCENIC VALUE
- UNIQUE LANDSCAPE FEATURES
- AREAS OF FUTURE DEVELOPMENT

0 5 10 20 NORTH
SCALE: 1 inch equals 10 miles

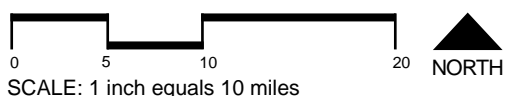


LEGEND

- US 93, East US 6, and East US 50 Corridor with Mile Markers
- Interstates
- Highways / State Routes
- Major Roads
- Existing Scenic Byways
- Existing Back Country Byways
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- Railroads (historic)
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VISUAL ANALYSIS

- City Boundary
- Streams / Rivers
- Lakes
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US 93, East US 6, and East US 50 landscape and aesthetics corridor plan

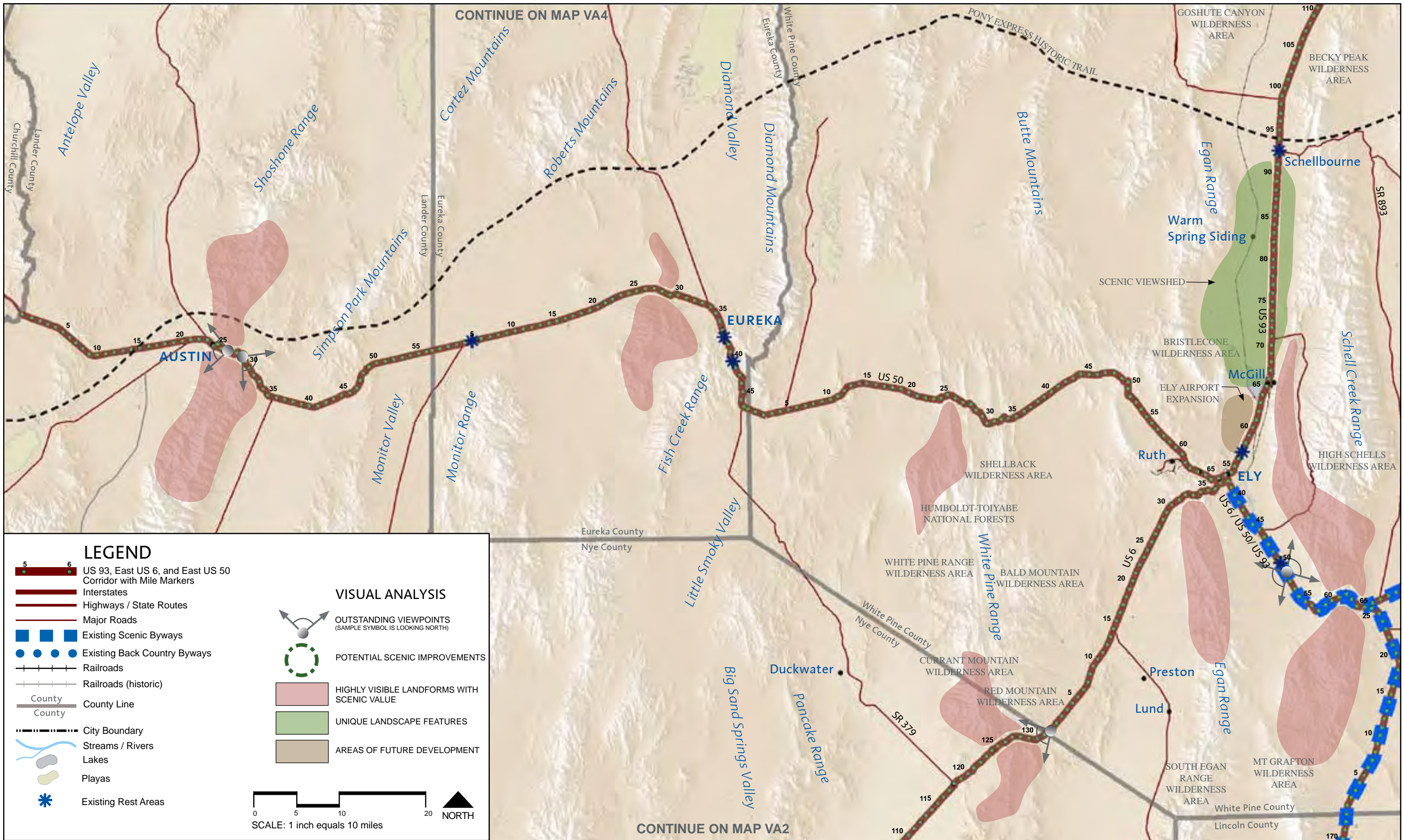


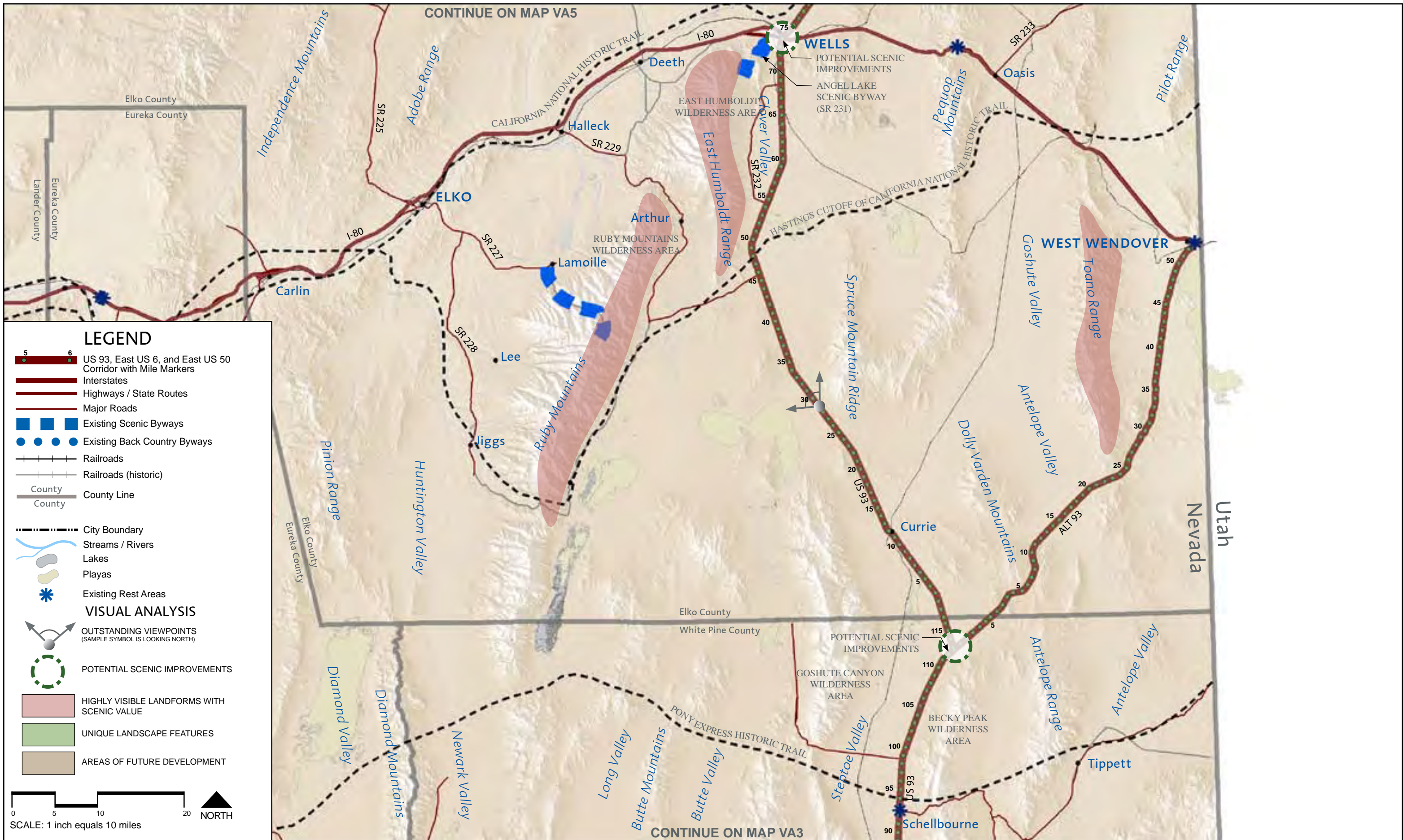
US 93: PANACA TO US 50/US 6 AND US 6: WARM SPRINGS TO UTAH STATE LINE

VISUAL ANALYSIS

DESIGNWORKSHOP
Landscape Architecture Land Planning Urban Design Tourism Planning

MAP VA2 1.31





CONTINUE ON MAP VA5

CONTINUE ON MAP VA3

US 93, East US 6, and East US 50 landscape and aesthetics corridor plan



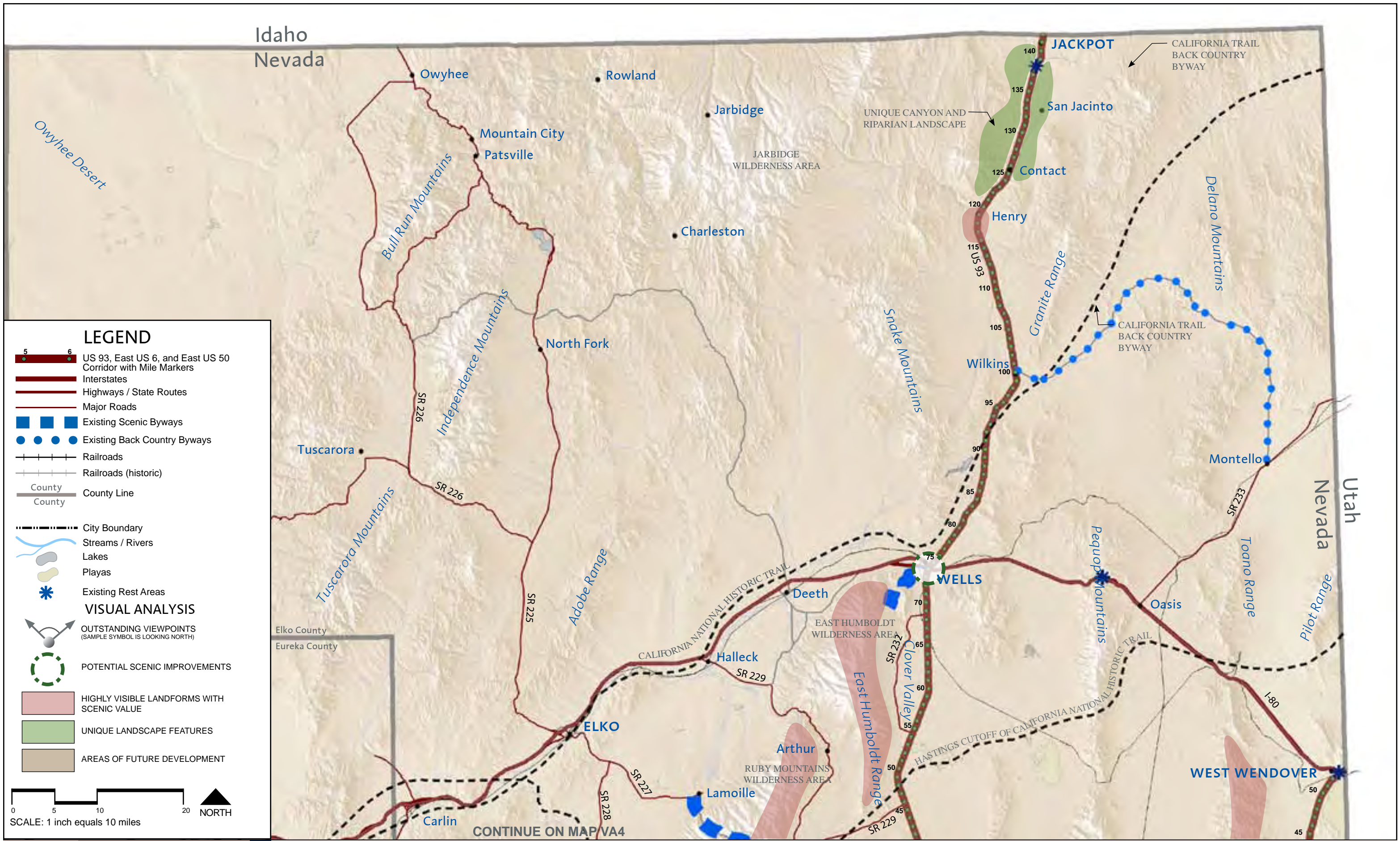
VISUAL ANALYSIS

US 93: SCHELLBOURNE TO WELLS AND ALT 93

DESIGNWORKSHOP
Landscape Architecture Land Planning Urban Design Tourism Planning

MAP
VA4
1.33

Idaho
Nevada



LEGEND

- US 93, East US 6, and East US 50 Corridor with Mile Markers
- Interstates
- Highways / State Routes
- Major Roads
- Existing Scenic Byways
- Existing Back Country Byways
- Railroads
- Railroads (historic)
- County Line

VISUAL ANALYSIS

- City Boundary
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- OUTSTANDING VIEWPOINTS (SAMPLE SYMBOL IS LOOKING NORTH)
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