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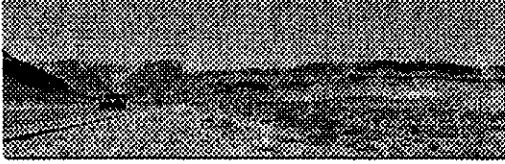
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Pattern and Palette of Place

A Landscape and Aesthetics Master Plan for the Nevada State Highway System




SR 154, entering Red Rock Canyon National Conservation Area.

Presented by Susan Martinovich, P.E., Assistant Transportation Director, NDOT
Mark Elson Hoversten, FASLA, AICP, University of Nevada, Las Vegas

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How the *Master Plan* was Developed



SR 825 (Boulder Avenue in Truckee Area) and Las Vegas Boulevard

May 2000

The State Transportation Board and NDOT began the master planning process to improve landscape and aesthetic policies, guidelines, practices, procedures, and standards.

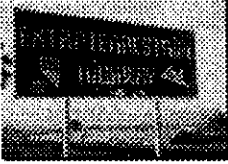
October 2000

A broad-based citizen's advisory committee was formed to make recommendations to the State Transportation Board.

2

How the *Master Plan* was Developed

July 2001



UNLV signed an interlocal agreement with NDOT to

- research highway landscape and aesthetics programs across the nation,
- facilitate the planning process, and
- prepare the master plan.

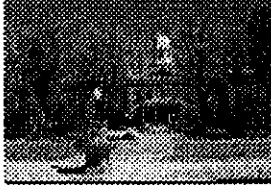
January - April 2002

Public meetings were held in Elko, Las Vegas, Reno, and Sparks.

Written comments were accepted throughout the master planning process.

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How the *Master Plan* was Developed




UNLV, Carson City

Participation

- State Transportation Board
- Landscape and Aesthetics Advisory Committee
- Nevada Department of Transportation
- University of Nevada, Las Vegas Landscape Architecture and Planning Program
- Technical Review Committee

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A Vision For the State Highway System



US 4, SR Las Vegas Boulevard, 'The Strip' SR 342, OAH NE


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.

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Statewide Policies



SR 89, Blue Canyon

Landscape and Aesthetics Policy

It is the policy of the State of Nevada that landscape and aesthetics will be considered along with all other design factors in all transportation projects throughout their life cycles.

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Statewide Policies



US 93 near Bask.

Policy on Partnerships

The principles of context-sensitive design guide the development of transportation projects.

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.

7

Statewide Policies



SR155, W. Caledonia Street, Bly.

Policy for the NDOT Landscape and Aesthetics Program

Landscape and aesthetic treatments will emphasize regionally appropriate materials and drought-resistant plants.

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Statewide Policies



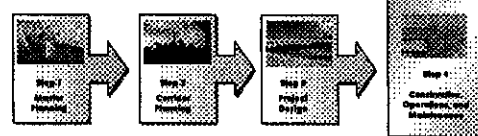
Cedar River Bridge, Nevada.

Policy on Funding

Local governments, private citizens, civic groups, and the business community are encouraged to work with NDOT to develop cooperative agreements for funding the design, construction, and maintenance of landscape and aesthetic improvements.

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The Master Plan defines the Landscape and Aesthetic Planning Process



Master Planning sets statewide policy and establishes broad guidelines and the process for incorporating landscape and aesthetics in highway planning, design, construction, and maintenance activities.

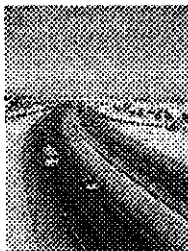
Corridor Planning provides a management tool for deciding when and where different levels of landscape and aesthetic treatments will be installed and for developing broad budgets and priorities.

Project Design focuses the details of what actually gets built at a specific site.

During Construction, Operations, and Maintenance, NDOT ensures that state highways are managed in a manner that is consistent with the landscape and aesthetic design intent specified in the corridor plan.

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The Master Plan identifies eleven highway corridors



Interstate-15, Las Vegas.

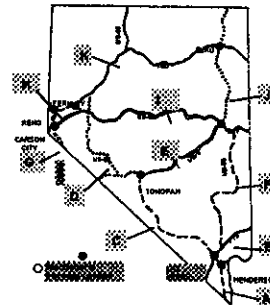
A highway corridor is a length of highway right-of-way and its associated secondary roads.

The length of a corridor is based on the character of its landscape.

In general, corridors begin and end at the state border or at one of our larger cities.

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The eleven corridors



- A. US-93 from the state border near Laughlin to Henderson, including US-93 through Boulder City to Hoover Dam.
- B. Interstate-15 from the California border at Primm to the eastern border at Ely, including US-93 from Henderson north to the junction with SR-157 at Las Vegas.
- C. US-93 from the junction with SR-157 to Tonopah.
- D. US-93 from Tonopah through Fallon to Interstate-80, and including US-4 from Tonopah to the California border.
- E. US-4 from Tonopah to Ely.
- F. US-89 from the junction with Interstate-15 at Apex to Ely.
- G. All of US-295 from the state line at Toiyabe Lake through Carson City and Reno to the state line north of Reno.
- H. Interstate-40 from the California border through Reno and Sparks to Fernley.
- I. US-50 from the western state line through Fallon, Eureka, and Ely to the eastern state line.
- J. US-89 from Ely through Verdi to the state border at Jarvis.
- K. Interstate-80 from Fernley through Lovelock, Winnemucca, Battle Mountain, Carson, Elko, and Wells to West Wendover at the Utah border, and including US-95 from Winnemucca to McDougal.

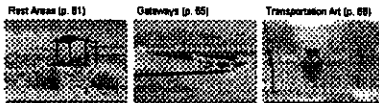
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The Master Plan address four highway types and three types of features.

Highway Types



Features



The Master Plan presents guidelines and examples.



Landscape and Aesthetic Opportunities

Examples of a drawing that illustrates landscape and aesthetic opportunities.



Conceptual Design Examples

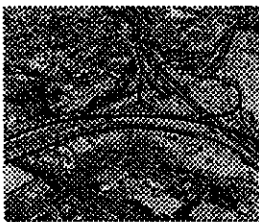
Examples of a conceptual design drawing.



Levels of Treatment

Levels of the design that illustrates different levels of treatment and aesthetic treatments.

Example - Urban Freeways: Landscape and Aesthetic Opportunities

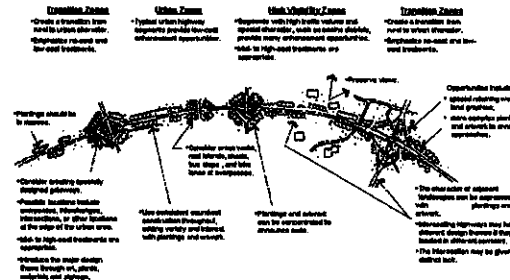


The "Sagebrush Drive" I-15/95 Interchange, Las Vegas

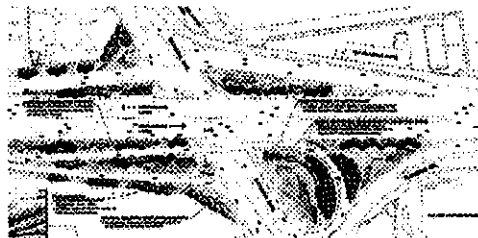
Numerous large-scale structures dominate the urban freeway, while plants and natural landforms are secondary or non-existent. Highway structures constitute a large presence and contribute significantly to the quality of the driving experience. Properly placed, well-chosen native plants can soften the appearance of urban freeways.

The landscape and aesthetic opportunities and treatments discussed on pages 37 through 46 include slopes, bridges, interchanges, retaining walls, and soundwalls.

URBAN FREEWAYS



Urban Freeway Conceptual Designs



One of three design concepts for the reconstructed Sahara Interchange on I-15 in Las Vegas. From Sahara I-15 Interchange Landscape Improvements, prepared by Skidmore, OWINGS & Merrill, Inc. for MCDOT.

The drawings on these two pages show real examples of landscape and aesthetic designs for urban freeway interchanges. Note that although the presentation styles are different, the level of treatment is similar. Context, plantings and artwork are concentrated at high visibility locations.

Urban Freeway Guidelines: Bridges and Interchanges



Overlook the Road overpass on the Clark County Bridge.


Aesthetic Guidelines

- Enhance the visual appeal of bridges through careful engineering of scale, proportions, and balance of all components.
- Keep details simple, pronounced, and easy to distinguish.
- Limit aesthetic treatments on bridges to specialized surface finishes, colors derived from those seen in surrounding communities, and textures and patterns that are visible at highway speeds.
- Preserve and replicate historic or architectural character of existing bridges.
- Use "high-end" treatments only at the most visible interchanges, such as gateways.

NO-COST TREATMENT
NEO Express

Aesthetic considerations include appearance and scale of building, color and texture of walls, lighting and landscaping.

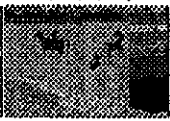
This adds \$0 to the construction cost of the highway. Annual maintenance cost is low.*



LOW-COST TREATMENT
Clark County Parkway 218, Las Vegas.

Simple artwork and patterns are added to the bridge.


This adds \$40,000 to the total construction cost of a bridge. Maintenance cost is low.*



MID-COST TREATMENT
Pima Freeway, Phoenix, AZ

Innovative plantings of native species on viaducts.


This adds \$15,000 to \$25,000 per acre to the construction cost of the bridge and maintenance costs are low.*



HIGH-COST TREATMENT
Reno Tahoe Regional Airport.

Carpeted and painted road at high visibility locations, such as interchanges.

This adds \$80,000 or more per acre to the construction cost of the interchange. Maintenance is high.*

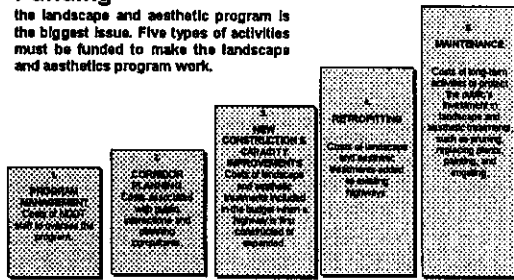


* Maintenance costs are project-specific and are estimated during the project design phase. Maintenance costs should be a factor in selecting a final design alternative.

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Funding

the landscape and aesthetic program is the biggest issue. Five types of activities must be funded to make the landscape and aesthetics program work.



1. **PRELIMINARY INVESTMENT**
Cost of design and construction of landscape and aesthetic treatments.

2. **CONSTRUCTION OF LANDSCAPE AND AESTHETIC TREATMENTS**
Cost of landscape and aesthetic treatments added to bridge or highway.

3. **HIGH CONSTRUCTION CAPACITY IMPROVEMENTS**
Cost of landscape and aesthetic treatments added to bridge or highway.

4. **MAINTENANCE**
Cost of long-term maintenance of landscape and aesthetic treatments.


5. **MAINTENANCE**
Cost of long-term maintenance of landscape and aesthetic treatments.

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How Decisions Affect Costs

Some treatments that improve the appearance of our highways are included in the normal process of designing, constructing, and maintaining a highway. They **ARE NOT** landscape and aesthetic costs.

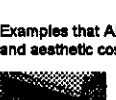
Some treatments go beyond what is needed for safety or environmental reasons. These treatments **ARE** landscape and aesthetic costs.




Design, construction, and maintenance of complex rock art.



Complex decorative planting.



Special textures and rock work.



Pre-standing custom sculptures or other artwork.

Examples that **ARE** landscape and aesthetic costs


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Examples of required safety and environmental treatments that **ARE NOT** landscape and aesthetic costs


- The size, color, texture, and distribution of rock mulch and native seed mix for erosion and dust control
- Establishment of plants for erosion and dust control
- Simple concrete or block soundwalls or retaining walls, with basic color, including the routine repainting
- Shaping curves and road cuts to blend with natural topography and well-designed lines and proportions for bridges and soundwalls
- Fencing required to control access, grazing and drainage
- Any other expense incurred primarily to improve safety or mitigate environmental impacts (e.g., air quality, noise, or visual impacts)

Examples of treatments that **ARE** landscape and aesthetic costs


- Complex plantings and land graphics made of colored rock
- Long-term irrigation after plants are established
- Special block, rock work, or art for soundwalls or retaining walls
- Special painting, graphics, murals or other one-of-a-kind artwork
- Upgraded decorative fencing
- Any other expense incurred primarily to improve the appearance of the highway right-of-way



Rock mulch and native seed mix.



Bridge proportions or color.




The shape of a curve or slope of a road cut.

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Funding New Construction and Capacity Improvements

As a general rule, 3% of total project construction costs on new construction and capacity improvements can be allocated to landscape and aesthetic treatments. NDOT will pay consultant costs for landscape and aesthetic design.



US 52 through Eureka.

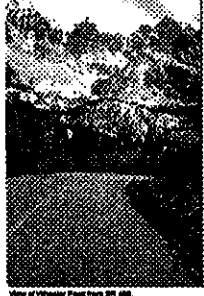
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Funding Corridor Plans

October 1, 2002 - \$2 million per year will be made available from existing funds to accelerate corridor planning and complete as many corridor plans as possible during the first two years of the program.

October 1, 2004 - The \$2 million per year will go into a 50/50 community matching grant program for retrofitting existing highways with landscape and aesthetic treatments.

October 1, 2004 - NDOT will contribute \$500,000 per year to complete the remaining corridor plans, which is expected to take no more than 3 additional years, terminating September 30, 2007. Program and funding will be re-evaluated at this time.



View of Wheeler Peak from SR 400.

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Funding Retrofits and Maintenance

Retrofitting typically is initiated by requests from local governments, private parties, or non-profit organizations. Funding comes from varied sources.

Long-term Maintenance typically will be shared between NDOT and local governments, with written agreements in place before the landscape project is installed.

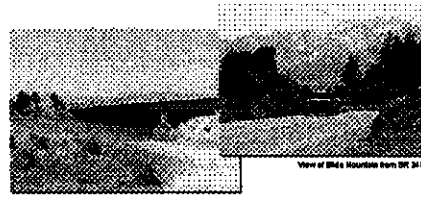
Generally, NDOT will hire the maintenance contractor and then invoice the local government for the costs, in accordance with the written agreement.



SR 241, The manholes at Sparks City.

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The future of the Nevada highway system is at stake.



SR 241 bridge over the Colorado River, looking towards Laughlin, Nevada.

View of SR 241 Mountain from SR 241.

As the landscape and aesthetics program takes built form, we hope that Nevada's citizens and visitors will experience a newfound kinship with our unique land.

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