

PLANNING HORIZONS

Caltrans Landscape Architecture

Landscape architects perform professional work in planning and design of land for human use and enjoyment. Based on analyses of environmental physical and social characteristics, and economic considerations, they produce overall plans and landscape project designs for integrated land use.

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September 29, 2014



Transportation Landscape Architects

Throughout Caltrans, Transportation Landscape Architects specialize in planning, design, erosion control, water management, safety roadside rest areas, community livability, context sensitive solutions, sustainability principles and worker and traveler safety.

Aesthetics

Environmental Quality

Quality of Life

Livability

Sustainability

Erosion Control

Community Vitality

Context Sensitive Solutions

Worker Safety

Economic Prosperity

Health

Safety

Welfare

Health Human
Ecological

Human Health



Environments that encourage active transportation



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Ecological Health



Preserving and Restoring Natural Systems

Ecological Health



Enhancing Water Quality

Ecological Health



Preserving Water Supplies



Safety Worker
Traveler

Worker Safety

- Urban location
- High ADT
- Roadside work near shoulder
- Vehicle parked on shoulder
- Employee on foot

Worker Safety

California Department of Transportation
Flex your power!

Be energy efficient!

Deputy Directive

<i>Number:</i>	DD-103
<i>Refer to Director's Policy:</i>	DP-03-R1 Health & Safety DP-25- Best Practices DP-29 Communication and Entertainment in the Work Zone
<i>Effective Date:</i>	10/16/2012
<i>Supersedes:</i>	NEW

TITLE Worker Safety on the State Highway System

POLICY

Safety for all workers is a critical component of all activities performed on the State Highway System (SHS) by the California Department of Transportation (Caltrans) and its partners. Caltrans incorporates many safety strategies into its routine business practices to reduce and/or eliminate the exposure of highway workers in active work zones on the SHS. Achieving a goal of "zero work zone related fatalities" and reduction of work related injuries are primary objectives when considering the planning, designing, construction, maintenance and operation activities on and around the SHS.

DEFINITION/BACKGROUND

Work Zone – For the purposes of this policy, work zone is defined as a designated highway location in which maintenance, construction, survey, and/or other highway work is taking place.

Caltrans utilizes and deploys many proactive measures including the creation of and dissemination of work zone safety education programs, public awareness campaigns and other Department wide activities including:

- Planning and designing the SHS to reduce the need for recurrent maintenance activities through consistent implementation of design and operation strategies, which provide the ability to utilize automated maintenance techniques.
- Locating highway features outside the clear recovery zone or within protected areas; and providing safe access for all highway workers.
- Raising public awareness of the risks taken by highway workers through public education campaigns.
- Targeting and identifying best practices for workers that are conducting work tasks on foot to eliminate their exposure to traffic hazards.

"Caltrans improves mobility across California"



BE ALERT, MY DAD'S AT WORK.

BE WORK ZONE ALERT



Traveler Safety

- Planting and irrigation setbacks
- Design “out” Roadside work near shoulder
- Reduce need for workers on foot
- Drowsy drivers

Traveler Safety



Safety Roadside Rest Areas

Traveler Safety



Excellence in Transportation Award Winners



Erosion Control



Erosion Control



Erosion Control



Erosion Control



Landscape Architects and Disaster Recovery

Climate change contributes to more frequent flooding and fires, creating conditions that destabilize slopes and cause damage to highways and structures.



Caltrans Emergency Response Policies

- Assess damage and protect the public.
- Minimize loss of life and property.
- Protect state facilities and highways.
- Maintain current damage and operations information.
- Restore damaged state facilities as soon as possible.
- Document impacts risks, potential impacts, alternatives considered, and decisions.

Caltrans Decisions

Capacity

Capability

Competence





Potential for slides and debris flows



Erosion Control application



Contour grading



Devil's Slide Tunnel



Sustainable drainage



Research



Sustainable Trees



Median trees can improve safety

Welfare **Vitality**
Livability

Community
Vitality
Livability

Highway Planting



Community
Vitality
Livability



Highway Planting



Community
Vitality
Livability



Main Street, California

A Guide for Improving Community and Transportation Vitality

Main Streets

Community
Vitality
Livability

Main Streets for
Economic Vitality



Community
Vitality
Livability



Multimodal Main Streets

Community
Livability

Community
Identification



Community
Vitality
Livability

Discover

Places of Interest on Mount Shasta's Southern Slopes

- 1 Mount Shasta Summit
- 2 Shastina Summit
- 3 Misery Hill
- 4 Sulphur Springs
- 5 Red Banks
- 6 Thumb Rock
- 7 Konwakiton Glacier
- 8 Helen Lake
- 9 Shastayama Point
- 10 Mud Creek
- 11 Hidden Valley
- 12 Green Butte
- 13 Old Ski Bowl
- 14 Horse Camp
- 15 Bunny Flat



A climber ascends a snow in the albedo belt of the Helton Glacier.



Fiery Coneheads
Mt. Shasta is a conical stratovolcano formed by repeated cycles of lava flows and eruptions from three major cones. The summit is on top of the Helton Cone and has erupted multiple times between 200 and 9,500 years ago. Shastina, whose name means "Little Shasta," is a cone that erupted between 9,500 and 9,700 years ago.

The two other cones are Misery Hill (erupted less than 130,000 years ago) and Sulphur Ridge (erupted less than 250,000 years ago).
It's all in the Datum
Your map probably says the small rocky peak of Mount Shasta's summit is 14,562 feet or 4317 meters above sea level. Most U.S. maps use a datum or sea-level elevation established in 1929. Here, a more accurate datum established in

1988 is the official basis for all elevations measured by federal agencies. It places Mount Shasta's summit at 14,579 feet or 4322 meters.
Glaciers in California?
Mount Shasta contains seven glaciers. While the Konwakiton Glacier is viewable from this location, most of the glaciers can be seen from points north, such as Green Lake Work Point on Highway 97, north of Weed, CA.

Experienced mountaineers enjoy the challenge of threading a route past crevasses as much as 100 feet deep. Some even go just off their way to do vertical climbing in the frozen chaos of ice cliffs and cracks in the Helton Glacier's surface. These glaciers are located on the north side of the mountain and can't be seen from this vantage point.



Context Sensitivity

Community
Vitality
Livability



Transportation Art

Community
Vitality
Livability



Revegetation
Planting



Mandela Parkway



Mandela Parkway



Mandela Parkway



Mandela Parkway

Catalyst

Mandela Parkway



Mandela Transit Village





NOW A
THROUGH
STREET

Corridor Master Planning

The “A” Word (aesthetics)

III. DESIGN GUIDELINES

LANDSCAPE DESIGN ELEMENTS

Hardscape - Inert / Materials

Gore areas and narrow areas shall be paved with the following materials:

- Gravel Mulch shall be used as erosion control to add color and texture.
- Rock Blanket shall be used for areas where maintenance access is not available.



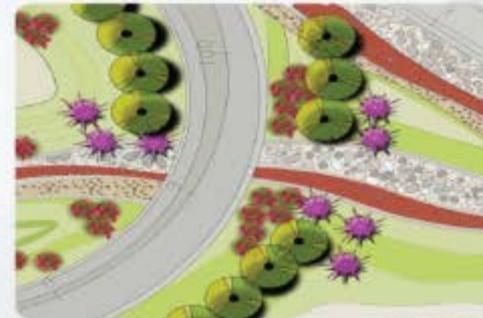
Planting

Opportunities for landscaping shall be used to create contrast with the linear corridor, soften hard edges, screen unsightly adjacent views, and identify important entries. Plant material shall create a seamless transition between areas.



Erosion Control

Sediment and erosion control shall be achieved through the provision of gravel mulch and or groundcover planting. On steep slopes where erosion is a concern, provide mid-slope retaining walls to create areas for landscaping or to avoid the need for an impervious flat surface.



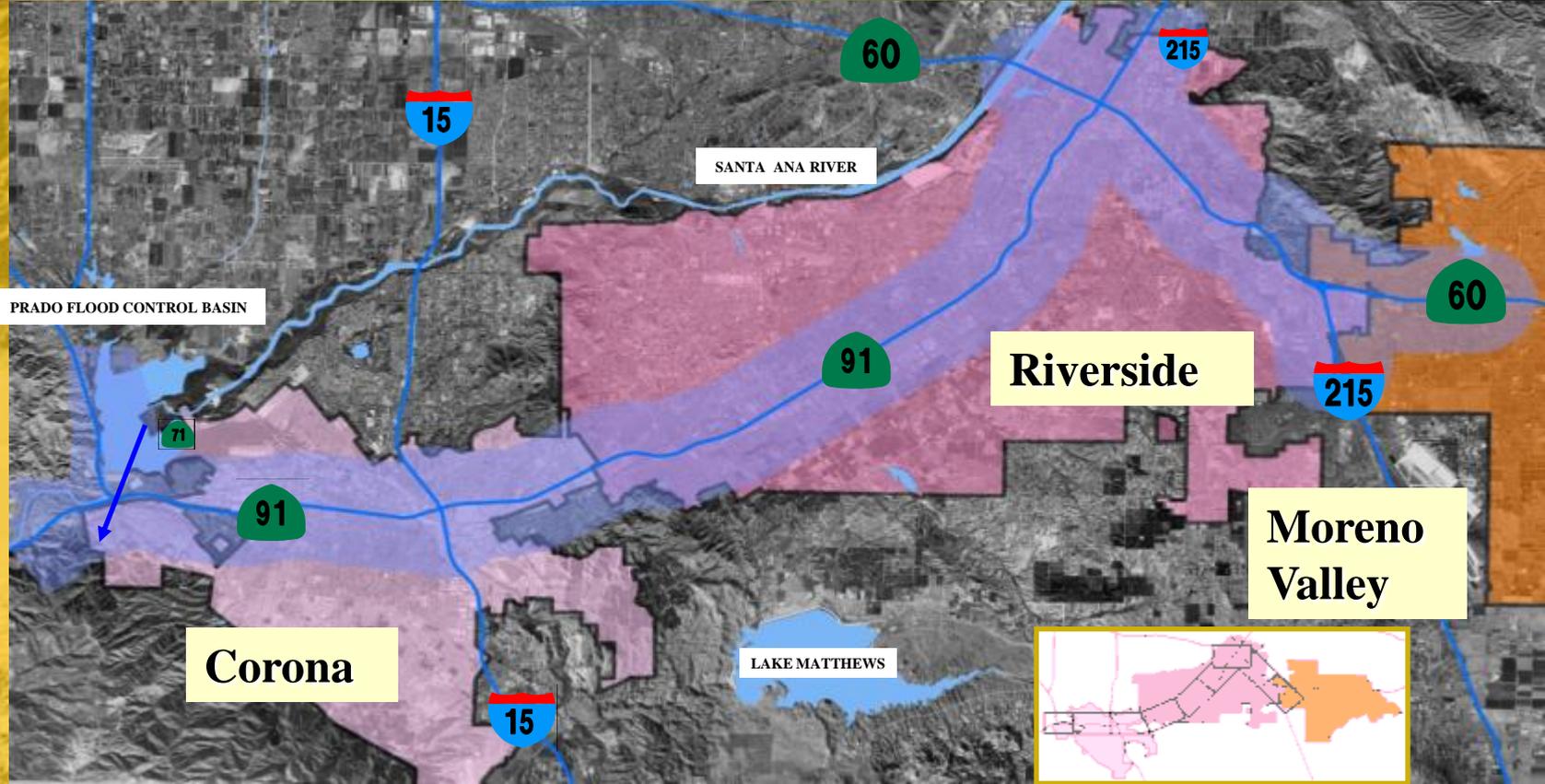
Irrigation

Landscape planting shall be drought tolerant. Minimum standards for irrigation design include:

- Remote Irrigation Control System.
- The communication equipment for the field units shall have a communication link with the existing server by fiber-optic technology.
- Reclaimed water shall be used for landscape irrigation, available from local entities.
- Irrigation shall be designed to limit overflows of irrigation water into the highway or other travel ways.

215/91/60

CORRIDOR MASTER PLAN



To Los Angeles



Purpose

Unify Freeway Corridor Improvements

Enhance Community Identity

Create a Lasting Public Works Project



Goals

Understand Public Expectations

Collaborative and Interdisciplinary Approach

Stewardship of Resources



Partnering Process/Interdisciplinary Team

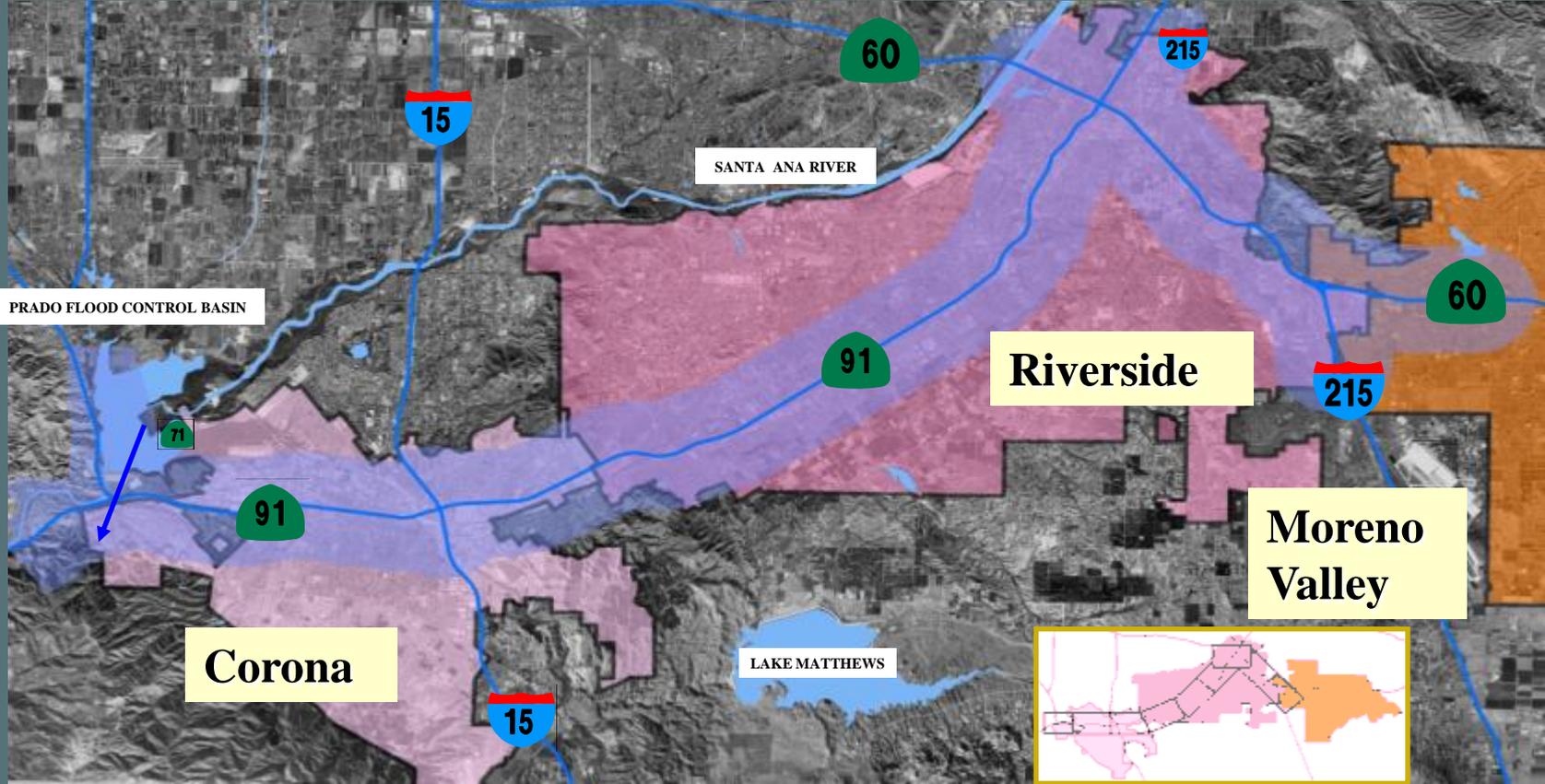
STAKEHOLDERS (partial list):

- Federal Highway Administration
- Riverside, Moreno Valley, Corona
 - Mayor, City Engineer,
- Count Government
- Local advocates
- State and Local water resources
- CA Fish and Game; US Fish and Wildlife
- CALTRANS



215/91/60

CORRIDOR MASTER PLAN





215/91/60
Corridor Design Context

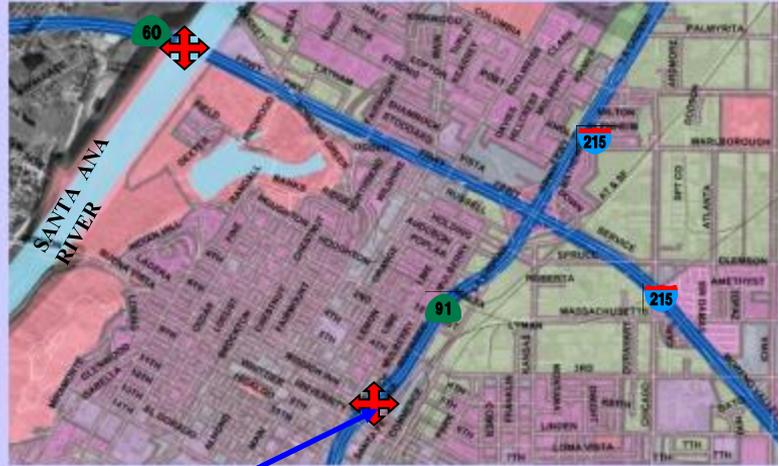


CONTEXT SENSITIVE SOLUTIONS

An approach to plan, design, construct, maintain and operate transportation systems in balance with community needs.



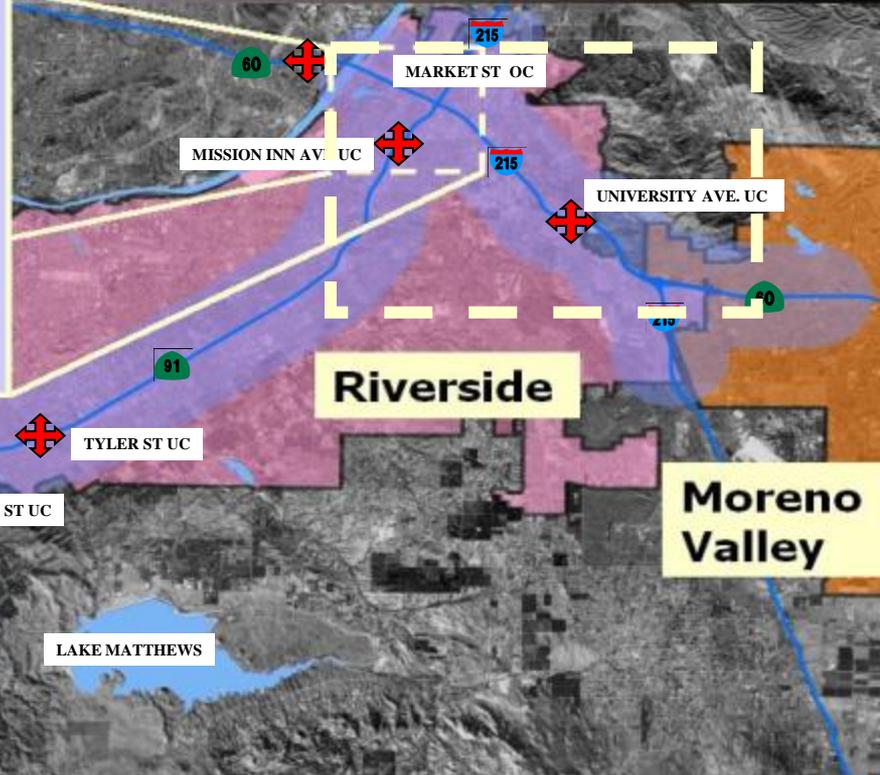
Gateway Location Analysis



RIVERSIDE DOWNTOWN GATEWAY

Legend

-  COMERCIAL ZONE
-  RESIDENTIAL ZONE
-  OPEN SPACE
-  AGRICULTURAL
-  PUBLIC FACILITIES
-  INDUSTRIAL ZONE
-  VACANT GATEWAY



Drainage



- Urban Basin
- Rural Basin

- Urban Swales
- Rural Swales



Urban Swale with formal rock blanket



Urban Irrigated Basin



Water Quality

Recommended Treatments



Rural Swale with informal rock blanket



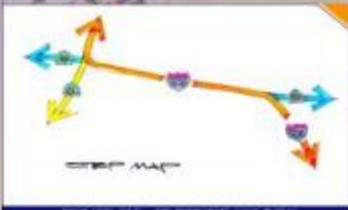
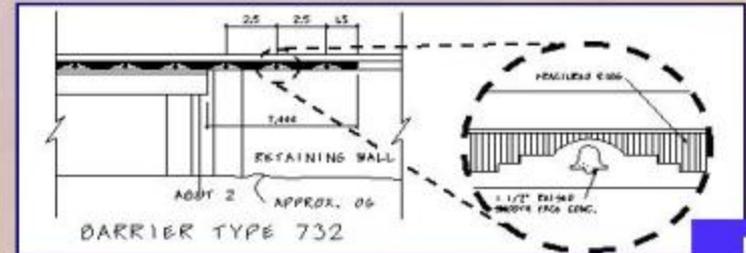
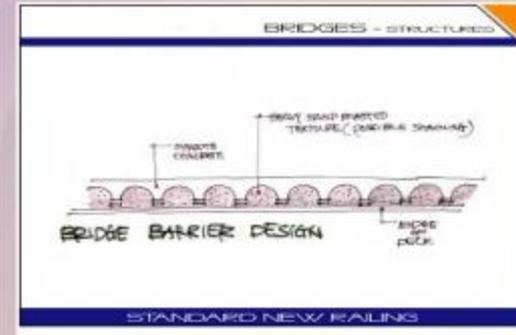
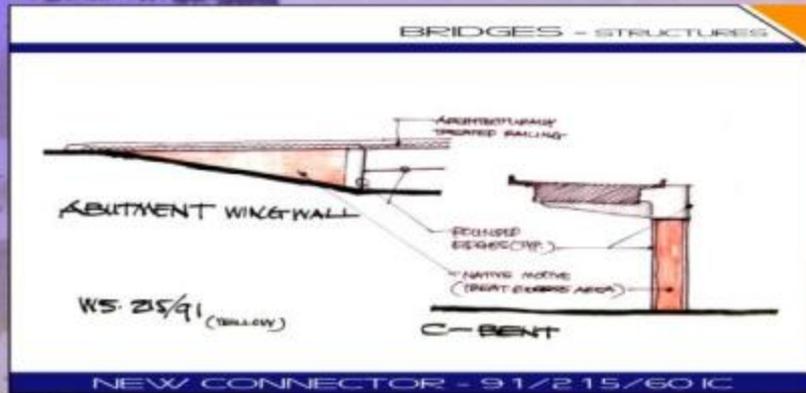
Rural Non-Irrigated Basin





Bridge Structures Typical for Rte 215, 91, 60

RTES 215,91,60 GENERAL TYPICAL ARCHITECTURAL ELEMENTS



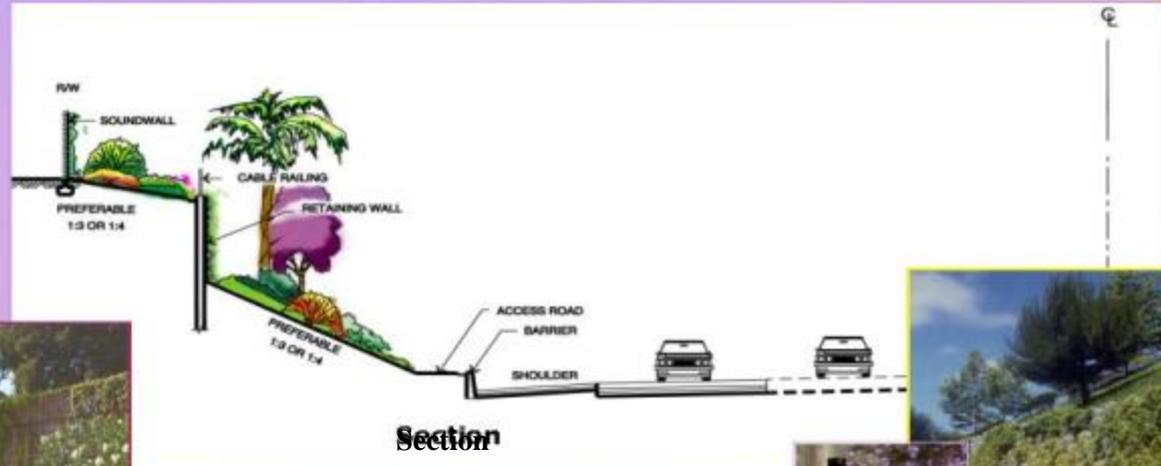


Conceptual URBAN Mainline

OPEN- Cross Section

Adjacent to Traveled Way

- Terraced walls
- Cover Walls with plants



Planting on Sound Wall

- Graffiti Control

Planting in open spaces

- Color & Texture



Planting on Retaining Walls



Developing Sustainable Relationships

215/91/60 Corridor Master Plan



Tie Back Walls

UCR Bear Test Panel



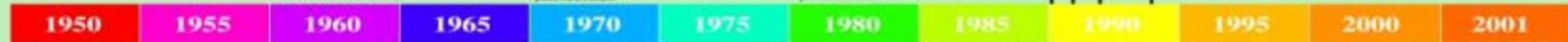
I-15
City Heights
San Diego





The I-15/40th Street Freeway Project

Mid City Timeline



1950 State Council for the I-15 freeway in Mid City is adopted.



1950s Increased activity across the mid-city area. Expansion of highway I-15 from downtown to a parkway in the north. Study issues for the needs of urban areas.

1970s Urban form re-evaluated in City Heights. All three areas suffer from aging or inadequate public infrastructure.



1980s The City Heights Community Center is established as center of urban life & revitalization. The entire block of the freeway is torn down.



1990s The Urban Project starts the freeway as a catalyst for revitalization.



1990s City of San Diego fails to adopt Urban Project. A study of 10 million dollars demonstrates a need to reduce overbuilding.



1990s City of San Diego begins the City Heights Urban Urban Revitalization program.



1980s Supplemental I-15 is approved (proposing a potential freeway bypass) (see I-15 Block 104). Approval includes a city park, transit block of transit lanes, and two neighborhood parks.

1980s Economic design begins. A design competition with the City of San Diego (through a consultant) and other interested groups.

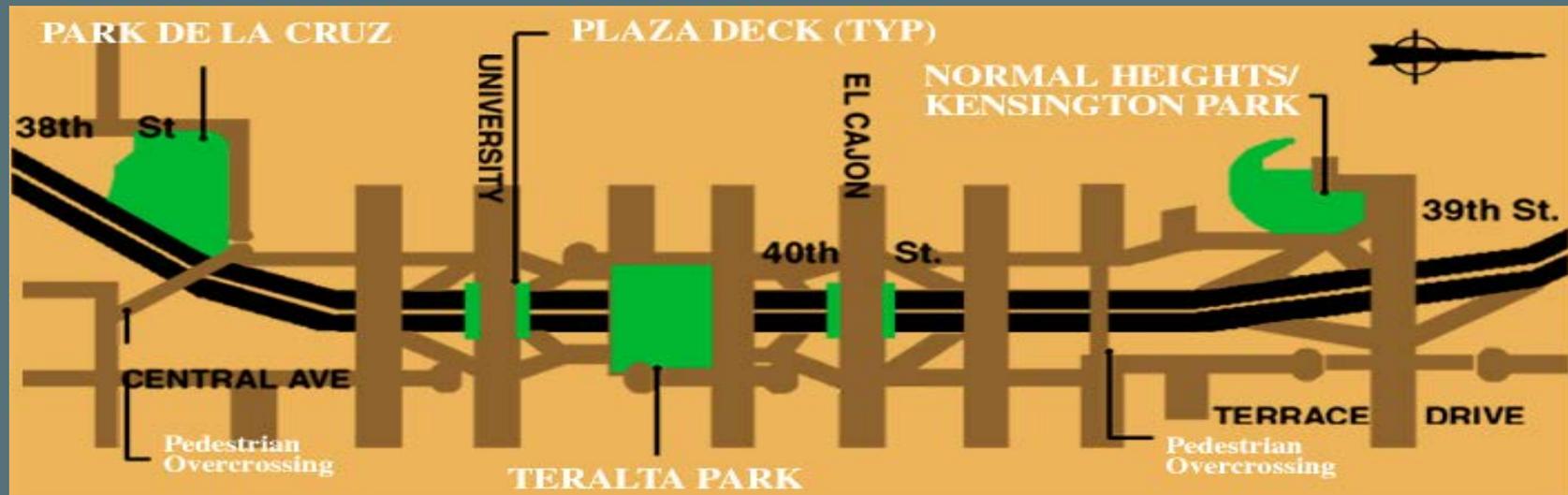


1990s Economic development begins.

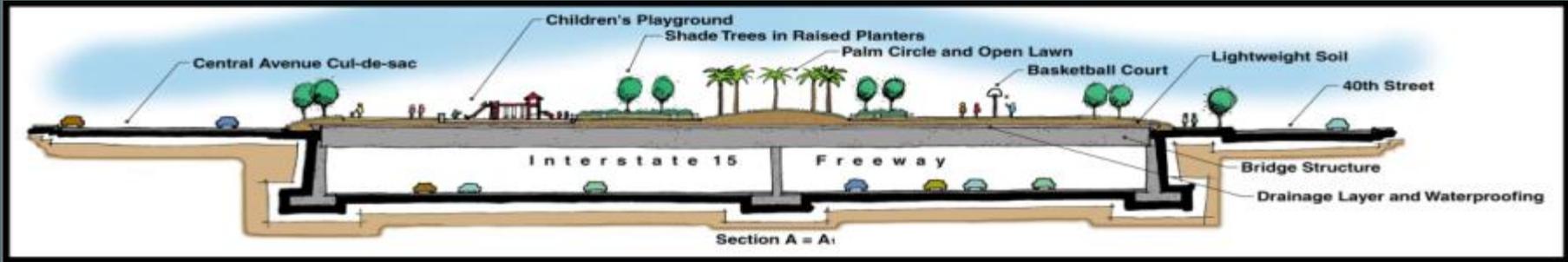


2000s Economic development is completed. Public, state-owned, plus numerous landscaping, and transit lanes on I-15. Street is closed to traffic.

I-15 Project Timeline



Teralta Neighborhood Park







Planning leads to Street Design



Long Range Planning

Calif Transportation Plan, RTP development

Community Planning Grants

Project Planning

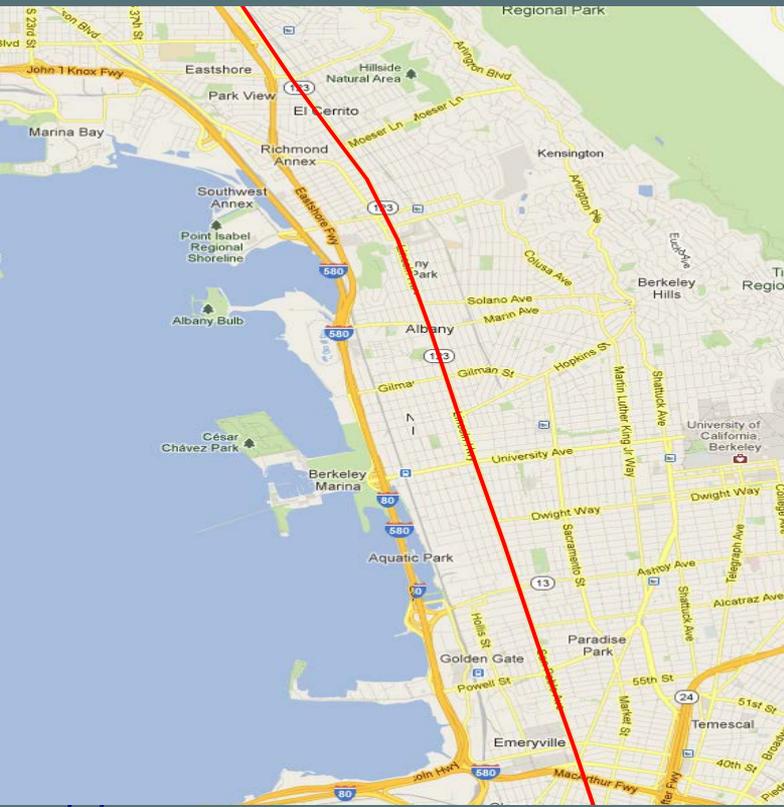
Maintenance Agreements

Cooperative Agreements

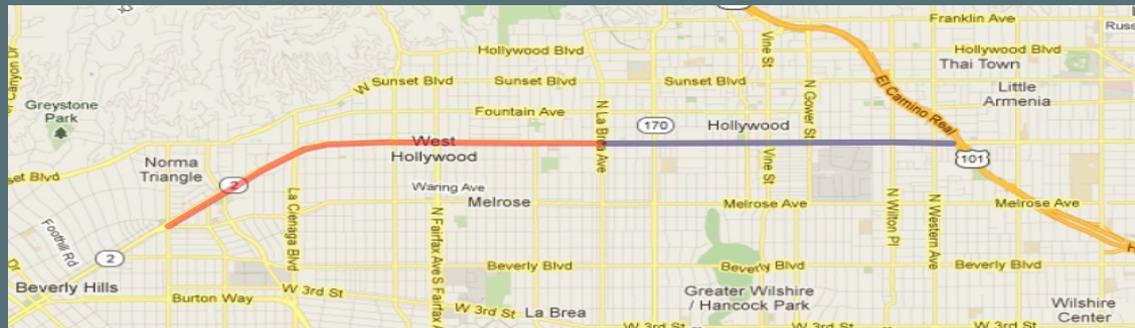
Relinquishment: Options for Ownership

Caltrans UCB Research

San Pablo Avenue



Santa Monica Boulevard



Roadside design features affect on pedestrian, bicyclist, and driver safety and mobility?

Local policies affect street quality?

Support Caltrans context-sensitive solutions based planning and design efforts.

Research Plan

- Policy analysis
 - Collision analysis
 - Intercept survey
- 
- Validation of performance measures.
 - Better understanding of effects of landscape and roadside design features.

Planning and Design Policies Make a Difference

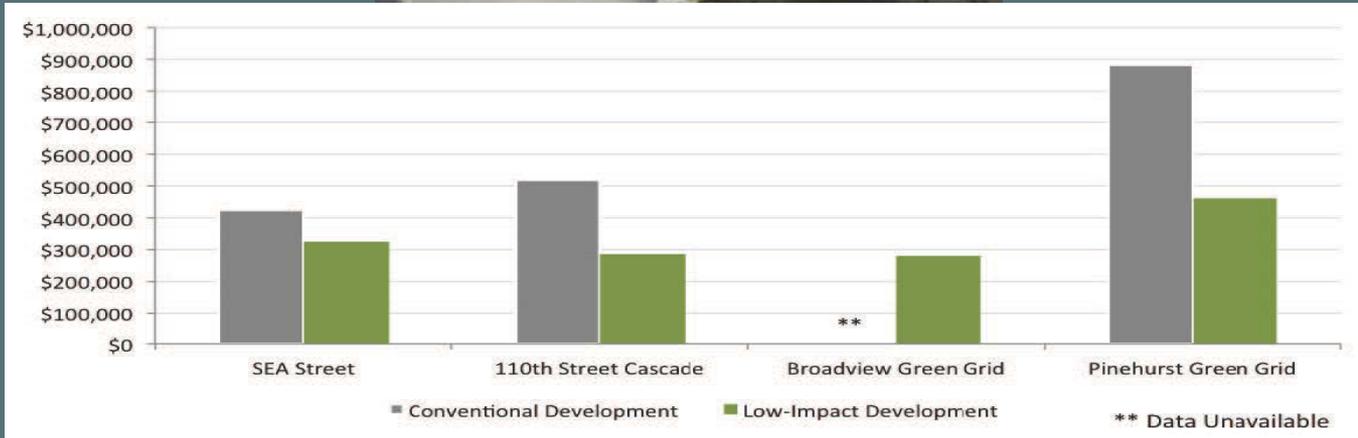
West Hollywood



Los Angeles



Quantifiable Benefits



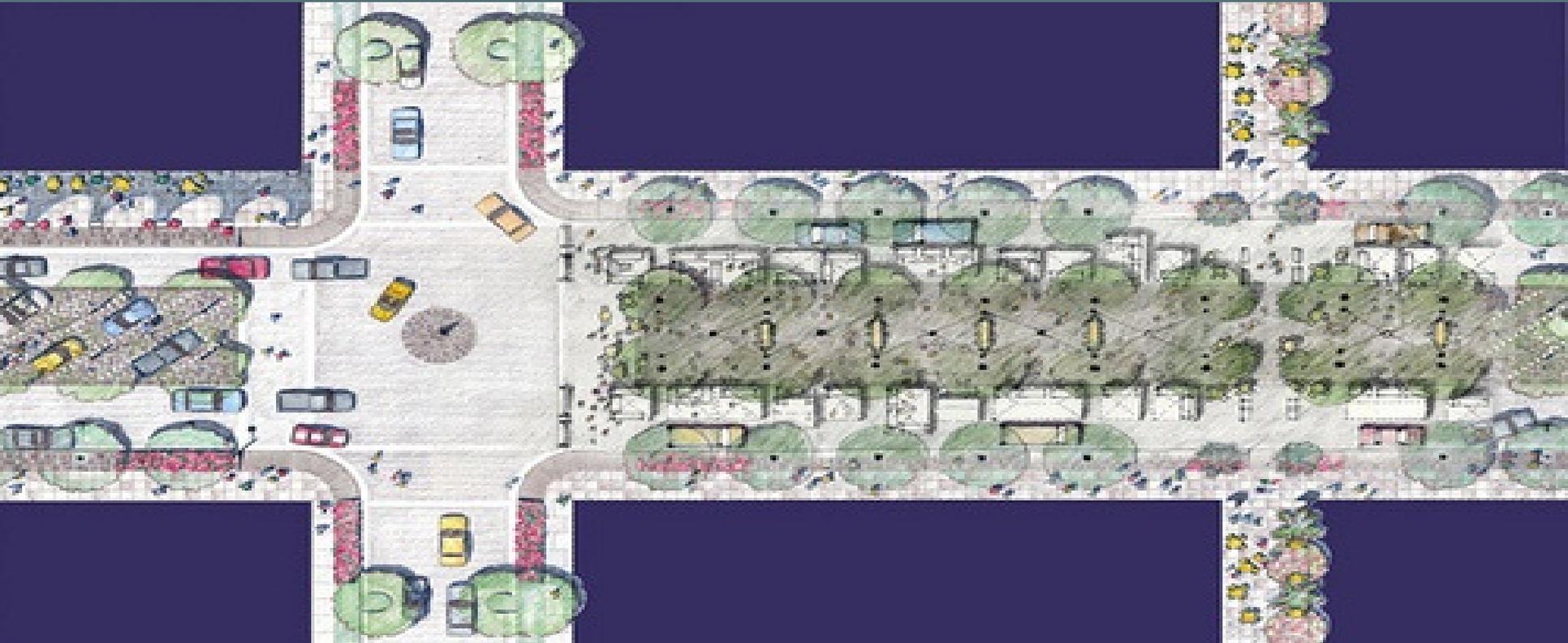
Street Reconstruction in Seattle

Quantifiable Benefits



**Green infrastructure vs. traditional
sewer/stormwater conveyance in Philadelphia**

Lancaster Blvd – case study



Lancaster Blvd



Lancaster Blvd



Lancaster Blvd



Welfare

Livability

Aesthetics















Rest Area paving



Corridor theme



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TOPICS

- [2010 Standards](#)
- [Aesthetic Barriers](#)
- [Awards](#)
- [Blue Star Memorial Highways](#)
- [Classified Landscaped Freeways](#)
- [Community ID](#)
- [Construction Inspection](#)
- [Context Sensitive Solutions](#)
- [Erosion Control Toolbox](#)
- [Estimating](#)

Welcome to the Landscape Architecture Program



Aesthetic Bridge Rail



Landscape Architecture Program

1120 N Street, MS 28
Sacramento, CA 95814

Composed of a broad range of skilled professionals, the Landscape Architecture Program provides the expertise necessary to help implement Caltrans' mission of improving mobility across California. The scope of our work within Caltrans is extensive, including multi-modal transportation and facility design, visual impact assessments, aesthetics, mitigation, roadside management, resource conservation, regional planning, site planning and development, and sustainable design.

[Read More...](#)



Caltrans Landscape Architecture Program

www.dot.ca.gov/hq/LandArch

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