Interstate 5 North Coast Corridor Project

Visual Impact Assessment

December 2007
Revised April 2009

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EA 235800
11 - SD - 5
R 45.8/R89.2 (KP)
R 28.4/R 55.4 (PM)

In San Diego County
In San Diego, Solana Beach, Encinitas, Carlsbad and Oceanside
To 0.3 KM North of Camp Pendleton Undercrossing

Caltrans District 11
Office of Design
Department of Landscape Architecture

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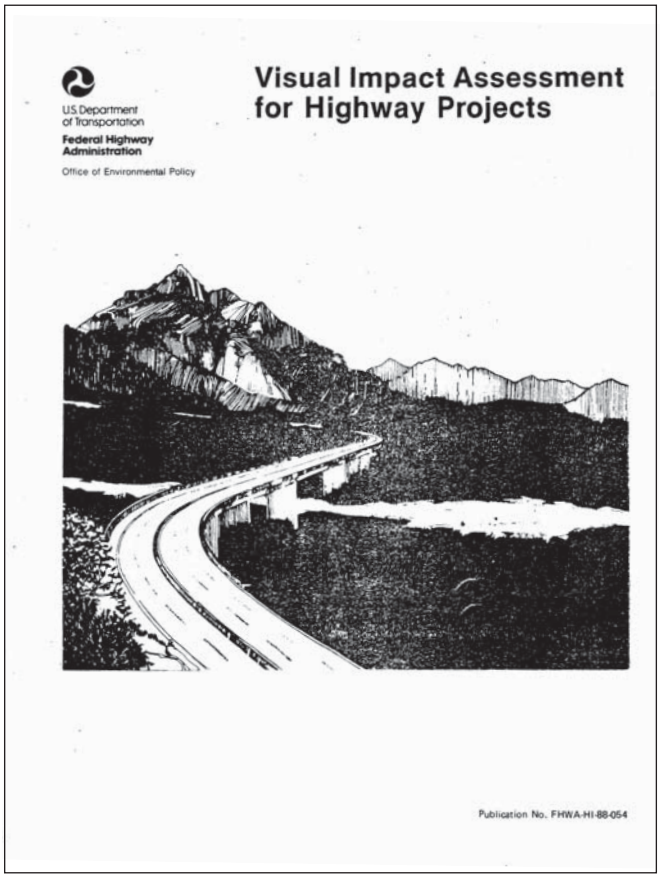
Introduction

Purpose of Study

The purpose of this study is to assess the visual impacts of the proposed project and to propose measures to mitigate any adverse visual impacts associated with the construction of the Interstate 5 North Coast freeway improvements on the surrounding visual environment.

Assessment Method

The process used in this visual impact study generally follows the guidelines outlined in the publication "Visual Impact Assessment for Highway Projects", Federal Highway Administration (FHWA), March 1981.



Six principal steps required to assess visual impacts were carried out. They are as follows:

A. Define the project setting and viewshed.
B. Identify key views for visual assessment.
C. Analyze existing visual resources and viewer response.
D. Depict the visual appearance of project alternatives.
E. Assess the visual impacts of project alternatives.
F. Propose methods to mitigate adverse visual impacts.

In addition, several methods of public outreach were used to collect data and validate the results of the assessment. A description of this process and the assessment method is contained in the Existing Resources and Viewer Response section of this document.

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Project Description

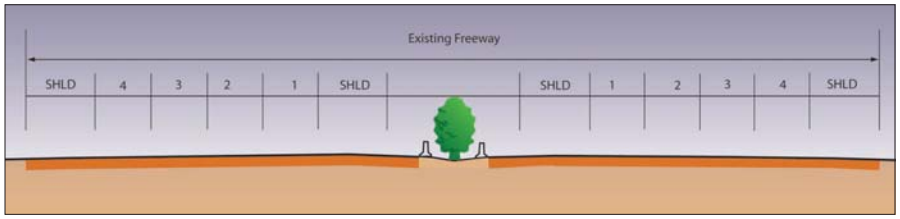
Proposed Project

The California Department of Transportation (Caltrans) proposes to construct one to two High-Occupancy Vehicle (HOV) / Managed Lanes, for an ultimate configuration of two HOV / Managed Lanes in each direction on Interstate 5 (I-5) from La Jolla Village Drive in the City of San Diego to State Route 78 (SR-78) in the City of Oceanside. From SR-78, one HOV / Managed Lane is proposed in each direction north to Harbor Drive in Oceanside. The project also proposes Direct Access Ramps (DARs) at Voigt Drive, Manchester Avenue, Cannon Road, and Oceanside Boulevard, and auxiliary lanes at various locations. Four build alternatives and one no-build alternative are proposed.

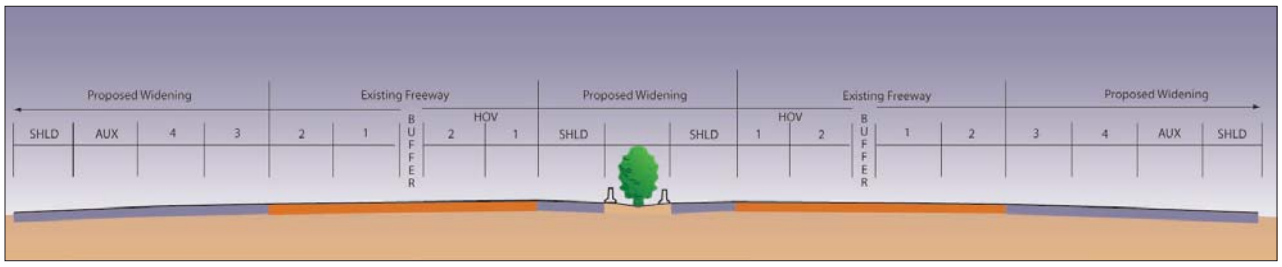
Project Alternatives

Five project alternatives are being considered:

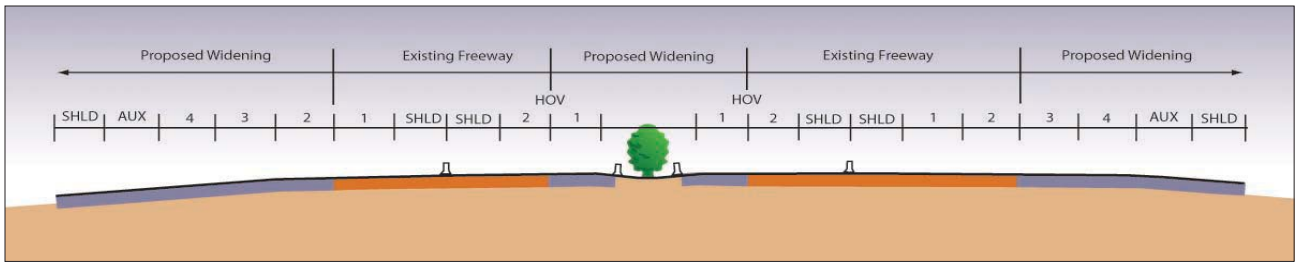
No Project



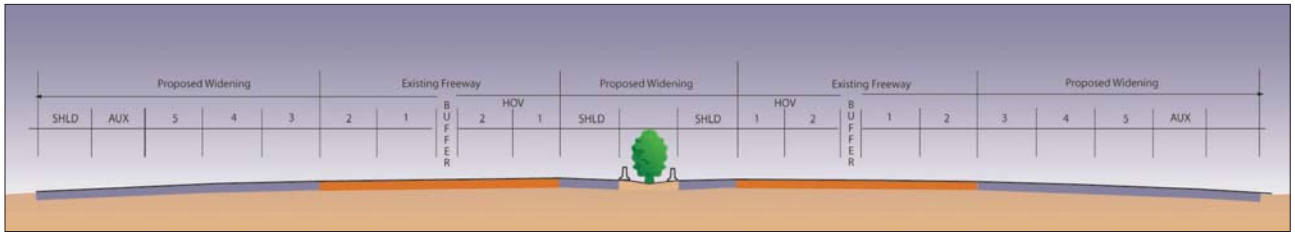
8+4 with Buffer – Eight general purpose lanes and four HOV lanes separated by 1.2m (4ft) wide striped buffer zones.



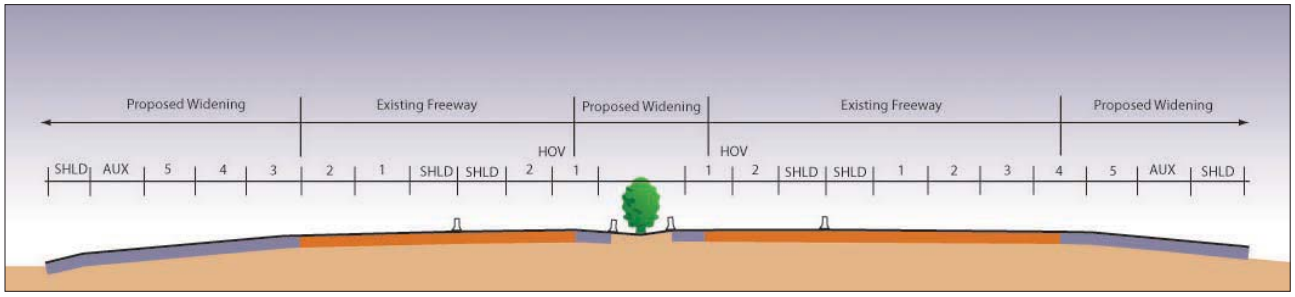
8+4 with Barrier – Eight general purpose lanes and four HOV lanes separated by concrete barriers and standard shoulders.



10+4 with Buffer – Ten general purpose lanes and four HOV lanes separated by 1.2m (4ft) wide striped buffer zones.



10+4 with Barrier - Ten general purpose lanes and four HOV lanes separated by concrete barriers and standard shoulders.



Proposed Project Features

Typical Cross Section

The proposed cross section varies with each project alternative and the need for auxiliary lanes in specific locations. The typical width of the existing freeway is 46m (150 ft.). The typical width of the narrowest build alternative (8+4 with buffer and two auxiliary lanes) would be 67m (225 ft.), and the width of the widest (10+4 with barrier and two auxiliary lanes) would be 77m (254 ft.). Most of the proposed widening would occur outside the existing travel lanes.

Constrained Right-of-Way

Each build alternative would be constructed within the limits of existing Caltrans right-of-way if at all possible. It would restrict the use of landform altera-

tion methods to replace existing freeway side slopes in kind. Instead, retaining walls as described below would be required to accommodate widening.

Graded Slopes
Cut slopes are anticipated to have a gradient of 1.5:1 or flatter, fill slopes would be 2:1 or flatter. The erosive nature of soils in the project area may prevent the use of steeper gradients in fill conditions to reduce the project footprint without mechanical slope reinforcement such as a geo-grid system.

Retaining Walls
Walls would be required to retain side slopes in areas where existing or proposed right-of-way would not accommodate relocated 2:1 slopes. The height of these walls is expected to be up to 18m (59 ft.).

Noise Barriers
The proposed barriers referred to in this assessment are those recommended as reasonable and feasible in the Preliminary Noise Abatement Decision Report (NADR) for this project.

Drainage Facilities
Storm water pollution prevention facilities such as bio-swales and detention basins would be project features and add to the project footprint.

Bio-swales are linear, shallow surface channels that would be placed near the edge of roadway or toe of slopes. They would direct freeway run-off and allow sediment to be discharged from freeway run-off prior its entry to a storm drain. They would be lined with vegetation that would likely consist of native grasses.

Detention basins would likely be located on the inside portion of loop ramps at freeway interchanges. They would temporarily detain large quantities of storm water in order to separate and capture sediment and pollutants before they enter storm drains. The basins would require features such as metal standpipes up to 2m (6ft.) in height, concrete structures such as headwalls and scour protection pads, rock slope protection (rip rap), an access road for maintenance vehicles, and chain link security fencing. They would be lined with bare earth and native grasses on the side slopes.

Existing detention basin at the I-5/Manchester Avenue Interchange.

Reconfigured Interchanges
Some interchanges would be reconfigured to facilitate future traffic volumes and provide improved non-motorized mobility. For example, at Mission Avenue interchange in Oceanside, existing freeway ramps near Oceanside High School would be relocated to eliminate existing pedestrian/vehicular conflicts, and a widened sidewalk with enhanced lighting would be provided across the freeway to accommodate high levels of pedestrian use.

Reconstructed Overcrossings
All existing overcrossings in the project area would be reconstructed for the 10+4 alternatives. Sidewalks with above standard widths and bicycle facilities would be provided on structures consistent with local non-motorized circulation goals.

The MacKinnon Road overcrossing would be reconstructed and relocated in the same vicinity and aligned perpendicular to the freeway.

Widened Undercrossings
All existing undercrossings in the project area would be widened. Local streets beneath undercrossings may be widened and improved pedestrian facilities may be constructed.

Lagoon Bridges
Existing bridges that span lagoons would be widened. Some may be rebuilt and replaced with longer structures in order to reduce the length of freeway fill slopes and allow wider lagoon channels to be created beneath.

Direct Access Ramp (DAR) Structures and Access Roads
DAR structures would be composed of overcrossings with central ramps that descend to HOV/managed lanes in the median. Access roads would connect the DAR to local street systems. DAR structures and access roads would be located on I-5 at Voigt Drive, Manchester Avenue, Cannon Road, and Oceanside Boulevard.

Bus Rapid Transit (BRT) Stations
A transit station near the DAR location at Manchester Avenue is proposed to accommodate BRT service on the HOV lanes of the freeway. It would consist of a bus platform, commuter drop-off area, and parking lot.

Lighting, Signage, and Related Appurtenances
Freeway appurtenances such as lighting and directional signage would be augmented by video cameras, changeable message signs, congestion pricing signs, overhead sensors, and related electronic equipment.

Vista Points
The existing vista point on the southbound side of the freeway near Manchester Avenue would be relocated and improved and would contain an interpretive element regarding the prehistoric use of the coastal area. The park and ride lot at La Costa Boulevard in Carlsbad is currently signed as a vista point and would also be improved per the I-5 Community Enhancement Plan.

Park and Ride Lots
These lots are currently located at Birmingham Drive in Encinitas, La Costa Avenue in Carlsbad, and SR-78/Vista Way in Oceanside. It has not yet been determined how these lots will function in the proposed project, although enhancements have been proposed for the facilities at Birmingham Drive and La Costa Avenue in the I-5 Draft Community Enhancement Plan.

Community Enhancement Projects
In an effort to avoid community and visual impacts, Estrada Land Planning (ELP) conducted a site analysis of opportunities and constraints that exist in the I-5 corridor. ELP then synthesized site analysis and local agency planning data with proposed project features. The design synthesis resulted in a number of potential community enhancement projects that could accomplish both community planning and project planning goals. The I-5 project development team, local agency staff, city council members, resource agency staff and general public reviewed these candidate projects. The candidate project list was refined in response to comments from the above-mentioned groups to form the Draft I-5 North Coast Community Enhancement Plan.

The proposed enhancement projects involve public land use and circulation improvements in and near Caltrans right-of-way. They include features such as pedestrian overcrossings, enhanced pedestrian and bicycle facilities, trail improvements, park improvements, habitat restoration, and interpretive centers.

Aerial simulation of a proposed BRT transit center and DAR at Manchester Avenue.

Visual Environment

Regional Landscape

Identifying the regional landscape enables us to establish a frame of reference for comparing the visual effects of alternatives and determining the severity or benefit of those effects. In other words, we can adequately assess the visual effects of a project only when we understand how the project's immediate visual environment is related to the visual environment of the geographic region.

The regional context of this project is the northern coast of San Diego County. The area is generally perceived as a series of coastal towns linked by the old Coast Highway.

The landscape of northern coastal San Diego County is characterized by the Pacific Ocean and natural features formed by the action of water on earth. Sandy beaches, sandstone bluffs, coastal lagoons, broad river valleys, steep canyons, expansive mesas, and rolling foothills constitute the predominant landforms.

Vegetation consists of a wide range of native and introduced plant species. The characteristic native plant communities are coastal sage scrub and maritime sage scrub, and the signature native plant is the rare Torrey Pine, which grows naturally only on the coastal bluffs of La Jolla and Del Mar and on Santa Rosa Island. The mild coastal climate allows exotic cultivated plants to thrive, and the area is noted for its unique ornamental horticulture industry exemplified by the Poinsettia farms of Encinitas and flower fields of Carlsbad. The seacoast is considered by many to be among the most scenic in the world, and the region is a major tourist destination.

The I-5 freeway passes through San Diego's north county seaside communities whose visual components establish the character of the corridor. The historic Coast Highway (old Highway 101) serves as a unifying link between them. Although each has a unique visual identity, a powerful unity is also present because of shared landform components.

Because of its outstanding climate and scenery, this portion of California coast has taken on a cultural significance that borders on the mythic. The California dream of sun, surf, and the freedom of the open highway took form here and in similar communities up the coast. The area has been immortalized in popular culture by such disparate voices as Raymond Chandler, Tom Wolfe, and the Beach Boys.

The scenic landscape components, both natural and man-made, have mostly survived the intense urban development of the past 30 years, and continue to draw new visitors and residents each year. The coastal landscape, historic villages, and unifying ribbon of highway are highly valued regionally, nationally, and globally. Below is a brief pictorial description of San Diego's north coast and the I-5 freeway corridor.

La Jolla as seen from the bluffs overlooking Black's Beach.

Left:
La Jolla Cove from the eucalyptus groves of Scripps Institute of Oceanography.

Below Left:
Children's Pool, one of the Village's scenic beaches.

Bottom:
Salk Institute of Biological Sciences, a twentieth century architectural masterpiece by Louis Kahn.

La Jolla

Despite its proximity to San Diego's urban core, La Jolla has managed to retain much of the village character it possessed one hundred years ago when it began as an artist's colony at the edge of the Cove. La Jolla's world famous beaches are fringed by picturesque sandstone bluffs and wooded foothills. The University of California, San Diego and Scripps Institute of Oceanography are nestled into century old eucalyptus groves planted by the Scripps family. The area also contains iconic architecture such as Irving Gill's La Jolla Women's Club and Louis Kahn's Salk Institute.

Left: Penasquitos Lagoon as seen from the State Reserve Visitors Center.

Below Left: Historic Torrey Pines Bridge.

Below Right: A portion of the original Coast Highway in Torrey Pines State Reserve.

Torrey Pines

The sight of windswept Torrey pines clinging to the coastal headland at Penasquitos Lagoon is the same one that greeted sixteenth century Spanish explorers who named it Punto de Los Arboles (Point of Trees) because trees were such a rare sight on the southern California coast. The scenic beach, lagoon, and headlands are now part of the Torrey Pines State Reserve. Area landmarks built in the twentieth century include the Torrey Pines Lodge, two incarnations of the old coast highway, and the Torrey Pines coast highway bridge.

Left:
Del Mar Village street scene.

Below Left:
Del Mar Racetrack and Fairgrounds grandstand building.

Below Right:
The beach at the old power station.

Del Mar

Del Mar is a seaside residential community anchored to the coast by a pedestrian oriented central village. Long stretches of sandy beach, sandstone cliffs, and hillside stands of Monterey Cypress and Torrey Pines, are natural elements that define the city's visual character. It is also home to the Del Mar Racetrack and Fairgrounds which has given rise to the city's unofficial motto: "Where the turf meets the surf."

Solana Beach

The coast highway and railroad form the linear orientation of old Solana Beach. Fletcher Cove is the city's historic focal point and provides its primary public beach access. Nearby, the Coaster rail station and recently redeveloped Cedros design district bring a new vitality to the area.

Left: Pedestrian friendly environment near the Solana Beach Coaster Station.

Below: The Solana Beach Coaster Station reflects the image of this beach community.

Cardiff

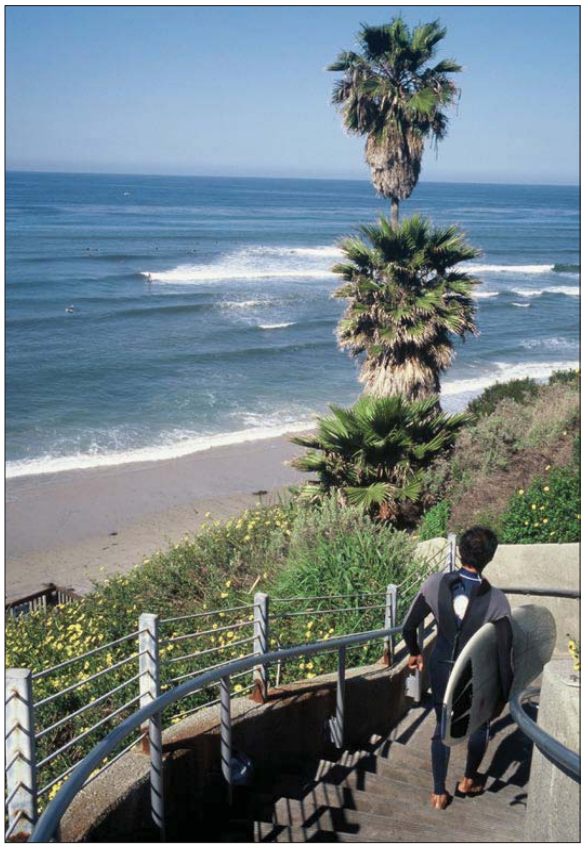
Cardiff is a residential community located on the bluffs north of San Elijo lagoon. On the coast, San Elijo State Beach comprises the majority of Cardiff's shoreline, but perhaps the most vivid coastal image is the beach at Cardiff reef where the ocean meets the lagoon at the mouth of an expansive valley.

Left: The Cardiff business district.

Bottom: The Coast Highway and Cardiff State Beach are primary visual components of the community.

Encinitas

Encinitas began as an agricultural community and is where the Poinsettia was developed as a commercial flower crop for export around the world. The agricultural influence remains as greenhouses and avocado and citrus groves intermingle with residential neighborhoods in the coastal hills. Its large business district along the coast highway possesses a casual village atmosphere. Encinitas also has a reputation as a surfing mecca, and many of its businesses and public facilities cater to the lifestyle. Swami's Point is a surf break of world renown, and its namesake, the Self Realization Fellowship, is a city landmark with its white towers and lotus flower domes.



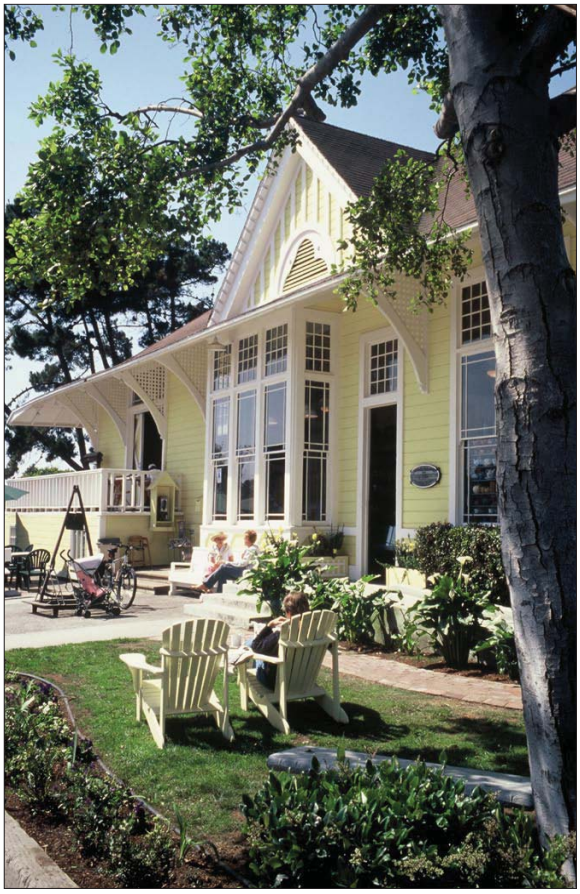
Left:
A good day at Swami's.

Far Left:
Village life along the Coast Highway.

Bottom:
Moonlight Beach serves as primary beach access for the city.

Leucadia

Like Encinitas, the visual character of Leucadia is formed to a large extent by surfing and ornamental horticulture. The coast highway is its Main Street, with historic Leucadia Roadside Park serving as the focal point and a link to Beacon's, a popular surfing beach.



Left: A local cafe serves as a center for community interaction.

Below Left: Mature Eucalyptus trees recall the historic character of the Coast Highway.

Below Right: Vulcan Avenue allows mutli-modal transportation opportunities. The greenhouses preserve Leucadia's rural character.

Left:
The sea wall at Carlsbad State Beach is an important recreational element.

Below Left:
The historic Coast Highway as it passes through Carlsbad Village.

Bottom:
A preserved section of the old Coast Highway along Carlsbad State Beach.

Carlsbad

Coastal Carlsbad is characterized by miles of open beach and open highway that begins at Batiquitos Lagoon and extends north to Carlsbad Village. Its historic commercial district is larger, extends further inland, and contains more mixed land uses than those to the south. It is also less linear and is not as oriented to the coast as the southern communities. For these reasons it exhibits more characteristics of a traditional small town rather than a beach community despite being bisected by the I-5 freeway.

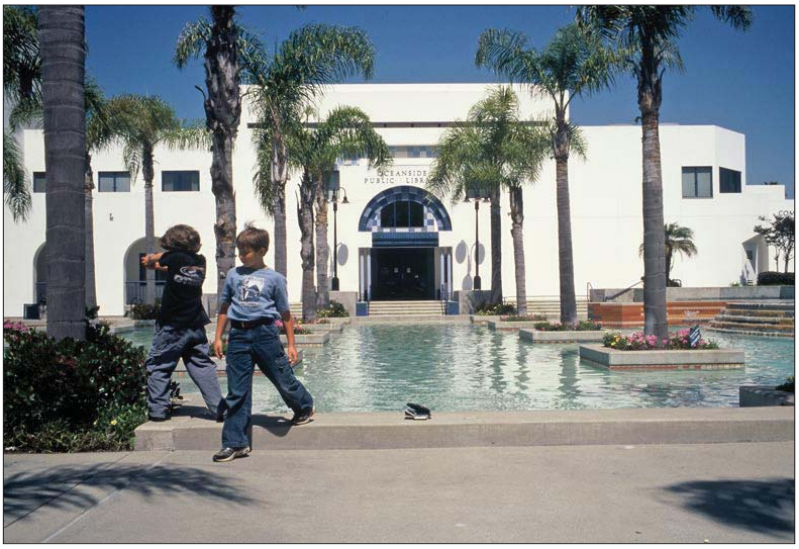
Oceanside

Oceanside is noticeably more urban than the other north county beach communities. The City Hall and Library complex, whose architecture was inspired by San Diego architect Irving Gill, anchors a recently redeveloped downtown commercial district. Commercial uses extend south from downtown along the coast highway for miles and the streetscape seems to personify mid-twentieth century California car culture. The Oceanside Pier and the Strand are landmarks and are the center of the city's beach activities.

Above:
Watching a surf contest at the Pier.

Left:
The Strand is Oceanside's historic beach

Oceanside (continued)



Above: The Oceanside public library is a part of the city hall complex downtown.

Middle Left: The Oceanside portion of the Coast Highway recalls mid-twenthieth century car culture.

Middle Right: Oceanside Pier is a center of beach activity.

Bottom: A downtown street market gives citizens an opportunity to interact.

The I-5 Freeway Corridor

The I-5 north coast freeway corridor began in 1955 as a short by-pass route on the east side of downtown Oceanside. As the freeway moved south over the years, it continued as a rural route around the old coastal towns, and formed an unofficial dividing line between the beach and inland portions of the region. Of greater significance was the corridor's developing role as the northern gateway to San Diego. Today, the corridor's scenic image forms the visitor's first impression of a city that takes pride in its unique visual identity and its nickname as the Garden City.

Although the freeway has grown to become the primary link between two of the largest metropolitan regions in the country, the rural character of the corridor has managed to survive. Expansive views of river valleys, coastal lagoons, beaches and other natural scenic resources offer a freeway driving experience like no other in southern California. Development densities near these natural features have remained low for the most part, and large groupings of mature trees are the primary visual element in the developed landscape.

The parkway character of the old by-pass road persists on today's freeway. Large structures normally found on urban freeways such as flyover bridges, retaining walls, and noise walls are absent from much of the corridor, and where they do exist, are strictly minimal in appearance. This allows natural landscape features to take center stage, opening scenic views from the road and screening views of the freeway from adjacent communities. On the freeway proper, large oleander shrubs in the median reduce the visual scale of the freeway by half and towering eucalyptus trees provide vertical relief in proportion to the broad horizontal plane of the freeway.

The I-5 corridor leads the traveler through a sequence of outdoor spaces that alternates between coastal valleys and their corresponding uplands. The valleys are characterized by natural open space and open water in the form of the ocean, lagoons and/or rivers, and the uplands consist of hills and mesas that contain a variety of developed land. Typically, new large-scale suburban development is located east of I-5 beyond the freeway viewshed, while older, small scale beach communities are adjacent to and west of the freeway.

The I-5 corridor is part of the California Scenic Highway System and is also designated as a scenic corridor by some of the cities it traverses.

Left: The I-5 as it traverses the San Dieguito River Valley.

Landscape Units

A landscape unit is a portion of the regional landscape that provides local visual context. It can be thought of as an outdoor room that exhibits a distinct visual character, and will often correspond to a place or district that is commonly known among local viewers.

Landscape units identified for this assessment are oriented to the freeway corridor, but also include characteristic landscape components in adjacent communities beyond the view of the freeway.

La Jolla Hills

The landscape in this area is consistent with the University of California campus through which the freeway traverses. Extensive groves of old growth Eucalyptus and large tracts of natural open space interspersed with large institutional buildings of modern design are the distinctive landscape components of this unit.

Above: Iconic architecture of The Geisel Library on the UCSD campus.

Bottom: Aerial view looking northwest with La Jolla Village Drive in the foreground.

Sorrento Valley

North of the Genesee Avenue interchange, the I-5 freeway traverses the eastern slope of a canyon punctuated with rolling tributary ridges with naturally vegetated slopes. The ridge lines form an irregular edge to flat mesas where a research park is located. Continuing north, views open up to Sorrento Valley, bordered on the north by Sorrento Hills, and to the southwest by the sandstone bluffs of Torrey Pines State Reserve. Northern valley slopes have been recently graded for residential and commercial development overlooking the freeway. The sixteen-lane I-5/I-805 merge, its elevated structures and retaining walls dominate views from Sorrento Valley.

Above:
A view from UCSD east toward I-5.

Left:
Aerial view looking north with Genesee Avenue near the bottom of the photo

Carmel Valley

The coastal landscape in this viewshed is among the most scenic in the world. Prominent coastal headland bluffs of eroded sandstone, pristine white sand beaches, windswept groves of native Torrey Pines silhouetted on ridge tops, and channels of open water meandering through the broad marshlands of Los Penasquitos Lagoon are among the vivid natural features that give the area its unique beauty. In the last thirty years, however, contrasting man-made features adjacent to Torrey Pines State Reserve have begun to alter this scenic viewshed. The I-5/SR-56 freeway interchange and development east of the I-5 freeway form the greatest contrast to the scenic landscape. Small-scale residential development to the west is more compatible with natural features, but has nonetheless obscured or displaced natural landforms and vegetation that once visually integrated the southern and northern portions of the Reserve.

Above: Los Penasquitos Lagoon from Torrey Pines State Reserve.

Left: Aerial view looking north with the I-5/SR-56 interchange at the top of the photo.

Del Mar Heights

Man-made landscape components dominate this landscape unit. Although ornamental landscaping is prominent, there are virtually no natural topographic features remaining in the freeway viewshed. The primary visual features are commercial business development, residential development, a freeway interchange, freeway cut slopes and retaining walls.

Left and Below Left: Two views from Del Mar Heights Road.

Left: Aerial view looking north with the I-5/SR-56 interchange near the bottom of the photo.

San Dieguito Valley

The San Dieguito River Valley is a broad floodplain that contains a variety of landscape elements and land uses. The southern portion of the valley retains its natural topography as agricultural fields climb the gently sloping terrain at the base of naturally vegetated sandstone bluffs. Small stands of Torrey pines are visible near the bluffs and finger canyons which have been preserved as open space in Crest Canyon Natural Park and Overlook Park. Residential communities recede into the mature tree plantings that line the southern and western ridges. The Del Mar Racetrack and Fairgrounds is a San Diego county land mark and is located at the mouth of the river near the ocean. A lagoon is adjacent to the river on the south. Small-scale commercial development consisting of a hotel, recreation center and shopping centers are located adjacent to Via de la Valle, a major east/west arterial that skirts the northern edge of the valley. The freeway is constructed on fill through most of the valley, and travelers enjoy views of the ocean, agricultural fields, and open space that give the valley its natural character despite the presence of the racetrack and commercial development.

Above: Looking East across Crest Canyon toward a ridge top residential community.

Left: Aerial view looking north with Del Mar Heights Road at the bottom of the photo.

Solana Hills

This landscape unit is located in the coastal hills that separate the San Dieguito and San Elijo watersheds. The Lomas Santa Fe interchange is at the crest of the freeway profile. Freeway landscaping and commercial landscaping are the primary visual elements at the interchange. To the south, custom built residences dot hillsides whose natural topography has been kept essentially intact, and whose primary visual element is mature residential landscaping. Some graded slopes exhibit the characteristic appearance of eroded sandstone bluffs. Equally characteristic is the mixture of native vegetation and naturalized ice plant that grows in the eroded sediment of slope crevices. All these elements combine to establish the historic visual character of a typical north coast beach community.

Left:
A residence near the freeway typical of the low density residential neighborhoods along the corridor.

Below Left:
An ocean view from Marine View Drive.

Left:
Aerial view looking north with Via de la Valle at the bottom of the photo.

San Elijo Valley

The landscape features of San Elijo Lagoon County Park and Ecological Reserve and Cardiff State Beach are the primary visual components of this scenic landscape unit. Lagoon marshland is the primary visual feature and is augmented by naturally vegetated coastal bluffs and gently sloping agricultural fields at their base. A residential development spills down one hillside, replacing natural bluffs with large graded slopes and rows of closely spaced structures, both of which detract from the natural character of the viewshed. Freeway travelers are offered scenic views of the ocean to the west, and inland foothills of Rancho Santa Fe to the east. As the freeway follows a tributary valley north, it ascends from the lagoon. A scenic vista point overlooks the ocean and lagoon on the southbound side of the freeway.

Above: Characteristic landscape components of the valley: bluffs, agricultural fields, and the lagoon. A recreational trail can be seen in the lower portion of the photo.

Left: Aerial view looking north with Lomas Santa Fe in the bottom of the photo.

Cardiff Bluffs

The southern portion of this landscape unit contains undulating sandstone bluffs that are part of a large tract of open space visible to the east, and a hillside capped by an even ridge line parallels the freeway on the west. Both hillsides are covered with a characteristic mix of native and naturalized vegetation. Individual residences are scattered in the hills and along the tops of ridges. Small-scale suburban development is the prevailing land use, and commercial uses are located near Santa Fe Drive.
The site for a future city park is located adjacent to the southbound lanes of the freeway between MacKinnon overcrossing and Santa Fe Drive. North of Birmingham Drive, the freeway is fully landscaped with ornamentals. Mature trees on freeway slopes and in the community are the primary visual feature in this portion of the landscape unit.

Above:
A view of Crest Street looking north. Mature vegetation is the primary landscape component of the older neighborhoods in the area.

Left:
Aerial view looking north with Manchester Avenue at the bottom of the photo.

Encinitas Uplands

Small-scale suburban development is the prevailing land use, and commercial uses are located near Santa Fe Drive. The site for a future city park is located adjacent to the southbound lanes of the freeway between MacKinnon overcrossing and Santa Fe Drive. North of Birmingham Drive, the freeway is fully landscaped with ornamentals. Mature trees on freeway slopes and in the community are the primary visual feature in this portion of the landscape unit.

Left:
Large areas of open space still remain adjacent to the freeway.

Below Left:
An ocean view from the freeway at Encinitas Blvd.

Left:
Aerial view looking north with Santa Fe Drive at the bottom of the photo.

Leucadia Hills

The freeway traverses the eastern slope of a large canyon in this landscape unit. To the west, a freeway fill slope descends to the canyon floor, which contains Moonlight Creek (south of Leucadia Boulevard) and Orpheus Avenue (north of Leucadia Boulevard). The western canyon slope facing the freeway is dotted with custom homes on large lots. Residences along the ridge have views of the ocean and mountains. Stands of mature trees are the primary landscape element, and old growth avocado groves are common, as are commercial greenhouses. To the east of the freeway, a cut slope rises to meet relatively flat topography that sustains similar land uses and vegetation as that described above.

Above: Ridgetop residences west of I-5.

Left: Aerial view looking north with Encinitas Boulevard at the bottom of the photo.

Batiquitos Lagoon

Batiquitos Lagoon is a large expanse of open water and is bordered on the south and northwest by rolling grassy slopes, which distinguishes it in topography and vegetation from lagoons to the south. Residential development can be seen on the tops of the slopes. To the east, a large valley opens to the foothills of the La Costa Resort and Spa and surrounding suburban development. The Four Seasons Aviara Resort and Country Club spreads out along the northeast shore of the lagoon whose edge is softened by groves of mature eucalyptus preserved as part of the resort landscape. Since the freeway traverses the lagoon at a low elevation, visual access to the ocean is blocked by intervening topography and bridge structures.

Above: Batiquitos Lagoon looking east from the freeway.

Left: Aerial view looking north with La Costa Avenue near the center of the photo.

Carlsbad Mesa

Carlsbad Mesa is a flat coastal upland that was, until the 1980's, an expanse of agricultural fields that were famous for brilliant rainbow rows of flowers that were grown en mass as a commercial seed crop. A remnant of those fields remains today outside the freeway viewshed. They have been displaced by shopping centers, car dealerships, hotels, and business parks that are located adjacent to freeway frontage roads. This type of strip development is uncharacteristic of the north coast corridor.

Left: Development has displaced a significant portion of Carlsbad's signature flower fields.

Left: An example of commercial development that borders the freeway in this landscape unit.

Left: Aerial view looking north with Poinsettia Lane near the bottom of the photo.

Agua Hedionda Lagoon

Agua Hedionda is an open water lagoon that appears as a lake to the casual viewer, and has a boat launch and other water related recreational activities taking place near the freeway. Around the lagoon there is high density residential development on the northwest, open space and a low density residential neighborhood on the northeast, a marina with high density residential to the east, the Encina power plant with its highly visible exhaust stack on the southwest, and agricultural fields on the southeast. With the exception of the boat launch area, the lagoon is buffered from adjacent land uses by naturally vegetated slopes. A landscaped berm screens views of the power plant from freeway viewers.

Left:
The strawberry fields near the freeway give the area a rural feel.

Left:
A view of I-5 as it traverses the lagoon looking east.

Left:
Aerial view looking north with Cannon Road near the bottom of the photo.

Carlsbad Village

In this landscape unit, an elevated freeway section overlooks the flat coastal upland topography of downtown Carlsbad. Southbound freeway travelers also have expansive views west to the ocean. Carlsbad town center was developed prior to the freeway and is an example of traditional land planning that features mixed land uses at a pedestrian scale. The freeway right-of-way is severely constrained and southbound traffic is in close proximity to adjacent residential properties. To the east, Pio Pico Drive serves commercial, residential, institutional, and recreational land uses. Narrow strips of freeway landscaping partially buffer the community from the sight of high speed traffic.

Above:
A view of pedestrian oriented Carlsbad Village.

Left:
Aerial view looking north with Tamarack Avenue near the bottom of the photo.

Buena Vista Lagoon

Buena Vista lagoon is a network of meandering channels and interconnecting lakes fringed by masses of aquatic reeds. The broad valley in which the lagoon lies is bordered by gentle topography that lends itself to development, and in fact, the SR-78 freeway, the I-5/SR-78 interchange, and three major shopping centers are located near the wetland's northern and eastern edges. The valley's southern edge is more visually compatible with the lagoon's natural character. Hosp Grove, a park that preserves a historic stand of mature eucalyptus is a signature component of the viewshed.

Above:
A view of the lagoon from the I-5/SR-78 Interchange. Hosp Grove Park can be seen in the distance.

Left:
Aerial view looking north with Las Flores Drive near the bottom of the photo.

Loma Alta Creek

This landscape unit is a canyon that was formed by Loma Alta Creek as it made its way to the ocean. Today, the creek is contained in a concrete channel that runs parallel to Oceanside Boulevard and a North County Transit rail line. The freeway bridges the canyon and provides an interchange on its northern side. It then continues north along a tributary canyon to a corresponding upland. Land uses vary from commercial and mobile home residential in the canyon floor, to single family residential, developed parkland (Center City Golf Course), and park open space on the surrounding ridges and developable slopes. From the freeway, the primary visual element consists of massive eucalyptus trees on side slopes that modulate the space and add foreground interest. The golf course and adjacent open space canyon are visible from the northbound lanes, and southbound viewers have more distant ocean views down the canyon to the west.

Left:
A view of the Oceanside Municipal Golf Course which can be seen from the freeway.

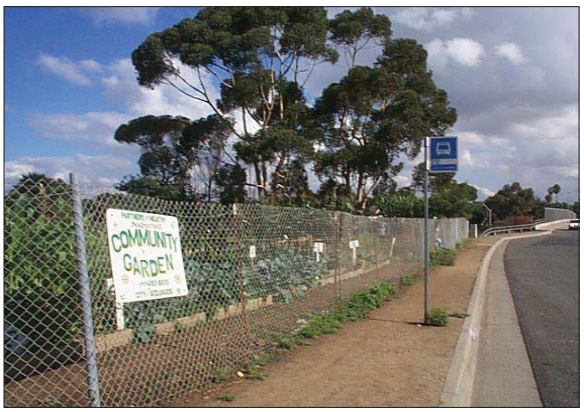
Below Left:
A brief ocean view from I-5.

Left:
Aerial view looking north. California Street is in the bottom half of the photo.

Oceanside Gateway

This unit is a coastal upland that serves as a gateway to downtown Oceanside from the freeway via the Mission Avenue interchange, which is the primary entry to downtown Oceanside. Commercial land uses are located at the northwest and southeast quadrants of the interchange. Oceanside High School occupies the southwest portion. The predominant land uses in this area are high density residential on the west and parkland on the east. Noise walls, retaining walls, and bridge structures are present, but the dominant visual elements for freeway viewers are masses of tall eucalyptus trees in the freeway landscape.

Left: A unique approach to retail highlights the cultural diversity of the community.



Below Left: A community garden adjacent to Bush Street overcrossing.

Left: Aerial view looking north. Oceanside Boulevard is near the bottom of the photo.

San Luis Rey River

This landscape unit is the boundary between the large undeveloped open spaces of Camp Pendeleton and the northern limits of the San Diego metropolitan region. Landscape components that introduce the southbound traveler to the region are the ocean, beach resort development, and ornamental landscaping associated with the freeway and the community. Most notable are the tall fan palms and eucalyptus trees that define the skyline and play counterpoint to the level horizon formed by the ocean. Although there is gateway signage visible from the freeway, the true gateway statement is created by the ocean, palms, and unique parkway nature of the freeway landscape. Below the freeway, the San Luis Rey River moves through a heavily developed beach resort area as it empties into the sea. Oceanside Marina is the focal point of an artificial harbor created with breakwaters and jetties near the mouth of the river. East of the freeway, the river and its natural topography are visible.

Above: The Oceanside Marina is located at the mouth of the San Luis Rey River.

Left: Aerial view looking north. The I-5/SR-76 interchange is near the center of the photo.

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Project Viewshed

A viewshed is a subset of a landscape unit and is comprised of all the surface areas visible from an observer's viewpoint. The limits of a viewshed are defined as the visual limits of the views located from the proposed project. The viewshed also includes the locations of viewers likely to be affected by visual changes brought about by project features.

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Existing Visual Resources

FHWA Method of Visual Resource Analysis

Identify Visual Character

Visual character is descriptive and non-evaluative which means it is based on defined attributes that are neither good nor bad in themselves. A change in visual character cannot be described as having good or bad attributes until it is compared with the viewer response to that change. If there is public preference for the established visual character of a regional landscape and a resistance to a project that would contrast that character, then changes in the visual character can be evaluated.

Assess Visual Quality

Visual quality is evaluated by identifying the vividness, intactness and unity present in the viewshed. This approach is particularly useful in highway planning because it does not presume that a highway project is necessarily an eyesore. This approach to evaluating visual quality can also help identify specific methods for mitigating specific adverse impacts that may occur as a result of a project.

Assessment Methodology

The enjoyment or interpretation of experience can have many preferential and subjective components, yet there is clear public agreement that the visual resources of certain landscapes have high visual quality. The existence of a broad commonality of public response to visual stimuli has been validated by academic research and forms the basis for the FHWA method of visual quality assessment.

During the development of the assessment method, several sets of evaluative criteria based on relationships between visual components in the landscape were proposed and tested. One set that proved to be useful includes three criteria: vividness, intactness, and unity. These relationships correlate sufficiently well with public judgments of visual quality to predict those judgments. The FHWA concludes that professionals can use these relationships as valid and reliable criteria for evaluative appraisals of visual quality.

The FHWA guidelines state: “The objectivity of evaluation processes can sometimes be an issue. Two principle components of objectivity are reliability and validity. A test is reliable if different observers using the test obtain similar results. A test is valid if the results prove relevant to other evaluation measures, which may be more direct but generally impractical to use. Thus, it may be impractical to obtain a random and completely representative sample of the public to rate the visual effects of highway alternatives. Expert judgment may be a valid and reliable substitute, if it is based on criteria derived from research about public perceptions. Its validity can be further strengthened by direct but limited public response in project community involvement programs.”

In addition to the FHWA method, this assessment relies upon a variety of public response data to validate its results. Public policy and planning document goals and objectives pertaining to visual quality and character were researched and are summarized in the viewer sensitivity section. Moreover, a wide range of direct

public comment was received over a period of several years from elected officials, local agency staff, resource agency staff, interested community groups, organizations of design professionals, and the general public. A summary of meetings with these groups is located in the Appendix.

The three criteria for evaluating visual quality can be defined as follows:

Vividness is the visual power or memorability of landscape components as they combine in distinctive visual patterns.

Intactness is the visual integrity of the natural and man made landscape and its freedom from encroaching elements. It can be present in well-kept urban and rural landscapes, as well as in natural settings.

Unity is the visual coherence and compositional harmony of the landscape considered as a whole. It frequently attests to the careful design of individual man made components in the landscape.

Courtesy Western Pennsylvania Conservancy

These photos are examples of exceptionally high visual quality.

Top: Vividness is created by dramatic land forms.

Middle: Intactness is preserved by sensitive land use.

Bottom: Unity is achieved by masterful site planning and architecture.

Existing Visual Character and Quality

Currently, the portion of I-5 north of SR-56 is unusual for a major freeway in its lack of noise walls, retaining walls and large bridge structures. It appears more as a rural parkway than an urban freeway and possesses a natural visual character that is unusual in such a highly urbanized region. It offers open, high quality views to travelers, and keeps its distance from adjacent communities with its heavily vegetated side slopes.

The traditional romantic image of California as a lush subtropical Eden of swaying palms and crimson bougainvilleas inspired the style of ornamental freeway landscaping that exists today. San Diego's reputation as the "Garden City" is reflected in these areas of the corridor, reinforcing the region's standing as an attractive tourist destination. The relationship of ornamental freeway landscape to more naturalized areas of the roadside corresponds to the unique interplay of cultivated and natural landscape that is a hallmark of the region.

Top: San Elijo Lagoon exemplifies the I-5 corridor's natural character.

Middle: Agricultural fields at Manchester Avenue interchange recall the area's rural history.

Bottom: Lush freeway landscaping frames a view of Agua Hedionda Lagoon.

La Jolla Hills

Natural forms of mature groves of trees and rolling topography give this landscape unit its visual character. Freeway slopes are planted with eucalyptus trees and naturalized ground cover consistent with the adjacent UCSD campus landscape. The unit has an almost rural, ranch-like appearance despite the presence of large institutional campus buildings.

The existing visual quality of this unit is moderate. Views from the freeway are somewhat limited due to its location in a depressed section, but the unity created between the freeway landscape and surrounding landscape is high. Intactness is moderate to high due to the lack of visually intrusive features in the landscape. Vividness is low to moderate.

Above: Looking north to Voigt Drive overcrossing.

Left: Freeway landscaping blends with that of UCSD near Voigt Drive.

Sorrento Valley

Open space and rolling hills in the southern portion give way to graded slopes and large-scale development further to the north. In the valley, the I-5/I-805 merge forms a wide horizontal plain of concrete bordered by retaining walls and topped by bridge structures. These features give the project area an urban character that contrasts with the natural landscape of Torrey Pines State Reserve to the west.

The existing visual quality of this unit is low to moderate. The tangle of freeway structures, manufactured topography, and large-scale development in the northern part of the unit results in low levels of intactness and unity. Views of the rolling hillsides near Genesee Avenue are moderate in intactness and unity. Both portions possess low levels of vividness.

Top: Looking north to the freeway and Sorrento Valley beyond.

Left: Looking north from Genesee Avenue.

Carmel Valley

The unique forms, colors and textures of the Torrey Pines bluffs and Penasquitos Lagoon wetland become prominent here, and give this landscape unit a natural character despite the presence of the freeway and encroaching development to the east and north. Also, the freeway is more compatible with the surrounding landscape in scale and pattern character due to fewer lanes and contour graded side slopes.

Left: High quality view of the ocean, Penasquitos Lagoon and Torrey Pines State Reserve (north segment)

Bottom: A view of the freeway from Torrey Pines State Reserve.

This unit has moderate to high levels of existing visual quality. The tree covered, windswept bluffs of Torrey Pines State Reserve are visual icons of San Diego and rank among the most scenic coastal views in the world. Views of Penasquitos Lagoon and Torrey Pines beach are also very scenic. Included in this setting is an historic highway bridge spanning the lagoon inlet. These views possess high levels of vividness, intactness and unity. The visual quality of the unit is moderated by the presence of the freeway and adjacent development to the east.

Del Mar Heights

Manufactured forms predominate here, including slopes that reinforce the flat planes and linear forms of the freeway and adjacent architecture. The overall visual character would be considered suburban due to the low density of the development and visual prominence of mature community landscaping.

Views from the freeway are limited to manufactured slopes, residential and commercial development, and the Del Mar Heights interchange. Visual quality in this landscape unit is moderate due to a continuity of landscape elements between the freeway interchange and adjacent community that maintains a degree of unity and intactness despite the lack of vividness.

Above:
Looking north to Del Mar Heights Road.

Left:
Looking south from Del Mar Heights Road.

San Dieguito Valley

Views of the ocean and natural forms of the river valley are in contrast with views of the freeway itself, and commercial development at the northern side of the valley along Via de la Valle. The large tracts of natural open space allow distant views from the freeway, which outweighs the scale of built forms and gives the valley an almost rural character. Highly visible, distinctive natural features also contribute to the natural feel of the area. The racetrack and fairground complex is a cultural landmark that seems to reinforce the rural character by adding a resort atmosphere to the landscape.

Views of the natural features in the river valley, surrounding bluffs, and ocean are of high vividness despite lower levels of unity and intactness found on the northern edge along Via de la Valle where commercial development is located. The racetrack enhances the vividness of the scene due to its unique location near the ocean "where the surf meets the turf." Overall visual quality remains high because the vivid natural and man made features far outweigh less desirable elements in the landscape.

Above: Looking southwest from I-5 towards San Dieguito Lagoon and the bluffs of Del Mar.

Left: Looking north east from I-5.

Solana Hills

Natural forms and human scale manufactured visual elements adjacent to the freeway predominate in this unit. Views of the ocean and racetrack are available for southbound freeway travelers. Median oleanders also reduce the scale of the freeway by half, in comparison to the landscape unit to the south. Manufactured cut slopes are vegetated with native and naturalized plants, and possess partially eroded surfaces similar to nearby scenic bluffs. With the exception of an office building in close proximity to the freeway, this unit displays a natural visual character associated with north coast beach communities.

The visual quality of this unit is moderate. Views from the freeway include topography, vegetation, and development characteristic of north coast beach communities that are moderated by foreground views of manufactured cut slopes. Views of the ocean from the southbound lanes add vividness to the unit. Unity and intactness are moderate due to encroaching visual elements such as a four-story commercial building located in close proximity to the northbound lanes. Tall vegetation and intervening slopes generally screen views of the freeway from the community. Some residences located near the freeway have ocean views, and the low-density, semi rural hillside neighborhoods in which they are set possess high levels of visual quality.

Top:
A view of the ocean and Del Mar Racetrack from I-5.

Above:
A view of the sandstone slopes south of Lomas Santa Fe Drive.

San Elijo Valley

Natural features of the ocean, San Elijo Lagoon and bordering bluffs define the visual character of this landscape unit. Distant views to eastern foothills display a typical west-to-east progression of the regional landscape as it transitions from coastal lagoon to inland foothills to back-country mountains. A small agricultural field on the northern side of the lagoon contributes a rural character to the unit, while the bisecting freeway and a residential community on the southeastern slope forms an urbanized contrast.

Views of the ocean, the San Elijo Lagoon Reserve, and inland foothills contribute to the high level of visual quality in this landscape unit. A residential development on the southeast edge of the preserve reduces intactness, but levels of vividness and unity remain high.

Above:
A view across the lagoon toward the eastern foothills.

Left:
The lagoon, agricultural fields, and sandstone bluffs near Manchester Avenue.

Cardiff Bluffs

Natural forms and human scale visual elements off the freeway predominate in this unit. Naturally vegetated open space canyons, bluffs, and hillsides are visible from the freeway, and buffers overlooking residences. Ocean views are visible from the southbound lanes and this unit contains a scenic viewpoint overlooking the ocean and San Elijo lagoon. Median oleanders and reduce the scale of the freeway by half, and combined with freeway landscaping north of Birmingham Drive, suggest the visual character of a suburban parkway. This unit displays a natural visual character in its southern portion, and a suburban character to the north.

Visual quality in this unit is moderate to high. Ocean views, natural open space, small-scale residential development set in mature vegetation, and freeway landscaping combine to create high levels of intactness and unity. Vividness is moderate.

Above: An ocean view from the scenic viewpoint north of Manchester Avenue.

Middle: Looking south to Birmingham Drive overcrossing.

Bottom: Natural open space along the northbound lanes of I-5.

Encinitas Uplands

South of Encinitas Boulevard, moderate levels of intactness and unity combine with moderate to low vividness as the freeway traverses a mixture of commercial, residential and institutional land uses. The northern portion of the landscape unit exhibits higher levels in all three categories due to a consistency of residential land use and the unique visual character of the hillside community as described elsewhere in this assessment. Overall visual quality for this landscape unit is moderate.

Top: Wetland vegetation buffers the adjacent community from I-5.

Middle: Looking north toward Requeza Street overcrossing.

Bottom: Looking northwest from MacKinnon Drive overcrossing.

Leucadia Hills

Natural forms and human scale visual elements off the freeway predominate in the unit. North of Encinitas Boulevard, long established residential areas composed of widely spaced custom homes nestle in the remnants of historic avocado and citrus groves. Interspersed throughout are commercial greenhouses which contribute to the unit's distinctive character. Large groves of mature trees are the primary visual element. On the freeway, median oleanders complement the scene by reducing the scale of the freeway by half, suggesting the visual character of a parkway. This unit epitomizes the semi rural visual character associated with historic north coast hillside neighborhoods.

Above:
A residential area at Orpheus Street.

Left:
Commercial greenhouses and open space lots characterize this landscape unit.

Batiquitos Valley

The wide expanse of open water in the Batiquitos Lagoon give this landscape a distinct character rare in the arid climate of Southern California. The rolling topography of this unit also distinguishes this unit from similar wetlands to the south, although the general character created by distant open views across natural open space continues to prevail even if an ocean view from the freeway is absent.

Batiquitos Lagoon is a vivid landscape component; although the vividness of the freeway viewshed is moderated somewhat because views to the west are limited and adjacent hillsides lack picturesque geologic features or vegetation. Recent development near the northern shore also moderates a high degree of unity and intactness. Overall visual quality is moderately high.

Above:
The lagoon as seen from southbound I-5.

Left:
A view of the lagoon looking south east.

Carlsbad Mesa

Relatively flat topography and large-scale development give this landscape unit an urban character that is not seen in landscape units to the south. Despite the high number of manufactured landscape elements, ornamental landscaping plays a large role in softening their effects and making the area more compatible with other coastal communities.

Generic suburban development placed on flat topography result in low levels of vividness and intactness. A moderate degree of unity exists due to regulated signage and landscaping. Another moderating influence is an agricultural field that is a visual resource and provides a vivid highlight to an otherwise ordinary suburban viewshed. Freeway landscaping provides a buffer for adjacent development, and screens views of an industrial area from the freeway. Overall visual quality is moderately low.

Top and Middle: Examples of commercial development bordering the freeway.

Bottom: A naturalized drainage channel buffers the freeway from nearby residences.

Agua Hedionda

A semi-rural character is created in the landscape unit by the open water of the lagoon and the recreational and agricultural uses that border it. Freeway landscaping complements this character and screens views of contrasting industrial uses from freeway travelers. Five-story multiple unit residential buildings interspersed along the shore contrast with the natural elements contained in large tracts of open space near the water.

The high vividness of the lagoon with its adjacent agricultural land is reduced somewhat by moderate levels of intactness and unity caused by development on its northern shores. Views to the west are limited due to the freeway's low profile. Overall visual quality is moderately high.

Above:
A view of the lagoon from the north bound lanes.

Left:
A view of the lagoon form the south bound lanes.

Carlsbad Village

This landscape unit is characterized by small to medium scale built forms buffered by ornamental landscape elements. Mixed use development gives the viewshed the appearance of a small town or village that is consistent with the downtown districts of other beach communities in the corridor.

The elevated section of the freeway in this landscape unit allows for expansive views across Carlsbad Village including distant views towards the horizon. A traditional, pedestrian-scale village of this type is a rare and vivid image in southern California. The village landscape includes a variety of land uses that are, for the most part, unified in scale by building type and mature urban landscaping. Mature freeway landscaping serves as a buffer and a unifying element. An absence of encroaching signage contributes to the intactness of the setting. Overall visual quality is moderately high.

Above:
A view of Pine Street looking west to the freeway and ocean.

Left:
Holiday Park as seen from I-5.

Buena Vista Lagoon

The natural forms of Buena Vista lagoon and ornamental freeway landscaping at the I-5/SR-78 interchange characterize this landscape unit. Hosp Grove Park and Saint Malo Beach are two culturally significant features that are visible from the freeway and reinforce the historic beach community character of the area. Large swaths of aquatic reeds in the lagoon provide seasonal changes in color and character. Two large retail centers at the east end of the lagoon conflict with the natural, semi-rural character of the viewshed.

The open space and open water of the Buena Vista Lagoon is a vivid image in the midst of an urban area. The lagoon is bordered on the north by the SR-78 freeway and the south by Jefferson Street which serve as low profile buffers to encroaching development.

Freeway landscaping also screens views of development. Unity and intactness of the freeway viewshed are moderately high, as is the overall visual quality.

Above and Left: Two views of I-5 at Buena Vista Lagoon.

Loma Alta Creek

Mature freeway landscaping featuring large eucalyptus trees and median oleanders set the visual character of this landscape unit. These two scale elements enable the freeway to appear as a suburban parkway. Mid-ground views to open space, a golf course, and distant views of the ocean reinforce viewshed character. Residential and commercial development in the area is small scale and also features mature landscaping. An exception to this is a large mobile home park set on thinly landscaped manufactured terraced slopes.

The freeway viewshed in this landscape unit is primarily defined by mature freeway landscaping featuring tall eucalyptus trees that delineate the skyline. Linear sight lines are expanded at the Oceanside Boulevard interchange by distant views to the west, where an ocean view is available to southbound travelers. This view provides orientation and vividness, and the mature freeway landscaping gives the viewshed a high degree of unity and intactness. Intactness is lessened for southbound viewers, however, by the presence of the above mentioned mobile home park and its encroaching signage. Overall visual quality is moderately high.

Top and Left: Mature freeway landscaping establishes the parkway character of the viewshed.

Oceanside Gateway

This unit has a similar parkway character as the previous unit, despite the fact that it contains perhaps the highest density residential community in the I-5 north coast corridor. The tall freeway trees, mature landscape and depressed freeway section screen most off site views for freeway travelers.

The same type of freeway landscaping described in the previous unit also contributes to the visual quality of this viewshed. Views of noise barriers and urban development beyond the right-of-way reduce vividness, intactness and unity to moderate levels.

Above and Left: Freeway landscaping provides a visual buffer and improves visual quality of the landscape unit.

San Luis Rey River

For freeway travelers from the north, this unit serves as the visual gateway to the San Diego metropolitan region. As discussed above, two visual elements in the freeway landscape create the signature parkway character of the I-5 north coast corridor. Tall eucalyptus trees on each side of the freeway provide vertical relief to the horizontal expanse of concrete paving, and oleander shrubs in the median block views of oncoming traffic and reduce the visible portion of the roadway by half. Tall fan palms in the community combine with ocean views to reinforce a beach resort appearance to the landscape. These also serve as pattern elements to soften manufactured forms, and providing natural forms, colors and textures to the visual environment.

As the freeway spans the San Luis Rey river valley, views of the ocean to the west and river valley to the east provide a high level of vividness. A wide variety of roadside commercial development including high rise resort hotels reduces the unity and intactness of the viewshed to moderate levels. Overall visual quality is moderately high.

Above:
A view of I-5 from the San Luis Rey River bike trail.

Left:
Lush landscaping forms the visual gateway to the San Diego region.

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Existing Scenic Resources

The I-5 corridor within the project area is part of the California Scenic Highway System and is eligible for designation as an Official Scenic Highway. If a highway is listed as eligible for official designation, care must be taken to preserve its eligible status.

According to the Caltrans Standard Environmental Reference, all highway projects must be reviewed for scenic resources. A scenic resource may be an object, set of objects or a whole landscape that has exceptional visual quality, character, uniqueness, cultural significance, or historical value. Since there is no comprehensive list of specific features that automatically qualify as scenic resources, the Caltrans District Landscape Architect is responsible to research community values, conduct field reviews, perform site analysis, and synthesize the data gathered to determine whether scenic resources exist within the project area.

The following visual elements of the I-5 north Coast Corridor project viewshed have been identified as Scenic Resources:

The Pacific Ocean

The I-5 freeway provides visual access to the ocean for hundreds of thousands of people each day. These views orient the viewer in the landscape and introduce visitors to the visual character of the region. Views such as these are rarely experienced while traveling on a major urban freeway and establish the corridor's unique visual identity.
Ocean views from the freeway occur at the following locations:

- Northbound lanes between Carmel Mountain Road and SR-56
- Northbound lanes between Del Mar Heights Road and San Dieguito River Bridge
- Southbound lanes between Via de la Valle and Lomas Santa Fe
- Northbound lanes between Lomas Santa Fe and Manchester Avenue
- Southbound lanes between Manchester Avenue and Birmingham Drive
- Vista Point adjacent to southbound lanes north of Manchester Avenue
- MacKinnon Avenue overcrossing
- All lanes at Encinitas Boulevard
- Southbound lanes between La Costa Avenue and Poinsettia Lane
- Southbound lanes at Oceanside Boulevard
- All lanes at the San Luis Rey River bridge

Coastal Wetlands

The coastal lagoons in the project area are some of the last surviving wetlands of their kind in southern California. The freeway also traverses two rivers that flow throughout the year, which is an unusual visual experience for southern Californians. Not only are the wetlands a rare commodity, the expansive open space associated with them offer relief from views urban development and also serve as view corridors from freeway to foothills.
This scenic resource exists at the following locations:

- Penasquitos Lagoon in San Diego
- San Dieguito River in San Diego
- San Elijo Lagoon in Encinitas
- Batiquitos Lagoon in Carlsbad
- Agua Hedionda Lagoon in Carlsbad
- Buena Vista Lagoon in Oceanside
- San Luis Rey River in Oceanside

Torrey Pines State Reserve

The vivid sight of native Torrey pines clinging to the picturesque sandstone bluff headland at Penasquitos Lagoon is considered to be one of the region's scenic treasures. The Reserve is visible from the Sorrento Valley and Carmel Valley landscape units.

Coastal Bluffs

The bluffs are ancient marine terraces cut by the sea and are composed primarily of cream-colored Torrey sandstone capped by a denser layer of rust red Linda Vista formation that contains protruding horizontal bands of cobblestones. These picturesque eroded cliffs are found near coastal beaches, lagoons, and rivers. The distinctive eroded appearance of the sandstone bluffs also appears in old road cuts and to a lesser extent on some freeway cut slopes. Eroded sandstone is an iconic image of north coastal San Diego, and is particularly associated with the Torrey Pines, Del Mar and Solana Beach communities.

Areas in which this scenic resource exists are:

- Torrey Pines State Reserve
- Southern slopes of the San Dieguito River Valley
- Native slopes of the San Elijo Valley
- Native slopes adjacent to the northbound freeway lanes between Manchester Avenue and Birmingham Drive

Agricultural Land

The strawberry fields situated along I-5 near Manchester Avenue in Encinitas and Cannon Road in Carlsbad contribute significantly to the rural character of the corridor. They are highly visible artifacts of historic land uses, are in visual harmony with adjacent lagoons, and provide relief from the visual patterns of urban development. As development continues to displace agriculture in southern California, their uniqueness and value as a scenic resource increases in equal proportion.

Encinitas and Leucadia Hillside Neighborhoods

These neighborhoods exemplify Encinitas' unique historic identity as a center of exotic horticulture and embody a vision of California living that has drawn millions of residents and tourists to the region over the years. The older homes in this area were built early in the twentieth century on large parcels of several acres that were utilized as avocado groves, exotic plant nurseries, or commercial greenhouse space. The homes were sited atop a coastal ridge that afforded views of the ocean to the west and mountains to the east. Most were designed in the romantic Spanish Colonial style and featured outdoor living areas surrounded by lush tropical landscaping that took full advantage of the mild year-round climate. Today, the visual character of the scene survives despite intense urban development that has occurred elsewhere along the coast. A few parcels have been subject to residential infill projects, but the original homes, large stands of tall trees, and some of the avocado groves, nurseries, and greenhouses remain. This is a viewshed that would not at first glance be considered scenic, yet it retains a high level of vividness due to the rarity of residential open space near the coast and the glimpse of the area's history that it affords.

Views of this resource are available from the freeway between Encinitas Boulevard and La Costa Avenue.

Carlsbad Village

Holiday Park is at the heart of Carlsbad Village, and is in large part responsible for its scenic designation. The park is visible from the elevated northbound freeway lanes, but its many tall, mature trees are also visible to southbound travelers as well. The village that surrounds the park was developed in the first half of the twentieth century and is what urban planners now call a traditional or livable community. This means that commercial and residential land uses coexist, streets are relatively narrow and shaded with large trees, parking lots and commercial signage are barely noticeable, and commercial buildings are in scale with nearby custom-built single family homes. Freeway landscaping screens the sight of moving traffic from the community, and large trees enable it to be consistent with the Village's visual character. This scene forms a sharp contrast to the more contemporary and commonplace land use patterns and building types found in the Carlsbad Mesa landscape unit to the south.

Freeway Median Oleanders

As southbound freeway travelers approach the city of Oceanside, they are introduced to San Diego's metropolitan region by lush freeway landscaping of a type they did not experience as they passed through urban areas to the north. The route seems to change from a standard freeway to a green parkway principally due to the presence of large, flowering oleander shrubs in the median. Oleanders reduce the scale of the freeway by half as they screen views of oncoming traffic. They provide cooling visual relief with their soft, green, non-reflective, undulating, natural appearance. They are a visual link to scenic areas adjacent to the freeway. Median oleanders are an I-5 freeway feature unique to San Diego and vividly communicate the region's distinctive landscape character and civic identity to millions of visitors each year. The oleanders extend from Harbor Drive interchange in Oceanside to San Dieguito River Bridge in San Diego, and again from Genesee Drive interchange in San Diego past the southerly project limit.

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Existing Landmarks

Landmarks are prominent features in the landscape that provide orientation or identify a particular locality. In most cases, they possess some degree of cultural significance. Landmarks are not necessarily scenic resources because some can act as encroaching visual elements and reduce visual quality. The following are landmarks located within the project viewshed.

Del Mar Racetrack and Fairgrounds

For generations of San Diegans, the sight of the Del Mar Racetrack grandstands adjacent to the ocean brings to mind the slogan "where the surf meets the turf" and the tune of Bing Crosby's song of the same name. Memories of summer evenings at the annual Del Mar fair (formerly the San Diego County fair) may also spring to mind. In either case, the image connotes thoughts of recreation, leisure, and for some, a brush with celebrity and wealth all within a setting of beautiful natural scenery. The racetrack and fairgrounds are visible from the freeway in the San Dieguito Valley and Solana Hills landscape units.

Encina Power Station

The Encina Power Station's single concrete chimneystack reaching to the sky is a Carlsbad landmark. Because of its location directly adjacent to the beach, it is visible from La Jolla to San Clemente. Freeway travelers can see the plant from Carlsbad Mesa, Agua Hedionda, and Carlsbad Village landscape units.

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Scenic Resources

- 1 Pacific Ocean (View)
- 2 Coastal Wetland
- 3 Torrey Pines State Reserve (View)
- 4 Coastal Bluffs
- 5 Agricultural Land
- 6 Encinitas Hillside Neighborhoods
- 7 Carlsbad Village
- 8 Median Oleanders

Landmarks

- 1 Del Mar Racetrack
- 2 Encina Power Station

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Viewer Response

Methods of Predicting Viewer Response

Viewer response is composed of two elements: viewer sensitivity and viewer exposure. These elements combine to form a method of predicting how the public might react to visual changes brought about by a highway project.

Viewer sensitivity is defined both as the viewers' concern for scenic quality and the viewers' response to change in the visual resources that constitute the view.

Local values and goals may confer visual significance on landscape components and areas that would otherwise appear unexceptional in a visual resource analysis. Even when the existing appearance of a project site is uninspiring, a community may still object to projects that fall short of its visual goals. Analysts can learn about these special resources and community aspirations for visual quality through citizen participation procedures, as well as from local publications and planning documents.

Research has shown that viewers exhibit similar responses to the arrangement of visual elements in outdoor space, and that spatial qualities can positively or negatively affect their personal comfort and ability to function. For example, most people respond negatively to large expanses of undifferentiated ground plane and hard vertical spatial edges that obstruct views. In contrast, people respond positively to a varied ground plane, coherent spatial relationships that provide opportunities for discovery, and open views that include orientation features such as landmarks. This behavioral consistency enables the reliable prediction of viewer sensitivity to changes in the visual environment.

Viewer exposure is typically assessed by measuring the number of viewers exposed to the resource change, type of viewer activity, duration of their view, the speed at which the viewer moves, and the position of the viewer.

Studies indicate that people are active receptors of visual information and seek understanding from experiencing their surroundings. Therefore, high viewer exposure heightens the importance of early consideration of urban design, public art, and architecture and their roles in managing the visual resource effects of a project.

Viewer Exposure

Freeway Travelers

There are approximately 250,000 freeway travelers per day on this portion of I-5, which is the primary northern gateway for visitors to the San Diego metropolitan area. Many local residents also commute to and from coastal north county every day and use a majority of the 28-mile project. During periods of free flow travel, the project can be traversed in less than 40 minutes.

The I-5 north coast corridor links two of the nation's largest metropolitan regions and is the primary transportation gateway to San Diego from the north. As San Diego's "front door", it forms the first impression of the region's scenic character for millions of tourists each year. Changes to the visual environment of the corridor may be controversial due to the economic importance of tourism to the San Diego region.

Residents of the San Diego region have historically taken great pride in the corridor's scenic resources and may be opposed to a project that contrasts with its existing visual character.

Daily commuters may have an increased awareness of views from the road due to the amount of time spent on the facility each day. Those that experience congested traffic conditions and slower speeds tend to notice views beyond the freeway itself.

Tourists traveling to and from San Diego on I-5 would likely have a high awareness of the visual environment. Studies have shown that visitors' perceptions of a metropolitan region are formed to a great extent by the views they observe from the road.

Drivers traveling at normal freeway speeds will focus attention on long distance, non-peripheral views. Passengers have a heightened awareness of a wide range of views.

Two views from the same location.

Top: A non peripheral view of the San Dieguito Valley.

Bottom: A high quality view of the San Dieguito River.

Community Residents

Hundreds of residents live near the freeway. Landscaping and/or berms now screen most residential views of the freeway. Some residents located at an elevation higher than the freeway have long duration mid-ground views of moving traffic. A number of these residents also have distant views of the ocean. Most residents located below freeway elevation view landscaped fill slopes. Some fill slopes also include small retaining walls.

Residents typically have a high concern about the effect of the project on views from their homes and its effect on the visual character of their community.

Left: Standard freeway features such as chain link fences, concrete ditches and noise walls abut rear yards.

Bottom: Many hikers and joggers use lagoon trails adjacent to I-5.

Recreational Area Users

The freeway is adjacent to five natural preserves, two open space parks, five community parks, one recreational area, and one golf course. Hikers and equestrians have foreground to mid-ground views of the freeway facility for periods of less than an hour. Community park users have mid-ground views of the freeway for longer periods of time. Golfers have mid-ground to distant views of the facility for up to three hours.

Those that visit nature preserves and open space parks near the freeway may have a high concern about project appearance due to its potential to disrupt their experience of the natural environment. Community park users will have an acute awareness of the proposed project features due to the relative scale of park to freeway.

Commercial Employees and Patrons

A variety of commercial uses ranging from shopping centers to hotels are located near the freeway. Potentially, there are hundreds of viewers per day with short to moderate duration views of the facility. Commercial employees and patrons will likely have a moderate to low awareness of visual changes casued by the project.

Business Park Employees and Visitors

Office buildings located in North City West and Carlsbad would have direct, foreground to midground views of the freeway. Employees working in these buildings would have moderate duration views of the facility. Office workers would likely have a low awareness of the freeway.

Local Street Users

Thousands of drivers using local streets each day have short duration views of the freeway facility at interchanges. Pedestrians and bicyclists using the interchanges would have longer duration views. There are residential frontage streets such as Orpheus Avenue in Encinitas that have direct views to the freeway. Community residents are the primary users of these streets and would have short duration views of the proposed project. Some residents may have high frequency exposure to these views from local streets. Adjacent streets such as Avenida Encinas in Carlsbad serve commercial areas and would have direct foreground views of freeway traffic.

Frequent users of local streets near the freeway would have a high awareness of visual change caused by the project.

Public Facility Users

Thousands of students and faculty, health care facility patients and staff, city staff and citizens have short to long duration views of the freeway. The University of California, San Diego and Scripps Memorial Hospital would be adjacent to the proposed DAR at Voigt Drive. Oceanside High School is in close proximity to I-5, and hundreds of students are exposed to traffic entering and exiting the freeway at the Mission Avenue interchange on a daily basis.

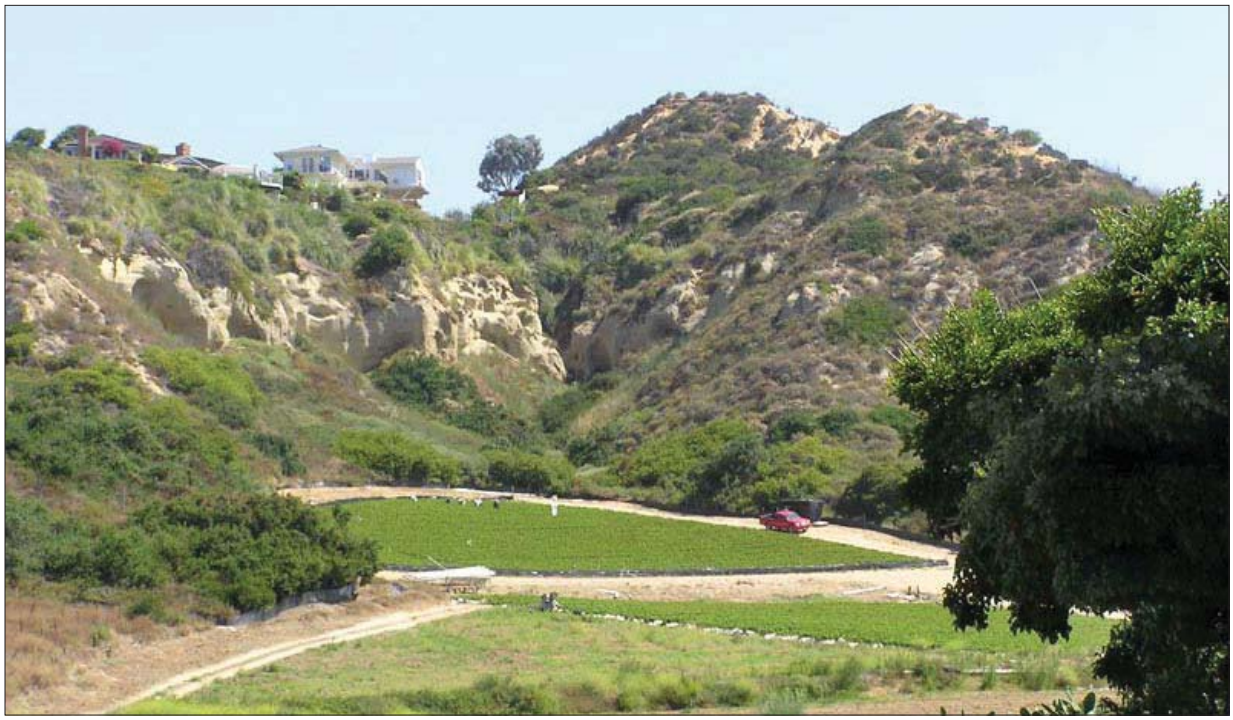
Public facility users would have a low to moderate awareness of the freeway. Awareness would be most acute for students who walk near or across the facility to attend classes.

Left: The Voigt Drive overcrossing affects pedestrian circulation at UCSD.

Viewer Sensitivity

In an area as scenic as the I-5 north coast corridor, there are many visual resources that are important not only to local viewers, but also to residents of the region and visitors from around the world. Within the corridor viewshed, natural features such as the ocean, beaches, lagoons, sandstone bluffs, canyons, agricultural fields, and natural open space are particularly memorable because it is unusual for a traveler on an urban freeway in Southern California to see such a quantity of scenic open space.

Also important to local viewers is the village-like character of the older seaside communities that border the freeway. This character can be viewed from the freeway as travelers pass through older neighborhoods such as Carlsbad Village, or the residential neighborhoods of Encinitas that are characterized by the presence of horticultural greenhouses and avocado groves. The historic semi-rural appearance that has been preserved in the older communities of the corridor is considered to be a scenic resource in itself.



North coast communities have placed great value on preserving the natural and historical land uses adjacent to I-5.

Top: Greenhouses in Encinitas.

Bottom: Strawberry fields and sandstone bluffs near San Elijo Lagoon.

State Policies that Indicate Public Values

The portion of I-5 within the project area is part of the California Scenic Highway System as a route eligible for official designation. Additions and deletions to the list of highways eligible for designation are made through legislative action. Because local agencies are required to complete a lengthy nomination process in order to nominate a route as an eligible scenic highway, it can be assumed that viewer sensitivity to visual changes to that route would be above average.

Caltrans has adopted policies relating to the protection of scenic corridors (Deputy Directive 31) and context sensitive solutions (Director's Policy 22) as a response to public sensitivity regarding the effects of highway projects on visual resources.

Caltrans Deputy Directive 31 states:
"Caltrans, in cooperation with affected communities, identifies impacts to scenic corridors as an integral part of its project planning and project development process, taking into account local perspectives, and is sensitive to the obstruction or degradation of any scenic view open to the public."

Caltrans Director's Policy 22 states:
"The Department uses "Context Sensitive Solutions" as an approach to plan, design, construct, maintain, and operate its transportation system. These solutions use innovative and inclusive approaches that integrate and balance community, aesthetic, historic, and environmental values with transportation safety, maintenance, and performance goals. Context sensitive solutions are reached through a collaborative, interdisciplinary approach involving all stakeholders."

The sensitivity of California citizens to changes in coastal resources was clearly expressed in 1972 with the passage of Proposition 20, the "Save Our Coast" initiative. The initiative created the California Coastal Commission, and in 1976, the Legislature adopted the California Coastal Act. The project area is located in the California Coastal Zone, which is under the jurisdiction of the Coastal Commission. The Commission works with local governments and other public agencies to protect public beach access, wetlands, wildlife, water quality, scenic vistas, and coastal tourism in accordance with the Coastal Act.

Regarding visual resources, Chapter 3, Article 6, Section 30251 of the Coastal Act states:
"The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas."

Local Values and Goals

Similar values are expressed in the planning documents and ordinances of local cities along the coast. The scenic qualities that give coastal communities their unique sense of place are highly valued by north coast residents and are perhaps best expressed in the following excerpts from the City of Del Mar General Plan:

"Unquestionably the strongest theme running through the Citizen's Report was the determination to maintain Del Mar as a village-like community of uncrowded, predominantly single-family residences. A closely related principle concern was the permanent protection of the outstanding natural features of Del Mar. Specifically, the citizens were concerned with preservation of Del Mar's two and one half miles of sand beach, its still largely undeveloped scenic sandstone bluffs, the open vistas and private gardens, the groves of native and exotic trees, and the presently degraded but restorable San Dieguito Lagoon."

"A broad-based concern for proper land use is especially important for Del Mar because of the community's regional significance as part of the coastal land of California. It should not be forgotten that the village qualities of sea-side communities like Del Mar are appreciated by people of all California and even of nearby states."

Specific goals and policies contained in the general plans of other cities in the corridor reflect the community values expressed above. For example, most cities have instituted building height restrictions in the coastal zone to preserve the existing village character of the seaside and protect visual access to the ocean. A summary of such goals and policies that pertain to the I-5 corridor follows.

Natural features predominate in Del Mar and other North Coast communities.

Top: Del Mar Beach and bluffs.

Middle: A typical residential street.

Bottom: Del Mar Village street scene.

The Torrey Pines Community Plan recommends relocating overhead power lines adjacent to Sorrento Valley Road at Los Penasquitos Lagoon underground. It also contains guidelines to insure visual compatibility between natural open space features and nearby development. Building size, form, and color are to be subordinate to the natural environment. The plan also recommends planting Torrey Pine trees in roadways and other landscaped areas. It requires the installation of landscaping to screen views of development from designated scenic roadways.

The City of Encinitas General Plan has designated I-5 at the San Elijo lagoon as a scenic corridor. It identifies bluffs, rock outcroppings, natural drainage courses, wetland and riparian areas, steep topography, trees, and views as significant natural features to be preserved. It has also identified the entire I-5 corridor within the city limits as a Scenic View Corridor. Encinitas has set a general plan goal to maintain the sense of spaciousness and semi-rural living within the I-5 corridor, and has a policy to encourage and preserve low-density residential zoning adjacent to I-5 and discourage development that would infringe upon scenic views and vistas within the I-5 corridor. It has a policy to encourage retention of buffer zones such as natural vegetation or earth barriers, bluffs, and canyons to protect areas adjacent to the freeway. It considers public use facilities such as linear parks, local streets, public parking, pedestrian and bicycle trails and related facilities to be land uses compatible with the I-5 corridor. It encourages freeway median planting and other freeway landscaping.

The City of Carlsbad General Plan has designated the segment of I-5 within the City as a scenic corridor. It also identifies hillsides, ridges, valleys, canyons, beaches, lagoons, and lakes as visual resources. It considers passive parks, open space and agriculture as land uses compatible with I-5. It discourages the use of walls in excess of six feet in height for noise attenuation.

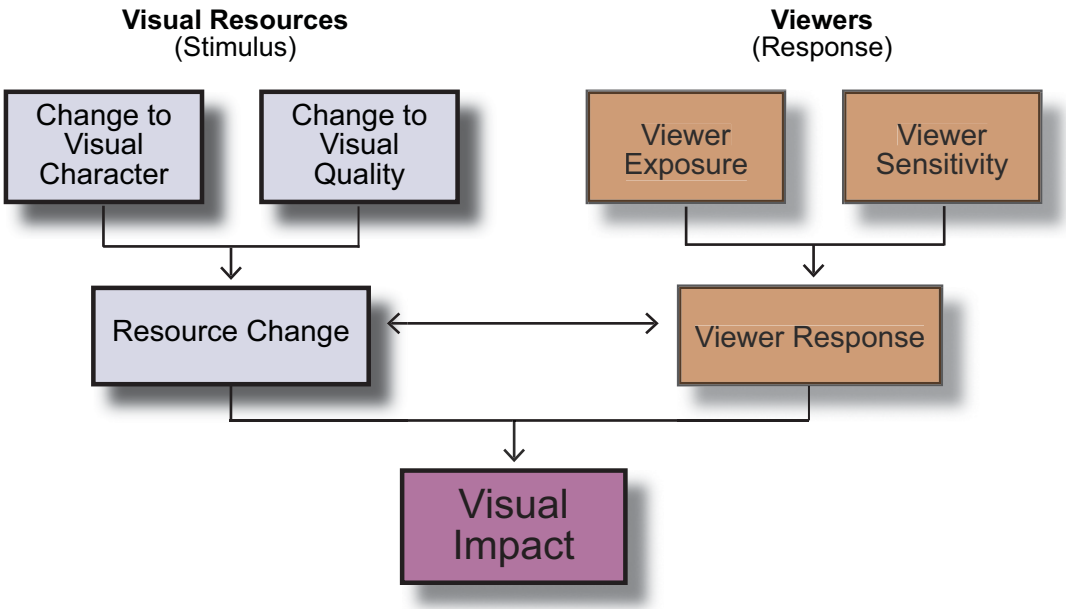
Since the project area is within the California Coastal Zone, is part of the California Scenic Highway System, and has been designated by Encinitas and Carlsbad as a scenic corridor, overall public sensitivity to visual changes caused by the proposed project could be considered high.

Left: The City of Encinitas considers open space land uses such as this one at Moonlight Creek to be compatible with transportation corridors.

Visual Impact Assessment

FHWA Method of Assessing Project Impacts

The visual impacts of project alternatives are determined by assessing the visual resource change caused by the project and predicting viewer response to that change. The diagram below illustrates a broad overview of the assessment process.



Step One: Determine Change to Visual Resources

Assess Change to Visual Character - Since visual character is descriptive and non-evaluative, change alone is assessed at this stage. The change likely to be caused by the project is assessed according to the visual attributes of objects (Pattern Elements) and the relationships between those objects (Pattern Character) in the visual environment before and after the project is constructed. A two sided "pendulum" scale (3 to 0 to 3, with 5 units of change possible) is used to measure contrasting qualities in each category. For example, the existing and proposed viewshed would each be assessed for the qualities "curvilinear" and "rectilinear" under the category "line" in the pattern elements analysis. The amount of change between the existing and proposed viewshed for each category is determined, then the degree of change is expressed as a percentage of maximum change possible. The overall level of change to visual character is then assigned a value that ranges from low to high.

Change to Visual Character		
Amount of Change (Δ = E-P)	Degree of Change (% = Δ / 5)	Level of Change
3	60%	High
2.5	50%	Moderately High
2	40%	Moderate
1.5	30%	Moderately Low
1	20%	Low

Assess Change to Visual Quality -

The second step of the process is to compare the visual quality of the existing resources with projected visual quality after the project is constructed. Existing and proposed intactness, unity and vividness are scored from one to five (five being highest). The amount of change in quality between the existing and proposed viewshed for each category is determined (with four units of change possible), then the degree of change is expressed as a percentage of maximum change possible. The overall level of change to visual quality is then assigned a value that ranges from low to high.

Change to Visual Quality

Amount of Change (Δ = E-P)	Degree of Change (% = Δ / 4)	Level of Change
2.4	60%	High
2.0	50%	Moderately High
1.6	40%	Moderate
1.2	30%	Moderately Low
0.8	20%	Low

Step Two: Predict Viewer Response

Viewer response to changes in the visual environment is predicted by using existing viewer exposure and viewer sensitivity values, which are assumed to remain constant before and after the project is implemented. The viewer response to project changes is the average of viewer exposure and viewer sensitivity to the project.

Viewer Response

Averaged Response Score	Level of Response
4.5 - 5.0	High
3.5 - 4.4	Moderately High
2.5 - 3.4	Moderate
1.5 - 2.4	Moderately Low
0 - 1.4	Low

Step Three: Synthesis - Determine The Level Of Visual Impact

The resulting level of visual impact is determined by averaging the degree of resource change with the extent to which people are likely to be affected by the change (viewer response).

Definition of Visual Impact Levels

Low (L) - Low negative change to existing visual resources, and low viewer response to that change. May or may not require mitigation.

Moderately Low (ML) – Low negative change to the visual resource with a moderate viewer response, or moderate negative change to the resource with a low viewer response. Impact can be mitigated using conventional practices.

Moderate (M) - Moderate negative change to the visual resource with moderate viewer response. Impact can be mitigated within five years using conventional practices.

Moderately High (MH) - Moderate negative visual resource change with high viewer response or high negative visual resource change with moderate viewer response. Extraordinary mitigation practices may be required. Landscape treatment required will generally take longer than five years to mitigate.

High (H) - A high level of negative change to the resource or a high level of viewer response to visual change such that extraordinary architectural design and landscape treatment may not mitigate the impacts below a high level. An alternative project design may be required to avoid high negative impacts.

Assessing Project Alternatives

The 10+4 Buffer Alternative will be assessed in this study and the comparative impacts of other build alternatives will be interpolated. This project alternative was chosen because its footprint width is an approximate average of the other proposed build alternatives. The decision to interpolate the impacts of the other alternatives was made because the actual footprint width of all build alternatives is very similar (a difference of about 12 feet maximum in most locations). This is due to the inclusion of auxiliary lanes in the 8+4 alternatives, narrow inside shoulders in the barrier alternatives, and the use of eight mixed-use lanes in the northern portions of the 10+4 alternatives. Therefore, the difference in impact severity between build alternatives in most locations would be minor. The photo simulations below illustrate this point.

Since it is a project objective to minimize construction outside existing right-of-way limits, differences in visual effects would primarily consist of roadway views pertaining to pavement width and retaining wall height. Other project features that create visual effects such as noise walls would essentially be the same for all build alternatives. In certain locations, the 10+4 Barrier Alternative may require acquisition of additional right-of-way that may require additional assessment. This would be done on a case-by-case basis.

Project Alternatives

8+4 with Buffer Alternative.

8+4 with Barrier Alternative.

Project Alternatives

10+4 with Buffer Alternative.

10+4 with Barrier Alternative.

Analysis of Key Views

Because it is not feasible to analyze all the views in which the proposed project would be seen, it is necessary to select a number of representative key viewpoints that would most clearly display the visual effects of the project. Key views also represent the primary viewer groups that would potentially be affected by the project.

Key view photo simulations depict the 10+4 Buffer Alternative. Some visual features proposed as mitigation such as landscaping and enhanced structure design are being integrated into the proposed project features to minimize adverse visual impacts. Some of these features are depicted in the photo simulations for illustrative purposes. Additional mitigation measures to those depicted may be required in each location. Specific mitigation requirements will be determined during the design phase according to the implementation procedures contained in the visual mitigation section of this assessment. Mitigation measures shown outside Caltrans right-of-way such as trees planted along local streets, or those that require the installation of non-standard equipment such as pedestrian bridge lights, will be implemented only if the responsible local government is willing to maintain them in perpetuity.

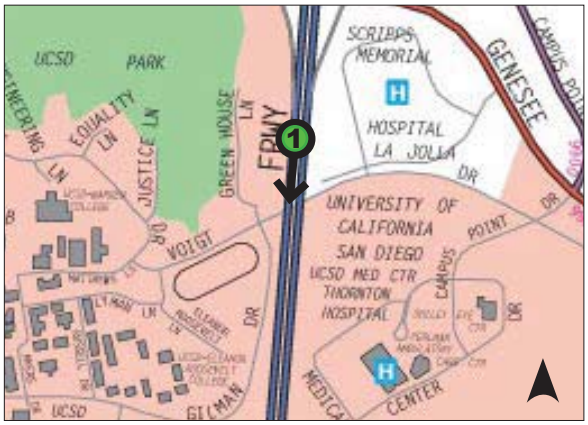
Key View Analysis

Key View # 1 Voigt Drive DAR

Existing view looking south toward Voigt Drive overcrossing.

Proposed view.

Key View # 1



Key View Location Map

Orientation

La Jolla Hills Landscape Unit in San Diego, southbound I-5 between Genesee Drive and La Jolla Village Drive interchanges, looking south to Voigt Drive overcrossing.

Existing Visual Quality/Character

The existing visual quality of this viewshed is moderate. Views from the freeway are somewhat limited due to its location in a depressed section, but the unity created between the freeway landscape and surrounding landscape is moderately high. Intactness is moderately high due to the lack of visually intrusive features in the landscape. Vividness is moderately low.

Proposed Project Features

DAR structures, overcrossing widening, Voigt Drive widening and realignment, freeway widening, retaining walls up to 14m (46') in height, loss of most existing freeway landscaping including median oleanders.

Change to Visual Quality/Character

Visual unity and intactness between the freeway and adjacent land uses would be reduced to low levels with the introduction of large walls, ramp structures, and widened local street. This would occur despite the use of project features such as terrain contoured retaining walls, planting pockets on freeway level, median landscaping where possible at DAR, enhanced bridge design, landscape buffer planting at the top of walls, and widened sidewalks and landscaped parkways on Voigt Drive. The resulting visual quality of the freeway would be low. The existing suburban campus character and compatible suburban parkway character of the overcrossing area and the freeway would change to one resembling an urban core area due to the large structures that are proposed. This would contrast with the visual context of the landscape unit, and would likely be viewed as a negative change to the community.

Viewer Response

The freeway would serve over 200,000 vehicles per day, and Voigt Drive would accommodate thousands of freeway users per day; UCSD students, faculty, and staff; and hospital user. Pedestrians and bicyclists would use the overcrossing and encounter potential conflicts with vehicles accessing the freeway via the DAR. Duration of views would vary from less than a minute to several minutes. Viewer awareness and activity would be redirected toward the proposed freeway features. Proposed changes to the visual environment would likely not be consistent with the high value UCSD places on architecture and the arts in its campus planning. Viewer sensitivity would likely be high. Overall viewer response would be high.

Resulting Visual Impact

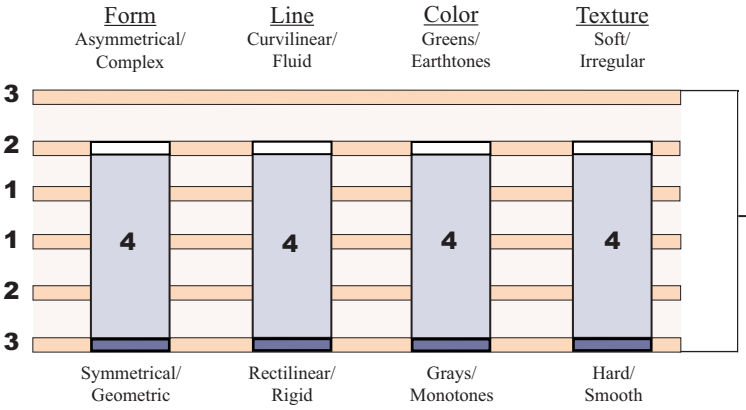
The change in visual quality would be from moderate to low. Visual character would undergo a high degree of change as it transitions from suburban campus/parkway to urban core. Viewer response would be high. The resulting visual impact would be high.

Key View # 1

VISUAL CHARACTER

Pattern Elements

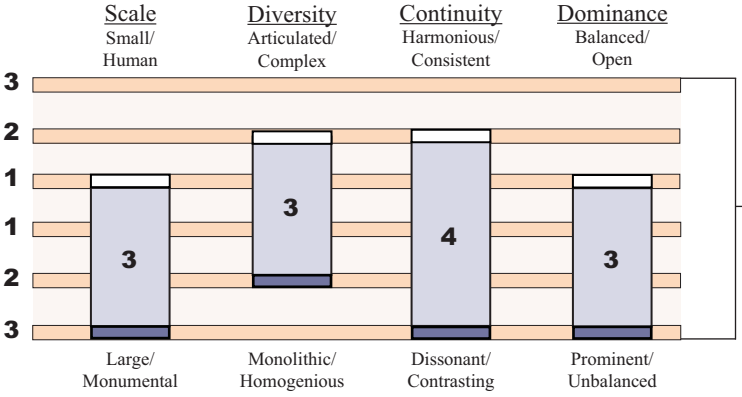
Describes the visual attributes of objects (Project and Setting)



Avg. Change: 4.0
% Change: 80

Pattern Character

Describes the relationships between visual elements (Project and Setting)



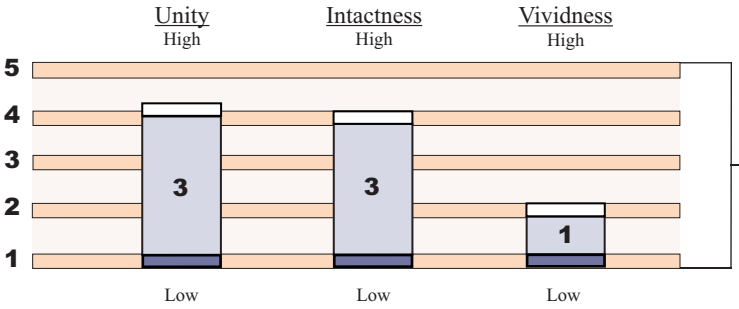
Avg. Change: 3.3
% Change: 65

Avg. Change: 3.7
% Change: 73

H

Change to Visual Character

VISUAL QUALITY



Avg. Change: 2.3
% Change: 58

MH

Change to Visual Quality

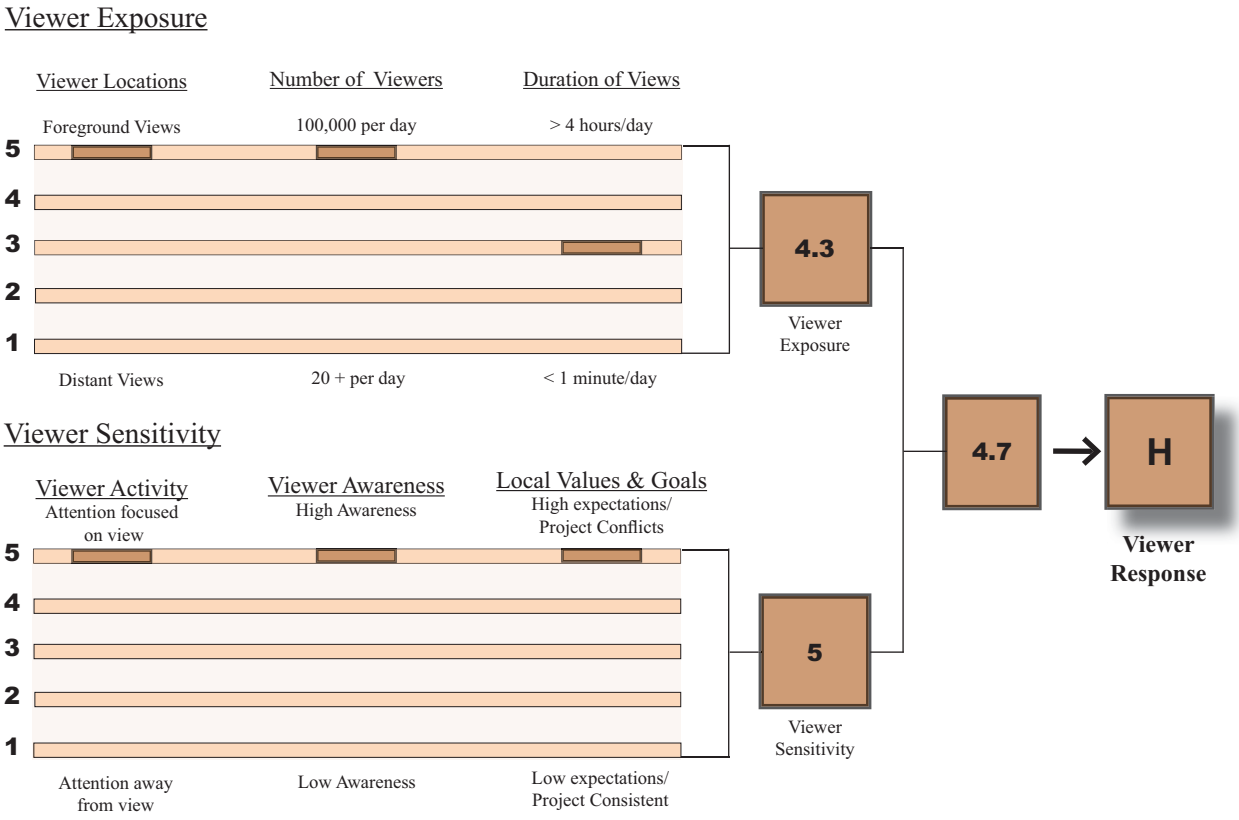
Legend

Existing Viewshed

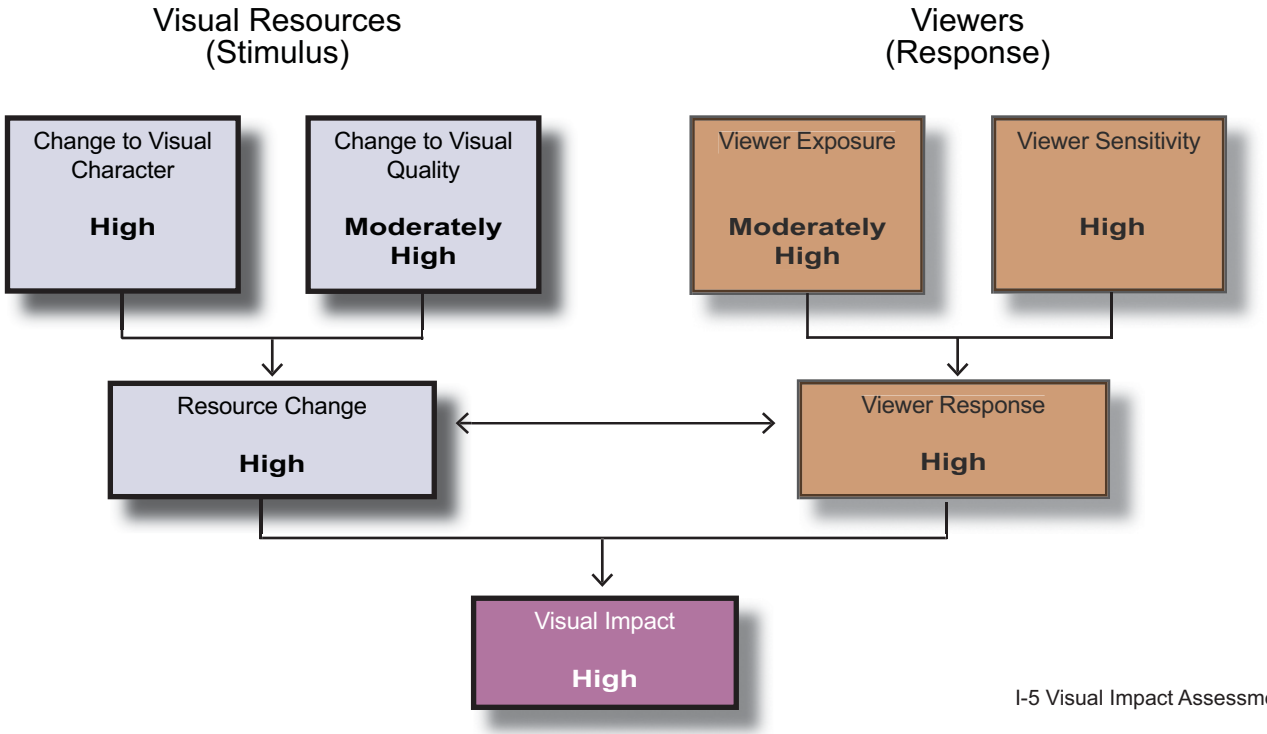
Proposed Viewshed

Key View # 1

VIEWER RESPONSE



ANALYSIS SUMMARY

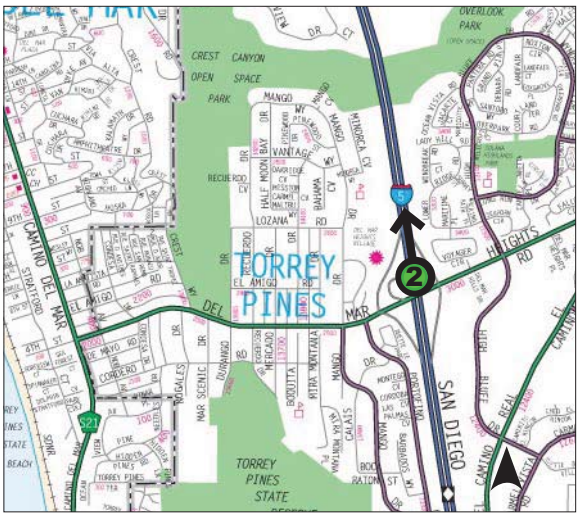


Key View # 2 I-5 at Del Mar Heights Road

Existing View looking South toward Del Mar Heights Road.

Proposed view.

Key View # 2



Key View Location Map

Orientation

Del Mar Heights Landscape Unit in San Diego, northbound I-5 between Del Mar Heights Road and Via de la Valle interchanges, looking north.

Existing Visual Quality/Character

Manufactured forms of the freeway are present in the foreground, including slopes that reinforce its flat planes and linear forms. However, the upper portions of the slopes seem more natural due to the presence of minor erosion of their sandstone surfaces, and naturalized plantings of mature trees. Views of the adjacent community at the top of slopes are characterized by rooftops and stands of mature trees. Distant views of the San Dieguito Valley are located to the north. Visual quality in this landscape unit is moderate due to a continuity of landscape elements between the freeway and adjacent community. The absence of oleanders in the median allows for open views of oncoming traffic and increases the perceived scale of the road. A moderate degree of unity and intactness exists despite this. Visual quality is moderate. The overall visual character is suburban due to the low density of the development and mature community landscaping.

Proposed Project Features

A pair of large retaining walls is proposed in the existing cut slopes to accommodate freeway widening. The wall on the northbound side would be about 3600 feet (1100m) in length and 0-40 feet (12m) in height, with the majority of the wall being 30-35 feet (9-10m) in height. The corresponding southbound wall would be of similar size. These walls would be designed as "terrain contoured walls" as a visual impact minimization feature (illustrated in the visual mitigation section) and would be typical of those proposed for similar large cut slopes in Solana Beach, Cardiff, Encinitas, and Carlsbad. They would be located at or near existing mid-slope benches so the upper portion of existing slopes and their vegetation could be preserved intact. In addition, they would have curved surfaces, sloped faces, integral earth-tone colors, and enhanced surface textures. They would be partially screened from freeway users by landscaped slopes at their bases. In this key view location, the freeway surface would increase to almost twice its existing width.

Change to Visual Quality/Character

The proposed walls would decrease the intactness and unity of the viewshed from moderate to low levels. Views of the preserved upper slopes and adjacent community would be obscured because the tops of the near-vertical retaining walls would block the line of sight for many freeway viewers. Vividness would also be reduced as the attention of the viewer is directed more toward foreground views of the widened

Key View # 2

freeway. The large-scale monolithic built forms in both the horizontal and vertical planes would be incompatible with the small-scale suburban character of the community and produce a marked increase in visual contrast between the freeway and its surroundings. The change to visual character would be high.

Viewer Response

The freeway would serve over 200,000 viewers per day with foreground views of the project. Hundreds of local street users on Del Mar Heights Road would have midground views of the walls. Some local residents would be able to view the freeway from their rear yards. Duration of views would vary from less than one minute to several minutes. Viewer sensitivity to changes in the visual environment in the Torrey Pines and Del Mar communities would be high. It is likely that the changes would be considered adverse.

Resulting Visual Impact

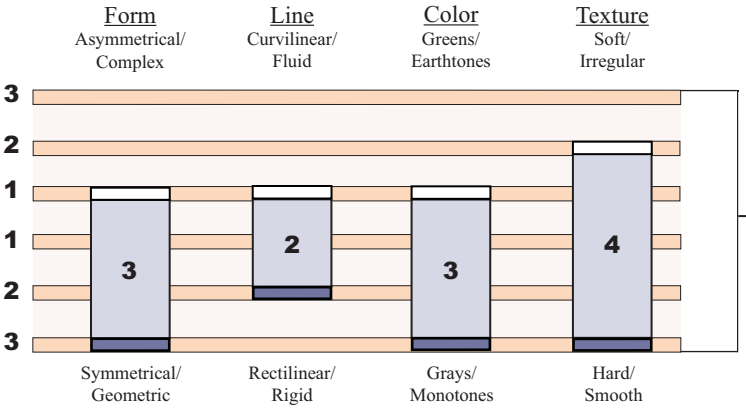
The change to visual quality would be moderate. Change to visual character would be high. Viewer response would be moderately high. Overall visual impact would be moderately high.

Key View # 2

VISUAL CHARACTER

Pattern Elements

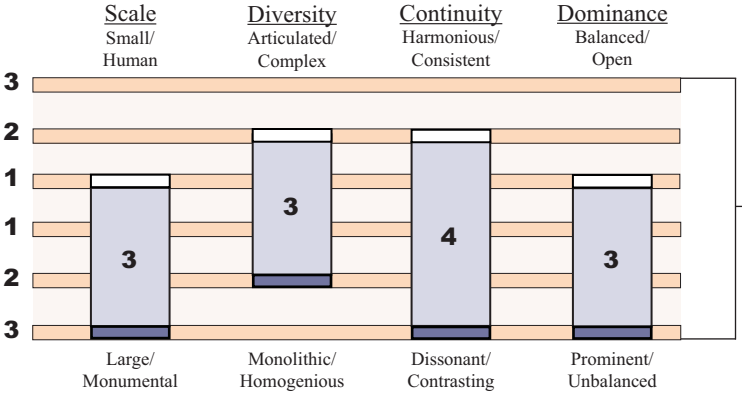
Describes the visual attributes of objects (Project and Setting)



Avg. Change: 3.0
% Change: 60

Pattern Character

Describes the relationships between visual elements (Project and Setting)



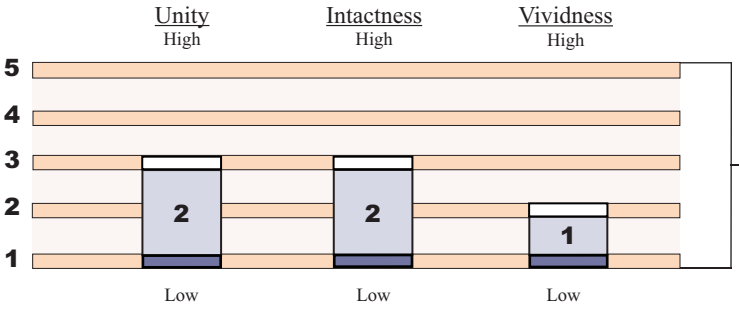
Avg. Change: 3.3
% Change: 65

Avg. Change: 3.2
% Change: 63

H

Change to Visual Character

VISUAL QUALITY



Avg. Change: 1.6
% Change: 42

M

Change to Visual Quality

3

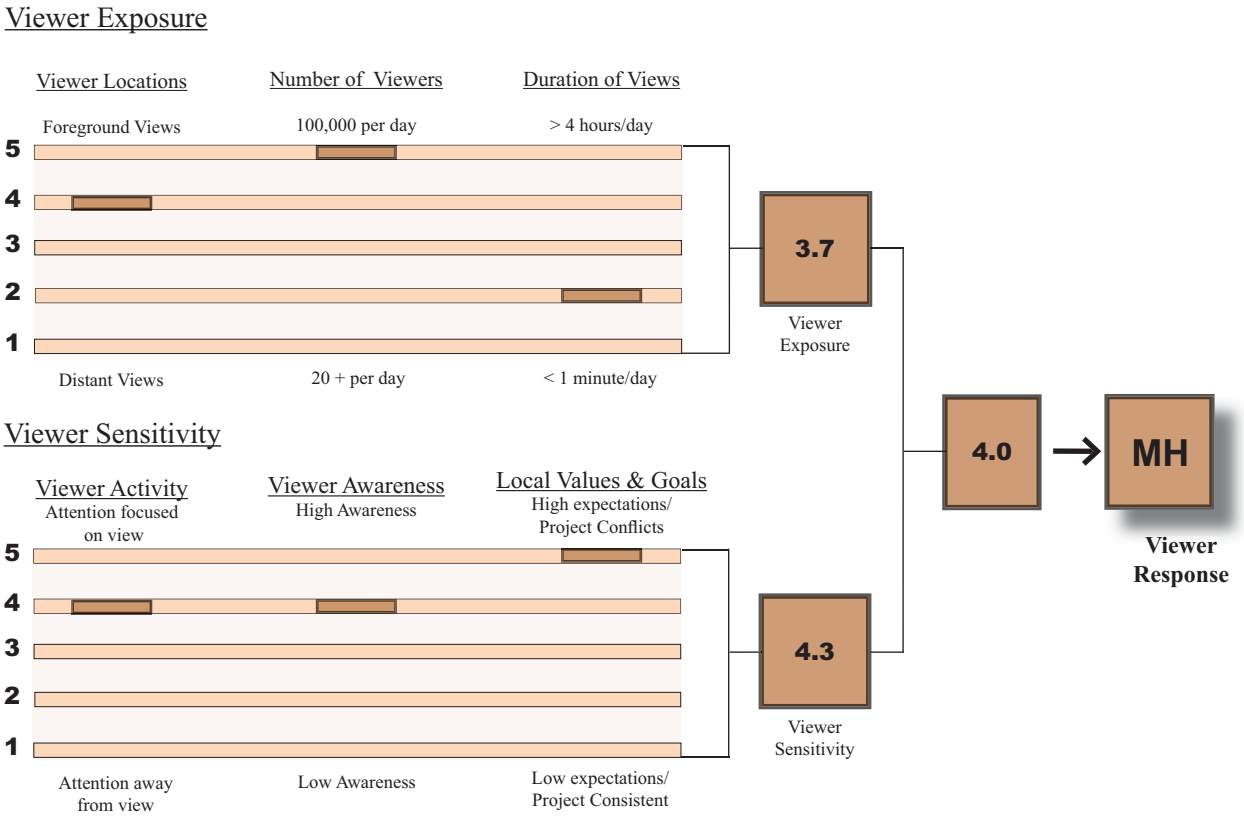
Legend

Existing Viewshed

Proposed Viewshed

Key View # 2

VIEWER RESPONSE



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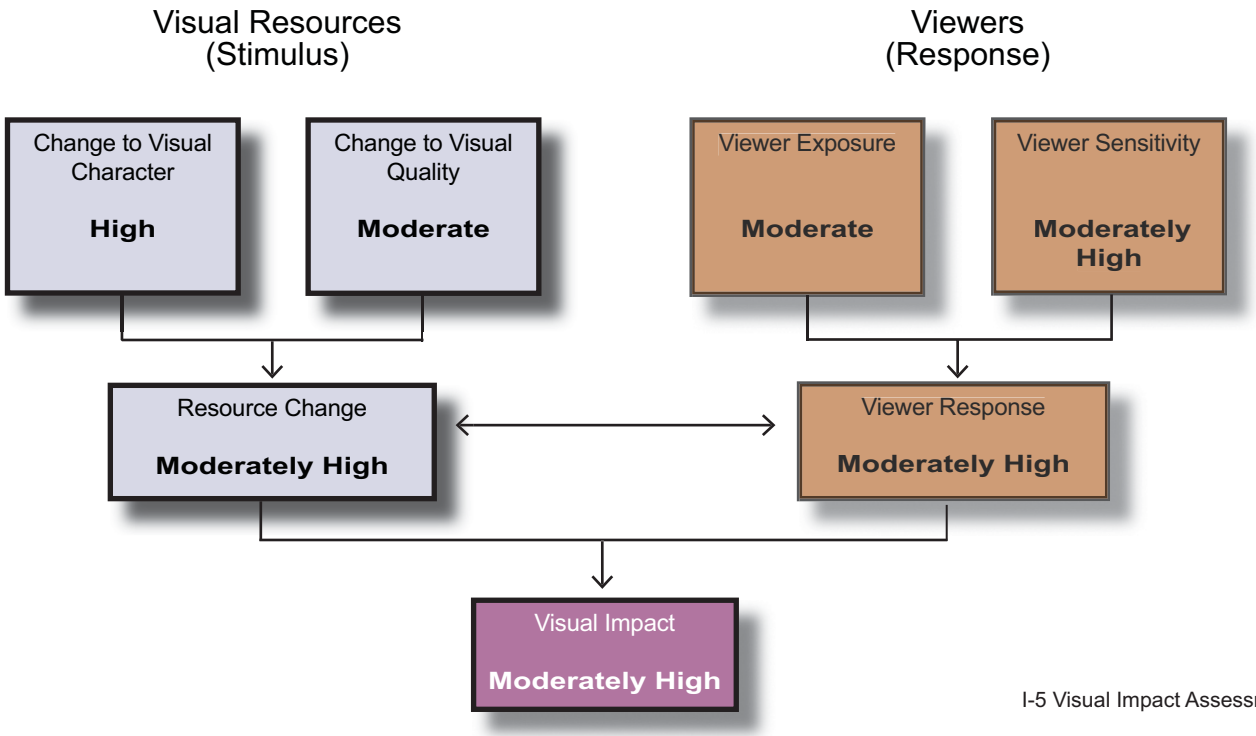
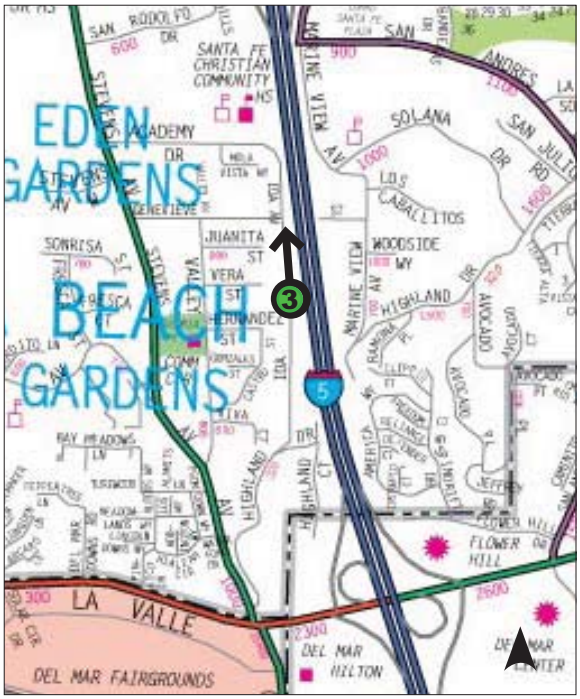


Key View # 3 Ida Avenue in Solana Beach

Existing View looking north on Ida Avenue.

Proposed view.

Key View # 3



Key View Location Map

Orientation

Solana Hills Landscape Unit in Solana Beach at Ida Avenue south of Genevieve Street looking north.

Existing Visual Quality/Character

This residential neighborhood is located in the community of Eden Gardens. It is one of Solana Beach's oldest communities, and was developed with mixed land uses, irregular lot sizes, and non-standard street widths. This gives the area a unique visual identity and historic qualities the residents value. Ida Avenue has been widened in the area of this key view, but will be narrowed to comply with the Eden Gardens Master Streetscape Plan (Adopted April 17, 1995) as part of an I-5 Auxiliary Lane project to be constructed in 2007.

The visual unity and intactness of the key view are moderate due to the presence of the encroaching freeway fill slope on the eastern side of the street. The vegetation of the slope is a unifying visual element that harmonizes with the mature residential landscaping. Vividness is also moderate because of the presence of the freeway, which creates an "edge" to the community, and reduces its historic neighborhood feel. Visual quality is moderate. Most residences are small and are located on large parcels that give the neighborhood a rural character.

Proposed Project Features

Freeway widening would require a large retaining wall along Ida Avenue. The wall would be up to 9m (30') tall and 396m (1300') long. It would incorporate a 6m (12') noise wall that would bring its total maximum height up to 12.8m (42'). The retaining wall surface would be battered and both walls would incorporate architectural treatment similar to that found in the Lomas Santa Fe interchange improvement project. A small landscaped slope would be located at the base of the wall. Existing overhead utility lines would be relocated underground as a community enhancement feature. In addition, street landscaping consistent with the Eden Gardens Master Streetscape Plan would be included as part of the freeway project.

Change to Visual Quality/Character

The proposed retaining wall and noise wall would appear as the largest built form in the community. It would appear twice as tall as the tallest building in the area and likely be the most prominent visual element in the northeastern portion of Eden Gardens. It would reduce visual unity, intactness, and vividness from existing moderate levels to low levels. Structures of that size are nor-

Key View # 3

mally associated with urban core areas, and would form a severe contrast to the visual character of the neighborhood. The change in character would be inconsistent with local goals and would likely be perceived as adverse by local residents.

Viewer Response

Hundreds of residents and local street users would have foreground, mid-ground, and background views of the project. Durations of the views would range from minutes to hours. Viewer exposure would be moderate. Views from some homes on Ida Avenue are directed toward the freeway, so viewer awareness would be moderate to high. Viewer sensitivity would be moderately high. Overall viewer response would be moderately high.

Resulting Visual Impact

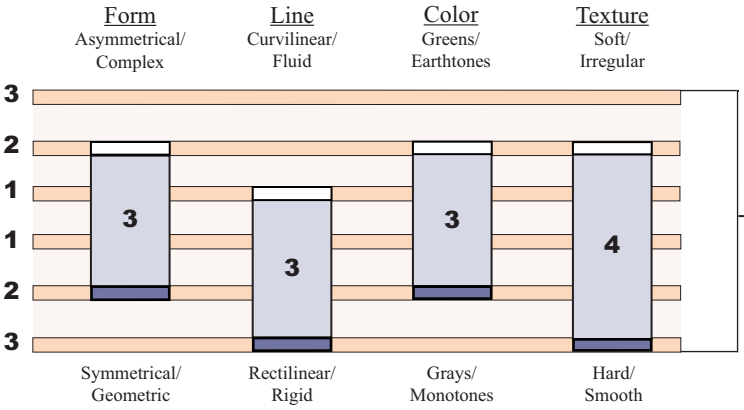
Change to visual quality would be moderately high, change to visual quality would be high, and viewer response to proposed changes would be moderately high. The visual impact would therefore be moderately high.

Key View # 3

VISUAL CHARACTER

Pattern Elements

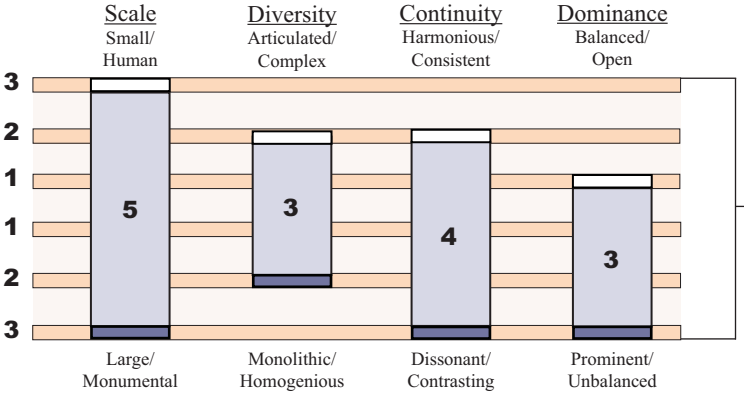
Describes the visual attributes of objects (Project and Setting)



Avg. Change: 3.3
% Change: 65

Pattern Character

Describes the relationships between visual elements (Project and Setting)



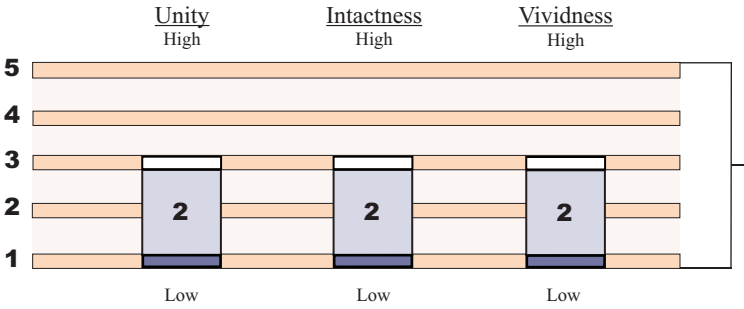
Avg. Change: 3.8
% Change: 75

Avg. Change: 3.6
% Change: 71

H

Change to Visual Character

VISUAL QUALITY



Avg. Change: 2.0
% Change: 50

MH

Change to Visual Quality

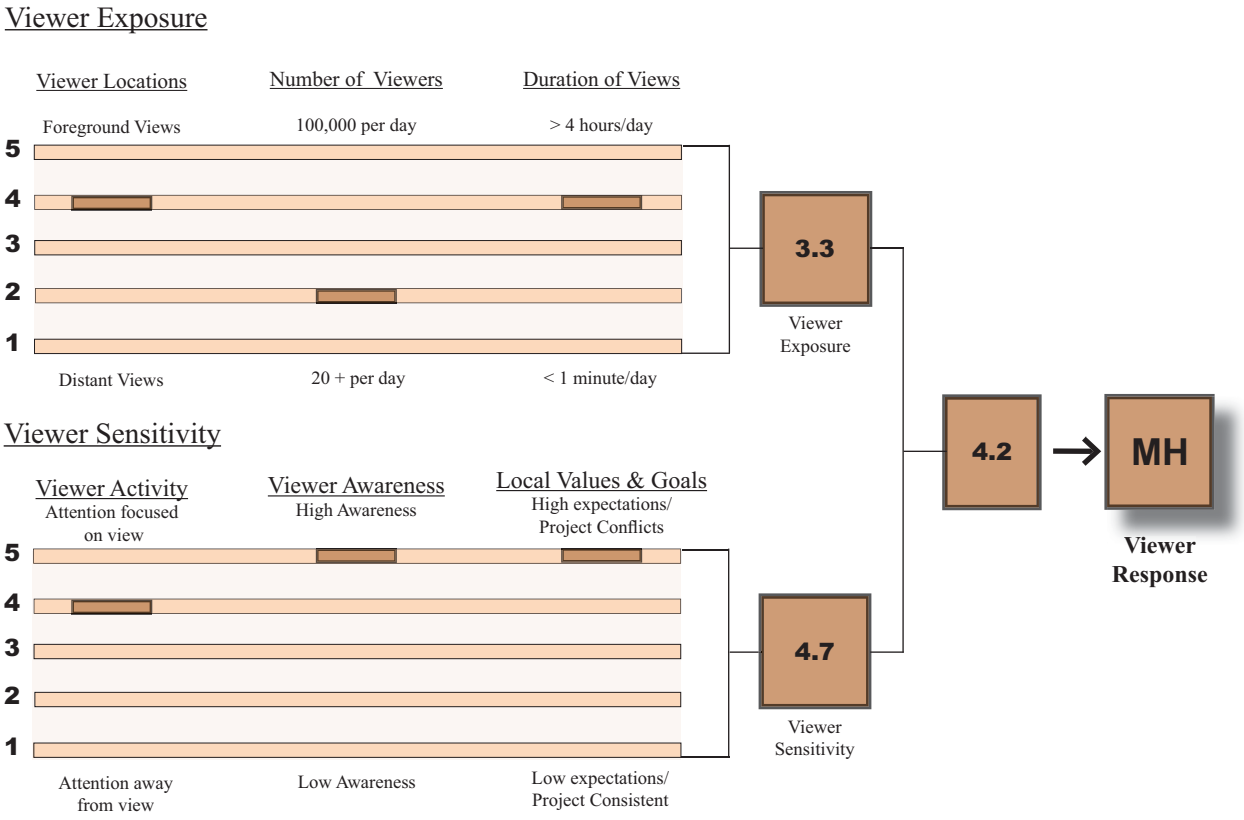
Legend

Existing Viewshed

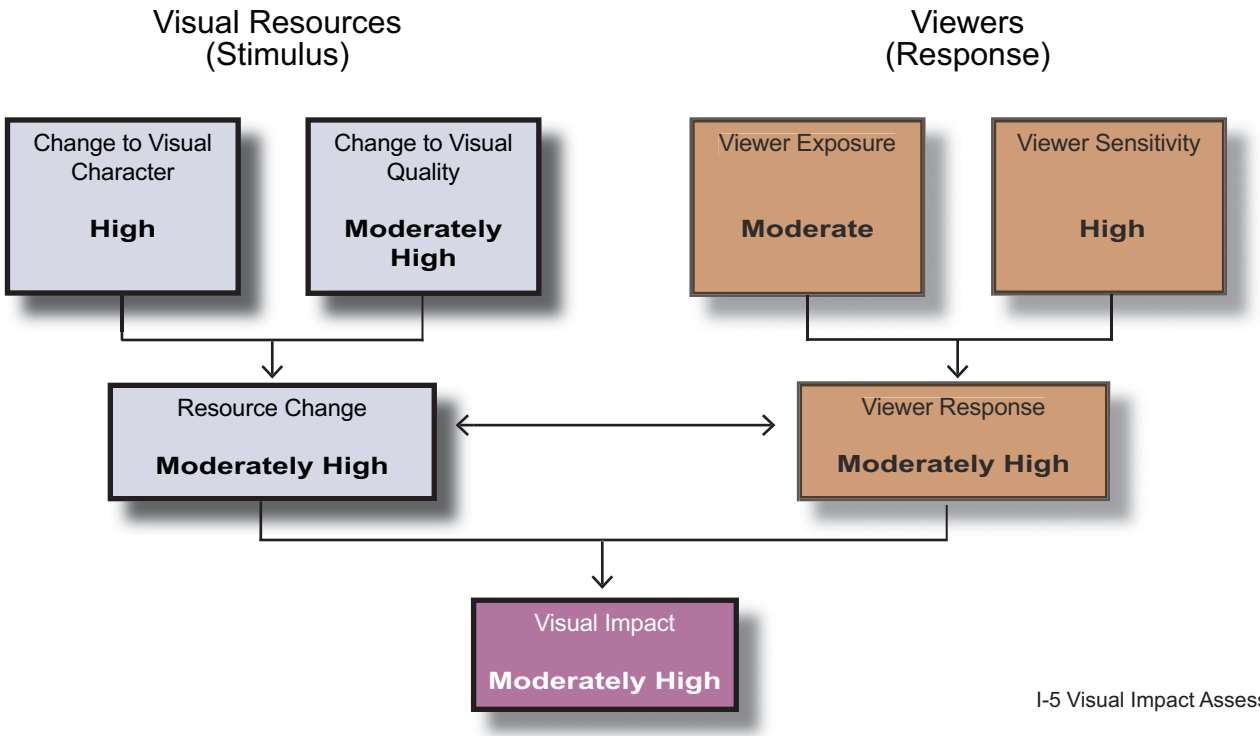
Proposed Viewshed

Key View # 3

VIEWER RESPONSE



ANALYSIS SUMMARY



Key View # 4 I-5 at Ida Avenue

Existing View from south-bound I-5 looking southwest.

Proposed view.

Key View # 4

Key View Location Map

Orientation

Solana Beach Landscape Unit in Solana Beach, southbound I-5 south between Via de la Valle and Lomas Santa Fe interchanges, looking southwest.

Existing Visual Quality/Character

The existing view of the Pacific Ocean and Del Mar Racetrack from this portion of the freeway is high in vividness because of its scenic quality and iconic nature. It provides the public visual access to the coast and reveals a regional landmark. Visual unity and intactness of the distant view is high, but they are moderated by the presence of utility lines and freeway appurtenances in the foreground. Overall visual quality is high. The scene contains the visual elements described elsewhere in this document that establish its visual character and make the northern coast of San Diego County such a desirable place to visit or reside.

Proposed Project Features

Freeway widening would add three lanes to the west of the existing shoulder and a noise wall 3.6m (12') in height. An integral concrete safety barrier has been recommended at the edge of the proposed roadway. An impact-minimizing alternative would include a narrow planted area between the wall and barrier, and architectural detailing. Additional right-of-way would be required to utilize an articulated wall layout. Transparent panels were considered, but determined to be unfeasible due to issues regarding the panels' effectiveness as mitigation as well as their maintenance requirements (see discussion on page 167). Removal of the portion of the wall blocking scenic views in lieu of alternate methods of off-site attenuation for ten residences benefited by that portion was considered and rejected due to noise abatement regulations.

Change to Visual Quality/Character

The proposed noise wall would block existing scenic views of the ocean and racetrack, confining views to the freeway foreground and mid-ground. This would result in a high level of change in visual quality and remove public access to a high quality visual resource. The open, parkway character of the existing freeway would be changed to that of a large, urban freeway whose visual enclosure is provided by a tall foreground wall. This would contrast severely with existing visual character and likely would be perceived as adverse by the public.

Viewer Response

More than 100,000 viewers per day would be affected by the proposed changes, and would have short duration views. Distant views of

Key View # 4

the ocean would be replaced by foreground views of the proposed wall. There would likely be a high level of awareness by viewers to the proposed changes. Changes that block visual access to the coast would likely conflict with local goals and expectations. They would also appear to conflict with Chapter 3, Article 6, Section 30251 of the Coastal Act stating: "The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance…development shall be sited and designed to protect views to and along the ocean and scenic coastal areas…" Viewer response would be moderately high.

Viewer Response

Change to visual quality and character would be high. Viewer response to those changes would likely be moderately high. The visual impact would be high.

Resulting Visual Impact

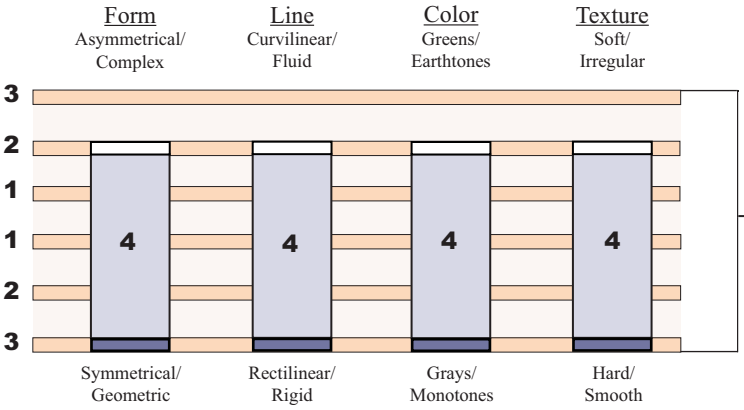
Change to visual quality and character would be high. Viewer response would be high. The visual impact would be high.

Key View # 4

VISUAL CHARACTER

Pattern Elements

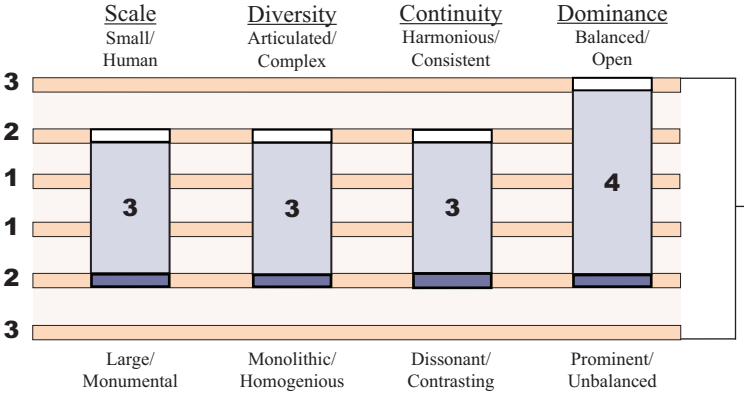
Describes the visual attributes of objects (Project and Setting)



Avg. Change: 4.0
% Change: 80

Pattern Character

Describes the relationships between visual elements (Project and Setting)



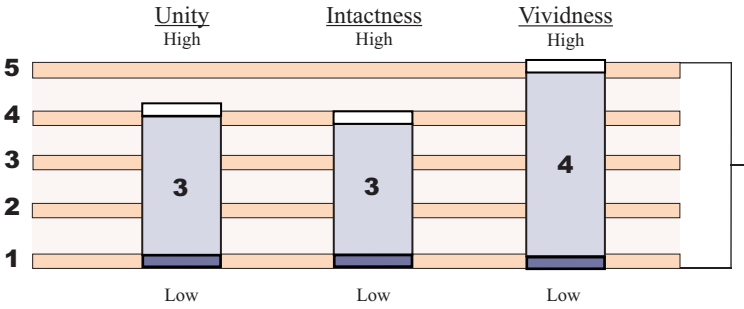
Avg. Change: 3.3
% Change: 65

Avg. Change: 3.7
% Change: 73

H

Change to Visual Character

VISUAL QUALITY



Avg. Change: 3.3
% Change: 83

H

Change to Visual Quality

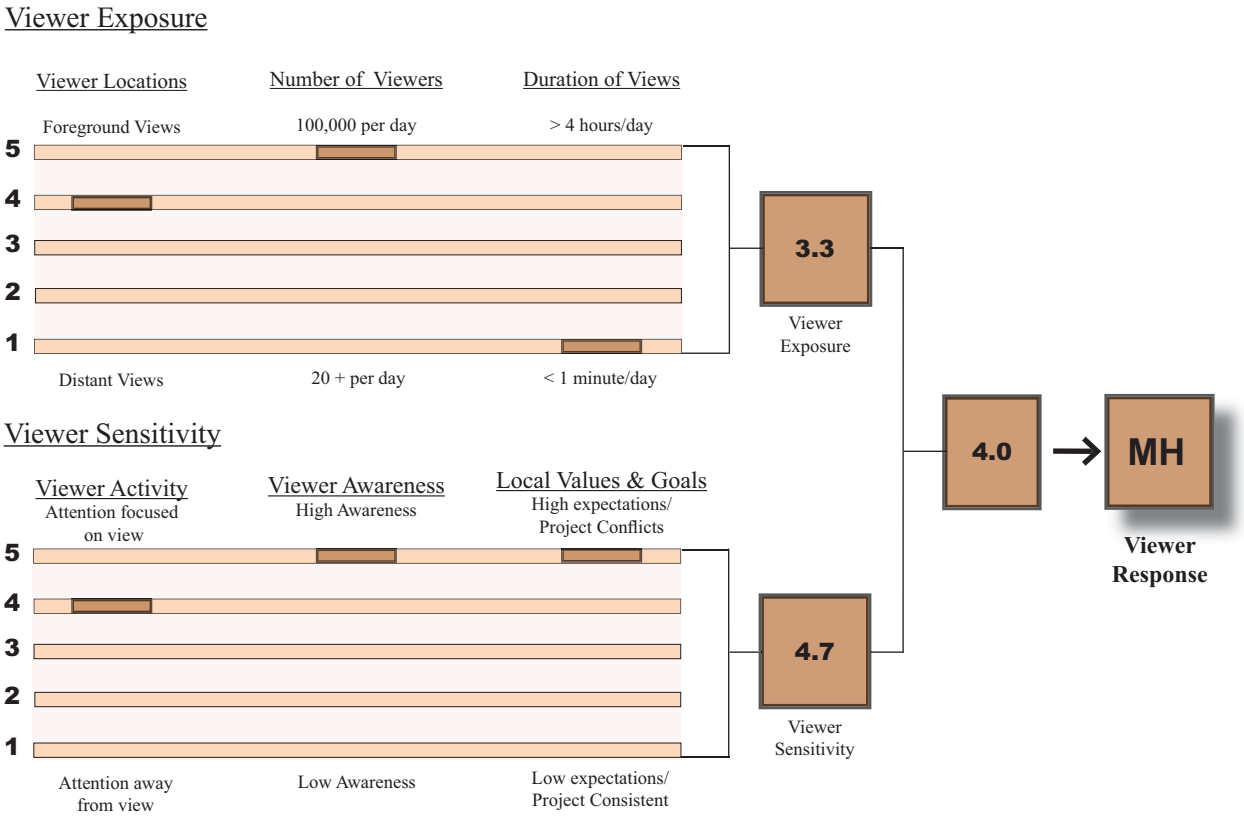
Legend

Existing Viewshed

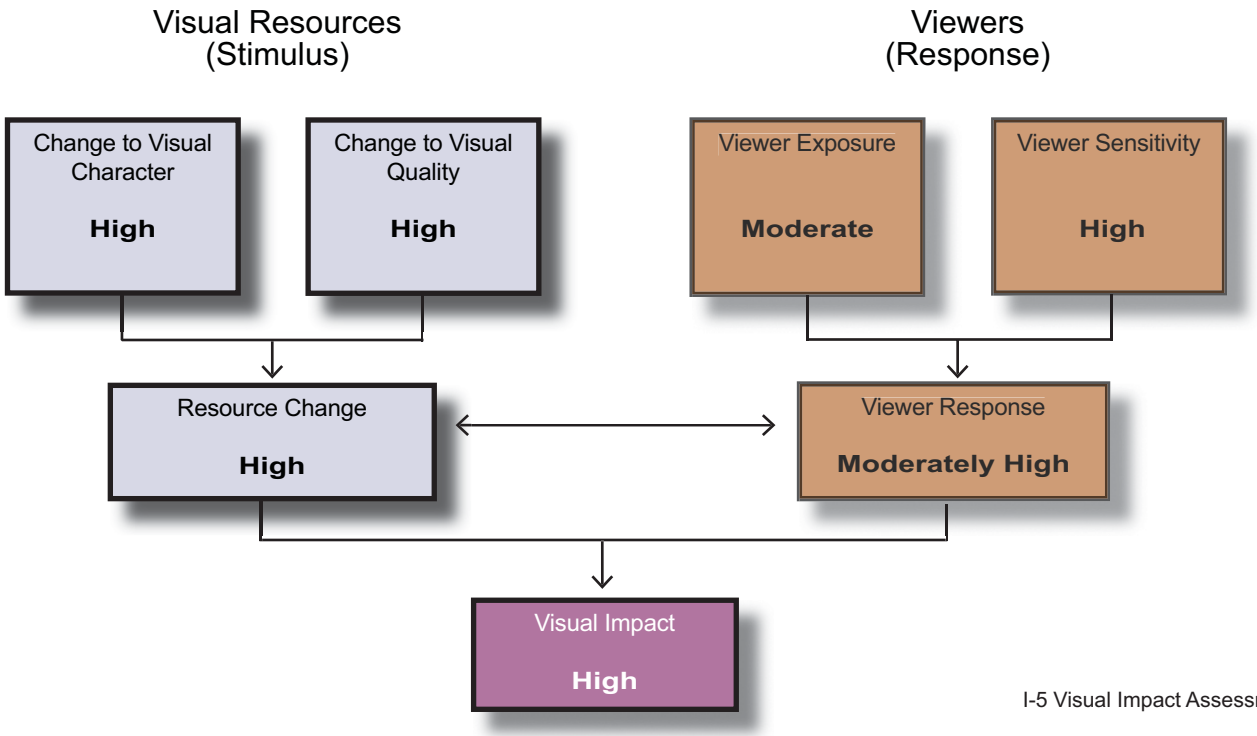
Proposed Viewshed

Key View # 4

VIEWER RESPONSE



ANALYSIS SUMMARY



Key View # 5 I-5 at Manchester Avenue

Existing View Looking north to Manchester Avenue.

Proposed view.

Key View # 5

Orientation

San Elijo Lagoon Landscape Unit in Encinitas, northbound I-5 at the San Elijo Lagoon bridge, looking north.

Existing Visual Quality/Character

This viewpoint is a natural scenic area of the corridor. It features expansive views of the ocean to the west and inland foothills to the east, with the lagoon and agricultural fields ringed by sandstone bluffs on display in the foreground. This assembly of natural landscape components is extraordinary in the context of an urban freeway. Because of this, vividness is high. Unity and intactness are also high, despite the presence of residential development within the viewshed, and a gas station on Manchester Avenue adjacent to the agricultural fields. Visual character is established by the abundance of natural features and gives the viewshed a rural feel.

Proposed Project Features

A DAR facility would be located just north of the interchange loop ramp. It would consist of two ramps rising from the median and meeting at an overcrossing structure that would span only the northbound lanes. Each ramp would be supported by a retaining wall until it reaches a height of 4.6m (15'). At that point it would become a bridge structure supported on columns. Here the paved freeway footprint would be at its widest as additional DAR entry and exit lanes are added to those already proposed for each project alternative. Existing oleanders would be removed from the median. Large terrain contour retaining walls would be terraced on each side of the freeway to replace existing cut slopes. The scenic bluffs located above the northbound slope would remain undisturbed. The DAR access road would go east from the freeway median to a proposed

Key View Location Map

transit center located on existing agricultural fields behind the gas station, and connect to Manchester Avenue east of the station. The transit center would provide a bus platform and parking for 400 cars. It would be situated below the level of the existing ground plane to minimize its visibility.

Change to Visual Quality/Character

The bridges, walls, and parking lot proposed for this scenic area would cause a high degree of change to its visual quality and character. Intactness and unity levels would change form high to low, and vividness would be reduced to a moderate level. Visual character would change from rural to suburban as incompatible built forms replace existing visual resources.

Viewer Response

Hundreds of thousands of freeway travelers and thousands of local street users would view the project each day. Hundreds of residents would have views to the project. The City of Encinitas has designated this portion of the freeway as a scenic corridor. Viewer response is high.

Resulting Visual Impact

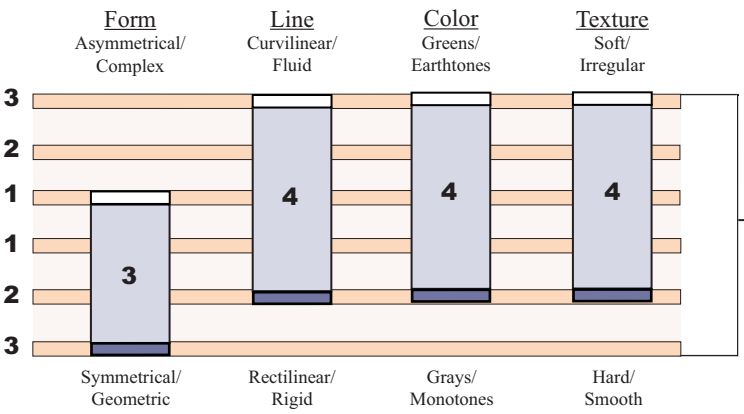
Change to visual quality and character would be high. Viewer response is high. The visual impact would be high.

Key View # 5

VISUAL CHARACTER

Pattern Elements

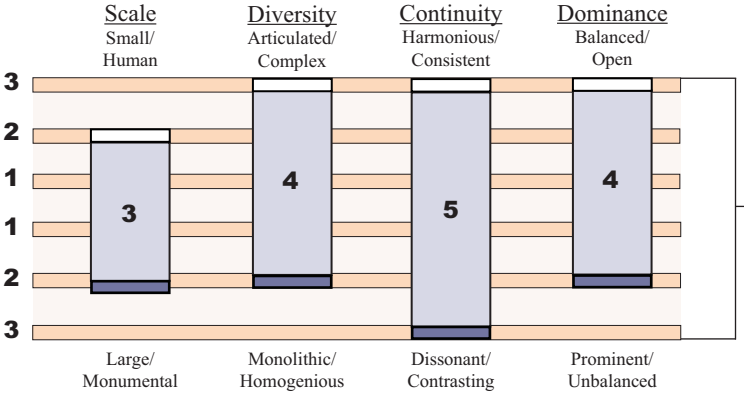
Describes the visual attributes of objects (Project and Setting)



Avg. Change: 3.8
% Change: 75

Pattern Character

Describes the relationships between visual elements (Project and Setting)



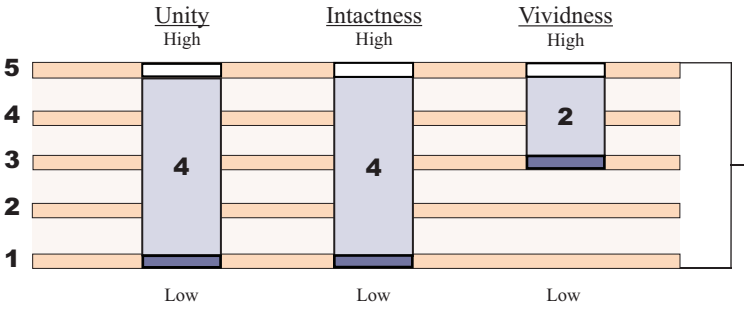
Avg. Change: 4.0
% Change: 80

Avg. Change: 3.9
% Change: 77

H

Change to Visual Character

VISUAL QUALITY



Avg. Change: 3.3
% Change: 83

H

Change to Visual Quality

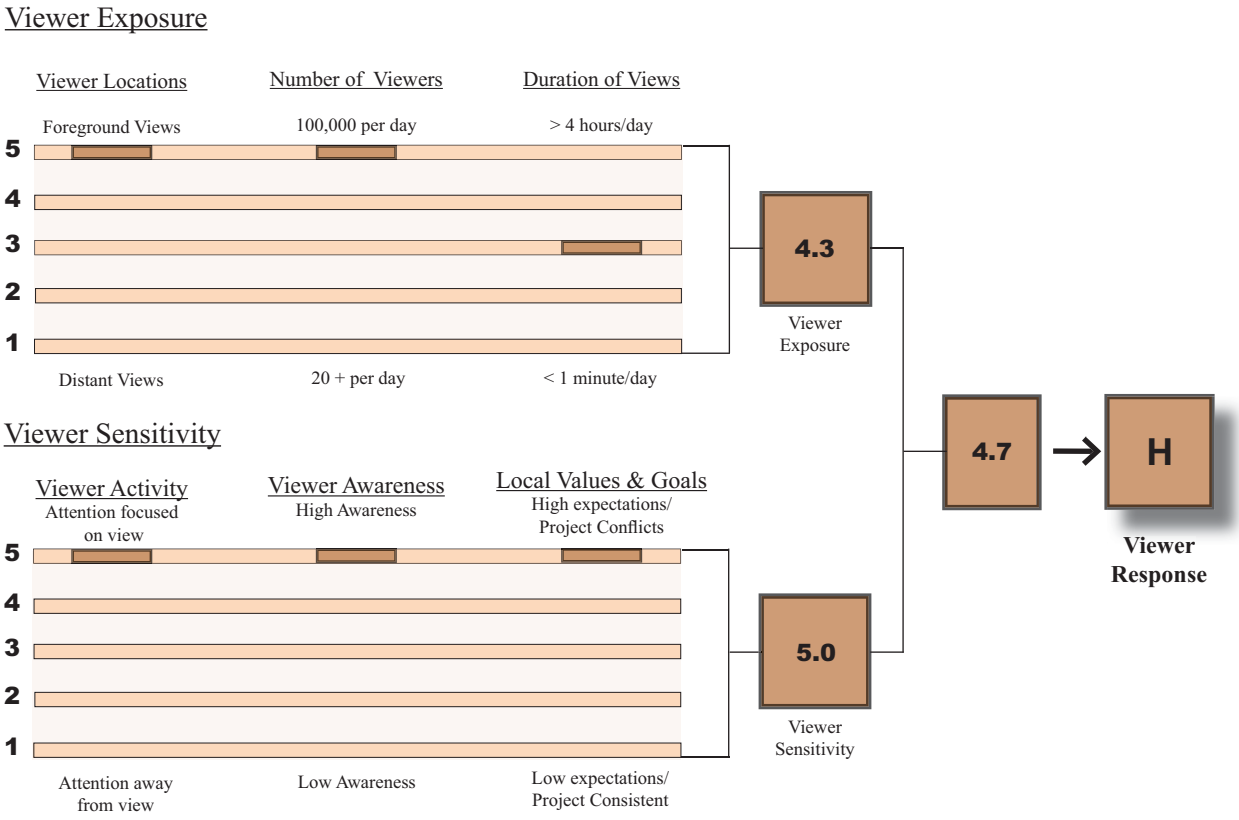
Legend

Existing Viewshed

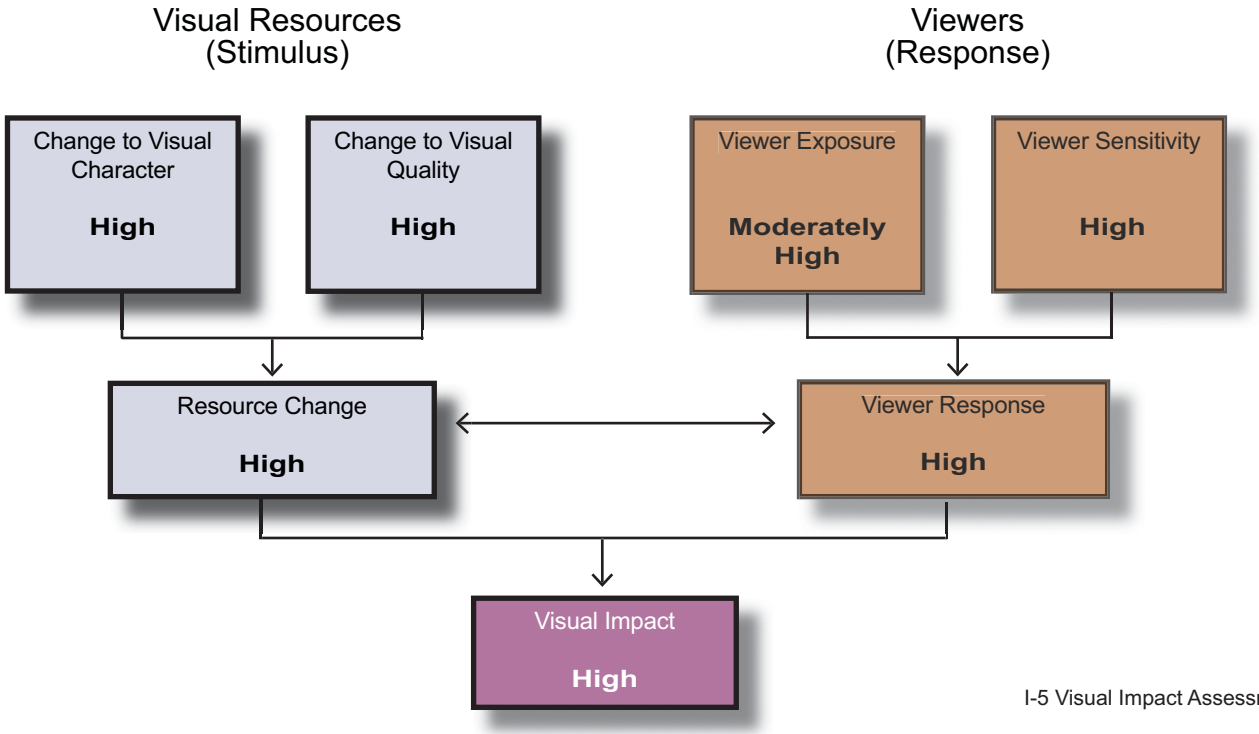
Proposed Viewshed

Key View # 5

VIEWER RESPONSE



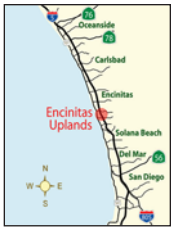
ANALYSIS SUMMARY



Key View # 6 Devonshire Drive in Encinitas

Existing View on Devonshire Drive looking north toward Requeza Street.

Proposed view.



Key View # 6

Key View Location Map

Orientation

Encinitas Upland Landscape Unit in Encinitas, Devonshire Drive near Requeza Street, looking north.

Existing Visual Quality/Character

This neighborhood is characteristic of well-established low-density residential communities in Encinitas. Mid-twentieth century custom homes are sited on large lots away from the street behind groupings of mature trees. Built features in the public realm include rural mailboxes and exclude features such as sidewalks, curbs, and gutters, giving the neighborhood a rural feel. In this view, unity is moderately high due to the predominance of informally planted mature vegetation both on the street and in freeway right-of-way. Intactness is only moderate due to encroaching visual elements such as chain link fence and overhead utilities. Vividness is moderate because the neighborhood's rural character is unique in such a large metropolitan area, but there are no distinctive visual elements that make the view particularly memorable. Existing visual quality is moderate.

Proposed Project Features

A noise wall 4.9m (16') in height is proposed to be located at the freeway right-of-way. It would be approximately 290m (950') in length. The wall would incorporate architectural detailing in addition to enhanced color and texture to reduce its apparent size and increase its compatibility with the surroundings. Street trees would also be planted in front of the wall if the City would maintain them in perpetuity.

Change to Visual Quality/Character

The proposed wall would be an encroaching urban element due to its large size. It would replace the variable spatial edge of the neighborhood with a tall, monolithic vertical plane. Its height would be more that twice that allowed by local building codes for solid, freestanding walls in residential communities. In a small-scale suburban environment with a rural character such as this, the wall would look singularly out of place, and reduce unity and intactness to moderately low levels. The City of Encinitas has designated this area as a scenic view corridor. Goal 9 of the General Plan seeks to: "Maintain the sense of spaciousness and semi-rural living within the I-5 View Corridor." Since the wall would not be consistent with local planning goals, the urbanizing change it would bring to the character of the viewshed would likely be considered adverse.

Viewer Response

There are hundreds of local street users and residents who view this area each day. Most views are of short duration, but there would be a high awareness of the proposed visual changes. Residents would likely be sensitive to this change in their neighborhood.

Resulting Visual Impact

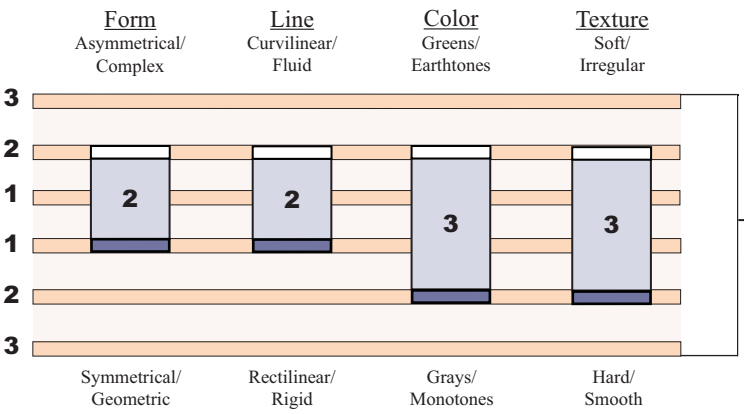
Change to visual character would be moderately high, change to visual quality would be moderate, and viewer response would be moderately high. The visual impact would be moderate.

Key View # 6

VISUAL CHARACTER

Pattern Elements

Describes the visual attributes of objects (Project and Setting)



Avg. Change: 2.5
% Change: 55

Pattern Character

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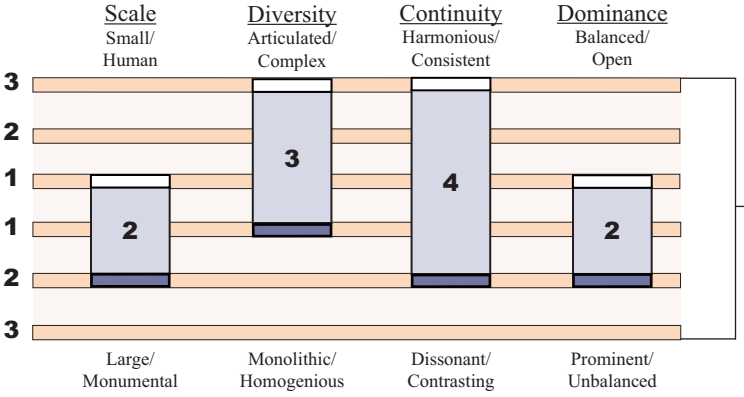


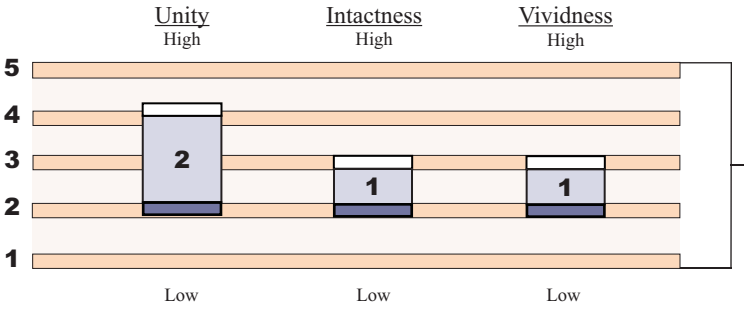
Avg. Change: 2.8
% Change: 55

Avg. Change: 2.7
% Change: 53

MH

Change to Visual Character

VISUAL QUALITY



Avg. Change: 1.3
% Change: 33

M

Change to Visual Quality

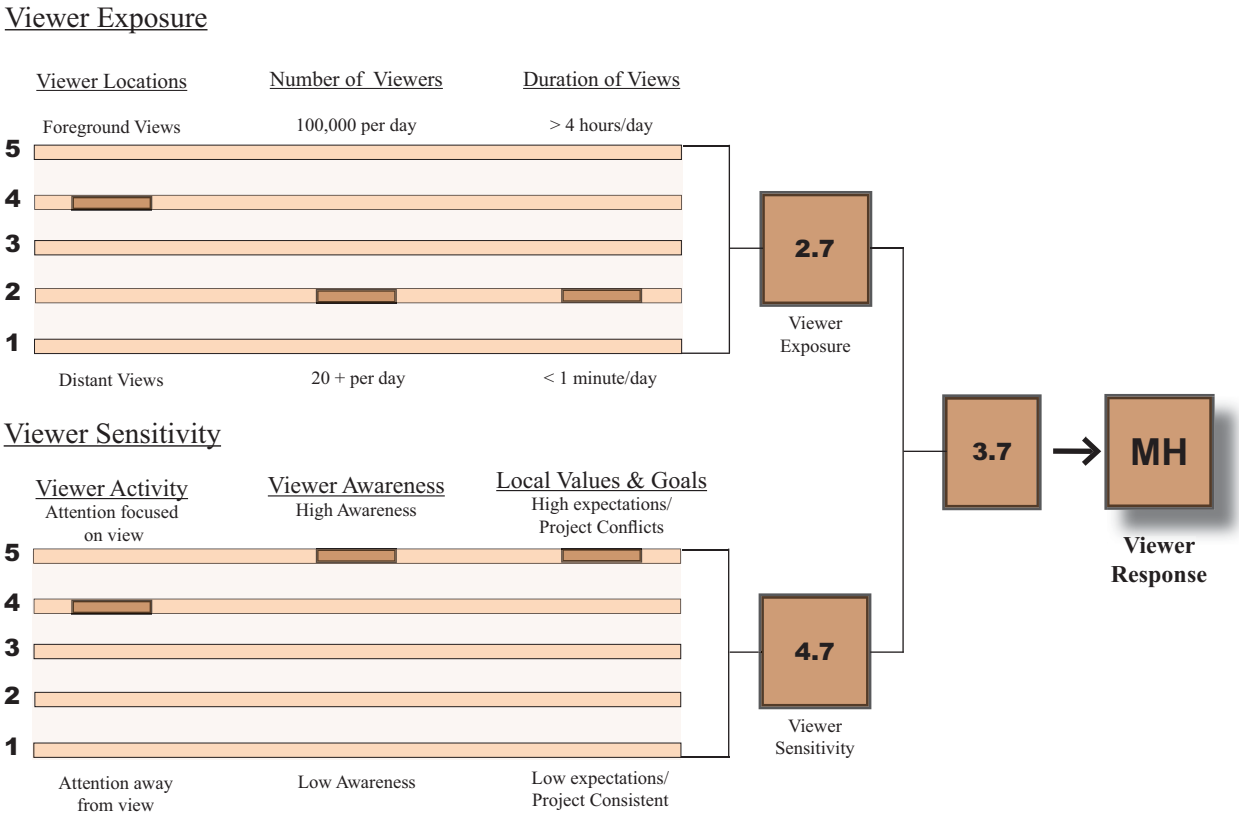
Legend

Existing Viewshed

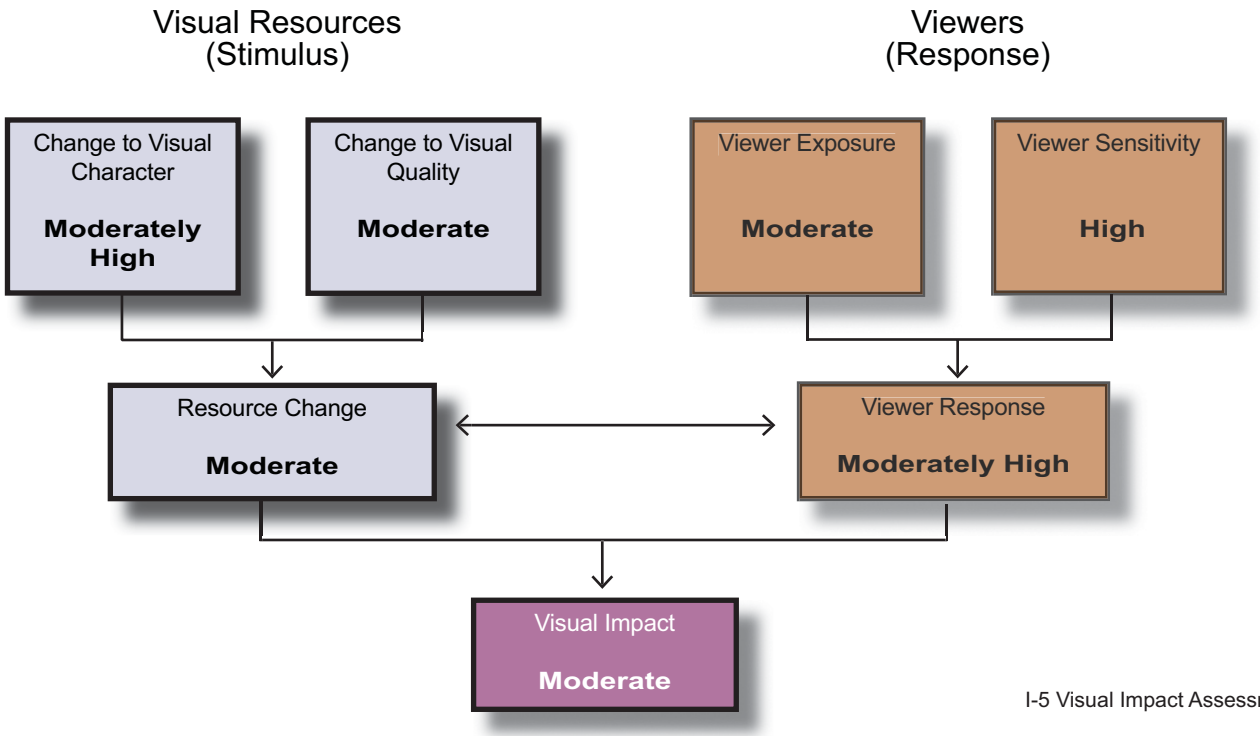
Proposed Viewshed

Key View # 6

VIEWER RESPONSE



ANALYSIS SUMMARY



Key View # 7 I-5 at Encinitas Boulevard

Existing NB View on I-5 north of Encinitas Boulevard.

Proposed view.

Key View # 7

Orientation

Encinitas Uplands Landscape Unit, in Encinitas, northbound I-5 at Encinitas Boulevard interchange, looking north.

Existing Visual Quality/Character

The unity of the interchange is moderately high due to the harmony of the freeway and community landscaping in this area. The intactness is moderate because of the presence of commercial development and signage near the ramps, and visually prominent multi-family residential development on overlooking slopes. Median oleanders and mature tree groupings reduce the scale of the freeway and blend with the large stands of trees in the adjacent community. Vividness is moderate despite the ocean view available to the west just outside the photographic field of view. This view is one of many that lend a suburban parkway character to the corridor, because landscape planting is the predominant visual element in the viewshed. Existing visual quality is moderate.

Proposed Project Features

The northbound side of the freeway would be widened to seven lanes, and a large retaining wall would replace the existing landscaped slope. The wall would be up to 12.2m (40') in height near the northbound on ramp, and be approximately 1067m (3500') in length. A second retaining/noise wall of similar height and length is proposed on the existing landscaped slope adjacent to the southbound on ramp. Both would be terrain-contoured walls, (described in the visual mitigation section) and for a portion of their length, small slopes adjacent to the freeway would provide landscape screening.

Key View Location Map

A planting pocket would be located between the wall and concrete safety barrier at the edge of the northbound shoulder where there is insufficient room for a slope. Proposed noise walls would be placed at or near the tops of the retaining walls. A third noise wall located near the southbound off ramp would be visible in the key view. Freeway widening would also occur in the existing median, new concrete safety barriers would be constructed, and existing oleanders would be preserved in place.

Change to Visual Quality/Character

Large manufactured objects would define the horizontal and vertical planes and would replace landscaping as the prominent visual element in the viewshed. The proposed retaining walls would likely be the largest built forms in the area. Visual unity would change from moderately high to moderately low. Intactness and vividness would be reduced to low levels. Visual character would change as manufactured forms replace existing natural components. The existing suburban parkway character of the freeway would become urban and contrast with the

Key View # 7

City's community identity goals. Local residents would likely consider the change to be adverse.

Viewer Response

Hundreds of thousands of freeway users, local street users, and local residents would view the proposed project features in this viewshed. Duration of views would be several seconds to several hours. There would likely be a high awareness of the project features by a majority of viewers. Local residents may be highly sensitive to the proposed changes. The City of Encinitas has designated this area as a scenic view corridor. Goal 9 of the General Plan seeks to: "Maintain the sense of spaciousness and semi-rural living within the I-5 View Corridor." Policy 9.1 states: "Encourage and preserve low-density residential zoning within the I-5 corridor while preserving the best natural features and avoiding the creation of a totally urbanized landscape and maintain I-5 interchange areas to conform to the specifications of this overall goal." Policy 9.6 states: "Where it is necessary to construct retaining or noise–attenuating walls along the I-5 corridor, they should be constructed with natural-appearing materials and generously landscaped with vines, trees, and shrubbery."

Resulting Visual Impact

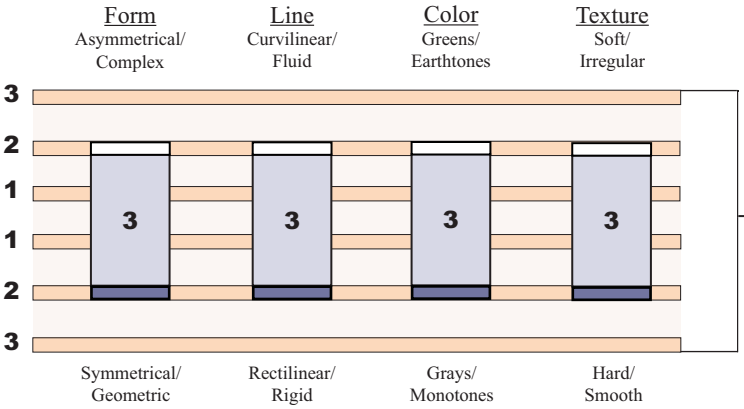
The change to visual character would be high. Change to visual quality would be moderately high. Viewer response would be moderately high. The visual impact would be high.

Key View # 7

VISUAL CHARACTER

Pattern Elements

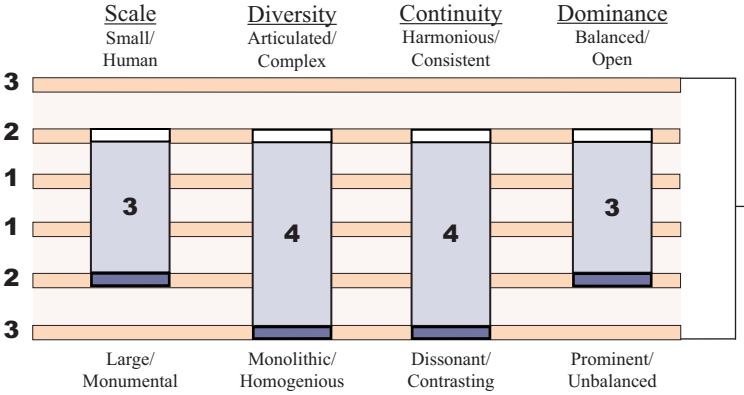
Describes the visual attributes of objects (Project and Setting)



Avg. Change: 3.0
% Change: 60

Pattern Character

Describes the relationships between visual elements (Project and Setting)



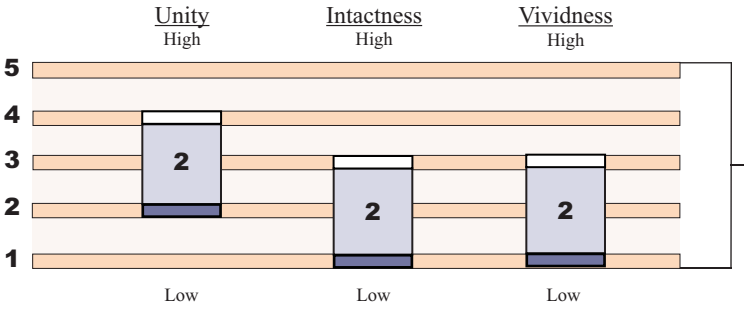
Avg. Change: 3.5
% Change: 70

Avg. Change: 3.8
% Change: 65

H

Change to Visual Character

VISUAL QUALITY



Avg. Change: 2.0
% Change: 50

MH

Change to Visual Quality

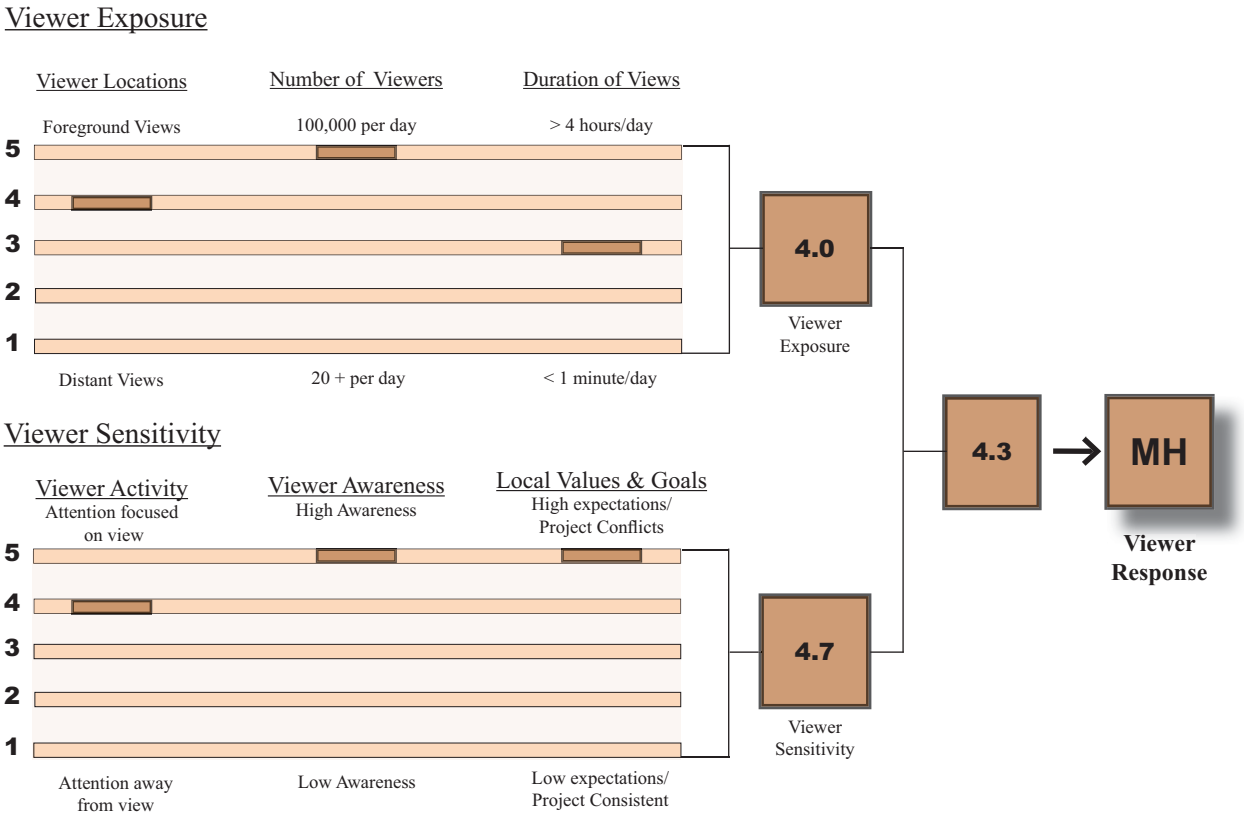
Legend

Existing Viewshed

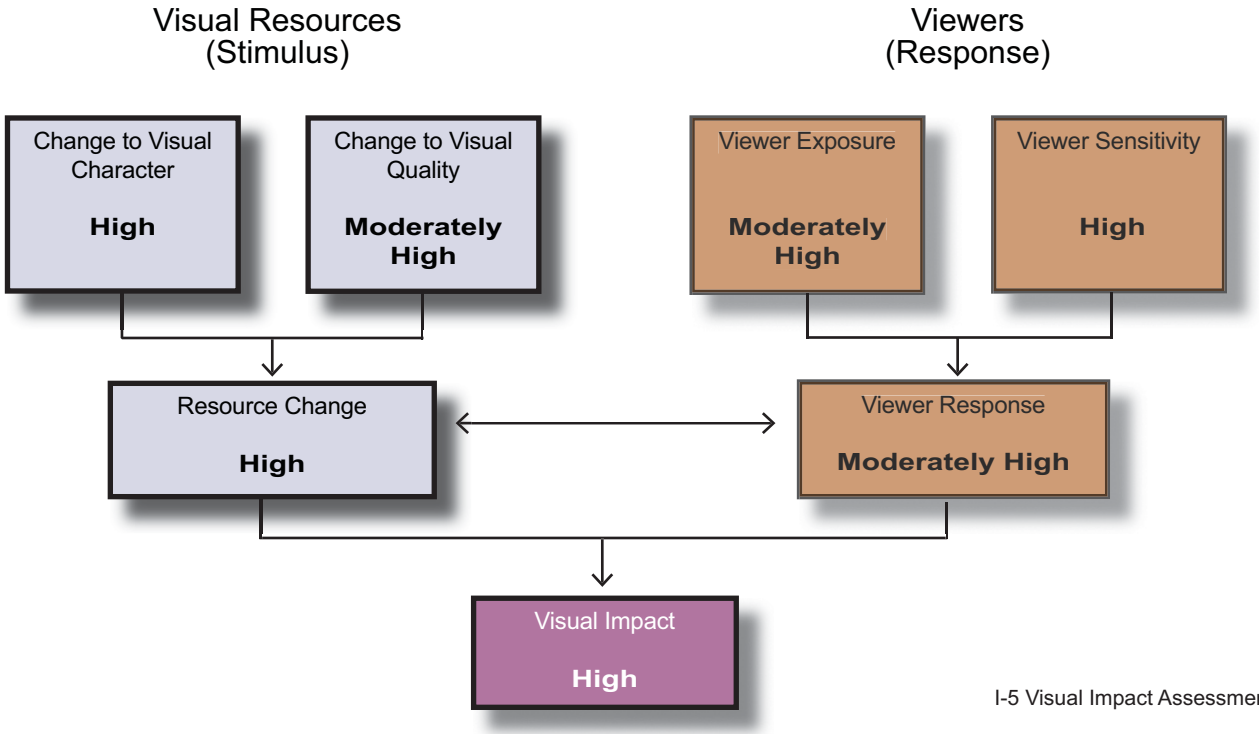
Proposed Viewshed

Key View # 7

VIEWER RESPONSE



ANALYSIS SUMMARY

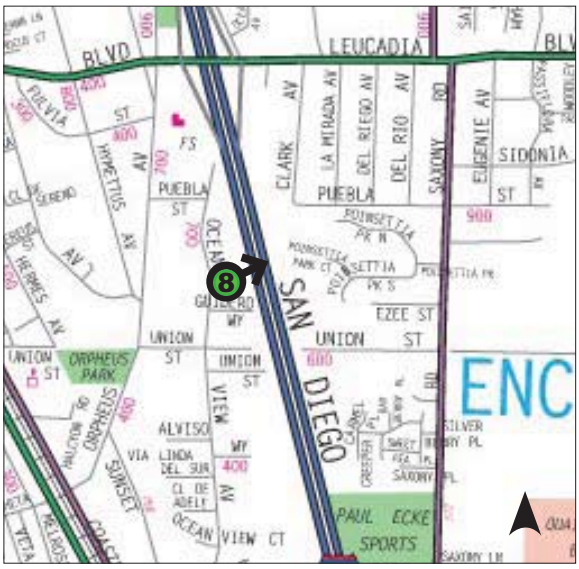


Key View # 8 Union Street in Encinitas

Existing View looking east from Union Street.

Proposed view.

Key View # 8



Key View Location Map

Orientation

Leucadia Hills Landscape Unit in Encinitas, on Union Street west of I-5, looking east.

Existing Visual Quality/Character

This key view is located on a vacant City-owned parcel in a residential neighborhood adjacent to Moonlight Creek and the I-5 freeway beyond. A north-south coastal canyon defines the viewshed of this area. A high ridge forms the western edge of the viewshed, while the eastern edge of the canyon is lower and composed of rolling, varied topography. The freeway follows the eastern slope of the canyon, bisecting a residential community first developed early in the twentieth century. Many older homes on the western slope are located at or near the ridgeline on large parcels that extend down to the creek. Remnants of old citrus and avocado orchards are mixed with new infill development. Within the bounds of the landscape unit there are commercial nurseries and greenhouses where exotic ornamental plants are propagated. This is a viewshed that would at first glance not be considered scenic, yet it retains a high level of vividness due to the rarity of residential open space near the coast and the glimpse of the area's history that it affords. Visual unity and intactness are moderately high. The freeway and scattered residential infill development compromise the visual integrity of the area. The character remains semi-rural despite the presence of these two encroaching elements. Visual quality is moderately high.

Proposed Project Features

A freeway pedestrian overcrossing (POC) at Union Street was recommended by the City of Encinitas to achieve their goal of enhancing pedestrian access across the freeway. It is proposed as a synergy project in the Draft I-5 North Coast Corridor Enhancement Plan, and would be located on City right-of-way. A small city-owned parcel in the key view foreground would become an informal city park. The POC would remain a bridge structure until it reaches well within the proposed park's eastern boundary. The POC and its associated walls and abutments would incorporate extraordinary design features to keep their scale and mass to an absolute minimum. Usable park space would be created at the eastern terminus of the bridge by adding fill material. Freeway retaining walls and noise walls would be located near the existing rights-of-way and be visible from the park..

Change to Visual Quality/Character

The POC would add an urban design element to the viewshed and have a moderately high effect on the visual character of the neighborhood. Proposed walls at freeway edges would contribute to this effect. Visual unity and intactness would be reduced to moderately low levels due to the proposed park grading, freeway walls, and aerial

Key View # 8

structure. Vividness would change slightly assuming the POC appears as an attractive amenity as planned. Change to visual quality would be moderate.

Viewer Response

Hundreds of thousands of freeway viewers and hundreds of local residents would see the POC each day. Duration of views would vary from a few seconds for freeway viewers to several hours for adjacent residents. There would likely be a high awareness of the project features by both travelers and residents. The City of Encinitas has designated this area as a scenic view corridor. Goal 9 of the General Plan seeks to: "Maintain the sense of spaciousness and semi-rural living within the I-5 View Corridor." The POC would be consistent with community goals assuming extraordinary design features are incorporated.

Resulting Visual Impact

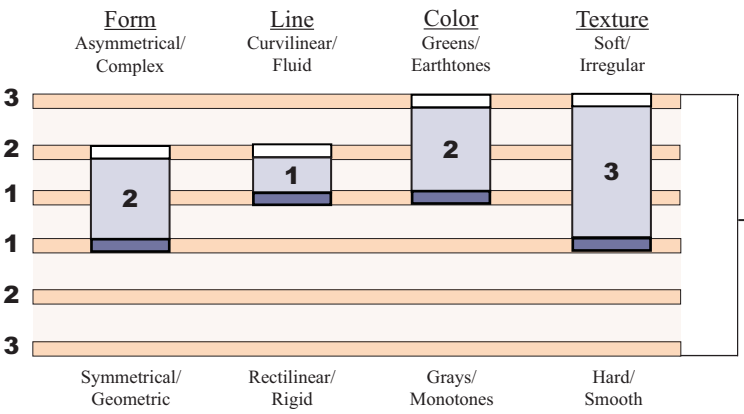
Change to visual quality would be moderate. Change to visual character would be moderately high. Viewer response would be moderately high. The visual impact would be moderately high.

Key View # 8

VISUAL CHARACTER

Pattern Elements

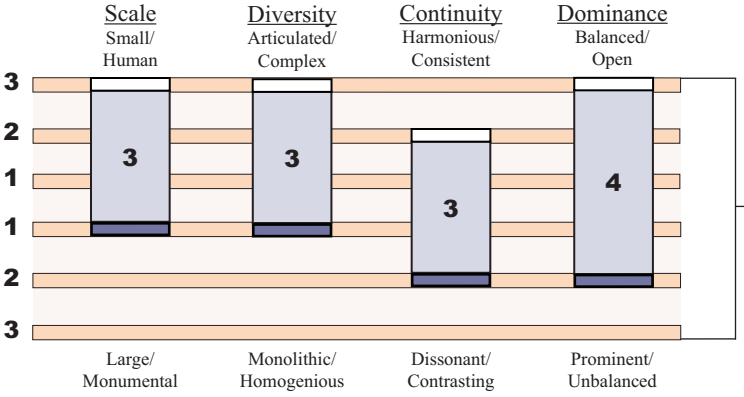
Describes the visual attributes of objects (Project and Setting)



Avg. Change: 2.0
% Change: 40

Pattern Character

Describes the relationships between visual elements (Project and Setting)



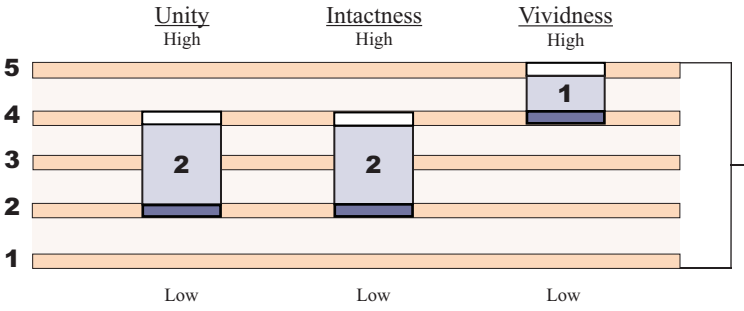
Avg. Change: 3.3
% Change: 65

Avg. Change: 2.7
% Change: 53

MH

Change to Visual Character

VISUAL QUALITY



Avg. Change: 1.7
% Change: 42

M

Change to Visual Quality

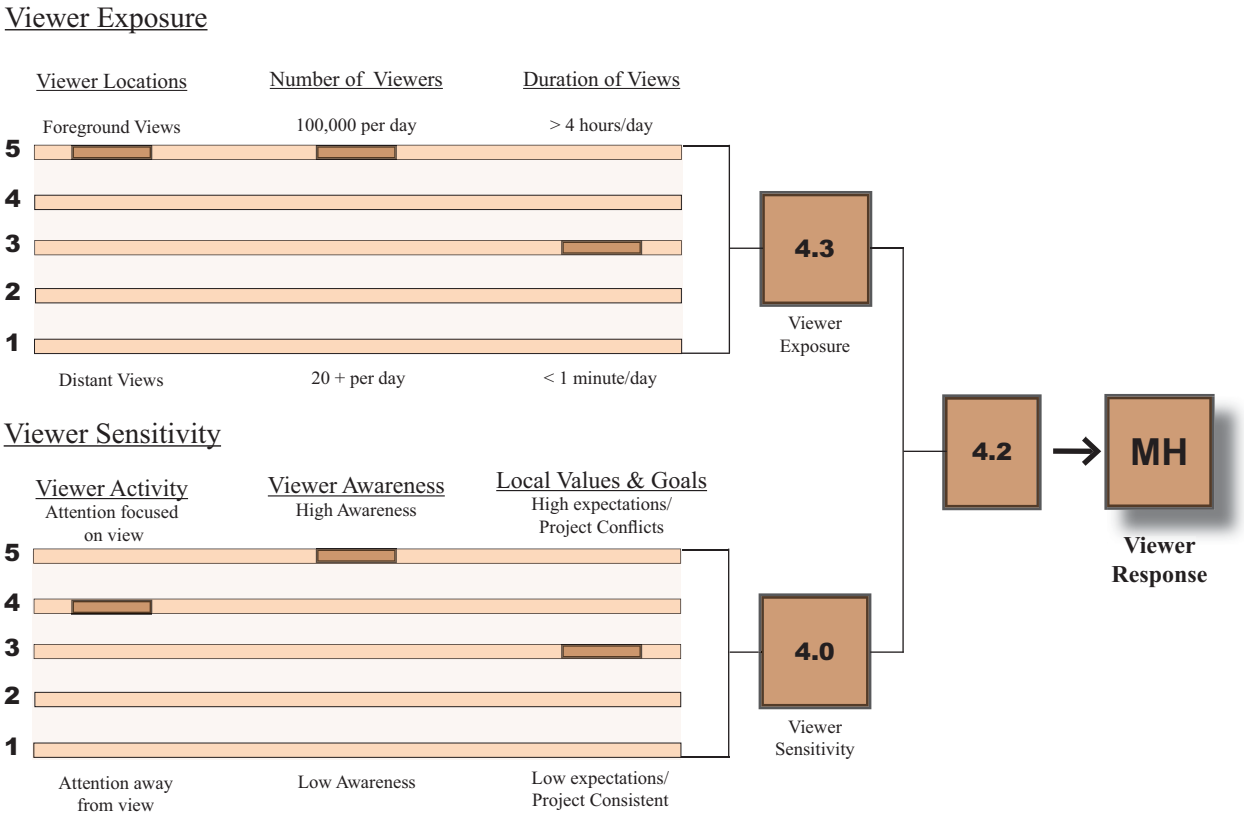
Legend

Existing Viewshed

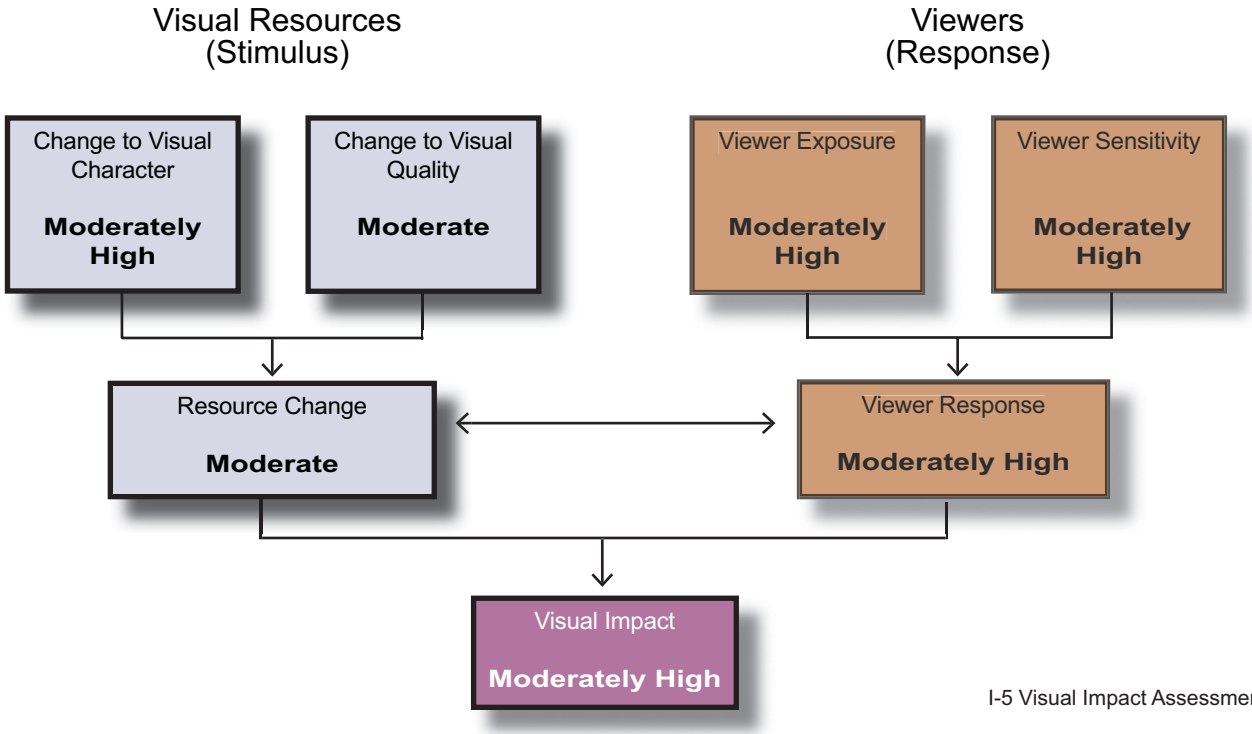
Proposed Viewshed

Key View # 8

VIEWER RESPONSE



ANALYSIS SUMMARY



Key View # 9 I-5 Near Union Street

Existing View looking South toward Voight Drive over crossing.

Proposed view.

Key View # 9

Orientation

Leucadia Hills Landscape Unit in Encinitas, on southbound I-5 at Union Street looking south toward Encinitas Boulevard.

Existing Visual Quality/Character

This key view is located in the same viewshed as the one described above, and possesses a similar visual character. Open views to the hills of Leucadia and Encinitas and Moonlight Creek canyon from this portion of the freeway provide interest, variety, and a sense of the area's history. Visual unity is moderately high because of the complimentary relationship between freeway and community landscape. Vividness is also moderately high due to the unique qualities of land uses visible from the freeway. Intactness is moderate because foreground views of freeway appurtenances and overhead utilities detract from the semi-rural setting. Visual quality is moderately high.

Proposed Project Features

Three lanes of widening would occur, and a proposed noise wall three quarters of a mile in length and 4.9m (16') in height would be located on the edge of shoulder. An articulated wall with a planting pocket behind a concrete safety barrier would be incorporated as project features to minimize visual impacts. Extensive groupings of mature trees would be permanently removed on side slopes to accommodate widening. Median widening would occur and existing oleanders would be preserved in place. Overhead utilities would be placed underground as part of improvement features proposed in the I-5 Corridor Enhancement Plan.

Key View Location Map

Change to Visual Quality/Character

The proposed noise wall would block desirable existing views and result in a sense of enclosure, directing the traveler's attention to undesirable foreground views of the widened freeway. The articulated wall design and planting pocket would lessen the apparent height of the wall, but would not prevent existing views from being lost. The lost views would reduce vividness to a low level. Intactness and unity would also be reduced to low levels because the size of the new freeway and its vertical components visible on both sides would contrast with natural features of the surrounding landscape. The visual character of the freeway would change from semi-rural parkway to urban freeway. Tree removal and the loss of visual connection to the community would result in a high degree of change to visual character.

Key View # 9

Viewer Response

The City of Encinitas has designated this area as a scenic view corridor. Goal 9 of the General Plan seeks to: “Maintain the sense of spaciousness and semi-rural living within the I-5 View Corridor.” Policy 9.6 states: “Where it is necessary to construct retaining or noise–attenuating walls along the I-5 corridor, they should be constructed with natural-appearing materials and generously landscaped with vines, trees, and shrubbery.” Local residents would likely be sensitive to the proposed changes.

Resulting Visual Impact

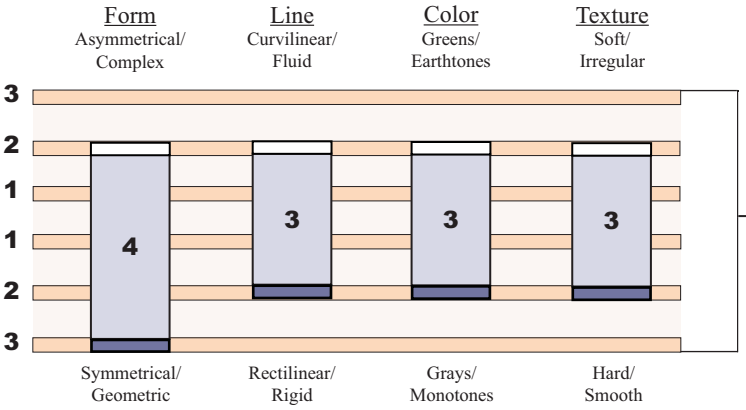
Change to visual quality and character would be high. Viewer response would be high. The visual impact would be high.

Key View # 9

VISUAL CHARACTER

Pattern Elements

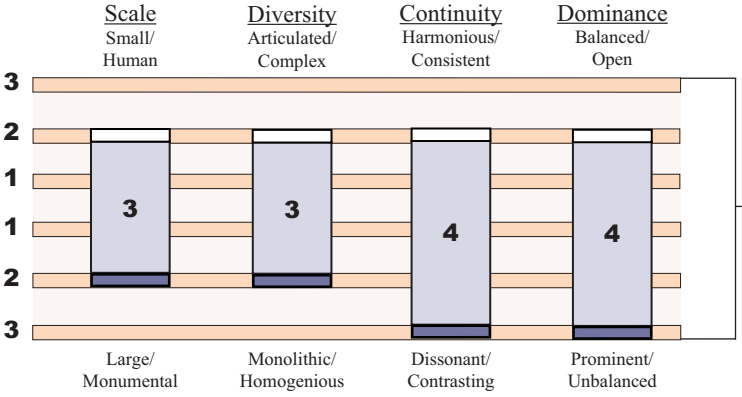
Describes the visual attributes of objects (Project and Setting)



Avg. Change: 3.3
% Change: 65

Pattern Character

Describes the relationships between visual elements (Project and Setting)



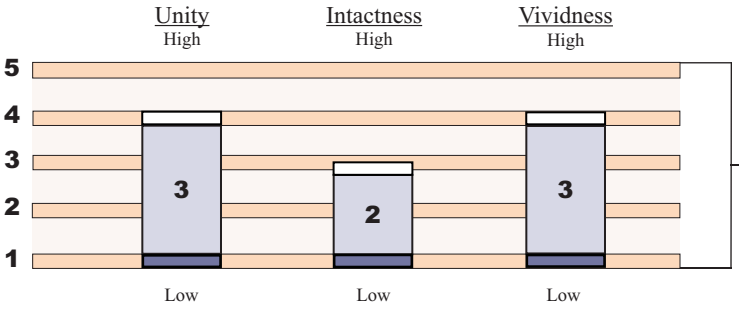
Avg. Change: 3.5
% Change: 70

Avg. Change: 3.4
% Change: 68

H

Change to Visual Character

VISUAL QUALITY



Avg. Change: 2.7
% Change: 67

H

Change to Visual Quality

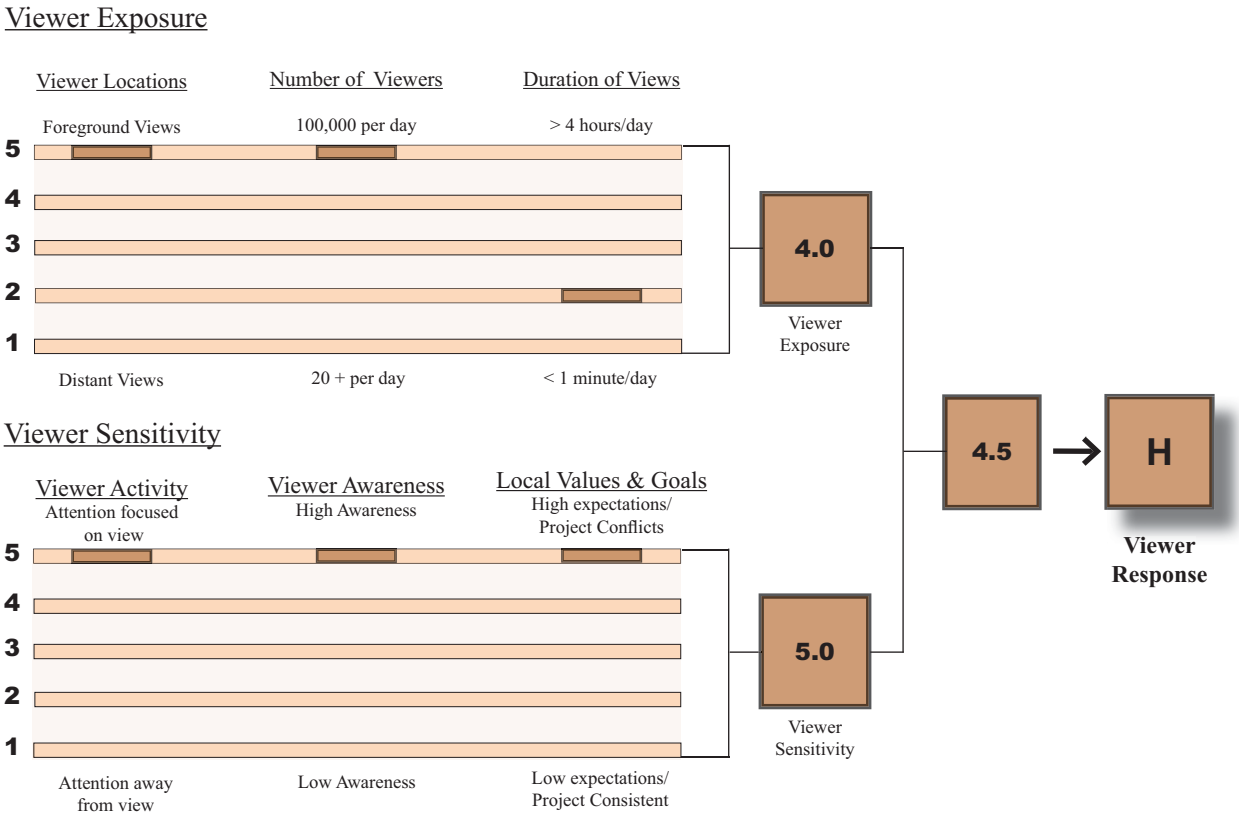
Legend

Existing Viewshed

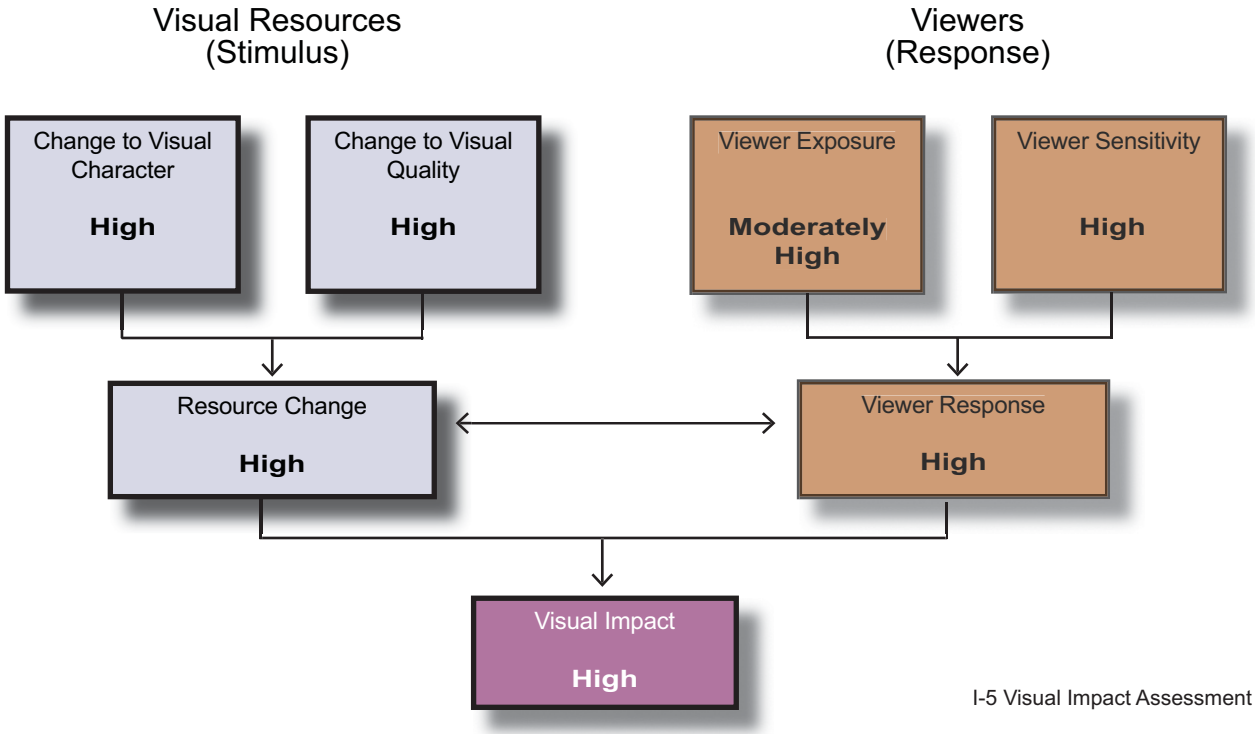
Proposed Viewshed

Key View # 9

VIEWER RESPONSE



ANALYSIS SUMMARY



Key View # 10 Union Street in Encinitas

Existing View looking south toward freeway right-of-way.

Proposed view.

Key View # 10

Orientation

Leucadia Hills Landscape Unit in Encinitas, on Union Street at the westerly I-5 right-of-way, looking southeast.

Existing Visual Quality/Character

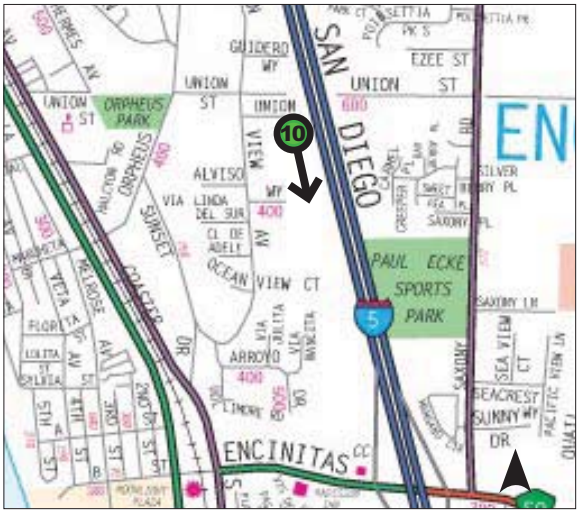
This key view is located in the same viewshed as Key View #8 described above, and possesses a similar visual character. Visual quality is moderate in this location because of its restricted views and lower levels of unity and intactness.

Proposed Project Features

A retaining wall 1.8m (6') in height with a noise wall 4.9m (16') in height would be constructed on or near the existing Caltrans right-of-way boundary. Due to topography, the top of the proposed noise wall would be 9.1m (30') higher than the elevation of the adjacent residence. The new freeway shoulder would be located immediately behind the wall. Drainage features such as a concrete ditch or vegetated swale may be located at the base of the wall and be protected by a chain link fence. Paved access from Union Street for Caltrans maintenance personnel may also be required.

Change to Visual Quality/Character

The replacement of the existing landscaped freeway buffer with the proposed wall would result in a manufactured urban form that would visually dominate the neighborhood. The scale of the wall would approximate that of a three-story building and would result in an uncomfortable feeling of enclosure for adjacent residents. It could also adversely affect solar access, air circulation, and microclimate. It would severely contrast with the semi-rural setting and change the visual character of the neighborhood. Visual quality components would be reduced to low levels.



Key View Location Map

Viewer Response

Scores of adjacent residents would have foreground and mid-ground views of the project for long durations. The City of Encinitas has designated this area as a scenic view corridor. Goal 9 of the General Plan seeks to: "Maintain the sense of spaciousness and semi-rural living within the I-5 View Corridor." Policy 9.6 states: "Where it is necessary to construct retaining or noise–attenuating walls along the I-5 corridor, they should be constructed with natural-appearing materials and generously landscaped with vines, trees, and shrubbery."

Resulting Visual Impact

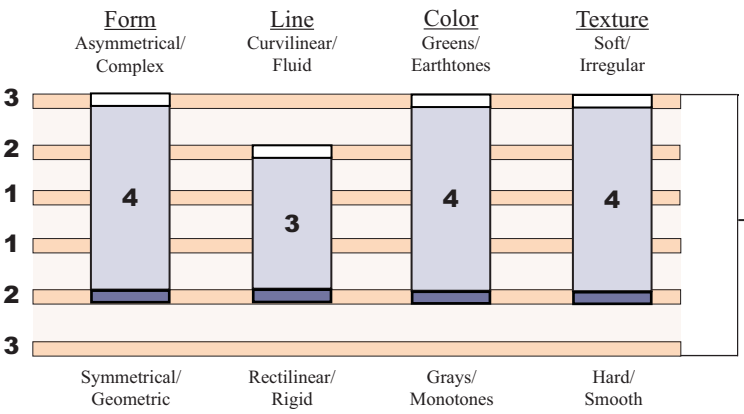
Change to visual quality would be moderately high. Change to visual character would be high. Viewer response would be moderately high. The visual impact would be moderately high.

Key View # 10

VISUAL CHARACTER

Pattern Elements

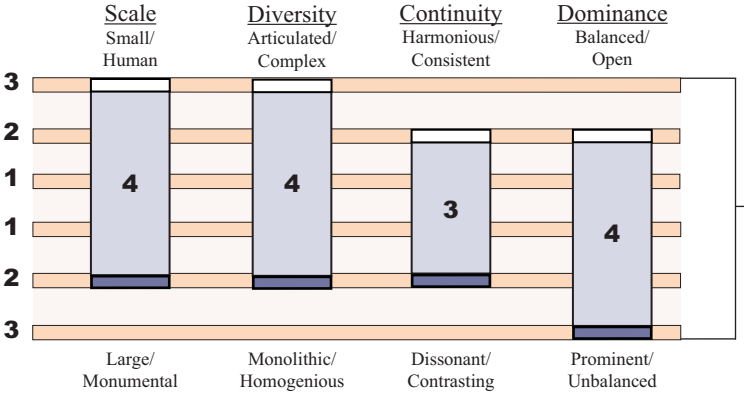
Describes the visual attributes of objects (Project and Setting)



Avg. Change: 3.8
% Change: 75

Pattern Character

Describes the relationships between visual elements (Project and Setting)



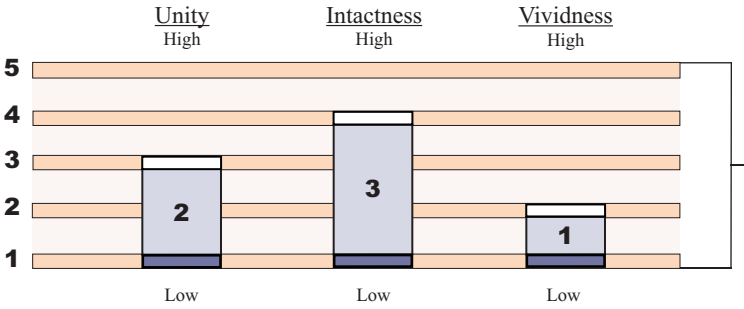
Avg. Change: 3.8
% Change: 75

Avg. Change: 3.8
% Change: 75

H

Change to Visual Character

VISUAL QUALITY



Avg. Change: 2.0
% Change: 50

MH

Change to Visual Quality

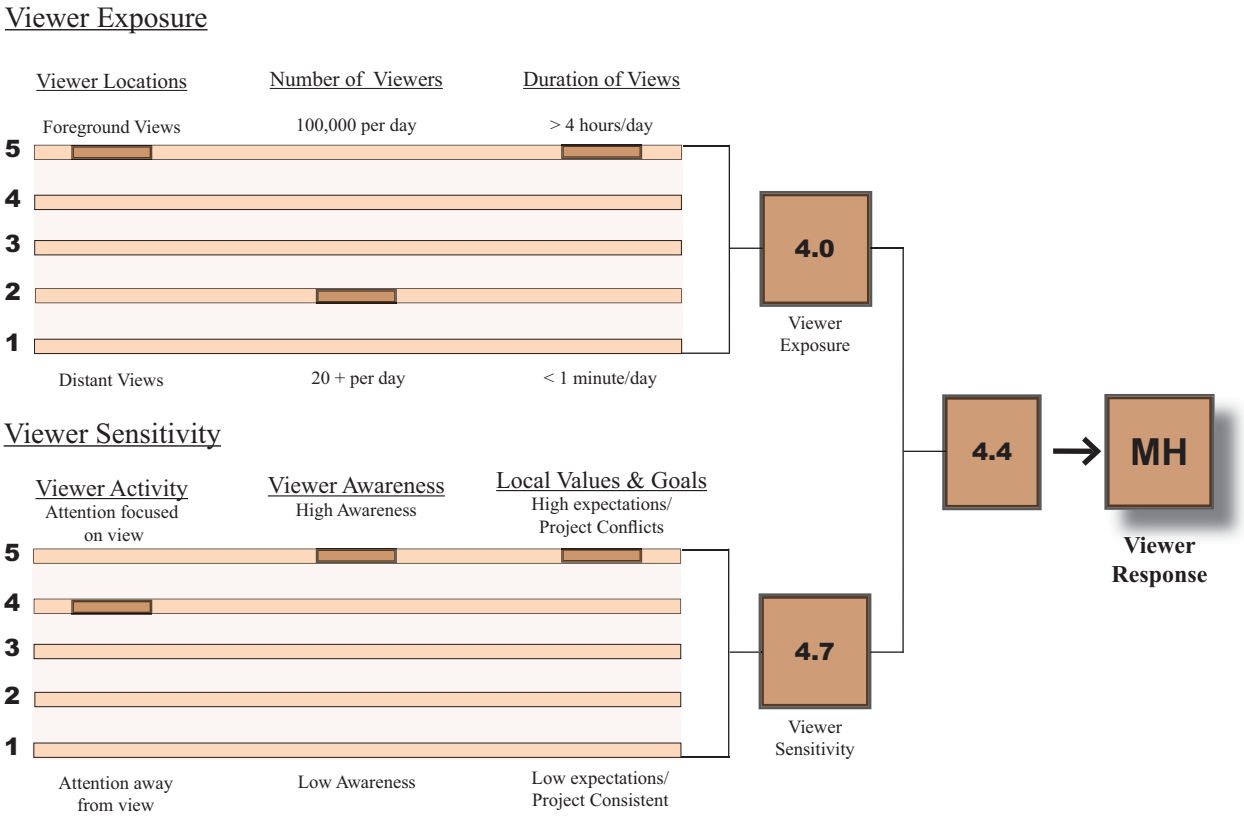
Legend

Existing Viewshed

Proposed Viewshed

Key View # 10

VIEWER RESPONSE



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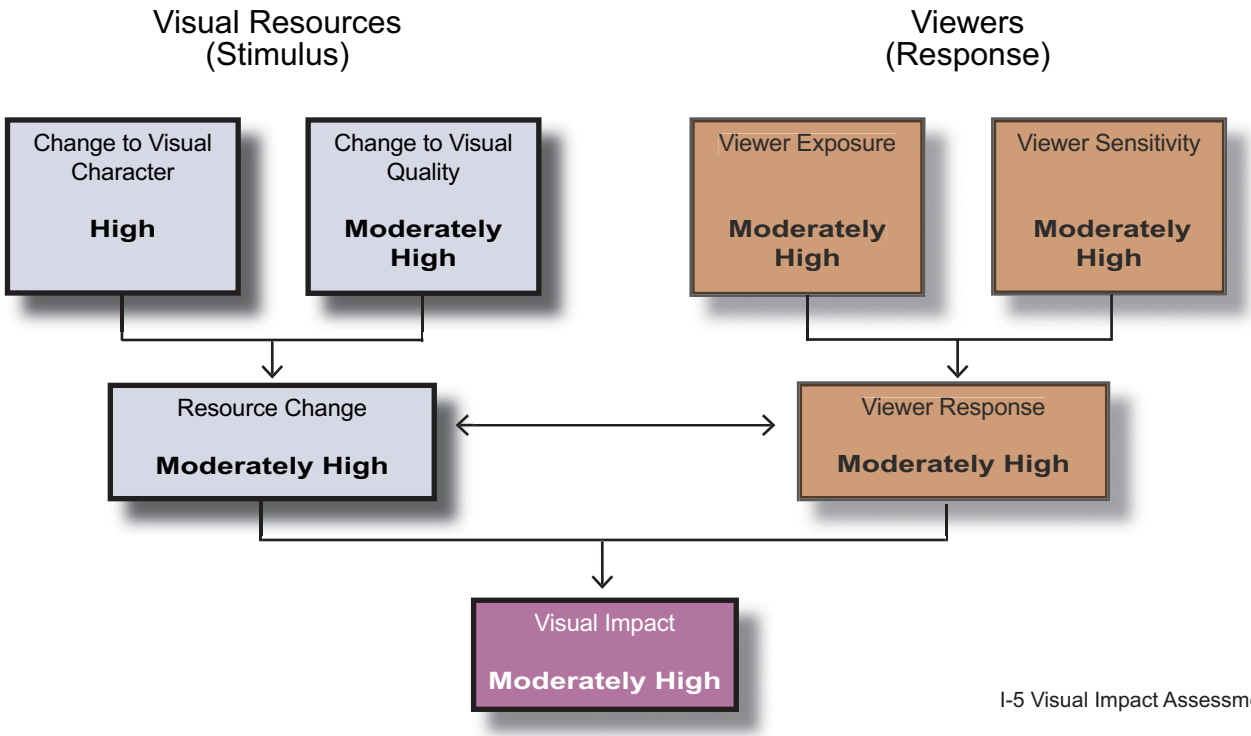


Key View # 11 Orpheus Avenue in Encinitas

Existing View looking north on Orpheus Avenue.

Proposed view.

Key View # 11

Orientation

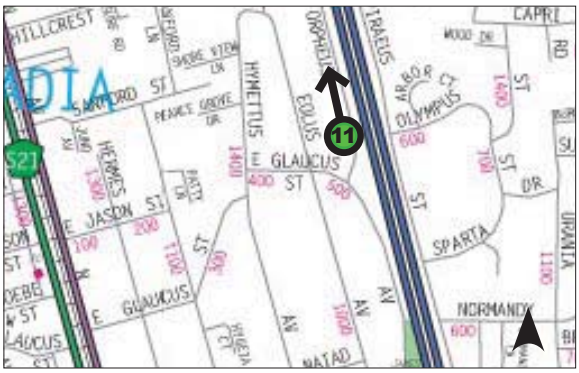
Leucadia Hills Landscape Unit in Encinitas, on Orpheus Avenue north of East Glaucus Street, looking north.

Existing Visual Quality/Character

In this northern portion of Leucadia Hills, the freeway becomes more prominent due to flatter topography, fewer large trees, and additional manufactured elements such as a frontage road and an adjacent open concrete drainage channel. Residences located on the western edge of Orpheus Avenue are custom homes on large parcels screened by mature vegetation, as in similar neighborhoods elsewhere in Encinitas. And, as elsewhere in the city, there is an absence of normal suburban features such as curbs, gutters, and sidewalks. This informal landscape produces a moderate level of visual unity, but the manufactured features mentioned above reduce intactness and vividness to moderately low levels. Visual quality is moderately low. Rural informality, vegetation, and natural topography combined with encroaching urban features associated with the freeway give this area a diminished suburban character.

Proposed Project Features

The existing open channel would be enclosed and moved underground due to freeway widening. In addition, an earthen berm would be placed at the edge of the freeway and be retained along Orpheus Avenue with a wall 1.8m-2.4m (6'-8') in height. The berm would be landscaped and trees would be planted along the street in informal groupings. The existing chain link fence would be removed and not replaced because the retaining wall would provide freeway access control. Curbs, gutters, sidewalks or concrete drainage ditches would not be placed in front of the wall.



Key View Location Map

Change to Visual Quality/Character

The proposed berm and retaining wall would screen views of the freeway from street level, but introduce another solid, monolithic manufactured form to the viewshed. The height of the wall would be consistent in scale with other site features normally found in residential neighborhoods. Landscape planting in front of the wall and on the berm would soften the appearance of the wall's hard surfaces. These changes would have a moderate effect on the visual character of the street, and a low change to visual quality. Local residents may consider the change to visual character as adverse.

Viewer Response

Hundreds of local street users and residents would view the proposed project features each day. Most views would be of short duration, but there would be a high awareness of the proposed visual changes. Residents would likely be sensitive to this change in their neighborhood.

Resulting Visual Impact

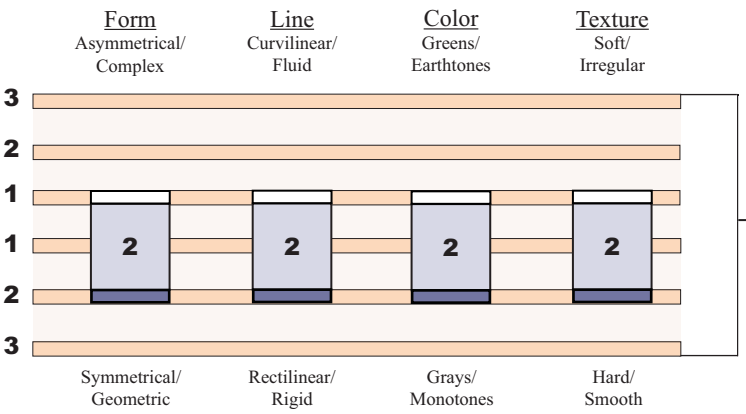
Change to visual quality would be low. Change to visual character would be moderate. Viewer response to the changes would be moderately high. The visual impact would be moderate.

Key View # 11

VISUAL CHARACTER

Pattern Elements

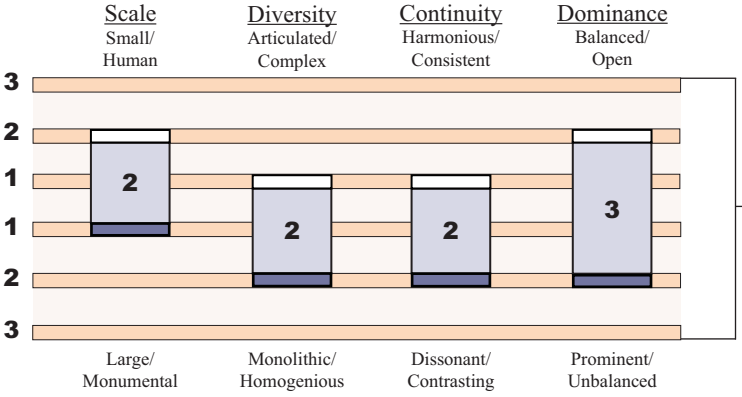
Describes the visual attributes of objects (Project and Setting)



Avg. Change: 2.0
% Change: 40

Pattern Character

Describes the relationships between visual elements (Project and Setting)



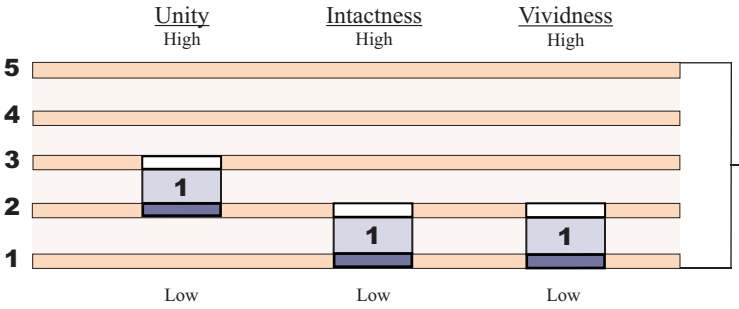
Avg. Change: 2.3
% Change: 45

Avg. Change: 2.2
% Change: 44

M

Change to Visual Character

VISUAL QUALITY



Avg. Change: 1.0
% Change: 25

L

Change to Visual Quality

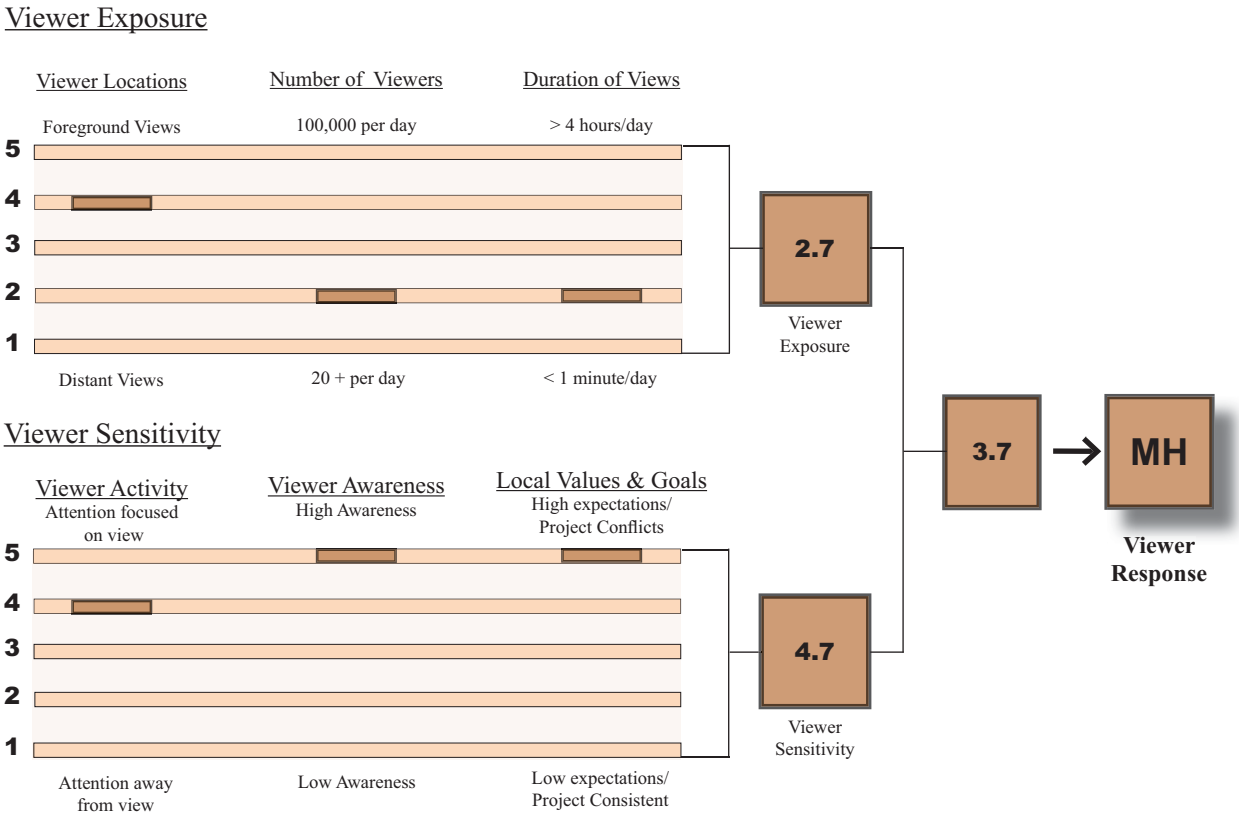
Legend

Existing Viewshed

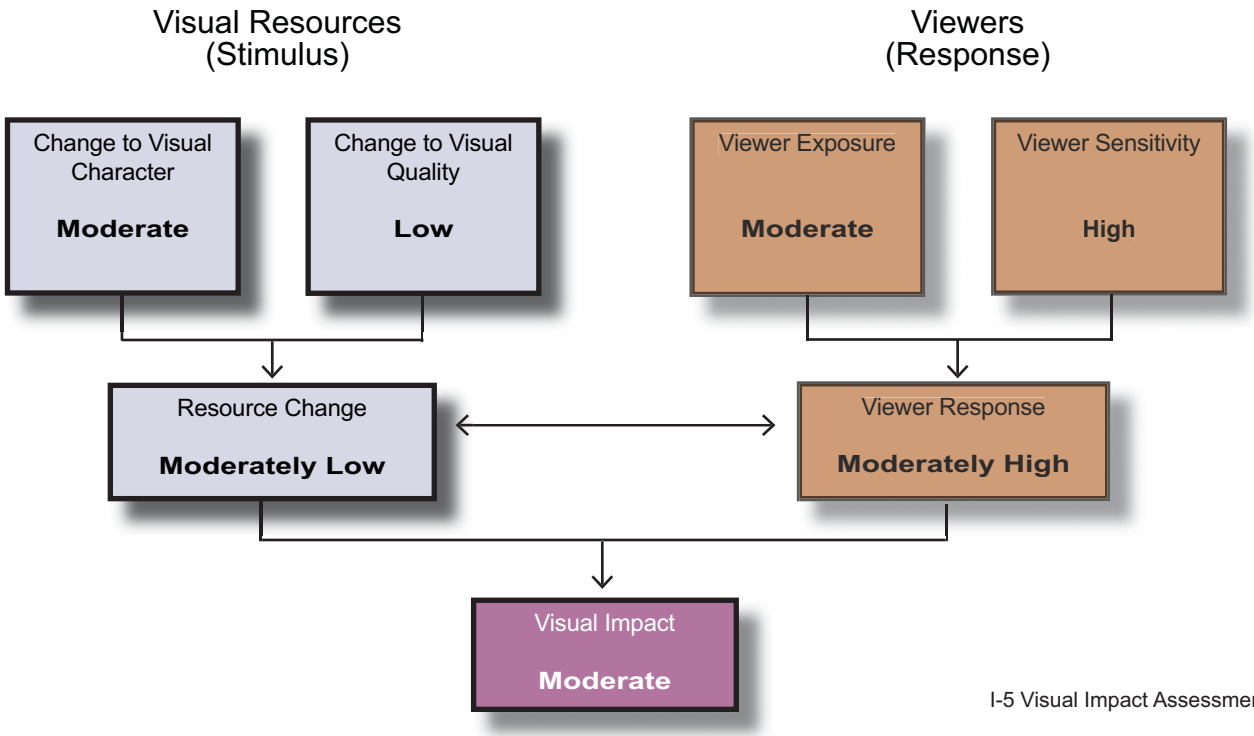
Proposed Viewshed

Key View # 11

VIEWER RESPONSE



ANALYSIS SUMMARY



Key View # 12 I-5 at Carlsbad Village Drive

Existing View looking north on I-5 in Carlsbad Village.

Proposed view.

Key View # 12

Orientation

Carlsbad Village Landscape Unit in Carlsbad, northbound I-5 between Tamarack Avenue and Carlsbad Village Drive, looking north.

Existing Visual Quality/Character

Views from the freeway to Holiday Park and beyond into Carlsbad Village provide variety and interest to travelers. Freeway landscaping in the median and adjacent to the outside shoulder combine with the mature Village landscape to form the prominent visual element of the scene. The freeway seems like a landscaped parkway that is an integral part of the city. Visual unity, intactness, and vividness are all moderately high.

Proposed Project Features

Freeway widening would result in the permanent loss of all freeway planting adjacent to the outside shoulder. A noise wall 3.6m - 4.9m (12'-16') in height has been recommended, and would be placed on top of a concrete safety barrier. A planting pocket between the barrier and wall would not be feasible due to space constraints. A vertical barrier design would be required in order to place architectural detailing on the noise wall. This condition would exist the length of Carlsbad Village between Tamarack overcrossing and Las Flores overcrossing, with the exception of the area between gore points at Carlsbad Village Drive undercrossing.

Change to Visual Quality/Character

The proposed noise wall would block high quality views of Holiday Park and Carlsbad Village. The vividness of those views would be lost and attention would be redirected to foreground views of the freeway. A sense of enclosure and separation from the city would replace the open views and visual unity of the existing scene. The increased horizontal width of the freeway in combination with the hard, monolithic edge of the plane created by the concrete barrier and noise wall would also change the visual character to one noticeably more urban. The public would likely view this change as adverse.

Key View Location Map

Viewer Response

Hundreds of thousands of travelers use the freeway each day, and their views of the Village endure for approximately one minute. Viewers would have foreground and mid-ground views of the project. Viewer response would be moderately high.

Resulting Visual Impact

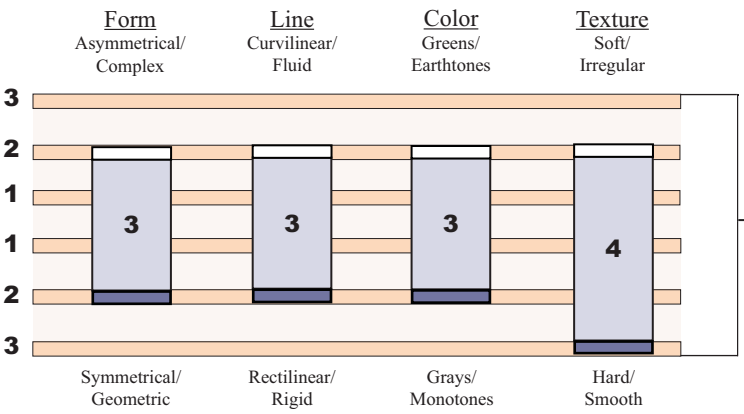
Change to visual quality and character would be high. Viewer response is moderately high. The visual impact would be high.

Key View # 12

VISUAL CHARACTER

Pattern Elements

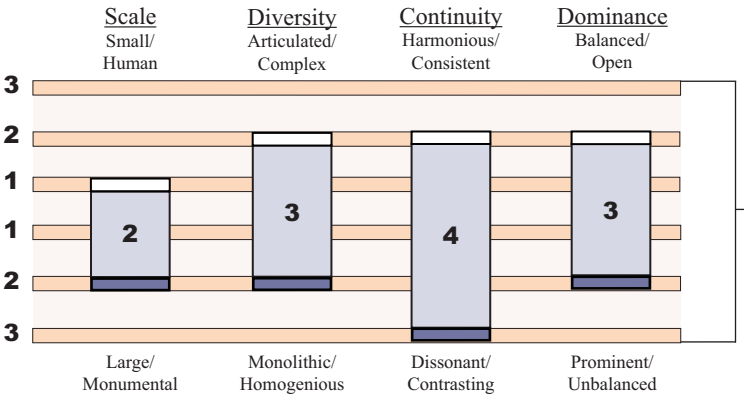
Describes the visual attributes of objects (Project and Setting)



Avg. Change: 3.3
% Change: 65

Pattern Character

Describes the relationships between visual elements (Project and Setting)



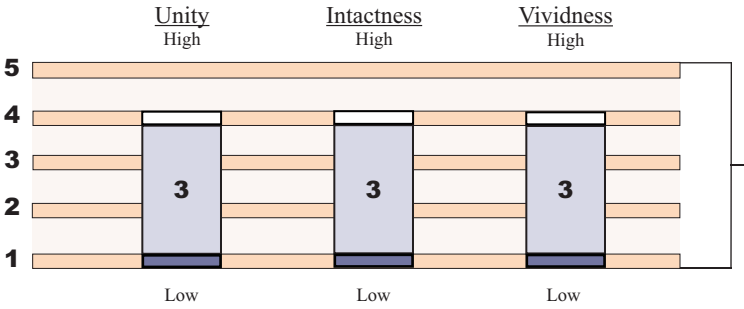
Avg. Change: 3.0
% Change: 60

Avg. Change: 3.2
% Change: 63

H

Change to Visual Character

VISUAL QUALITY



Avg. Change: 3.0
% Change: 75

H

Change to Visual Quality

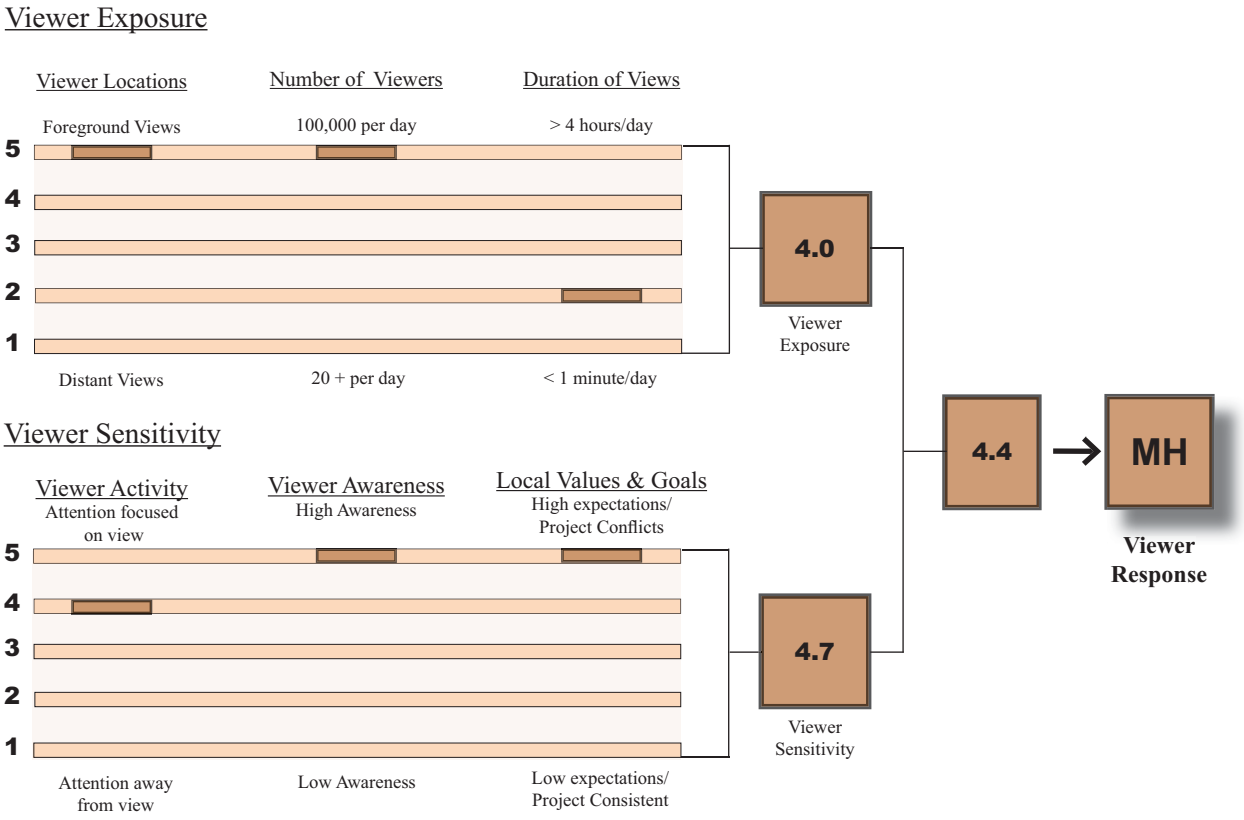
Legend

Existing Viewshed

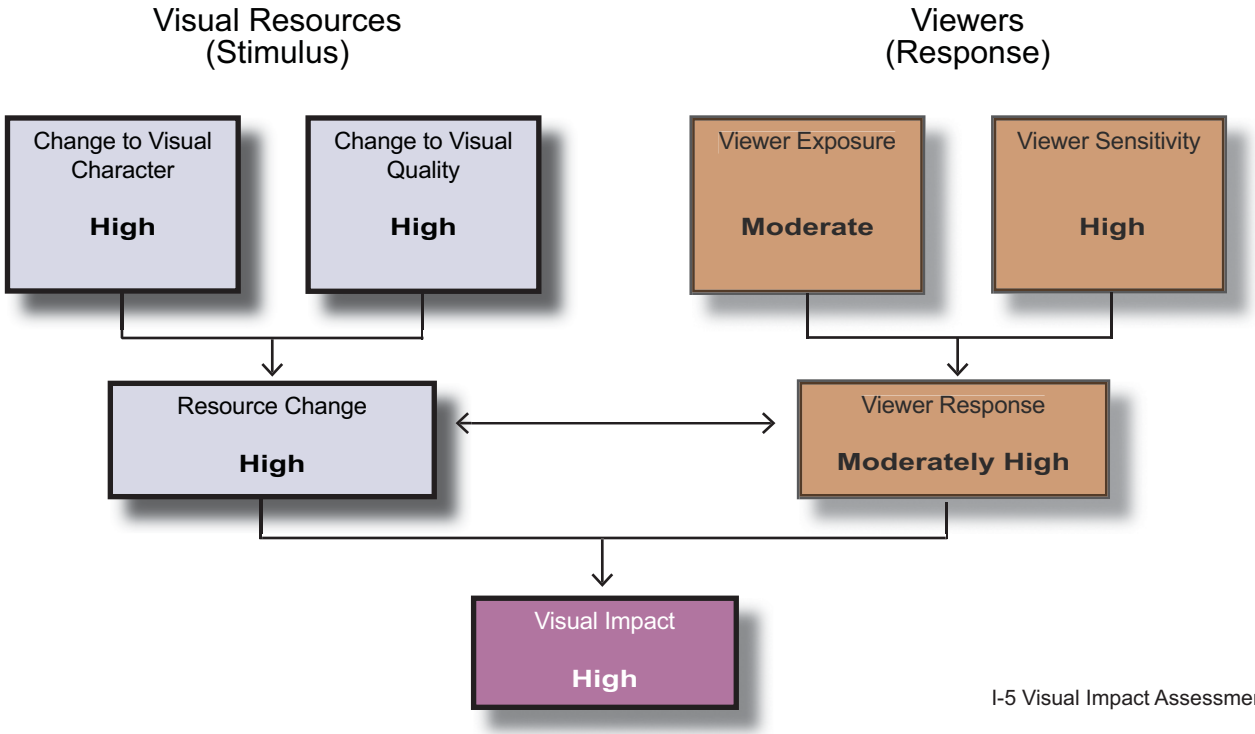
Proposed Viewshed

Key View # 12

VIEWER RESPONSE



ANALYSIS SUMMARY



Key View # 13 Holiday Park in Carlsbad

Existing View in Holiday Park from Pio Pico Drive.

Proposed view.

Key View # 13A Holiday Park in Carlsbad

Existing View from the playground in Holiday Park from Pio Pico Drive.

Proposed veiw.

Key View # 13

Key View Location Map

Orientation

Carlsbad Village Landscape Unit in Carlsbad at Holiday Park. View 13 is from Pio Pico Drive looking north. View 13A is from the children's playground in the park looking southwest.

Existing Visual Quality/Character

Holiday Park is located in a residential neighborhood of central Carlsbad referred to as the Village. The portion of the Village in which the park is located possesses many neighborhood qualities that are considered desirable. These qualities are typical of pre-war development and include an emphasis on mixed-use development that provides services within walking distance. The park is an open space amenity in an urban setting, but its wide lawns and large groupings of tall trees are consistent with the mature landscaping of the adjacent neighborhood. The visual quality of the park and community are moderately high. The moderating elements are the I-5 freeway and the adjacent frontage road, Pio Pico Drive. The freeway is partially screened by landscaping and the retaining wall is consistent in scale, if not materials, with the community. The park is fairly large for a community park, has a natural visual character due to its abundance of mature trees and wide lawns.

Proposed Project Features

Freeway widening would require Pio Pico Drive to be narrowed 3m (10') in width. A retaining wall would run the length of Pio Pico Drive from Tamarack Avenue to Carlsbad Village Drive, and be from 3.6m - 7.6m (12'-25') in height adjacent to the park. A noise wall 3.6m - 4.9m (12'-16') in height is recommended to be placed on the retaining wall for its entire length. Because of space constraints caused by the need to maintain minimum street standards on Pio Pico Drive, a recessed retaining wall supporting a cantilevered roadway would be required in order to provide a planted buffer between the freeway and street. The noise wall would only have minimal architectural detailing due to the space constraints.

Change to Visual Quality/Character

The proposed walls adjacent to Holiday Park would be as tall as a three-story building. Unlike a row of three story buildings, the proposed wall surface would continue unbroken for thousands of feet. The combined walls would be the largest built form in the Village and would greatly increase the visual prominence of the freeway, while decreasing visual cohesion in the community. The walls would effectively screen all views of freeway traffic, but their massive appearance would create a severe contrast with the small-scale architecture of the community and natural character of the park. Visual unity and intactness would be reduced to

Key View # 13

low levels, and change to existing community character would be high. It is likely the public would consider the change adverse.

Viewer Response

Hundreds of residents and park visitors would view the project for durations that would range from a few minutes to several hours per day. There would likely be a high awareness of the project for most viewers.

Resulting Visual Impact

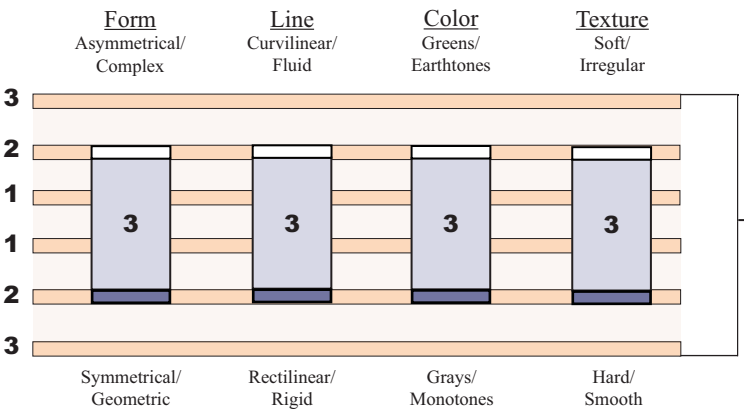
Change to visual quality and character would be high. Viewer response to the change would be moderately high. The visual impact would be high.

Key View # 13

VISUAL CHARACTER

Pattern Elements

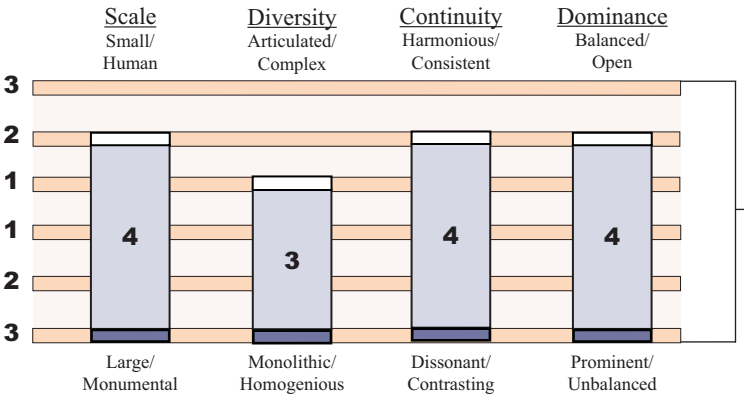
Describes the visual attributes of objects (Project and Setting)



Avg. Change: 3.0
% Change: 60

Pattern Character

Describes the relationships between visual elements (Project and Setting)



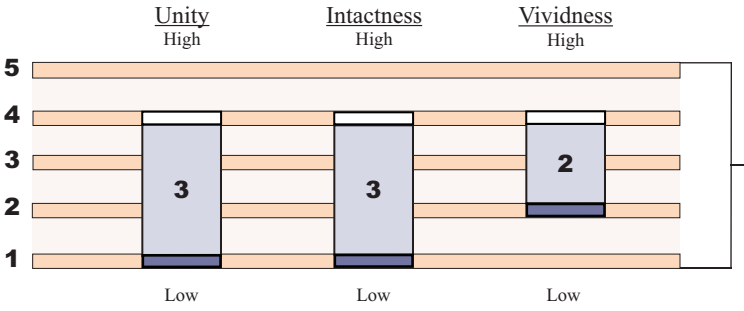
Avg. Change: 3.8
% Change: 75

Avg. Change: 3.4
% Change: 68

H

Change to Visual Character

VISUAL QUALITY



Avg. Change: 2.7
% Change: 67

H

Change to Visual Quality

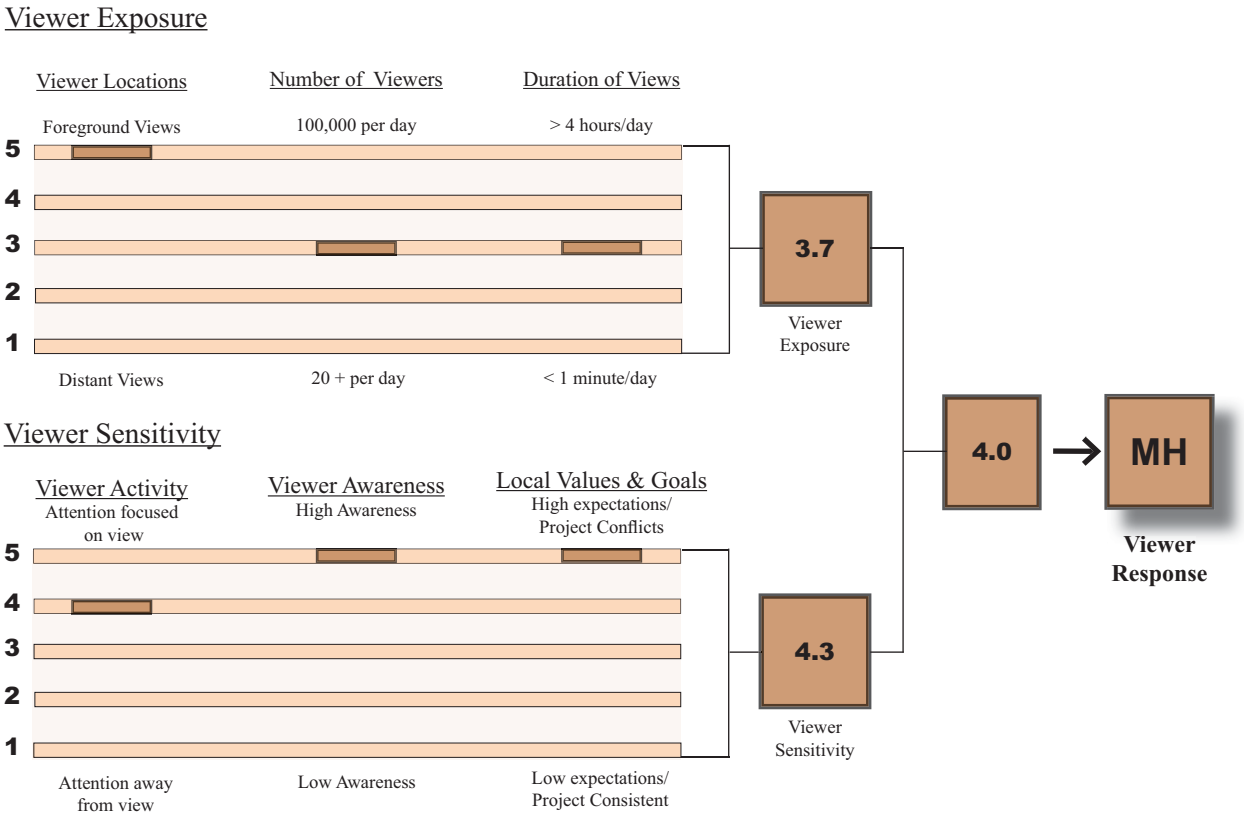
Legend

Existing Viewshed

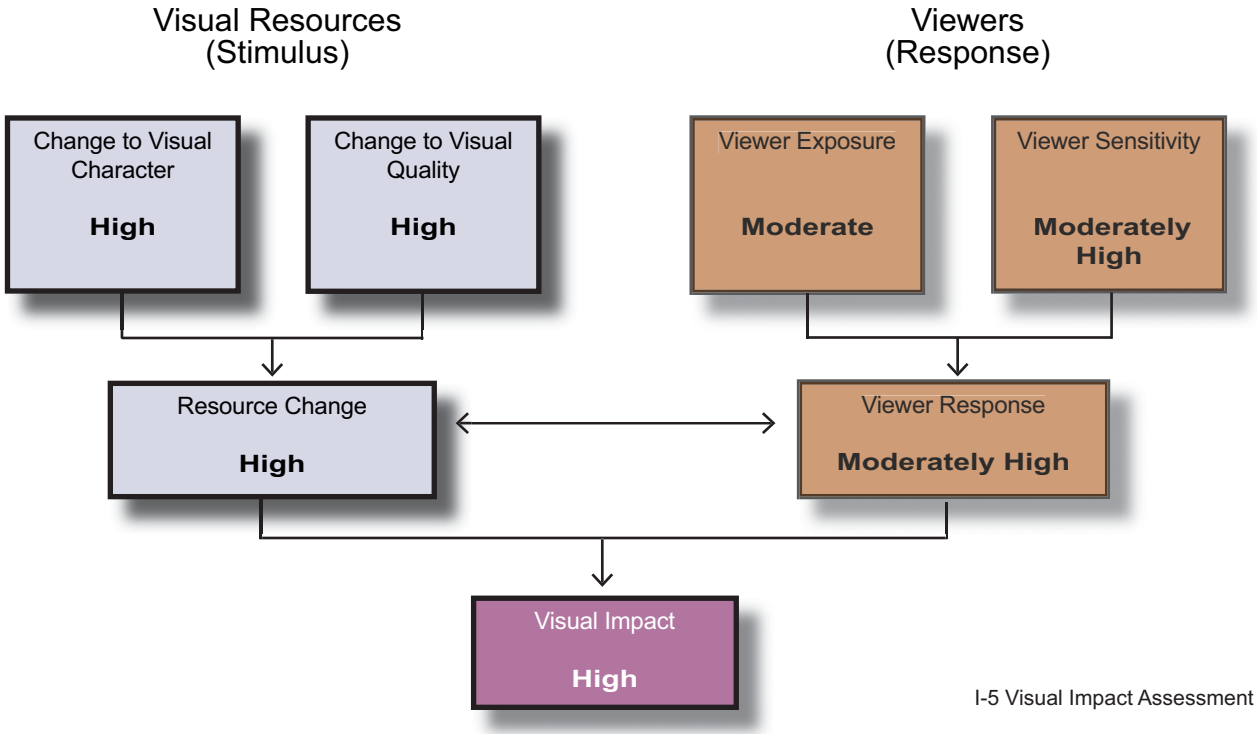
Proposed Viewshed

Key View # 13

VIEWER RESPONSE



ANALYSIS SUMMARY



Key View # 14 I-5 at Carlsbad Village Drive

Existing view, southbound I-5 between Tamarack Avenue and Carlsbad Village Drive looking south.

Proposed view.

Key View # 14

Orientation

Carlsbad Village Landscape Unit in Carlsbad, southbound I-5 between Tamarack Avenue and Carlsbad Village Drive, looking south.

Existing Visual Quality/Character

Open, distant views are available on this section of freeway that is elevated above the adjacent community. Brief intermittent views of the ocean are beyond expansive rooftop views of Carlsbad Village. Encina power station is a local landmark visible to the southwest and an orientation feature for travelers. The freeway landscape visually integrates the roadway with the landscape of the community. Because both edges are landscaped and only half the freeway is visible, it possesses the character of a suburban parkway. These qualities of the freeway design, when combined with the open views, result in a moderately high level of visual quality.

Proposed Project Features

Freeway widening would result in the permanent loss of all freeway planting adjacent to the outside shoulder. A noise wall 3.6m - 4.9m (12'-16') in height has been recommended to be placed on top of a concrete safety barrier at the edge of shoulder. A planting pocket between the barrier and wall would not be feasible due to space constraints. A vertical barrier design would be required in order to place architectural detailing on the noise wall. This condition would exist the length of Carlsbad Village between Tamarack overcrossing and Las Flores overcrossing, with the exception of the area between gore points at Carlsbad Village Drive undercrossing, where the wall would be located at the shoulders of the on and off ramps.

Key View Location Map

Change to Visual Quality/Character

The proposed noise wall would block open distant views. The vividness of those views would be lost and attention would be redirected to foreground views of the freeway. A sense of enclosure, disorientation, and isolation from the surrounding landscape would replace the open views and visual unity of the existing scene. Visual quality would be reduced to a low level. The increased horizontal width of the freeway, the loss of a soft, landscaped freeway edge, and its replacement with one that would be hard and unarticulated would change the visual character from suburban to urban. The public would likely view this change as adverse.

Viewer Response

Hundreds of thousands of travelers use the freeway each day, and their views last for approximately one minute. Viewers would have foreground and mid-ground views of the project. Viewer response would be moderately high.

Resulting Visual Impact

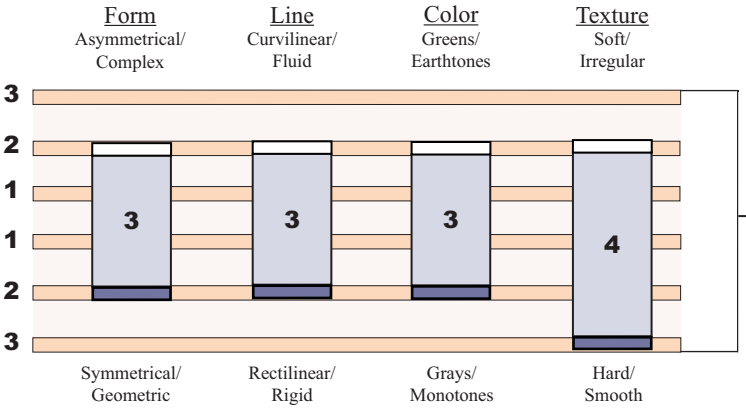
Change to visual quality and character would be high. Viewer response would be moderately high. The visual impact would be high.

Key View # 14

VISUAL CHARACTER

Pattern Elements

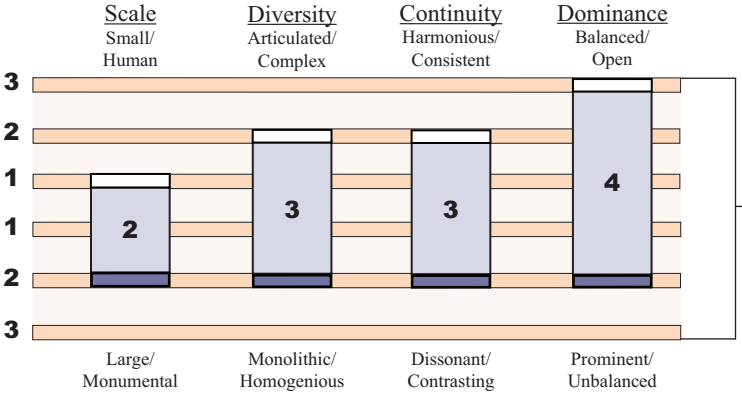
Describes the visual attributes of objects (Project and Setting)



Avg. Change: 3.3
% Change: 65

Pattern Character

Describes the relationships between visual elements (Project and Setting)



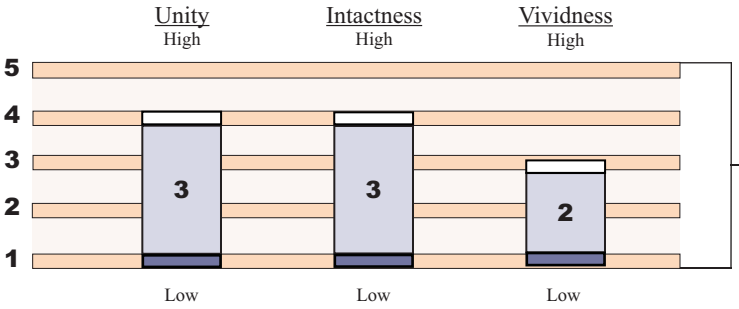
Avg. Change: 3.0
% Change: 60

Avg. Change: 3.2
% Change: 63

H

Change to Visual Character

VISUAL QUALITY



Avg. Change: 2.7
% Change: 67

H

Change to Visual Quality

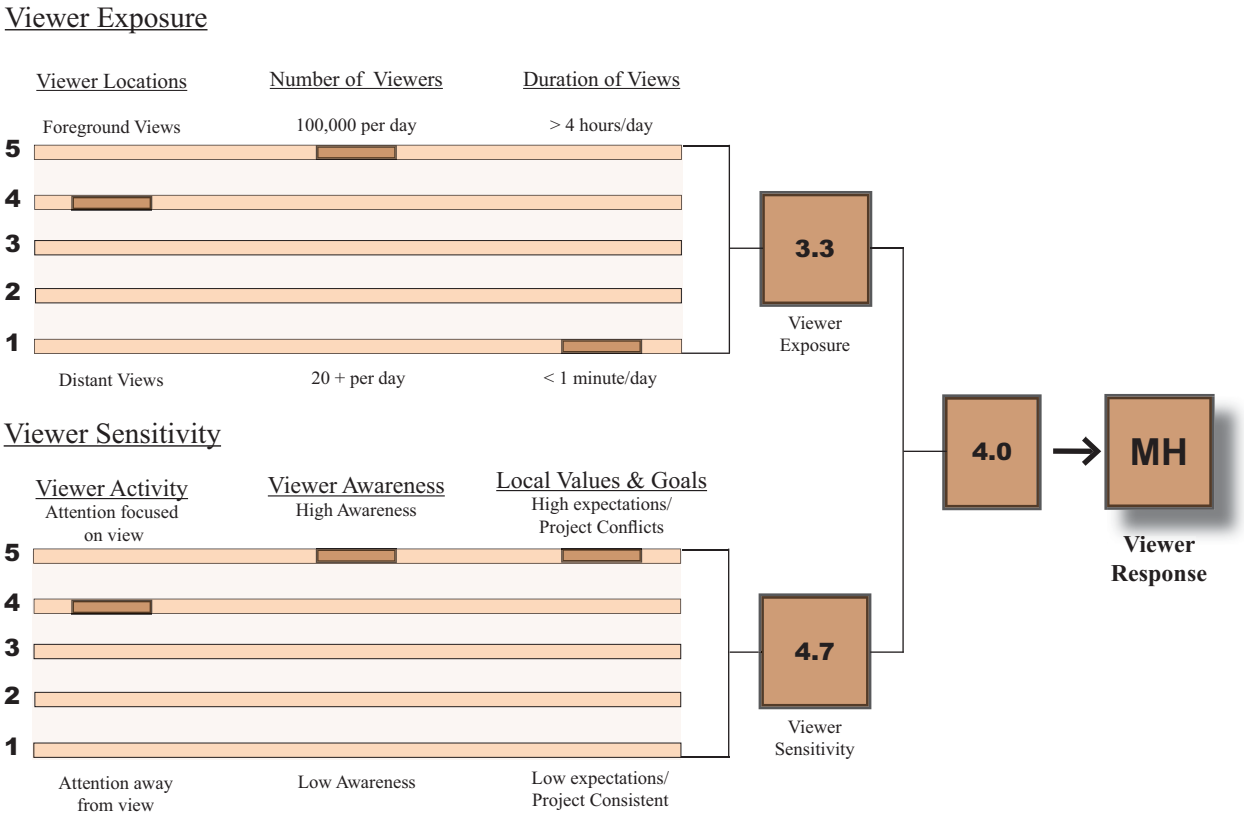
Legend

Existing Viewshed

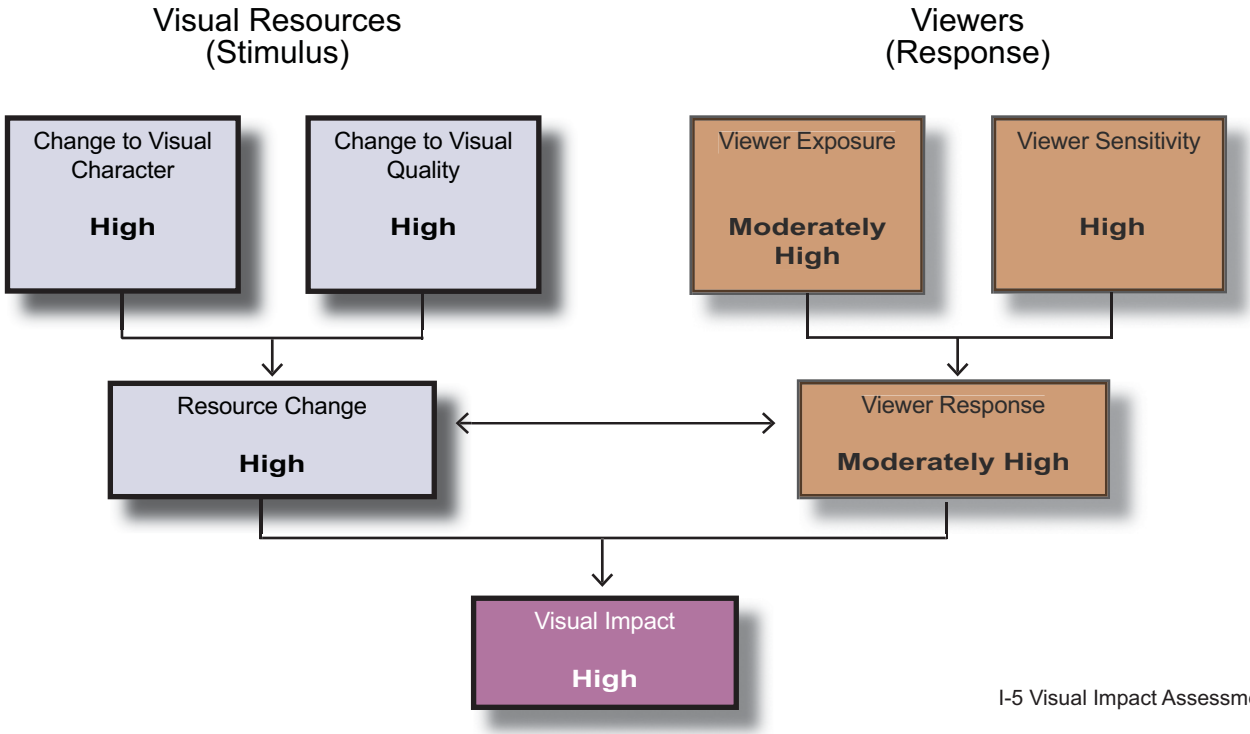
Proposed Viewshed

Key View # 14

VIEWER RESPONSE



ANALYSIS SUMMARY



Key View # 15 Pine Street at I-5 in Carlsbad

Existing View looking north toward toward Pine Street.

Proposed view.

Key View # 15

Orientation

Carlsbad Village Landscape Unit in Carlsbad, adjacent to southbound I-5 near Pine Street, looking north.

Existing Visual Quality/Character

This view is taken from the parking lot of an apartment complex adjacent to the western edge of the freeway. Views of traffic are screened by freeway landscaping which also softens the hard surfaces found on the ground plane and vertical surfaces. Unsightly features such as trash bins, utility poles, and chain link fencing are prominent. The scale of the buildings and their density is relatively small and suburban, however. Visual unity and intactness are moderately low due to the random arrangement of visual elements and their low state of repair. Despite this, landscaping on the freeway slope and in the complex acts as a unifying visual element. Vividness is low. The visual character of the view is suburban due to the nature and scale of its elements, but encroaching urban features are present.

Proposed Project Features

Freeway widening would require a retaining wall of approximately 6m (20') in height in this area. The proposed wall would be located approximately 1.8m (6') closer to the apartment buildings than the existing wall, placing it 4.9m (16') from the nearest residence. A noise wall of 3.6m - 4.9m (12'-16') would be placed on top of the retaining wall. The combined walls would be 9.8m - 11.0m (32'-36') in height and their length would extend to the limits of the viewshed. Existing freeway landscaping would be permanently removed.

Key View Location Map

Change to Visual Quality/Character

Visual unity and intactness would be reduced to low levels, while vividness would remain low. The combined height of the proposed walls would be about 3.6m (12') higher than the two-story apartment buildings, and they would be near enough to living areas to produce an uncomfortable sense of enclosure. The retaining wall would be about 914m (3000') in length, and the noise wall would be about 1280m (4200') long. The combined walls would be a dominant visual element in the Village, greatly increasing the visual prominence of the freeway and decreasing visual cohesion in the community. Large built forms such as these are normally associated with central urban core areas, and would change the visual character of the area accordingly. For adjacent residents, the walls could present an unwelcome source of reflected light and heat in the afternoons due to their close proximity. The project would cause a high degree of change to visual character. Local residents would likely perceive the change

Key View # 15

as adverse.

Viewer Response

Hundreds of adjacent residents would view the project for hours at a time. They would likely have a high awareness of proposed changes to the existing visual environment. The changes would likely conflict with local values and goals.

Resulting Visual Impact

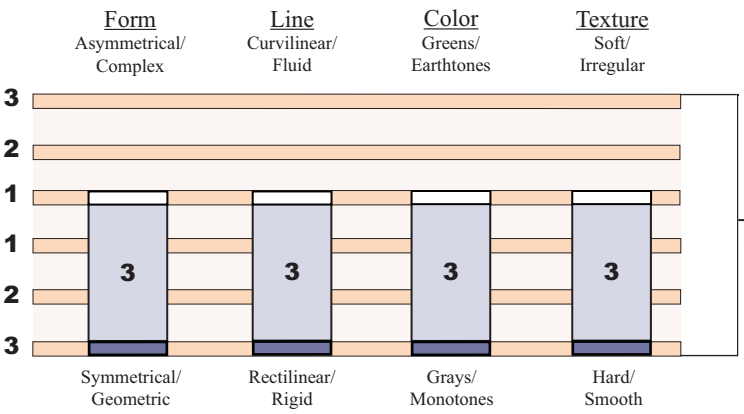
Change to visual quality would be low. Change to visual character would be high. Viewer response to those changes would be high. The visual impact would be moderately high.

Key View # 15

VISUAL CHARACTER

Pattern Elements

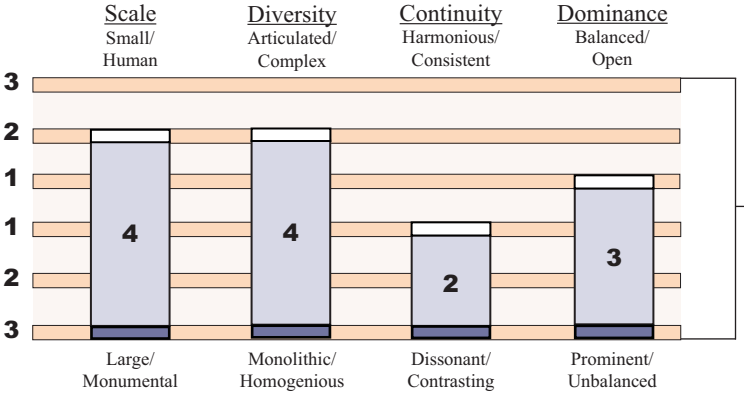
Describes the visual attributes of objects (Project and Setting)



Avg. Change: 3.0
% Change: 60

Pattern Character

Describes the relationships between visual elements (Project and Setting)



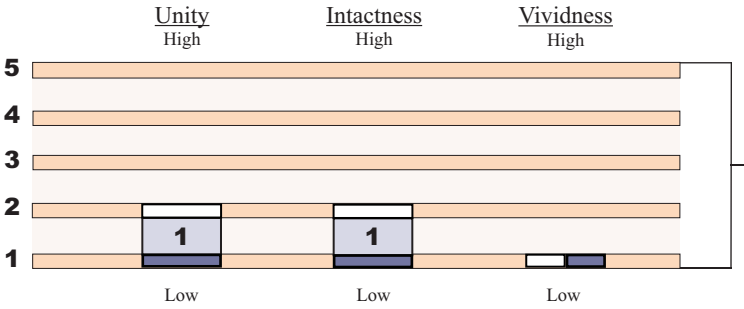
Avg. Change: 3.3
% Change: 65

Avg. Change: 3.2
% Change: 63

H

Change to Visual Character

VISUAL QUALITY



Avg. Change: 1.0
% Change: 25

L

Change to Visual Quality

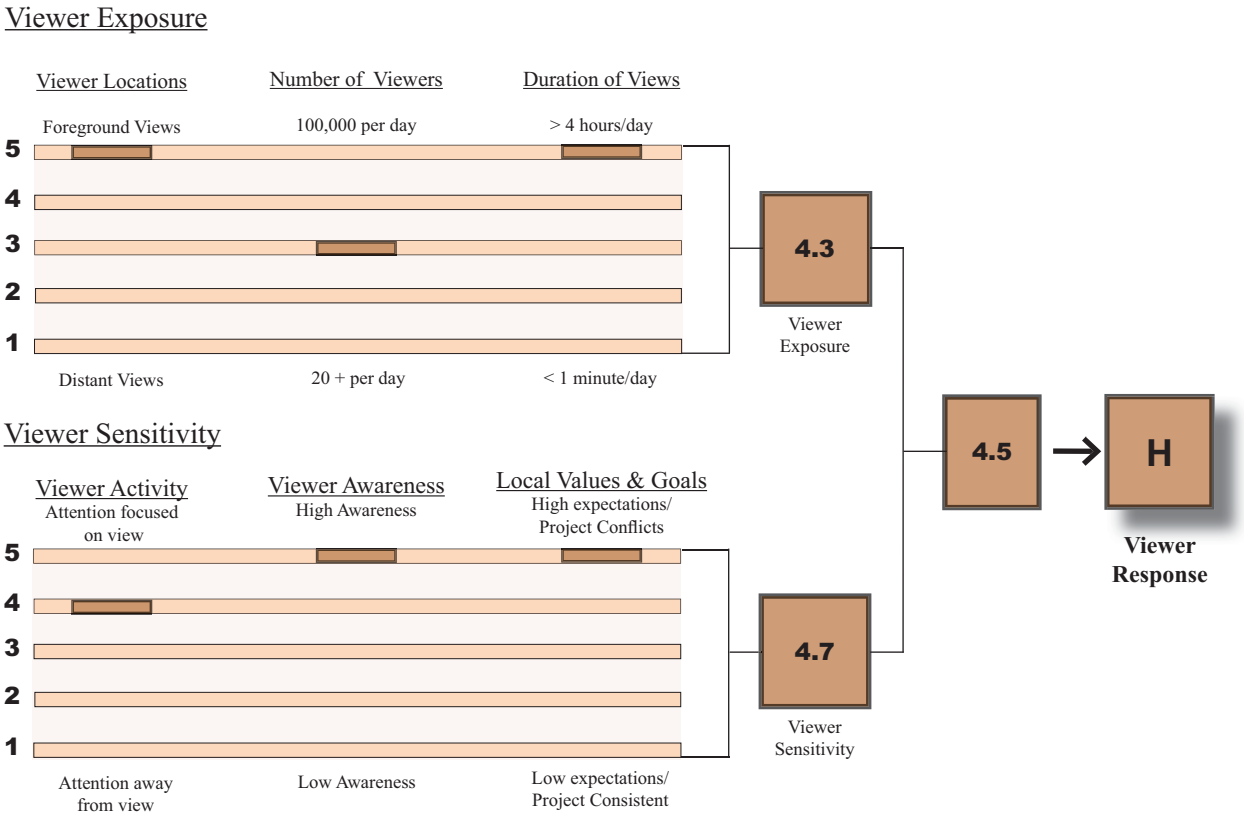
Legend

Existing Viewshed

Proposed Viewshed

Key View # 15

VIEWER RESPONSE



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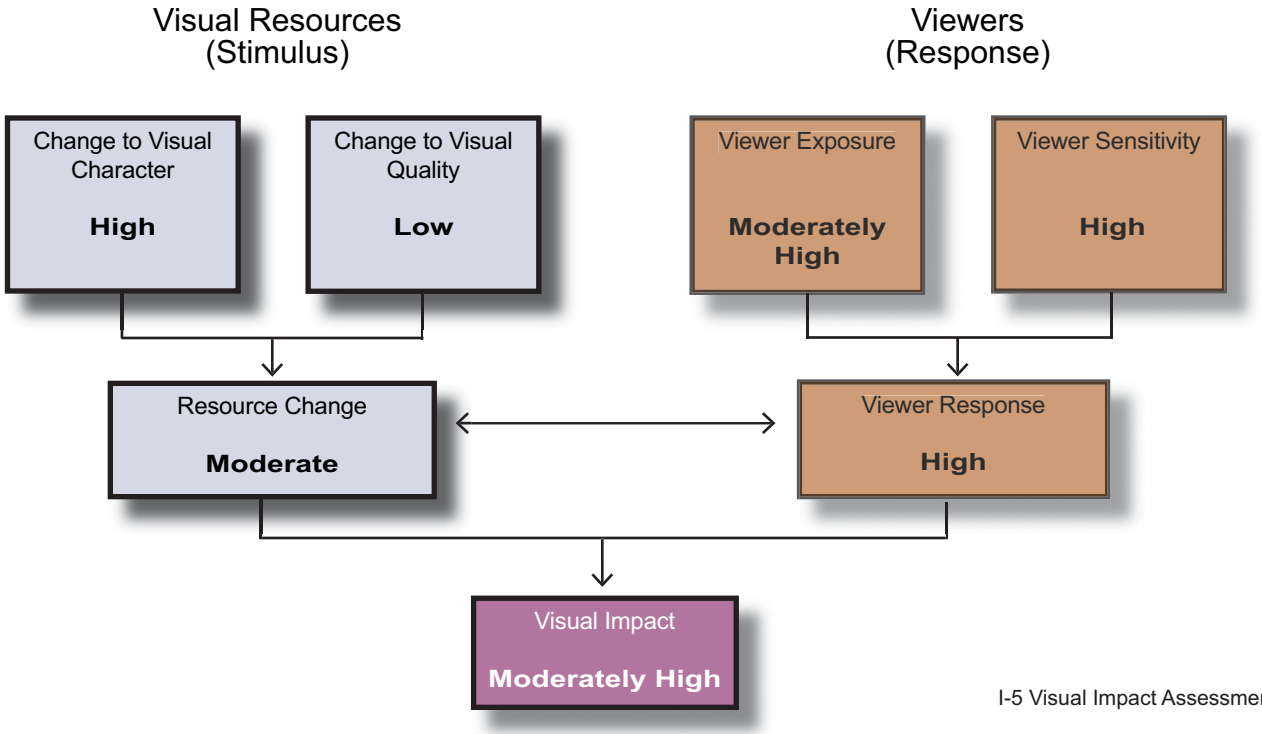


Key View # 16 I-5 at Oceanside Boulevard DAR

Existing View looking south on I-5 toward Oceanside Boulevard.

Proposed view.

Key View # 16

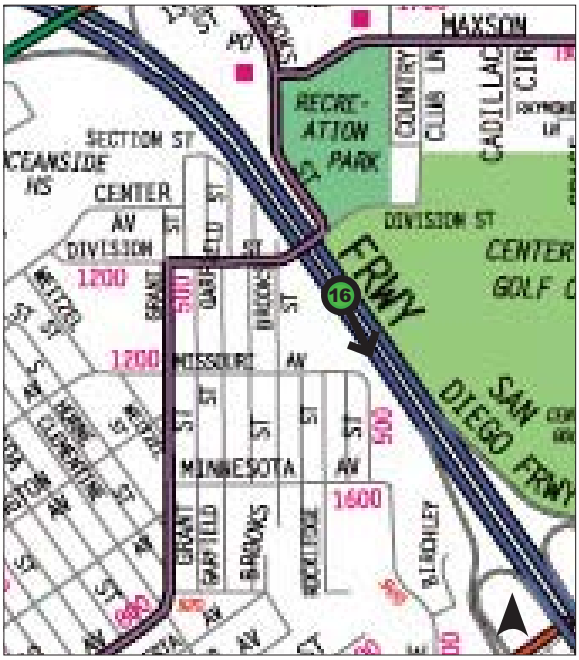
Orientation

Oceanside Gateway Landscape Unit in Oceanside, I-5 southbound between Oceanside Boulevard and Mission Avenue interchanges, looking south.

Existing Visual Quality/Character

This portion of I-5 in Oceanside serves as the northern gateway to the San Diego region. After driving south through the native landscape of Camp Pendleton, the I-5 traveler entering Oceanside experiences a transition to an urban environment distinct from those he or she has seen to the north. Three visual cues signal the beginning of this new regional landscape. The vacation and recreation-oriented nature of the region is evidenced by views of the Oceanside Marina and hotels. Views of the San Luis Rey River flowing into the Pacific are a prelude to the series of lagoons and ocean views to come. Intense ornamental freeway landscaping creates a parkway effect and reflects San Diego's image as a resort destination.

This key view exemplifies the visual quality and character of freeway views in the Oceanside Gateway Landscape Unit. Visual unity and intactness are high due to the proportional composition of tall trees in the vertical plane with median oleanders and lush ground cover in the horizontal that reduce the apparent size of the freeway to a suburban scale. Vividness is moderately high. Overall visual quality is moderately high. The freeway landscape is visually compatible with residential areas to the west, and an open space canyon and municipal golf course to the east. Natural forms, textures, and colors predominate the view and establish its visual character.



Key View Location Map

Proposed Project Features

The Oceanside Boulevard DAR would require a wider footprint and the removal of median oleanders to accommodate transition lanes and shoulders. Widening would remove existing landscape slopes. Retaining walls up to 12.2m (40') in height in cut sections of the roadway would be located near the existing right-of-way and additional space at the base of the walls for landscaping would not be available. A noise wall 3.6m (12') in height would be located at the top of the retaining wall on the southbound side of the freeway. DAR ramp retaining walls and ramp structures would be located in the median. The DAR overcrossing structure would bridge the northbound lanes of the freeway only. It and the DAR access road would require large retaining walls to avoid impacting the existing municipal golf course to the north and shopping center to the south.

Key View # 16

Change to Visual Quality/Character

The proposed project would greatly increase the size of the freeway and introduce large scale built forms that are normally associated with large urban core areas. Permanent loss of skyline trees and freeway landscaping would increase change to the visual environment. The change would severely reduce the regional gateway experience described above, and be incompatible with the visual character of the adjacent community. Visual unity, intactness, and vividness would be reduced to low levels. The change to existing visual character would be high, and would likely be perceived as adverse by the public.

Viewer Response

Hundreds of thousands of freeway travelers each day would view the project, for several seconds. Thousands of residents, local street users, and recreational area users would view the project for minutes to hours at a time.

Resulting Visual Impact

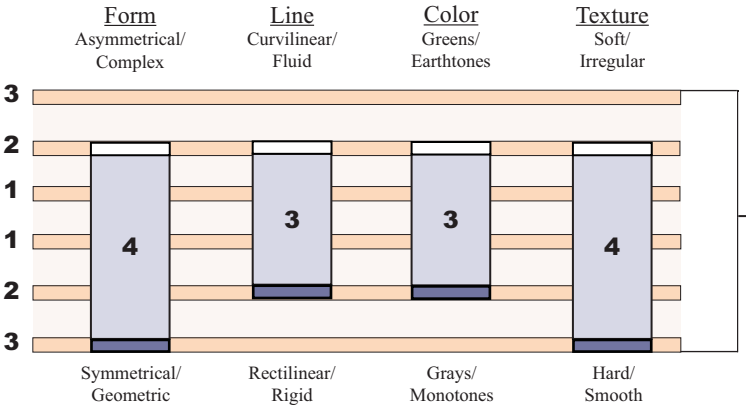
Change to visual quality and character would be high. Viewer response would be high. The visual impact would be high.

Key View # 16

VISUAL CHARACTER

Pattern Elements

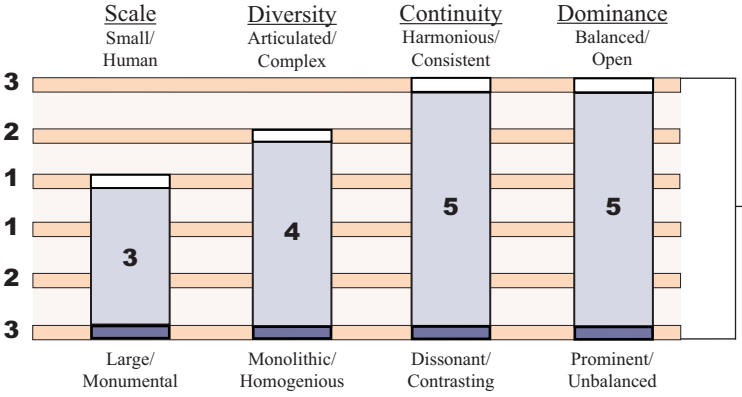
Describes the visual attributes of objects (Project and Setting)



Avg. Change: 3.5
% Change: 70

Pattern Character

Describes the relationships between visual elements (Project and Setting)



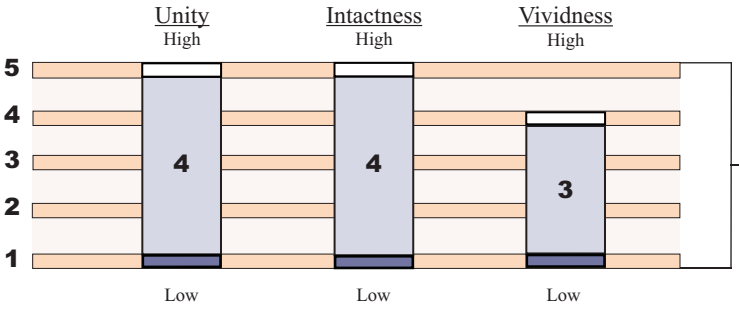
Avg. Change: 4.3
% Change: 85

Avg. Change: 3.9
% Change: 78

H

Change to Visual Character

VISUAL QUALITY



Avg. Change: 3.7
% Change: 92

H

Change to Visual Quality

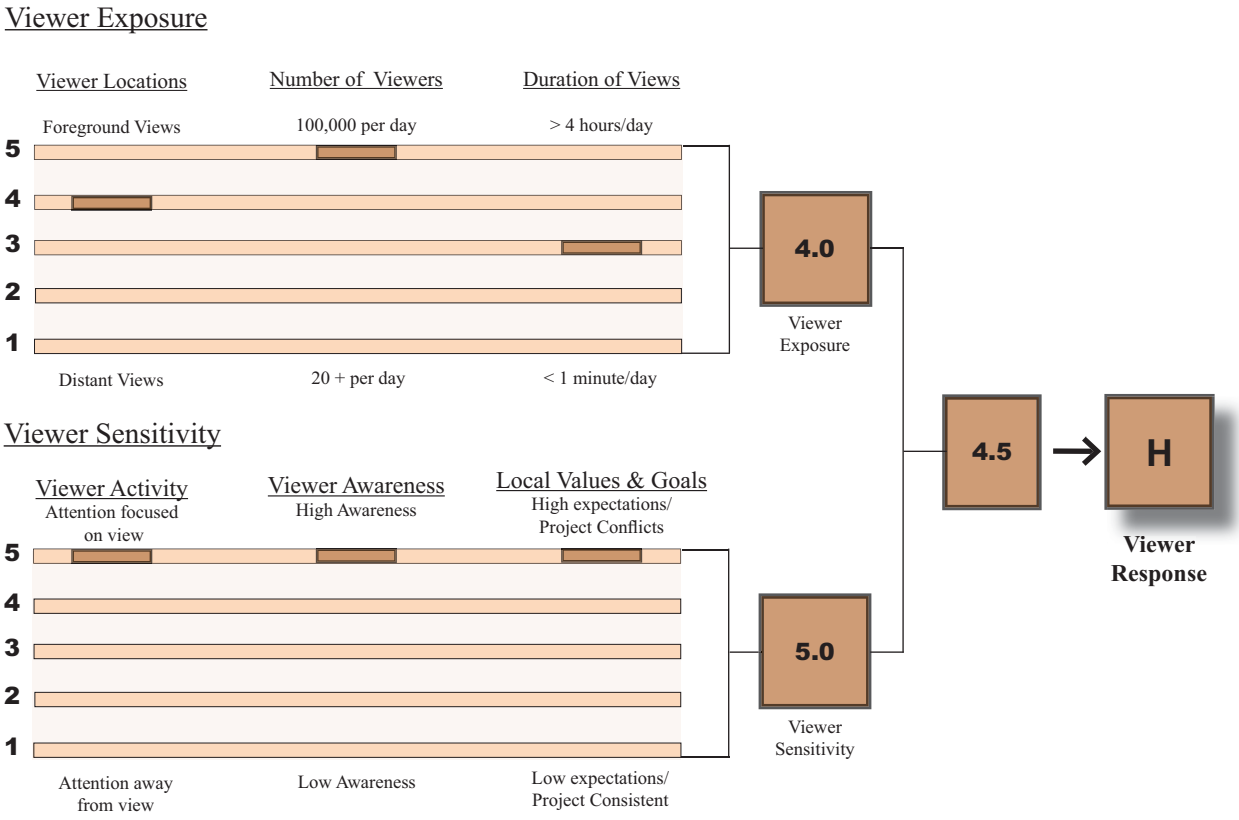
Legend

Existing Viewshed

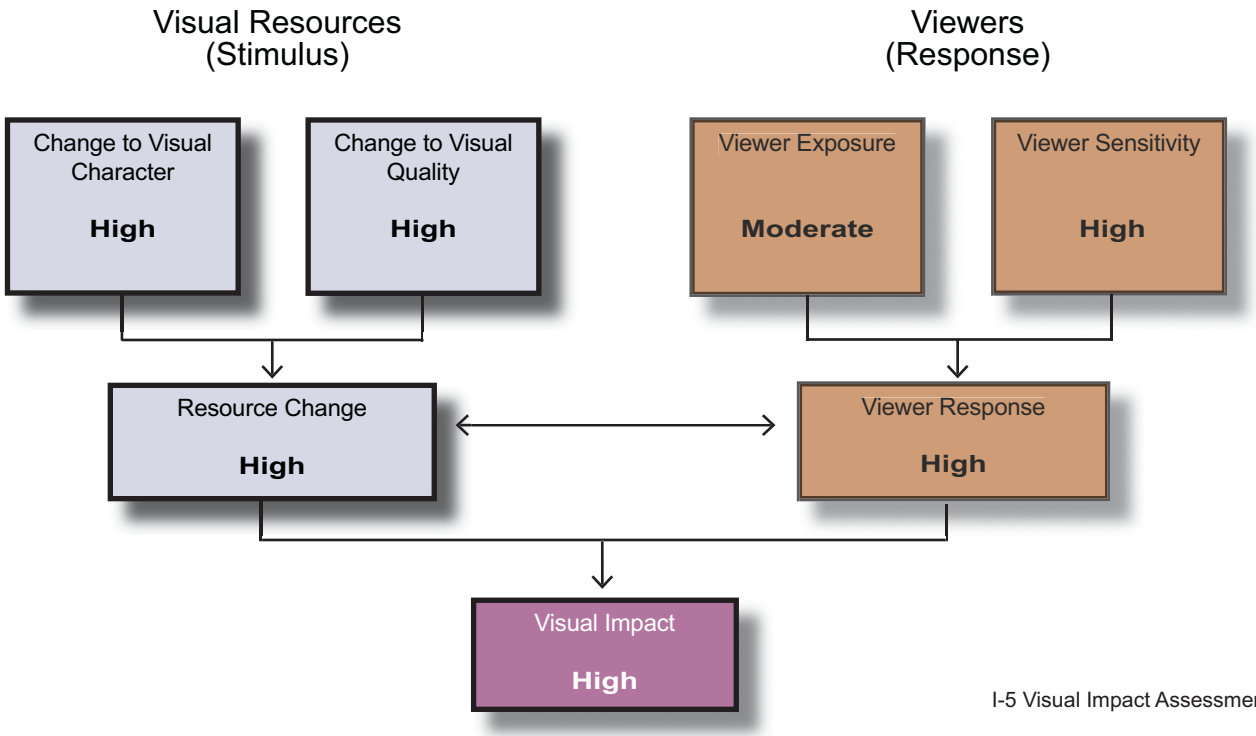
Proposed Viewshed

Key View # 16

VIEWER RESPONSE



ANALYSIS SUMMARY



Key View # 17 Mission Avenue at I-5 in Oceanside

I-5 northbound off ramp at Mission Avenue.

Proposed view of Mission Avenue over-crossing I-5, looking west.

Key View # 17

Orientation

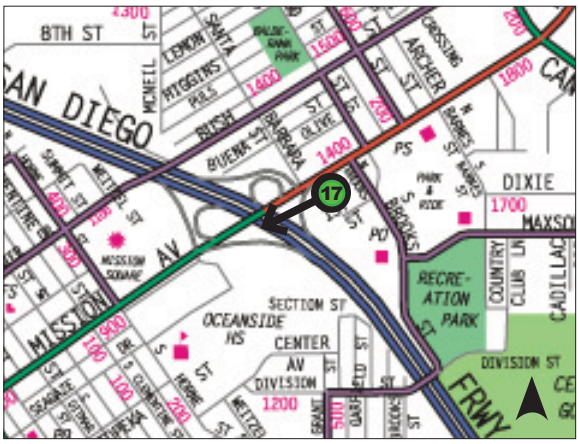
Oceanside Gateway Landscape Unit in Oceanside, Mission Avenue at I-5, looking west.

Existing Visual Quality/Character

The I-5/Mission Avenue interchange has enhanced landscaping that is maintained by the City of Oceanside, and as a result, natural forms serve as a visual counter point the dominant features of the local street and freeway. The interchange landscaping and street features such as lighting are designed at a large "freeway-scale" and provide greatest benefit for drivers rather than pedestrians. Pedestrians and bicyclists have uncomfortable foreground views of traffic exiting the freeway at high speeds. Standard width sidewalks require those walking with others to focus concentration on the pavement in order to prevent stepping off the curb into traffic. Both factors diminish the visual quality experienced by the pedestrian. Visual quality is moderate. The street has an urban character, with the roadway and streetscape oriented for vehicular users.

Proposed Project Features

The interchange would be reconfigured to eliminate the two existing free-flow freeway ramps located on the south side of Mission Avenue. This would enable the creation of a continuous sidewalk crossing the freeway. The Mission Avenue overcrossing would be reconstructed and widened to include wider sidewalks. The proposed width for the southerly sidewalk is 4.6m (15') to accommodate large numbers of students from Oceanside High School that now cross the facility on a daily basis. Pedestrian-scaled streetscape features such as street lights,



Key View Location Map

street trees, and benches would also be provided.

This key view is representative of pedestrian and bicyclist improvements that would occur on interchanges, undercrossings, and overcrossings throughout the corridor.

Change to Visual Quality/Character

The project would improve visual unity and intactness by providing greater visual continuity and balance in the streetscape, allowing for greater ease of use and sense of security for non-motorized viewers, and increasing the prominence of natural forms and positive aesthetics. Vividness would also be improved as attractive visual elements are incorporated in the streetscape. Visual character would change slightly, but remain urban. The public would likely view the change as positive.

Viewer Response

Thousands of drivers, pedestrians, and bicyclists would view the project for several minutes each day. They would have a high awareness of the project. The changes would be consistent with local values and goals.

Key View # 17

Resulting Visual Impact

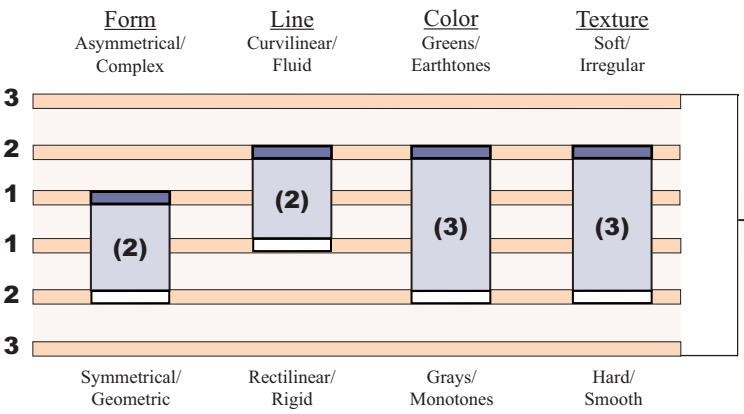
The visual quality would improve. Change to visual character would likely be seen as positive, and viewer response would be high. The project would enhance the viewshed and have no visual impact.

Key View # 17

VISUAL CHARACTER

Pattern Elements

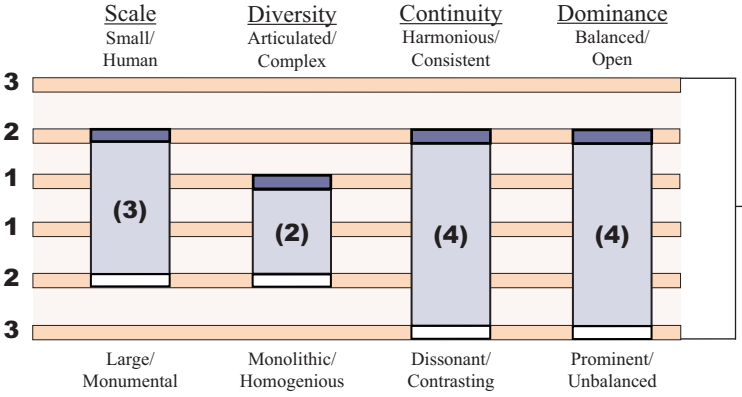
Describes the visual attributes of objects (Project and Setting)



Avg. Change (2.5) 50 % Change

Pattern Character

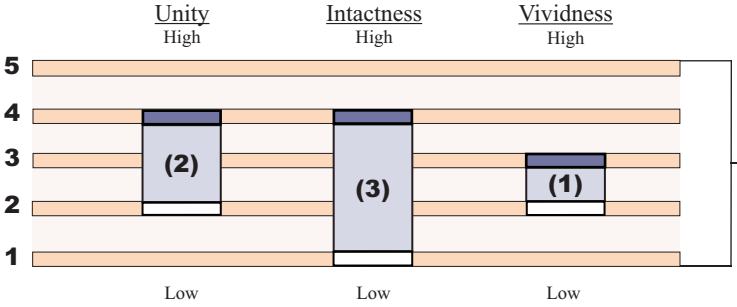
Describes the relationships between visual elements (Project and Setting)



Avg. Change (3.3) 66 % Change

Avg. Change (2.9) 58 % Change → (MH) **Change to Visual Character**

VISUAL QUALITY



Avg. Change (2.0) 50 % Change → (MH) **Change to Visual Quality**

Legend

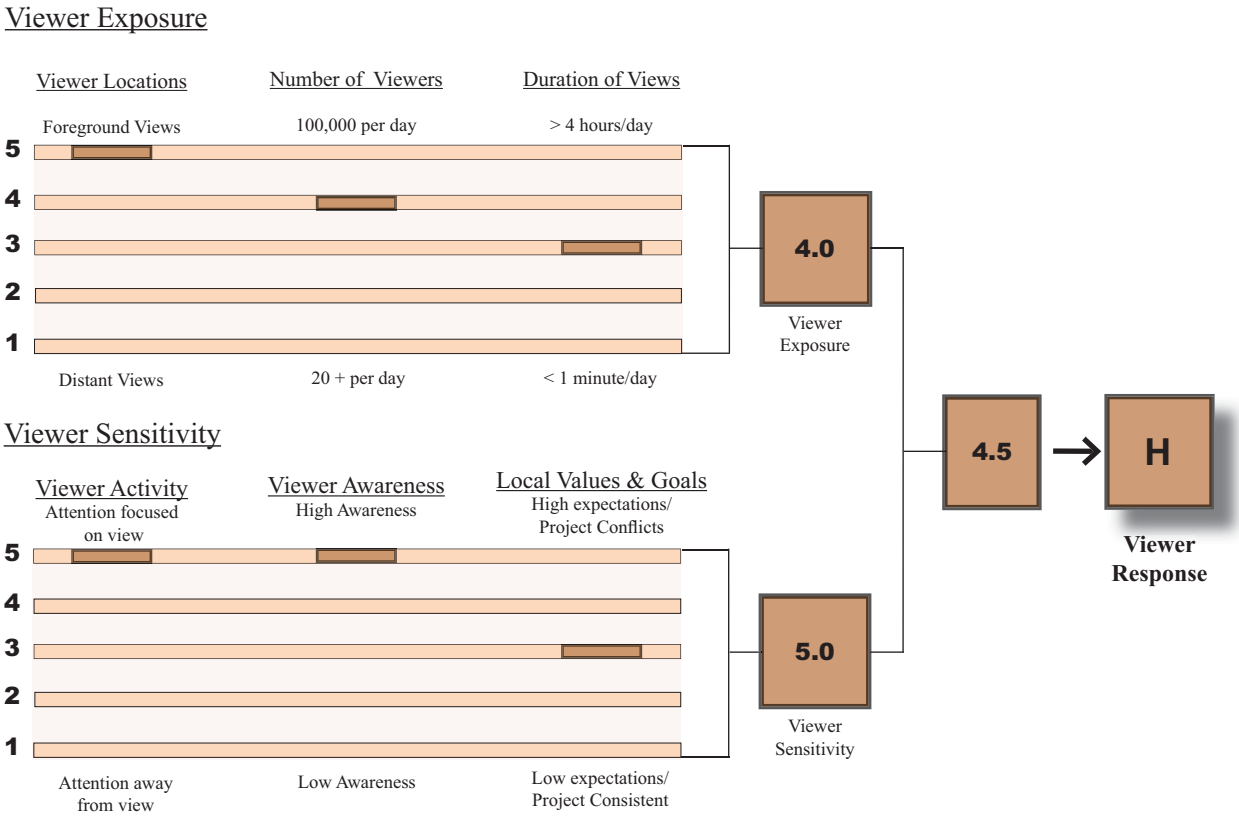
Existing Viewshed

Proposed Viewshed

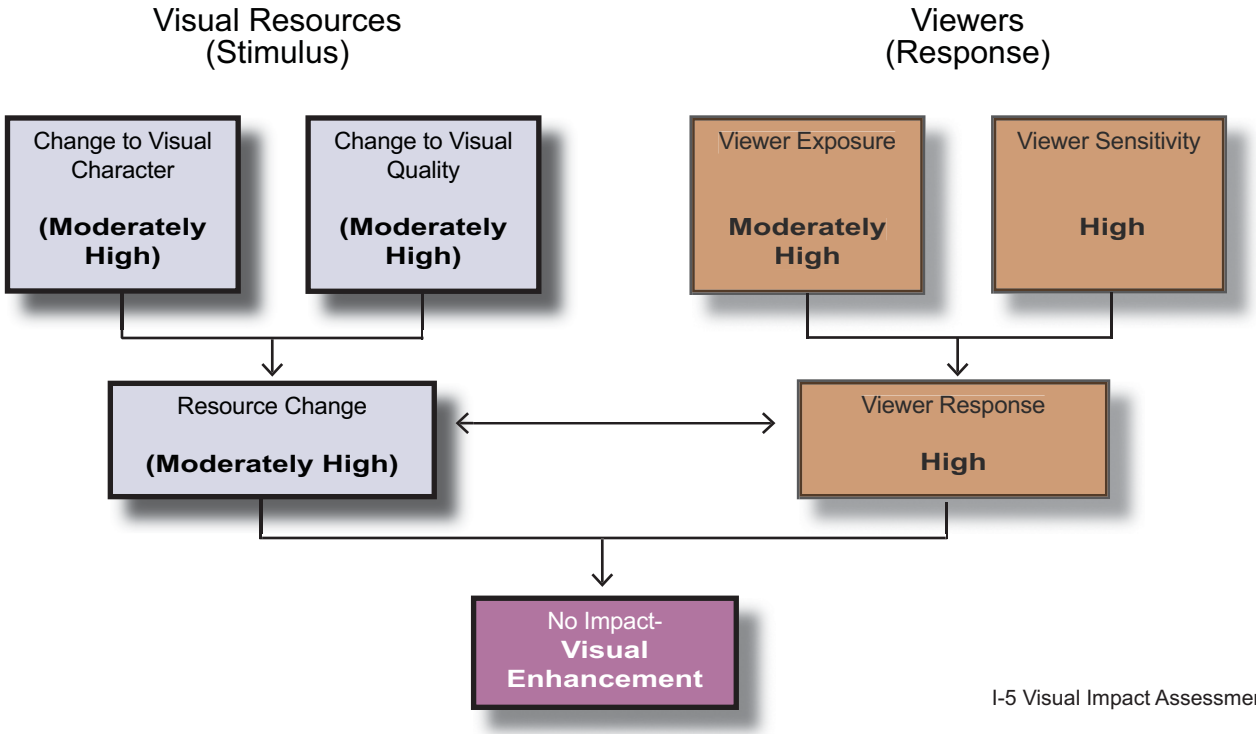
Positive Change ( )

Key View # 17

VIEWER RESPONSE



ANALYSIS SUMMARY



Summary of Project Impacts

The visual effects of the project can be summarized by saying that the natural character of the I-5 corridor would become noticeably more urban, and scenic resources now available to the traveling public would become less accessible. One existing ocean view from the freeway would be permanently lost. The high degree of visual change caused by the project would remain despite the implementation of mitigation measures proposed in this assessment.

Impacts to Viewers on the Freeway

Loss of Existing Views and Creation of a "Tunnel Effect"

Views from the freeway would be diminished in quantity and quality by the introduction of new walls, structures, and appurtenances. Visual access to the ocean and other desirable views would be obstructed by noise walls in several locations, isolating travelers from scenic resources they now enjoy. The most adverse example would be the obstruction of an existing ocean view (Key View 4) in Solana Beach. The loss of open views that provide variety, interest, and orientation to the traveler (such as Leucadia Hills [Key View 9] and Carlsbad Village [Key Views 12, 14]) would change the visual character of I-5. In addition, the sense of enclosure created by the walls would be similar to the travel experience one now encounters in large urban areas to the north, thereby diminishing the region's unique visual identity.

Expansive Paving with Large Walls and Structures

Each build alternative would approximately double the width of the existing freeway and require ten football fields of new paving per mile. This would be done for the most part within the existing right-of-way envelope, proportionally displacing landscaped roadside areas and adding large retaining walls that would enable the new roadway to cut through and cover over existing topography. The walls depicted in Key Views 2 and 7 are typical of those that would be placed in cut sections facing the freeway. To better understand how large they would be, each would be roughly equivalent in size to the sides of two and one half aircraft carriers laid end to end. Key views 3 and 15 contain walls that would be typical of those placed in fill sections facing communities. These types of large, urban freeway components would contrast severely with the visual character of adjacent scenic areas and beach communities. The contrast between proposed urban and existing natural features would be most pronounced at Manchester Avenue DAR (Key View 5) and Cannon Road DAR where large transportation complexes would impact landmark agricultural fields and adversely affect views of scenic coastal lagoons.

Loss of Existing Freeway Landscape

Roadside areas for landscaping would be severely reduced and the exclusive use of native plants for freeway landscape replacement would be required by regulatory agencies in many locations. Also, due to limited roadside maintenance funds, the use of drought tolerant planting that naturalizes with temporary irrigation has become necessary. These three factors would cause a substantial change to visual character and an adverse effect on the visual quality of the north coast corridor. Reduced areas for landscaping would shift the freeway's visual balance from landscaping to hard surfaces,

and its character from semi-rural to urban. The traditional San Diego landscape image characterized by lush subtropical greenery would be severely diminished along the freeway, and would change to an overall appearance of gray and brown. The prominence of tall trees in the freeway landscape would be permanently lost. This would be caused by space limitations as well as the limitations of San Diego's coastal native tree palette. Torrey Pines are the most suitable San Diego native for freeway planting because of their drought tolerance and relatively fast growth rate. Other natives such as Sycamores or Willows are riparian species that lack the drought tolerance required to survive freeway slope conditions. Others, such as oaks, are very slow growing, and would appear as shrubs for many years. None would grow tall enough to provide vertical balance for the freeway's expansive horizontal plane, as do existing ornamental trees.

Loss of Existing Median Oleanders
In the two barrier alternatives, median oleanders would be removed in all curved portions of the freeway. The barrier alternatives propose 1.5m (5 ft.) median shoulders, which would not allow the required stopping sight distance around curves in a dual barrier configuration.

Changeable Message Boards and Congestion Pricing Signage
New freeway appurtenances such as changeable message signs, overhead traffic sensors, video cameras, and congestion pricing signage would add to the urbanizing effect of the project and detract from scenic views. These types of features would be concentrated at or near DAR facilities and HOV ingress/egress points.

Impacts to Viewers in Adjacent Communities

Community Proximity Impacts
Views to the freeway would be adversely affected at right-of-way edges where the project would bring the freeway in closer proximity to community viewers. Existing landscaped buffers would be substantially reduced in size or removed altogether and replaced with retaining walls and/or noise barriers. This condition would have a particularly noticeable effect for residents whose homes are located adjacent to the freeway at elevations near to or below the level of the road. From their rear yards they would have long-term foreground views of unsightly features such as concrete retaining walls, noise walls, and drainage ditches. Paved maintenance roads, bio-swales, and chain link fencing would also be present in the foreground.

In some cases, such as the ones shown in Key Views 10 and 15, large walls would be in close proximity to residents, affecting light access, air circulation, microclimate, and creating an uncomfortable feeling of enclosure. Close proximity solid noise walls are considered to be undesirable by State and Federal policy (see Appendix).

Some real estate parcels required for freeway widening may remain as undeveloped lots. Parcels such as these often appear to be under-maintained and can adversely affect visual quality, especially in residential neighborhoods.

Community Entry Impacts
At freeway interchanges, overcrossing and undercrossing structures and some local streets would be enlarged and create an increased urban visual character. In particu-

lar, the visual experience of pedestrians and bicyclists would diminish as the balance of available circulation space shifts further from the pedestrian realm to the vehicular. At some interchanges these impacts would be avoided or minimized by eliminating existing non-stop right turns to or from freeway ramps, and providing wide sidewalks, street trees, and other pedestrian amenities. Other interchanges such as Mission Avenue in Oceanside (Key View #17) may be reconfigured to provide high volume pedestrian routes with uninterrupted access across the freeway.

At some freeway interchanges, the project may include new visual elements that would be incompatible with community goals and existing visual character. Existing ornamental freeway landscaping would be reduced or could be replaced by native species. Storm water detention basins as described in the project features section would be located at most interchange loop ramps. Their standard features such as maintenance vehicle roads, rock rip-rap slopes, concrete headwalls, standpipes, and chain link fencing would be a non-compatible visual element in most community entry points, and further reduce available landscape area.

Proposed roundabouts at the Birmingham Drive and Santa Fe Drive interchanges in the City of Encinitas would constitute an improvement to existing visual quality. Roundabouts create a more balanced visual environment between the street and community by requiring less vehicular circulation space, slowing vehicular speeds, allowing shorter street crossing distances for pedestrians, and providing a central island that can be landscaped as an attractive community entry feature.

Impacts to Scenic Resources

Scenic Resource View Impacts

Views to scenic resources from some private residences located at an elevation higher than the freeway would be obstructed by proposed noise walls if residents agree to place them on or near their property line as recommended by the noise study report. Transparent panels could be incorporated in the barriers to avoid view impacts should residents accept them. Because the impacts to distant views from private property can be avoided, locations where those impacts could occur will not be listed in this assessment.

The use of transparent panels in noise walls adjacent to freeway lanes would not necessarily preserve existing scenic views. Transparent materials can appear to be opaque to the casual observer due to surface reflectivity. This is especially true when the material is soiled or scratched, and the observer is traveling by its surface at a high rate of speed viewing it at an oblique angle, as would be the case on a freeway. The physical properties of transparent material normally used in freeway noise walls cause noticeable image distortion. The distortion effect is amplified when the viewer is in motion, further decreasing transparency. Caltrans approved panel support structures are substantial and utilitarian in appearance, and the latticework of posts and rails required to support the panels would form an additional visual barrier whose transparency would decrease as the viewing angle

varies from perpendicular. Current Caltrans maintenance practice would not likely allow regular cleaning, graffiti removal, or scratch repair sufficient to achieve acceptable levels of transparency.

At best, a barrier using transparent panels on the freeway would act as a translucent screen, requiring the viewer to expend some degree of effort and concentration in order to achieve visual contact, if possible, with the desired object beyond. At worst, it would appear as a smooth, reflective, opaque wall. Considering the fact that most scenic views from the freeway are relatively brief because viewers are moving at a high rate of speed, it is likely that these views would be substantially degraded or lost altogether by such a barrier. Since views such as these are pleasant surprises to first-time travelers, it is questionable whether those viewers would know to expend the effort to peer through the barrier surface and experience that moment of discovery. For these reasons, noise barriers with transparent material would not avoid or mitigate the loss of scenic views from the freeway.

Below is a list of locations in which a permanent loss of a view to an existing scenic resource would occur.

Loss of views to the Pacific Ocean
Between Via de la Valle and Lomas Santa Fe Drive, southbound freeway travelers have a view of the ocean and the Del Mar Racetrack and Fairgrounds. This view would be completely obscured by a noise wall 3-3.6m (10-12 ft) in height located at the edge of freeway shoulder. The impact is depicted and assessed in Key View #4.

Loss of views to Encinitas Hillside Neighborhood
Freeway travelers in both directions would lose existing views to the hillside neighborhood west of the freeway between Encinitas Boulevard and Leucadia Boulevard. The impact is depicted and assessed in Key View #9.

Loss of views to agricultural fields
Retaining walls needed to support a proposed DAR access road at Cannon Road would obstruct most freeway views of existing agricultural land.

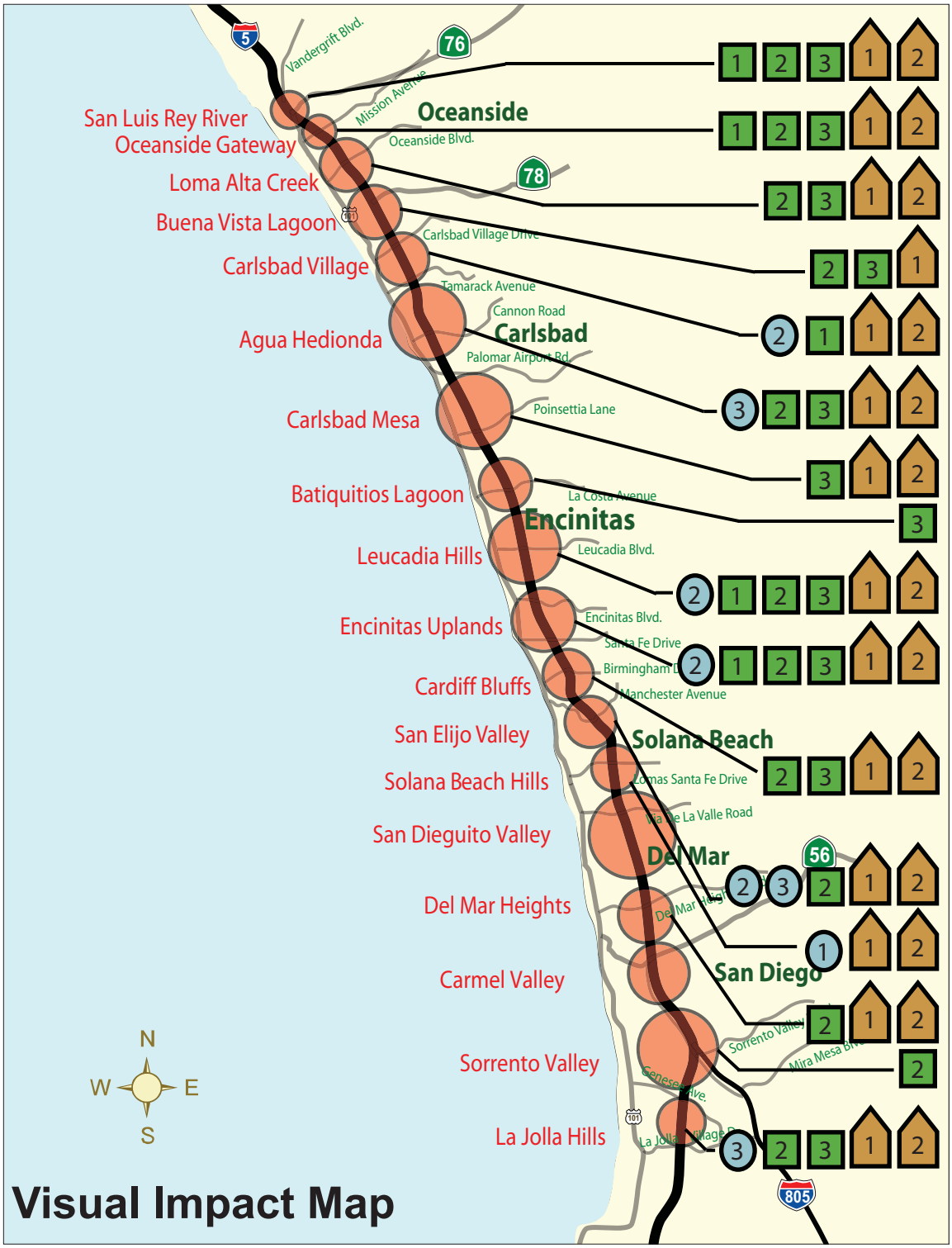
Loss of views to Carlsbad Village
Existing views of Carlsbad Village and Holiday Park would be obscured by a noise wall 3.6m (12 ft) in height placed at the edge of freeway shoulder. The impact is depicted and assessed in Key View #12.

Scenic Resource Direct Impacts

Direct impacts to agricultural fields would occur at Manchester Avenue and Cannon Road DAR locations. A transit center with access road, parking for 400 cars, and bus platform is proposed at the Manchester Avenue DAR.

At Cannon Road, a DAR access road connecting the freeway with Cannon Road would impact existing agricultural land.

Median oleanders would be permanently removed in all curved freeway portions of both barrier alternatives.



Legend

Scenic Resource Impacts

- 1 Loss of ocean view
- 2 Loss of view to resource
- 3 Impact to resource

Freeway Viewer Impacts

- 1 Loss of desirable view/ "Tunnel" effect
- 2 Large walls or structures
- 3 Loss of mature trees

Community Viewer Impacts

- 1 Proximity to freeway
- 2 Incompatible community entry

Impacts of Project Alternatives

As stated previously, differences in freeway width between the proposed build alternatives would be relatively minor in most locations, and proposed freeway features expected to affect visual resources such as noise walls would be the same or similar for each one. The exception would be median oleander removal in curved portions of both barrier alternatives. All build alternatives would result in highly adverse change to existing visual character and quality.

The 8+4 buffer alternative would result in the least amount of change to the visual environment and is considered the visually preferred build alternative. The 10+4 barrier alternative would cause the greatest visual change and is least preferred from a visual quality standpoint.

Visual Mitigation

Goals and Implementation

Caltrans and the FHWA mandate that a qualitative/aesthetic approach should be taken to mitigate for visual quality loss in the project area. This approach seeks to replicate desirable visual qualities that are impacted by a project *in situ* to restore a viewshed's original level of aesthetic excellence. It fulfills the letter and the spirit of FHWA requirements because it addresses the actual cumulative loss of visual quality that would occur in the project viewshed when the project is implemented. It also constitutes mitigation that can more readily generate public acceptance of the project.

Visual mitigation for adverse project impacts addressed in the previous section would consist of adhering to the following design requirements in consultation with the District 11 Landscape Architect (DLA). The requirements are arranged by project feature and include required options in order of effectiveness. One or more of these options are to be implemented on applicable project features wherever they occur. Some of the mitigation measures have been incorporated as project features to minimize adverse impacts and are depicted in key view simulations.

In addition, a set of corridor design guidelines would be developed under the direction of the DLA. The guidelines would supplement the mitigation requirements found in this document by developing more detailed architectural and landscape mitigation concepts. They would also reflect comments provided by interested community groups, city staff members, regulatory agencies, and the project development team.

Effective implementation of the following mitigation measures would require a multi-disciplinary design approach as required by the National Environmental Policy Act and Caltrans Policy and Procedures Manual.

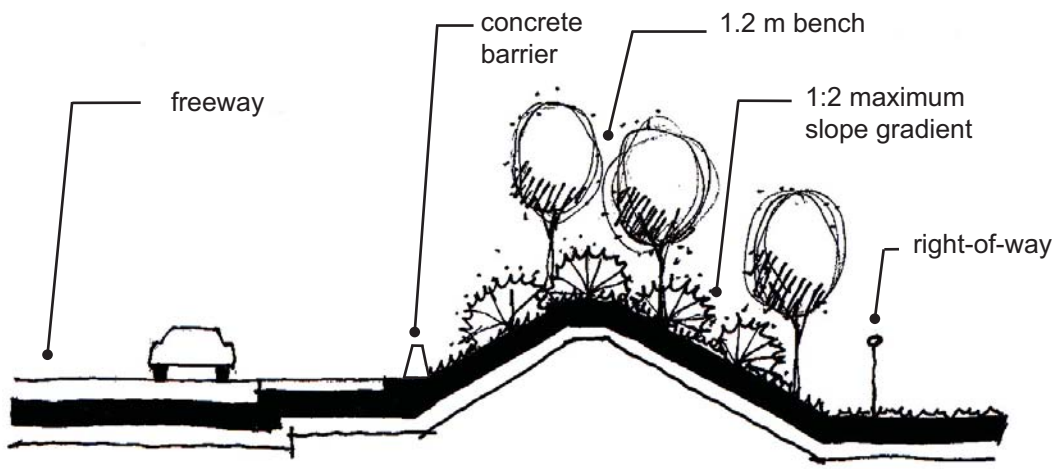
During project design and construction, it would be the responsibility of the DLA to analyze the visual effects of specific project features, synthesize applicable mitigation from this document and the I-5 corridor design guidelines, apply those requirements to actual freeway feature designs in specific locations, and assist the design team in determining reasonable visual mitigation solutions. The DLA would also perform mitigation monitoring of all visual mitigation requirements.

Implementation of the measures in this section would partially mitigate adverse effects of the project. The overall visual impact of the mitigated project would be high.

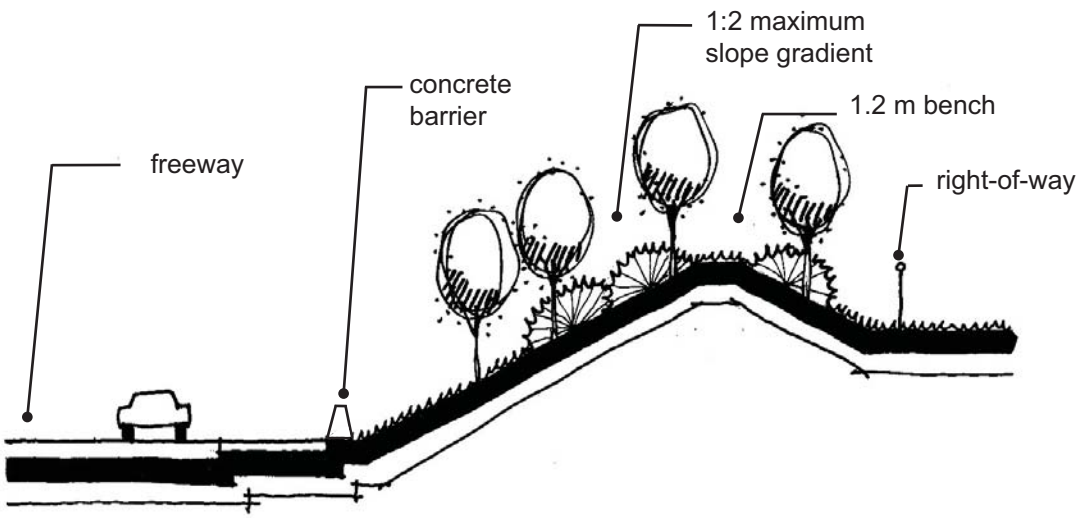
Mitigation Measures

Noise Barriers

Landscaped noise berms
Noise barriers would consist of landscaped berms wherever possible. Landscaped berms are the preferred visual mitigation for noise barriers and are most visually compatible with most land uses adjacent to the freeway.



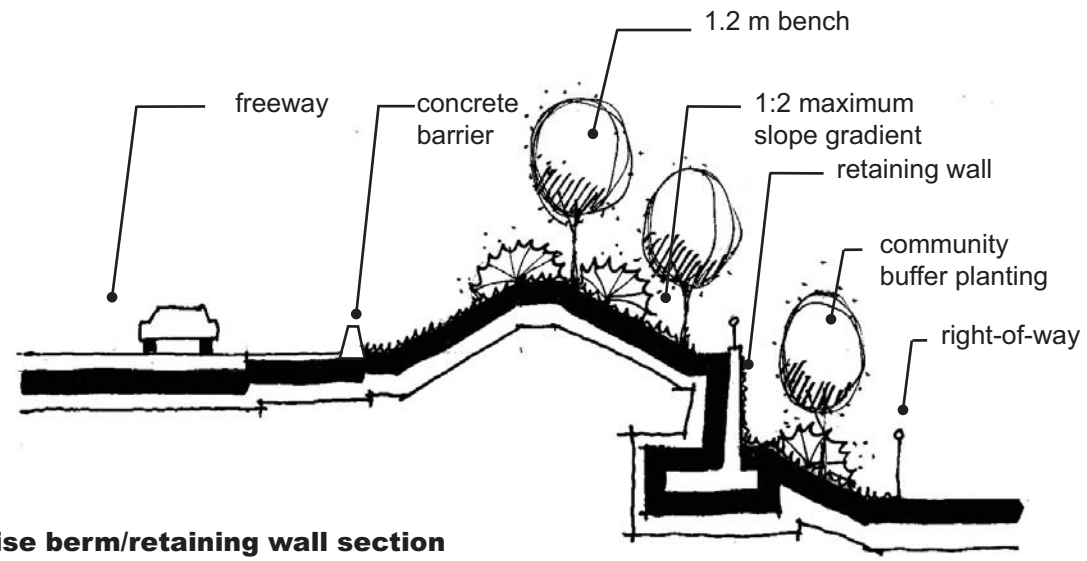
Berm in fill section



Berm in cut section

Noise berm/ retaining wall combinations

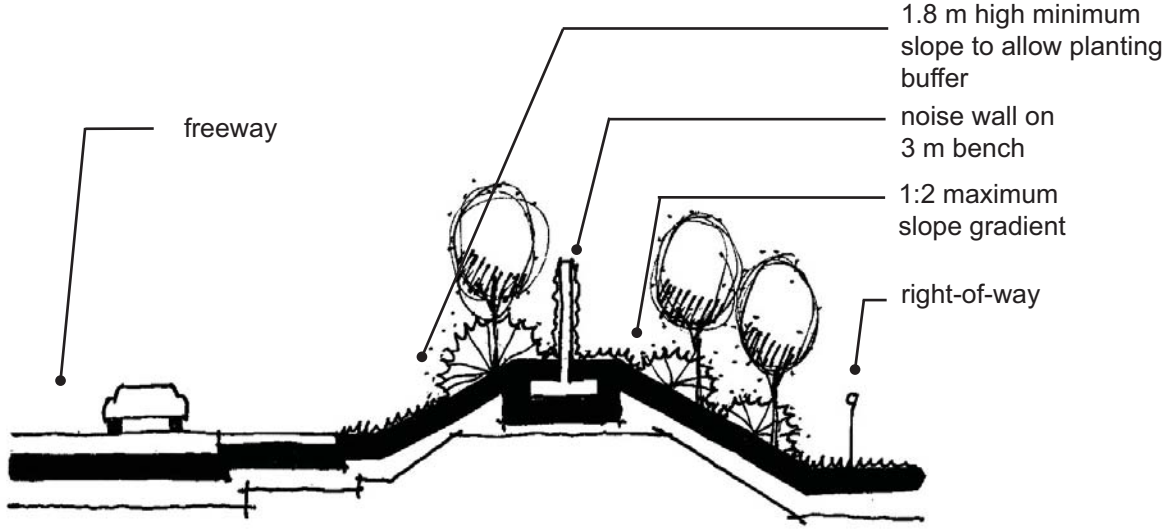
In areas where the right-of-way is too narrow to accommodate a berm, a retaining wall may be used to avoid constructing a sound wall on top of the berm. This may result in a barrier with a lower profile than a noise berm/wall combination due to the berm's superior sound attenuation qualities.



Noise berm/retaining wall section

Noise berm/wall combinations

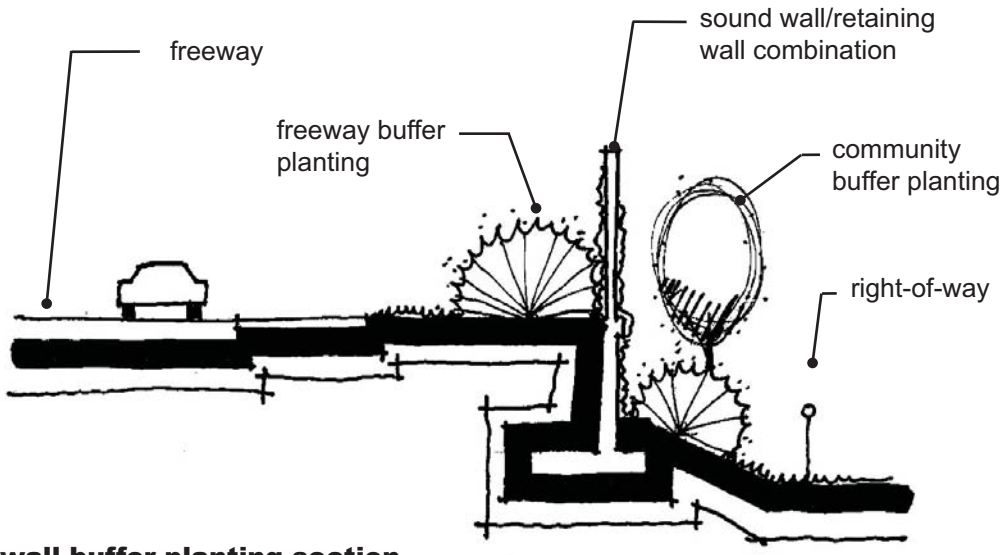
This barrier configuration is preferable in situations where a tall retaining wall at the toe of slope would create a visual impact to an adjacent property. To be effective, this option should incorporate a berm with a 1:2 slope on the freeway side that is 1.8m (6 ft.) high (minimum). This size berm should allow enough space to provide screening shrubs in front of the wall.



Noise berm/noise wall combination section

Noise wall landscape buffers

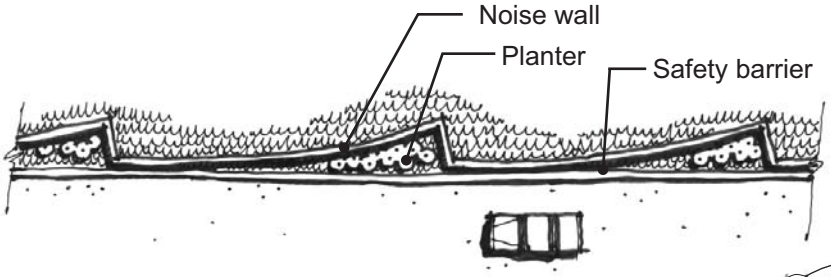
In cases where berms are entirely unfeasible, sound walls should incorporate planting on both sides. In some cases, retaining walls and/or a concrete barrier at the edge of shoulder may be needed to provide the required planting space.



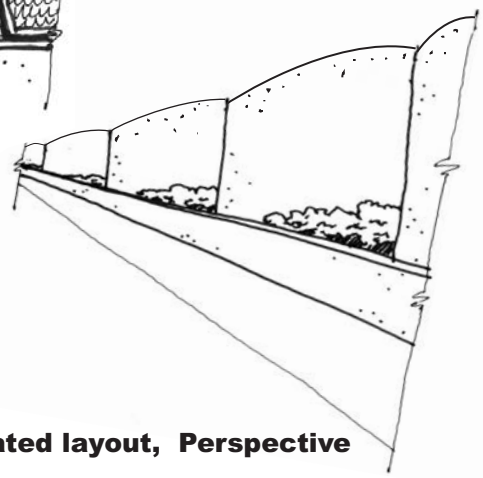
Noise wall buffer planting section

Noise wall articulated layout/ varied profile

The use of setbacks and return sections in wall layouts reduces the monotonous visual effect of a single wall surface and helps reduces its apparent scale. This design option can be used with a varied top of wall profile to further increase visual interest.



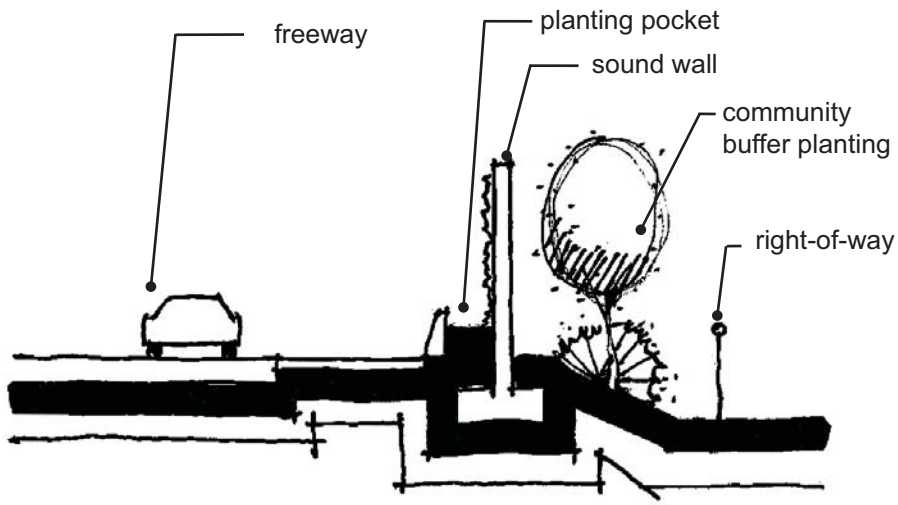
Noise wall articulated layout, Plan



Noise wall articulated layout, Perspective

Noise wall planting pockets

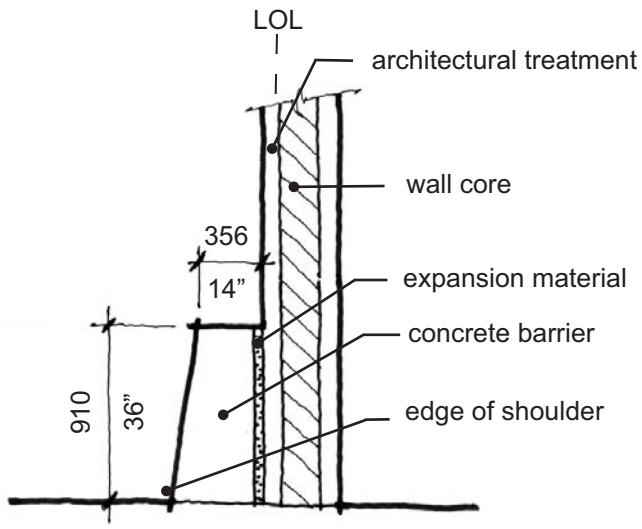
Where right-of-way is too narrow to employ the configurations listed above, a minimum 1.5m (5 ft.) wide planting area should be provided between the back of the barrier and the face of wall.



Noise wall planting pocket section

Noise wall/barrier setbacks

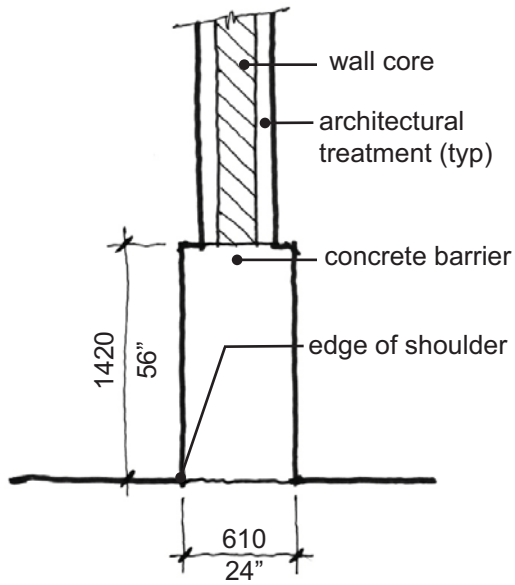
In areas too narrow to place a planting pocket, the noise wall should be recessed behind the face of barrier at a sufficient distance to allow architectural features to be included on the face of the noise wall. Placing a noise wall directly on top of a concrete barrier should be avoided if at all possible.



Noise wall setback section

Vertical concrete safety barriers

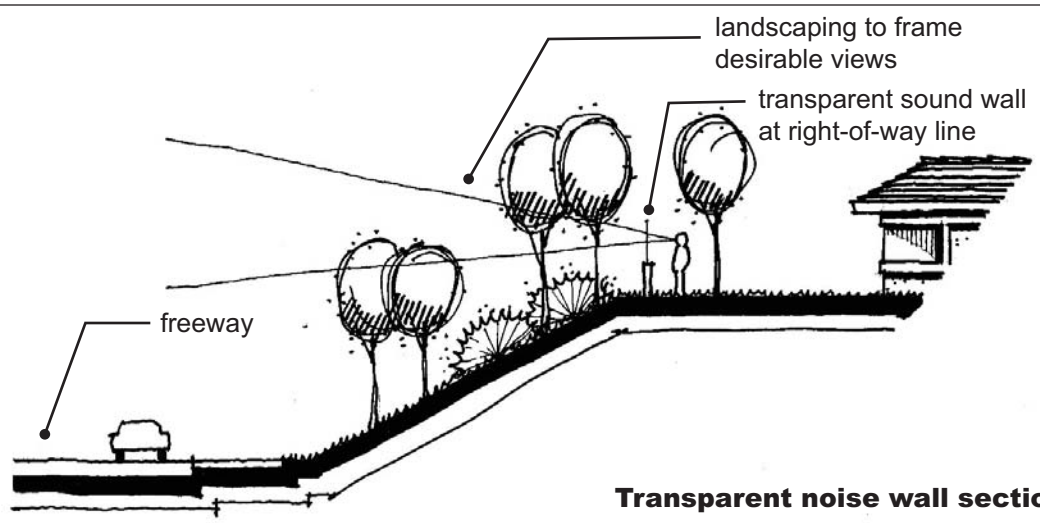
In areas where space for architectural detailing does not exist, vertical concrete safety barriers would be considered. Vertical barriers add 301mm (12”) of additional width in which architectural elements such as pilasters and wall caps can be included.



Vertical concrete safety barrier section

Transparent noise walls on private property

In situations where noise receptors are located above the elevation of the freeway, noise walls located at the top of slope on the right-of-way line or on private property would be used if the benefited property owner agrees to maintain wall surfaces. Locating walls at higher elevations nearer the receptors substantially reduces the height of walls to achieve “line of sight” noise reductions.



Transparent noise wall section

Translucent noise wall panels on Caltrans property

Translucent materials can be placed on top of noise walls to reduce their apparent height and create a greater sense of openness. Translucent materials should be placed above areas of potential vehicle impact, out of easy reach, and should consist of vandal-resistant materials.

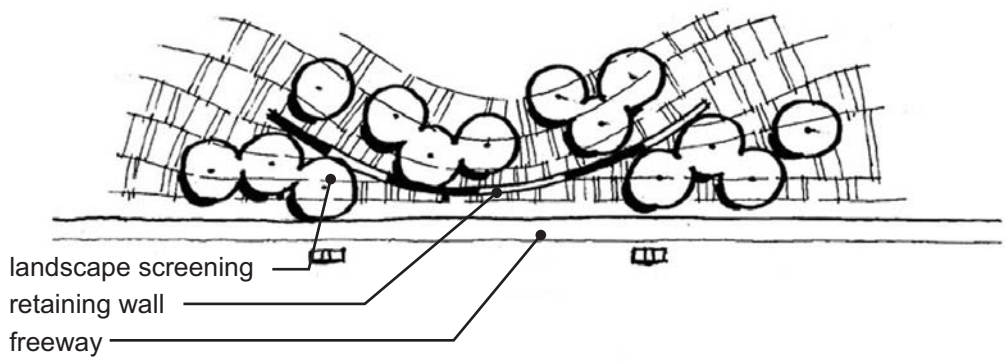
Architectural detailing

Noise walls would be designed to be visually compatible with the surrounding community. Architectural detailing such as pilasters, wall caps, interesting block patterns, and offset wall layouts would be used to add visual interest and reduce the apparent height of the walls. Poured-in-place integrally colored concrete construction techniques would be encouraged where visual consistency with retaining walls is desired. Enhanced surface materials such as mosaic tile and weathering steel would also be used where appropriate to meet community design goals.

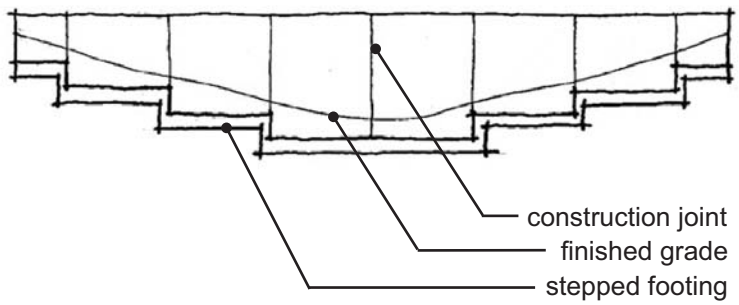
Retaining Walls

Terrain contoured retaining walls in cut sections

Retaining walls that follow the contours of the topography and maintain a constant elevation at the top of wall would be used where appropriate. Wall layouts and profiles should be composed of long radius curves, with no tangents or points of intersection. Wall faces should be battered at a 1:12 minimum horizontal/vertical ratio. Walls should be located at mid-slope. This type of wall is visually compatible with surrounding terrain and provides room at the base for a slope that contains landscape screening.



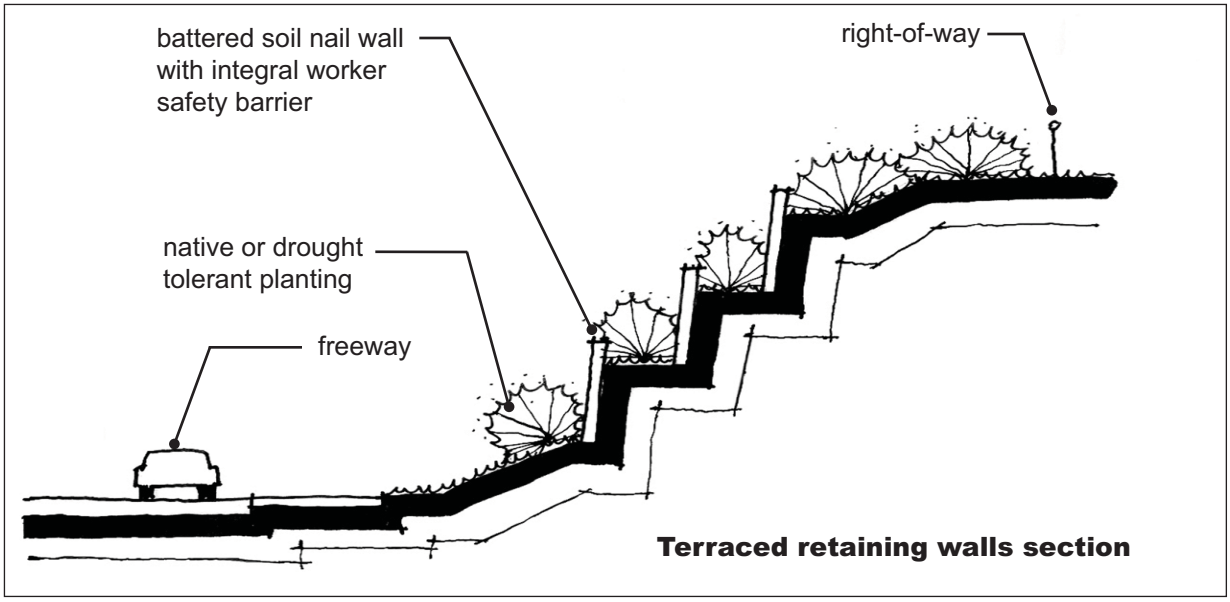
Terrain Contoured Wall in Cut Section **PLAN**



Terrain Contoured Wall in Cut Section **ELEVATION**

Terraced retaining walls

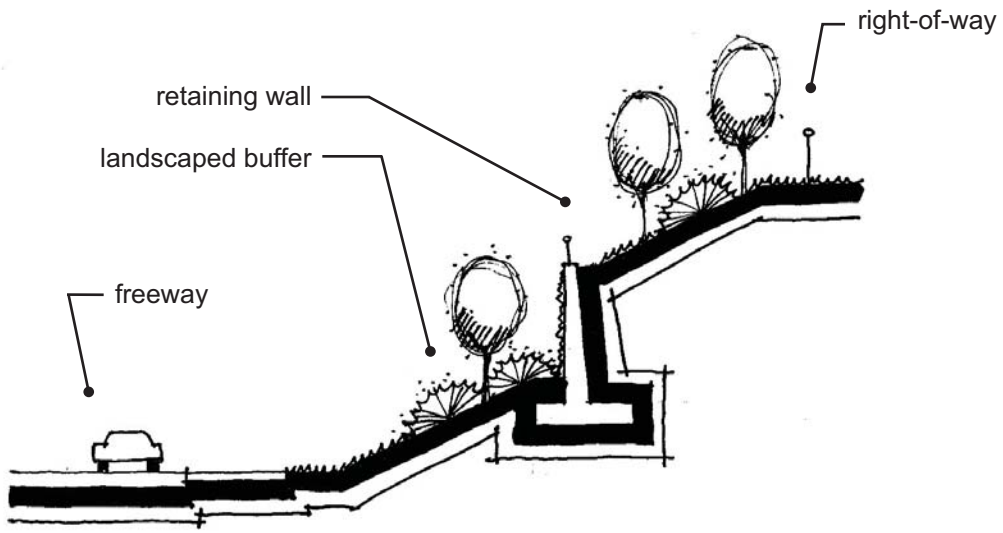
Where site conditions are favorable, retaining walls over 6m in height should be divided into separate structures sufficiently offset from one another to create a planting area between the two.



Terraced retaining walls section

Mid-Slope retaining walls in cut sections

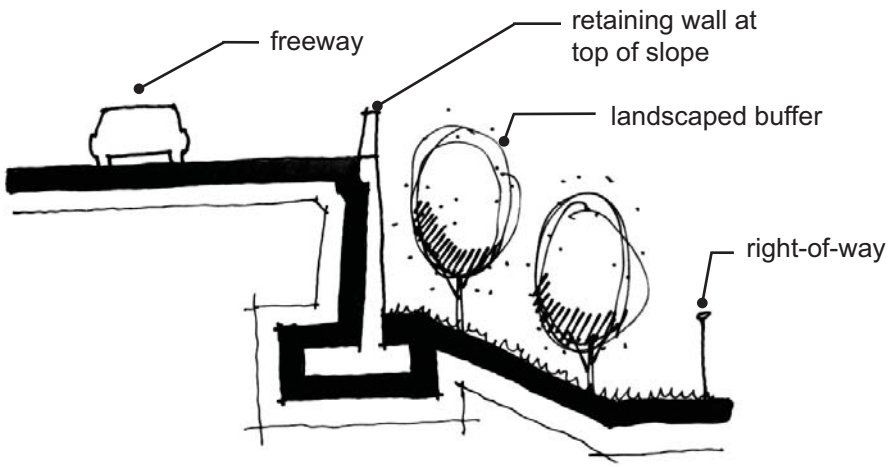
Retaining walls should be located at mid slope wherever possible in cut sections to provide a buffer area for landscape screening between the wall and the freeway.



Mid slope retaining wall section

Top-of-Slope retaining walls in fill sections

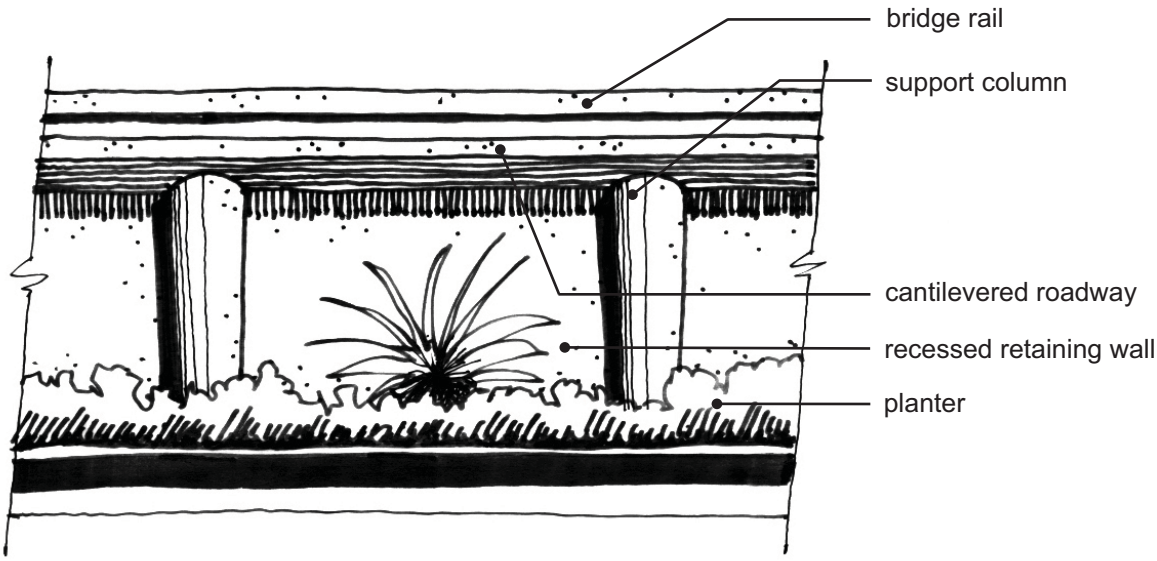
Retaining walls should be located at the top of slope wherever possible in fill sections to provide a buffer area for landscape screening between the wall and the community.



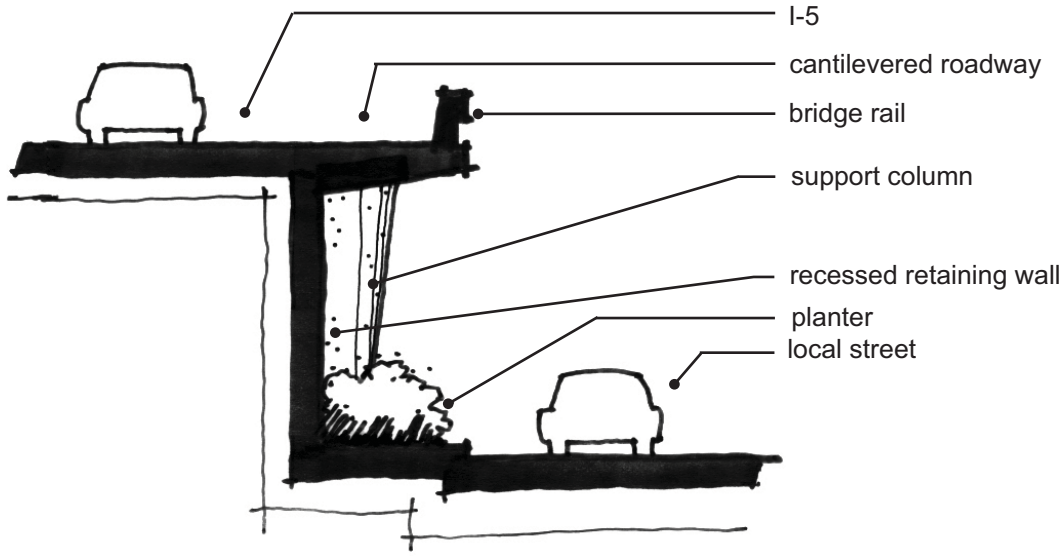
Top-of-slope retaining wall section

Viaduct retaining walls

In areas where insufficient space exists to include planting buffers between freeway retaining walls and adjacent community features such as frontage roads, the use of viaduct retaining walls would be considered. Viaduct retaining walls would cantilever the roadway to form a wall recess in which spatial articulation and planting can occur.



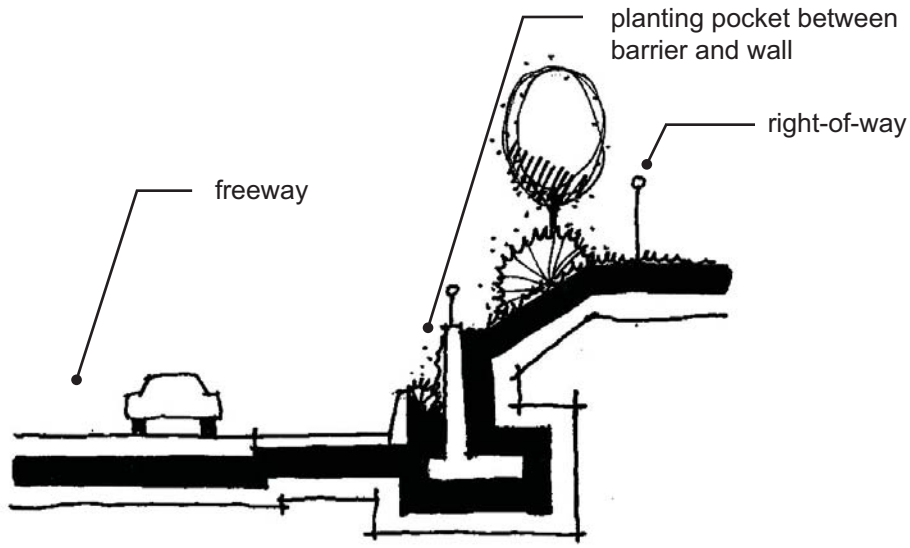
Viaduct retaining wall **Elevation**



Viaduct retaining wall **Section**

Retaining wall/barrier planting pockets

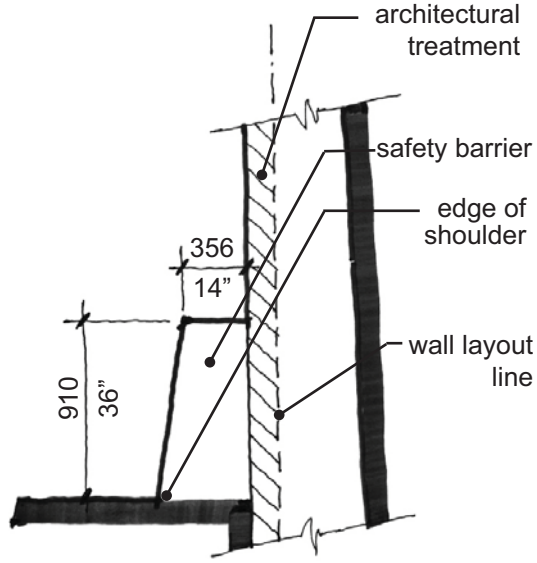
In areas where retaining walls must be placed close to the traveled way, space should be reserved between the wall and the safety barrier to include a 1.5m (5') wide planting pocket.



Retaining wall/Barrier planting pocket section

Retaining wall/barrier setbacks

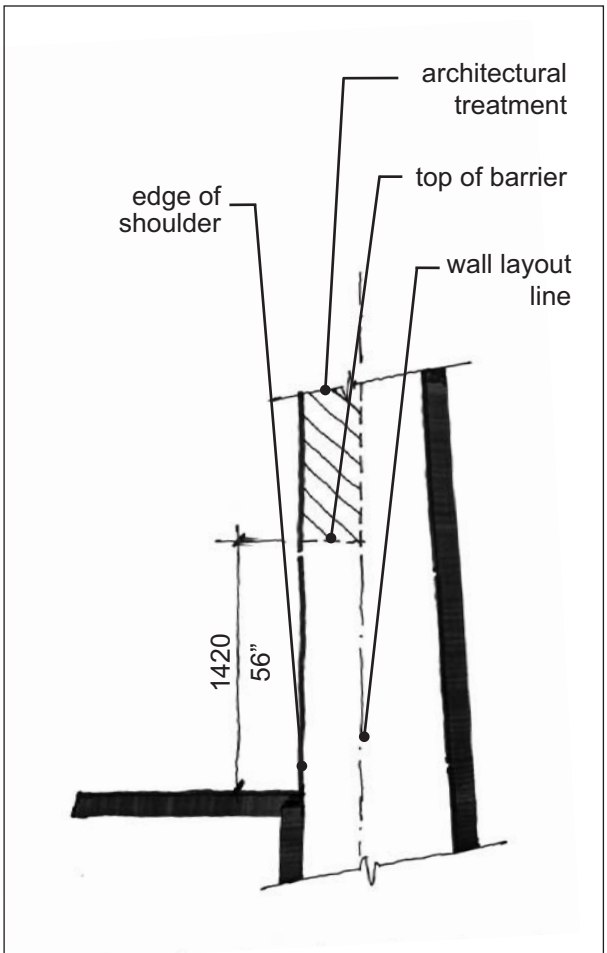
In areas too narrow to place a planting pocket, the retaining wall should be recessed behind the face of barrier at a sufficient distance to allow architectural features to be included on the face of the retaining wall.



Barrier setback section

Vertical concrete safety barriers

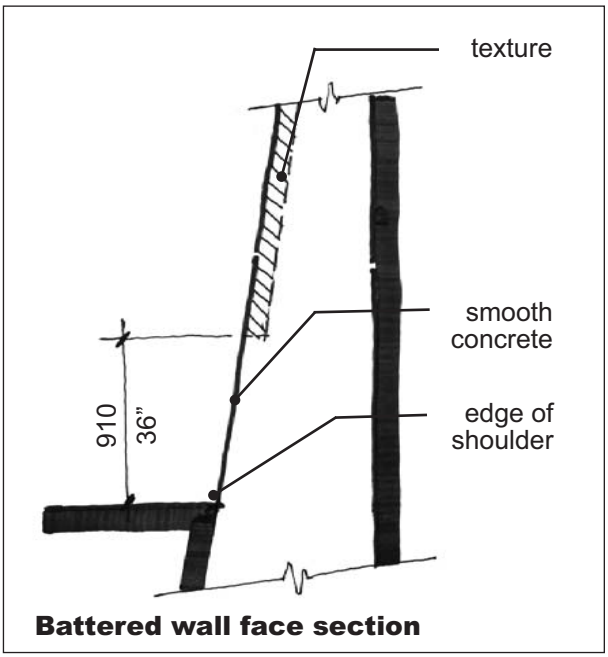
In areas where space for architectural detailing does not exist, vertical concrete safety barriers would be considered. Vertical barriers add 301mm (12”) of additional width in which architectural elements such as mechanically stabilized earth wall panel relief, pilasters, and wall caps can be included.



Vertical concrete safety barrier section

Battered wall faces

Wall faces should be battered at a 1:12 minimum horizontal/vertical ratio wherever possible to reduce the apparent scale of the wall and give the wall a more natural appearance. The batter also can serve as a barrier safety shape where the base of wall exhibits a smooth surface facing traffic.



Battered wall face section

Enhanced safety railings

Alternatives to standard cable rail barrier would be used to complement enhanced wall designs. Options could include integral solid concrete parapets or alternative metal materials. Design details would be contained in the corridor design guidelines.

Architectural surface treatment

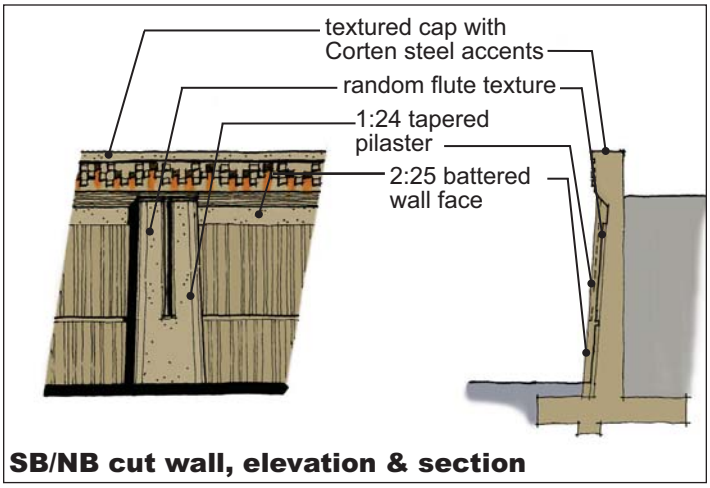
Architectural features, textures and integral concrete colors would be used to mitigate the appearance of retaining wall surfaces. Walls would incorporate architectural features such as pilasters and caps to provide shadow lines, provide relief from monolithic appearance, and reduce their apparent scale. Enhanced surface materials such as mosaic tile and weathering steel would also be used where appropriate to meet community design goals.

Mechanically stabilized earth walls

Great care should be taken when considering the use of mechanically stabilized earth (MSE) walls due to their design constraints. Placement of landscaped slopes, noise walls, barriers, drainage conveyances, and other roadway features can require special design. MSE walls would have custom designed panels that include integral color, enhanced surface texture, and a 102mm (4”) minimum pattern reveal on each panel.

Low Profile and See-Through Safety Barriers

Low profile (e.g. Caltrans Type 60S) or see-through (e.g. Caltrans Type 80) safety barriers would be used if at all possible in areas where standard height barriers would diminish views of scenic resources from the freeway.



Proposed architectural features for I-5/Lomas Santa Fe Interchange improvements suggest several visual mitigation components that could be used on this project.

An MSE wall with a 102mm (4”) pattern reveal.

Overcrossing, Undercrossing, Bridge and Direct Access Ramp (DAR) Structures

Bridge type selection and all other structure design would be consistent with these mitigation measures and design themes contained in the I-5 North Coast Corridor Design Guidelines. Some mitigation features may be new or non-standard and require approvals or design exceptions. Design feasibility studies would be performed during development of the Corridor Design Guidelines.

An example of a short seat abutment.

Freeway Overcrossings

Abutments would be short seat abutments placed at the top of slopes wherever possible. The visual mass of abutments would be minimized as much as possible. High cantilever abutments would be used in locations where space does not exist for short seat abutments at the top of a slope.

Secondary walls such as this reduce visual unity and should be avoided.

At each overcrossing, bridge abutments would be of the same type to produce a symmetrical appearance. Where overcrossing structures are replaced, high cantilever abutments would be used in lieu of secondary tie back walls. Temporary tie back walls would be terrain contoured walls, and receive architectural features consistent with permanent walls in the viewshed. Temporary tie back walls would be removed when overcrossing structures are reconstructed.

Retaining walls placed at the edge of shoulder should be avoided.

In locations where retaining walls must be incorporated into abutments, they would be designed as terrain contoured walls if possible, and be located away from the edge of shoulder to allow space for a planted buffer at their base.

Walls separated from the shoulder by planting areas are preferred.

Slope paving would be enhanced with integral concrete color, texture, and deeply textured facing materials such as score veneer block or natural rock.

Bridge signage would be designed to

visually integrate with bridge architecture. Concrete sign pedestals would be consistent in appearance with bridge design themes.

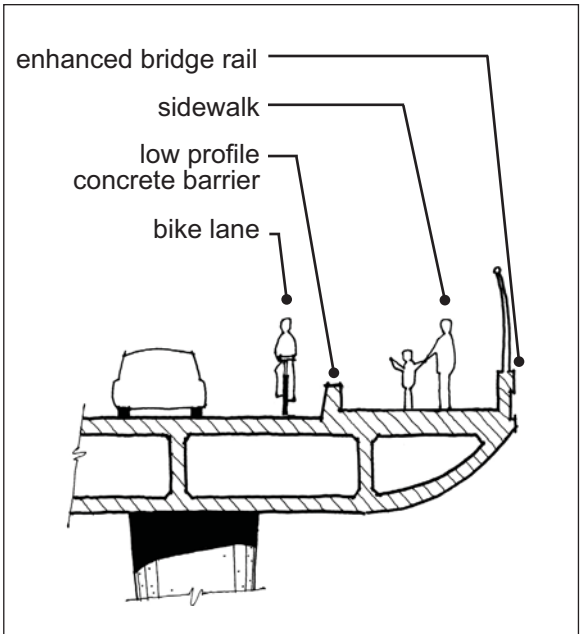
Sidewalks would be provided on both sides of each overcrossing. They would have a 1.8m (6') minimum width on a two lane structures with a curb to curb width of 9.8m (32') or less. On wider streets, both sidewalks would be a minimum of 3.0m (10') in width. Sidewalk widths would be selected based on SANDAG regional guidelines ("Planning and Designing for Pedestrians" June 2002) and local pedestrian design guidelines. All sidewalks would receive score patterns, surface texture, and in some cases, integral color.

Low profile barrier separations between pedestrian and vehicular traffic would be provided on overcrossings where Caltrans policy prohibits or restricts architectural features and pedestrian amenities on or near concrete bridge rails. Sidewalks in these locations would be 3.0m (10') in width minimum.

Pedestrian lighting, enhanced fencing and railings, and other urban amenities would be provided on each overcrossing and be consistent with local values and goals. Local agency streetscape design guidelines would be continued within Caltrans right-of-way at each overcrossing, and interchange. Container trees located on structures would also be provided in locations where the responsible local agency has requested them and agreed to maintain them in perpetuity.

Bicycle shoulders, lanes, or paths would be provided on both sides of each overcrossing. The type of facility provided would be based on regional and local planning goals. A minimum shoulder width of 1.2m (4') would be provided for Class 3 facilities.

A wider sidewalk would enable these pedestrians to walk side by side.



Sidewalk barrier separation section

An example of pedestrian amenities on the I-15/El Cajon Boulevard over-crossing.

Freeway Undercrossings

Bridge abutments would be of the same type on all four quadrants to give widened undercrossings a symmetrical appearance.

Bridge widening would be done using box girder construction wherever possible. Girders would be similar in appearance on both sides of the bridge to produce a symmetrical appearance.

In locations where street widening occurs, tie back walls would be terrain contoured walls, and receive architectural features consistent with those required for retaining walls and with community values and goals.

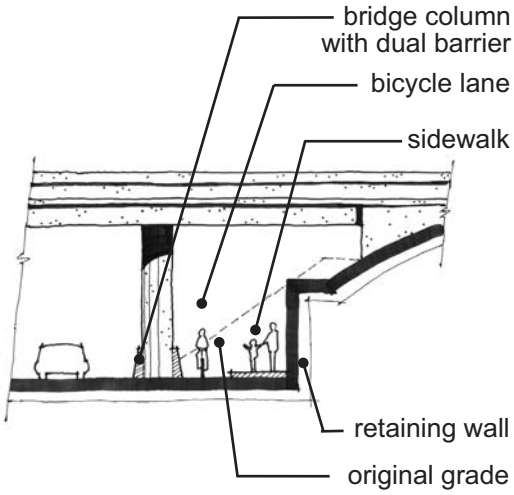
Pedestrian sidewalks 3.0m (10') in width (minimum) would be provided at undercrossings on both sides of the street wherever possible. In all cases, existing sidewalk configurations on local streets would be continued across Caltrans right-of-way as a minimum project feature.

Bicycle shoulders, lanes, or paths would be provided at each undercrossing. The type of facility provided would be based on regional and local planning goals. A minimum shoulder width of 1.2m (4') would be provided for Class 3 facilities.

Enhanced pedestrian lighting including bridge soffit lighting would be provided at each undercrossing.

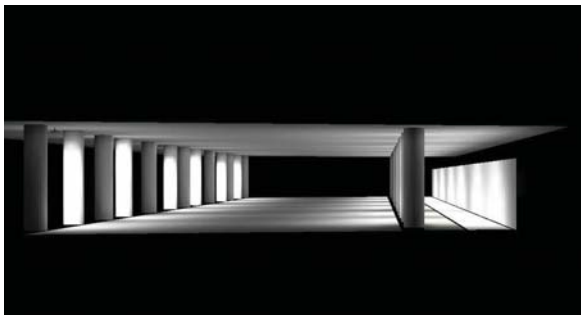
Slope paving at undercrossings would be enhanced with deeply textured facing materials such as scored veneer block or natural rock to add visual interest and deter graffiti.

Encinitas Blvd. undercrosing. Pedestrian and bicycle access would be improved.



Undercrossings- pedestrian sidewalks and bicycle lanes section

Pedestrian and bicycle facilities can be created by retaining existing undercrossing slopes.



A lighting concept for Lomas Santa Fe undercrossing integrates function and aesthetics.

Bridges

Mitigation measures listed above for overcrossing and undercrossing structure symmetry, abutment design, tie back walls, slope paving, sidewalks, bicycle routes, and streetscape features would also apply to freeway bridges as appropriate.

See-through bridge rails such as the Caltrans Type 80 rail would be used on freeway bridges with views to ocean, rivers, lagoons or other scenic resources.

Type 80 bridge rail.

Pedestrian Overcrossings

Pedestrian overcrossings would be a minimum of 4.6m (15') in width. Pedestrian lighting, enhanced fencing, railings, architectural features, and other urban amenities would be provided on each pedestrian crossing and be consistent with local values and goals. Existing streetscape elements and design themes would be continued within Caltrans right-of-way.

Seating, lighting and community identity elements enhance this pedestrian overcrossing entry.

DAR Structures

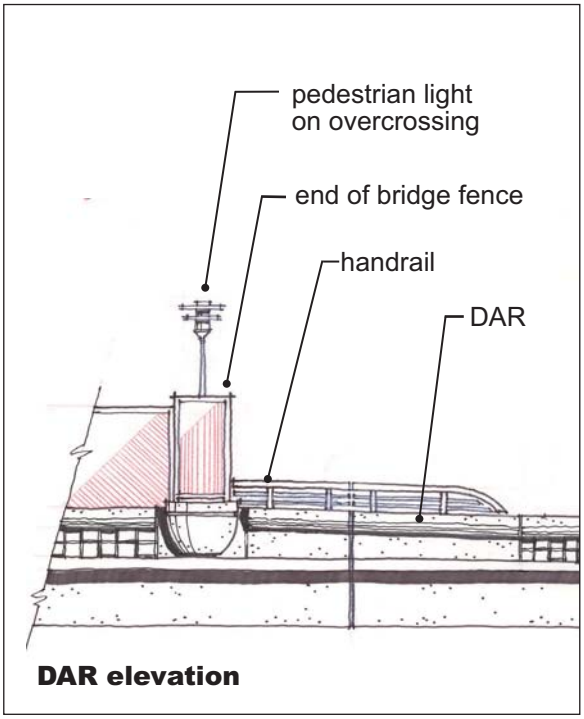
DAR retaining walls would have a 4.6m (15') maximum height allowing approximately 3.0m (10') of minimum vertical clearance under the connecting ramp structure.

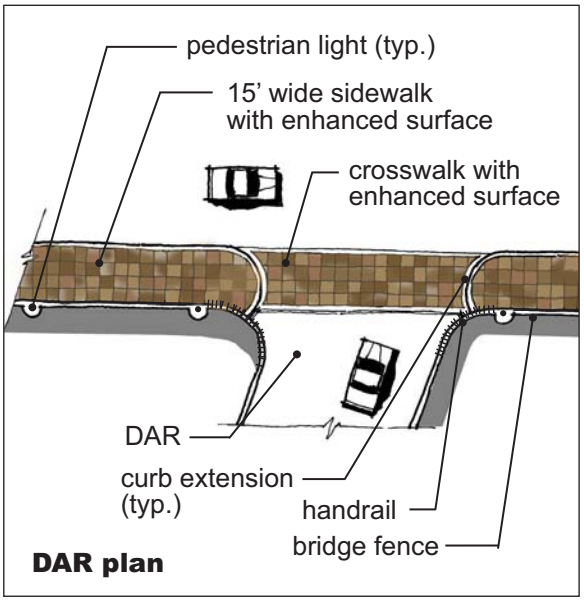
Pedestrian and bicycle traffic on existing overcrossings to be converted to DAR overcrossings would be routed to a separate pedestrian overcrossing structure in the immediate vicinity if possible.

On structures where pedestrians are present, sidewalks would be 4.6m (15') in width on each side. Bridge barriers, fences, and sidewalks would be designed to provide standard stopping sight distance at DAR termini to enable pedestrians to be visible to drivers. Barrier separations between pedestrian and vehicular traffic would be provided if Caltrans policy requires bridge barriers to adhere to freeway crash standards.

Bicycle shoulders, lanes, or paths would be provided on both sides of each DAR overcrossing open to non-vehicular traffic. The type of facility provided would be based on regional and local planning goals. A minimum shoulder width of 1.2m (4') would be provided for Class 3 facilities.

Pedestrian lighting, enhanced fencing and railings, and other urban amenities would be provided on each DAR local street overcrossing and be consistent with local values and goals. Existing streetscape elements and design themes would be continued within Caltrans right-of-way at each such DAR overcrossing, and local streetscape guidelines would be followed. Container trees located on structures would also be provided in locations where the responsible local agency has requested them and agreed to maintain them in perpetuity.





Freeway Interchanges

Interchanges are locations in which the large scale, high speed, high volume, restricted access realm of the automobile intersect the human scale, multi-modal, multi-use world of the community and street. The goal of the following mitigation measures is to preserve community character and continuity across the proposed freeway facility by creating a distinct visual and functional realm for pedestrians and bicyclists, providing landscape features that contribute to community goals, and designing freeway features and appurtenances that harmonize with the character of the community and street.

Interchange Configuration
Continuity of street and pedestrian facilities should be maximized wherever possible by converting existing non-stop freeway ramp entries and exits to ramp termini placed perpendicular to the street. The use of roundabouts should also be considered to create a more balanced relationship between interchange and community by decreasing required roadway width.

A sidewalk along an I-15 freeway off ramp becomes a pedestrian realm with the inclusion of human scale street amenities.

Pedestrian Facilities
Establishment of a continuous pedestrian realm on both sides of local streets as they pass through the interchange would be accomplished by utilizing design features such as street trees, pedestrian lighting, landscaped parkways located between sidewalk and curb, enhanced sidewalk paving that continues across freeway ramps, and islands of refuge in street and ramp medians. Pedestrian and transit facilities would conform to SANDAG Pedestrian Design Guidelines and any applicable local streetscape design standards and guidelines. Urban design features such as benches, bollards, directional signage, and trash receptacles would be also included

Pedestrians negotiate their way across a space designed for automobiles.

as appropriate. Specific guidelines and/or specific interchange streetscape plans would be developed as part of the I-5 North Coast Corridor Design Guidelines.

Bicycle Facilities
Bicycle facilities would be preserved or upgraded to conform to the San Diego Regional Bike Plan, applicable local standards, and General Plan circulation element goals.

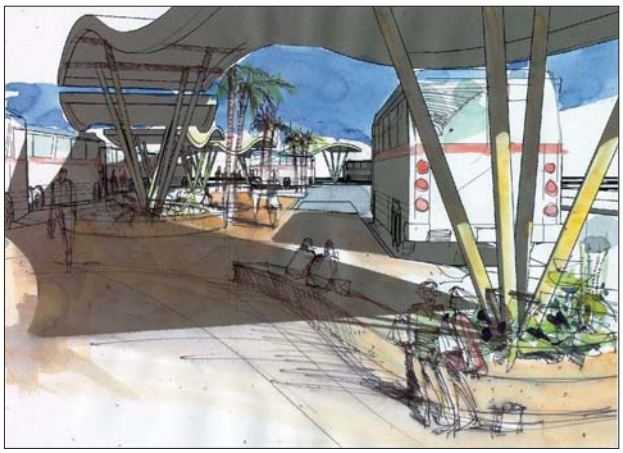
Landscaping
Interchange landscaping would reflect the visual character and goals of its locality. Enhanced interchange landscaping would be considered in cases where the responsible local agency would provide maintenance in perpetuity. Entry features would be included as transitional visual elements into local communities where appropriate. Traditional decorative entry signage with text would not be used. Specific interchange landscape themes would be developed as part of the I-5 North Coast Corridor Design Guidelines.

Storm Water Treatment Facilities
Detention basins located at freeway interchanges or in areas of high visibility would incorporate the following design features. Basins would be located at least 3.0m (10') from free recovery areas wherever possible to allow landscape screening to be installed. Basins would appear to be natural landscape features such as dry streambeds or riparian pools. They shall be shaped in an informal, curvilinear manner. Basin slope grading would incorporate slope rounding, variable gradients, and be similar to the surrounding topography to deemphasize a defined outer edge. Maintenance access drives would be located in unobtrusive areas away from local streets and would consist of inert materials or herbaceous groundcover that is visually compatible with the surrounding landscape. Chain link perimeter fencing would not be used if at all possible. All visible concrete structures and surfaces would be of special design and adhere to the corridor design guidelines. Rock slope protection would consist of aesthetically pleasing whole material of various sizes. Standpipes and other vertical appurtenances would be placed in unobtrusive locations and be painted an unobtrusive color. Bio-swales would be located in non-obtrusive areas, be designed to appear as natural features, and incorporate applicable mitigation measures listed above for detention basins.

Street Appurtenances
The use of Caltrans standard freeway appurtenances on local streets would be avoided or minimized wherever possible by the use of functional alternatives that are more consistent with community design standards. Crash cushions, metal beam guardrail, end anchor assemblies, concrete barriers, sign standards, light standards, signal standards, and chain link fencing are examples of such features that would be addressed in the Corridor Design Guidelines. The use of access control fencing at interchanges would be minimized and it shall be located in unobtrusive locations when its use is necessary. It shall be of non-standard design and composed of enhanced materials where appropriate. Electrical control cabinets and other utility boxes would be located in unobtrusive locations away from sidewalks wherever possible. Raised medians shall be used wherever possible to allow for pedestrian islands of refuge, create a visual break in the ground plane, and provide space for street tree planting.

Manchester Avenue Transit Center

Site amenities for transit users would be provided such as covered bus shelters, pedestrian lighting, benches, litter receptacles, tree grates, bollards, and bicycle racks. Landscaping and enhanced pedestrian paving would be an integral part of the station features. A sidewalk 3.0m (10') in width would be provided along the west side of the transit center access road from the bus platform to Manchester Avenue. It would be located 1.8m (6') from the back of curb to create a landscaped parkway.



Concept sketch for a BRT station proposed for the I-15 Corridor.

Freeway Landscape

Corridor landscaping
The I-5 corridor design guidelines would contain a landscape concept plan for the project. In general, freeway landscaping would be consistent with the character of adjacent community landscape. In communities that are characterized by ornamental landscaping, freeway landscaping that includes drought tolerant ornamental trees, shrubs, and groundcover would be installed. In less developed areas of the corridor, landscaping with drought tolerant ornamental and native trees and shrubs would be planted. Areas adjacent to native habitat would receive native landscaping. Native landscaping would be designed in consultation with the District Biologist. All landscaped areas would receive permanent irrigation.

Freeway planters
Since the project would result in the loss of a majority of existing landscaped roadside areas, exstraordinary steps would be taken to create new areas for mitigation replacement planting within the freeway facility at the edge of shoulder, between concrete median and spearator barriers, or between barriers and walls whereever the available withdth allows. Minimum widths for planting are 0.6m (2') between barrier and wall, and 1.8m (6') between median or separator barriers. Safety barriers at the edge of shoulder would facilitate tree and shrub planting in roadside areas that are too narrow to allow standard free recovery area planting setbacks to be used.

Median oleander preservation and replacement planting
Existing median oleanders would be preserved wherever possible. Since freeway widening would disturb the roots of existing plants, the following measures would be implemented. A new automatic irrigation system would be installed in the median as first order of work and the oleanders would be irrigated and fertilized on a regular basis before, during, and after project construction. The oleanders would be watered, fertilized, and pruned under the direction of a certified arborist prior to the commencement of grading. The oleanders would remain in place undisturbed during construction. Existing non-vigorous oleanders would be replaced with new oleanders planted from #15 containers

at the direction of the Resident Engineer. Oleanders that do not survive during construction or plant establishment would be replaced using oleanders planted from #15 containers. A plant establishment period of one year would be provided. Following plant establishment, a mitigation monitoring period of three years would be implemented to ensure plant survival.

Local Frontage Roads

In locations where freeway widening brings traffic into close proximity to parallel local streets such as Ida Avenue in Solana Beach, Piraeus Street in Encinitas, Avenida Encinas in Carlsbad, and Brooks Street in Oceanside, landscape buffers would be created between the freeway and street wherever possible. Buffers would include elements such as street trees and shrubs, sidewalks, and solid screen walls for access control. Inclusion of some buffers may require local street widths to be adjusted. Installation of this mitigation measure is contingent on local agency approval and commitment to maintain the streetscape buffer in perpetuity.

Excess Real Estate Parcels

Real estate parcels in whole or in portion that are purchased for freeway widening but are not required to be used as permanent State right-of-way would be considered for development as community pocket parks or public open space and relinquishment to a responsible governmental agency. This would be done at the request of the local agency.

Overhead Utility Relocation

Existing overhead utilities running parallel to the freeway and requiring relocation due to freeway widening would be considered for relocation underground if doing so would improve visual quality.

Manufactured slopes

Slopes would be graded 1:2 or flatter to support planting and irrigation. Steeper slopes may be possible if they are serrated and contain benches wide enough to accept plants from 15 gallon containers. Grading would utilize techniques such as slope rounding, slope sculpting, and variable gradients to approximate the appearance of natural topography.

Lighting, Signage, and Miscellaneous Freeway Appurtenances

Signage, lighting and miscellaneous freeway feature mitigation designs would be detailed in the Corridor Design Guidelines.

Lighting and signage pedestals on structures would occur at pilasters or be incorporated in other architectural features.

Freeway lighting and signage would conform to the corridor design guidelines.

Concrete lighting and signage pedestals would be designed in such a way that vertical barrier transitions are not required.

Electrical and signal equipment at ramp termini would be placed in visually unobtrusive locations.

Median barriers would receive integral concrete color and the application of a heavy sandblast texture to barrier surfaces visible from the freeway. Heavy sandblast texture would create an irregular surface relief to a depth of 9.5mm (3/8”).

Gore paving would incorporate enhanced materials consistent with corridor design themes.

Signage with movable elements or self illuminated features such as changeable message signs would be excluded from viewsheds containing scenic resources if at all possible. The DLA would assist in the placement of all such signage.

Access control fencing would be placed in visually unobtrusive locations of interchanges and bridges. It would be of special design and consist of enhanced materials where appropriate and where the responsible local agency agrees to maintain it in perpetuity.

Retaining walls and sound walls near right-of-way boundaries would be designed in such a way that access control fencing would not be needed. The "dead" spaces that occur between walls and fences should be avoided if at all possible.

Drainage and Water Quality Facilities

Concrete interceptor ditches would not be placed at the toe of slopes adjacent to residential property or pedestrian use areas. Alternatives such as subterranean drainage placed below finish grade or a planted geo-reinforced drainage surface would be used.

Linear ditches or bio-swales would be designed for dual use as maintenance vehicle access facilities.

Concrete drainage devices located in non-landscaped areas would be colored to match the surrounding soil.

Soft surface alternatives to concrete ditches and rock slope protection would be utilized wherever possible.

Detention basins located in areas visible to the public would incorporate the same mitigation features required for basins located at interchanges.

Bio-swales and linear drainage ditches would be designed to appear as natural features and incorporate applicable mitigation measures listed above for detention basins. They should be designed as dual use facilities such as recreational trails or maintenance access roads wherever possible.

The use of pervious concrete for storm water pollution prevention should be considered to avoid adverse visual impacts. Project features such as interceptor ditches, inlet aprons, gutters, maintenance access roads, maintenance vehicle pullouts, and parking lots could consist of pervious concrete and perhaps serve a dual purpose.

REFERENCES

California Department of Transportation (Caltrans), Technical Noise Supplement-A Technical Supplement to the Traffic Noise Analysis Protocol. October 1998.

Chandler, Raymond. *The Long Goodbye*. Houghton Mifflin, Boston, 1953.

City of Carlsbad, City of Carlsbad General Plan, 1994.

City of Del Mar, City of Del Mar General Plan. 1976.

City of Del Mar, Vision 2020 – Results of Community Focus Groups. 2002.

City of Encinitas, City of Encinitas General Plan. 1989.

City of Oceanside, City of Oceanside General Plan. 2002.

City of San Diego, Torrey Pines Community Plan. 1995.

City of San Diego, University Community Plan. 1987.

City of Solana Beach, City of Solana Beach General Plan. 2001.

City of Solana Beach, Eden Gardens Master Streetscape Plan. 1995.

Costonis, John J. *Icons and Aliens: Law, Aesthetics, and Environmental Change.* University of Illinois, Urbana and Chicago, 1989.

Estrada Land Planning, I-5 North Coast Draft Community Enhancement Plan. 2007.

Kaplan, R., S. Kaplan, and R. Ryan. *With People in Mind: Design and Management of Everyday Nature.* Island Press, Washington D.C., 1998.

U.S.D.O.T., Federal Highway Administration, Office of Environment and Planning, Noise and Air Quality Branch, Highway Traffic Noise Analysis and Abatement Policy and Guidance. U. S. Department of Transportation, Washington, D. C. June 1995.

U.S.D.O.T., Federal Highway Administration, Office of Environmental Policy, Visual Impact Assessment for Highway Projects. U. S. Department of Transportation Washington D. C. March 1981.

Wilson, Brian, and Chuck Berry. *Surfin' USA*. Jewel Music, 1963.

Wolf, K. L. 2007. Transportation, Large Infrastructure, and Context in Urban Areas: A Review of Human-Scale Perception and Response, Paper 07-1842. Proceedings of the 86th Annual Meeting of the Transportation Research Board (January 21-25, 2007). Washington D.C.: Transportation Research Board of the National Academies of Science.

Wolfe, Tom. *The Pump House Gang*. Bantam Books, New York, 1968.

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APPENDIX

California Department of Transportation

DIRECTOR'S POLICY

Effective Date: 11-29-01

TITLE Context Sensitive Solutions

POLICY

The Department uses "Context Sensitive Solutions" as an approach to plan, design, construct, maintain, and operate its transportation system. These solutions use innovative and inclusive approaches that integrate and balance community, aesthetic, historic, and environmental values with transportation safety, maintenance, and performance goals. Context sensitive solutions are reached through a collaborative, interdisciplinary approach involving all stakeholders.

The context of all projects and activities is a key factor in reaching decisions. It is considered for all State transportation and support facilities when defining, developing, and evaluating options. When considering the context, issues such as funding feasibility, maintenance feasibility, traffic demand, impact on alternate routes, impact on safety, and relevant laws, rules, and regulations must be addressed.

INTENDED RESULTS

In towns and cities across California, the State highway may be the only through street or may function as a local street. These communities desire that their main street be an economic, social, and cultural asset as well as provide for the safe and efficient movement of people and goods. In urban areas, communities want transportation projects to provide opportunities for enhanced non-motorized travel and visual quality. In natural areas, projects can fit aesthetically into the surroundings by including contour grading, aesthetic bridge railings, and special architectural and structural elements. Addressing these needs will assure that transportation solutions meet more than transportation objectives.

The Department can be proud of the many contributions it has made to improve highways that are main streets and the aesthetics of its highways and structures; however, there is a strongly expressed desire across California for this concept to be the norm.

Director's Policy
Page 2

Context sensitive solutions meet transportation goals in harmony with community goals and natural environments. They require careful, imaginative, and early planning, and continuous community involvement.

The Department's *Highway Design Manual*, Federal Highway Administration (FHWA) regulations, FHWA's *Flexibility in Highway Design* publication, and the American Association of State Highway Transportation Officials' *A Policy on Geometric Design of Highways and Streets* all share a philosophy that explicitly allows flexibility in applying design standards and approving exceptions to design standards where validated by applying sound engineering judgment. This design philosophy seeks transportation solutions that improve mobility and safety while complementing and enhancing community values and objectives.

RESPONSIBILITIES

Director:

- Creates an environment in which innovative actions, such as context sensitive solutions, can flourish.
- Recognizes and highlights individuals, teams, and projects that advance the goals of this policy.
- Encourages staff to conduct and participate in meetings and conferences to expand the knowledge of context sensitive solutions internally and externally.

Chief Counsel: Evaluates and provides opinions on legal issues associated with context sensitive solutions.

Deputy Director, Maintenance and Operations; Chiefs, Divisions of Traffic Operations and Maintenance:

- Support context sensitive solutions in the maintenance and operation of transportation facilities.
- Revise manuals and procedure documents to facilitate the application of context sensitive solutions.
- Initiate and coordinate research to enable context sensitive solutions.

Director's Policy
Page 3

Chief, Division of New Technology and Research:

- Conducts research and develops and improves techniques and materials to enable context sensitive solutions.
- Revises manuals and procedure documents to facilitate the application of context sensitive solutions.

Chief Engineer (Deputy Director, Project Delivery):

- Supports context sensitive solutions in the design and construction of transportation facilities.
- Encourages innovation and flexibility in design.
- Ensures projects are well coordinated to support the application of context sensitive solutions through the life of projects.

Chief, Division of Engineering Services:

- Conducts research and develops and improves techniques and materials to enable context sensitive solutions.
- Trains staff in the application of context sensitive solutions.
- Revises manuals and procedure documents to facilitate the application of context sensitive solutions.

Chief, Division of Project Management: Ensures resources are distributed to enable implementation of context sensitive approaches.

Chiefs, Divisions of Right of Way and Construction:

- Train staff in the application of context sensitive solutions.
- Revise manuals and procedure documents to facilitate the application of context sensitive solutions.

Chief, Division of Design:

- Works in cooperation with district and other functional units to develop guidance on design flexibility.
- Identifies good examples of the application of context sensitive solutions to share with departmental and local agency staff.
- Initiates and coordinates research to enable context sensitive solutions.
- Trains staff in the application of context sensitive solutions.

Director's Policy
Page 4

- Revises manuals and procedure documents to facilitate the application of context sensitive solutions.

Chief, Division of Environmental Analysis:

- Facilitates coordination with resource agencies to assure facilities and activities are in harmony with the surrounding environment.
- Ensures communities have the opportunity to be actively involved in the environmental stage of the project development process.
- Ensures context sensitive commitments are sustained, as warranted, as a project moves through the environmental approval process.
- Trains staff in the application of context sensitive solutions.
- Revises manuals and procedure documents to facilitate the application of context sensitive solutions.

Chief Financial Officer (Deputy Director, Finance); Chief, Division of Transportation Programming:

- Support the inclusion of context sensitive solutions when programming transportation projects.
- Communicate the importance of context sensitive solutions to the California Transportation Commission.
- Facilitate district development of funding partnerships for context sensitive solutions.

Deputy Director, Administration: Supports context sensitive solutions in the planning, design, construction, maintenance, and operation of offices, maintenance stations, and other departmental support facilities.

Deputy Director, Planning and Modal Programs: Supports context sensitive solutions in the planning of transportation programs and facilities.

Chief, Division of Local Assistance:

- Facilitates training of local agencies in the principles of context sensitive solutions.
- Trains staff in the application of context sensitive solutions.
- Revises manuals and procedure documents to facilitate the application of context sensitive solutions.

Director's Policy
Page 5

Chief, Division of Transportation Planning:

- Develops and maintains community planning guidance.
- Trains staff in the application of context sensitive solutions.
- Revises manuals and procedure documents to facilitate the application of context sensitive solutions.
- Works with regional transportation planning agencies, metropolitan transportation organizations, counties, cities, and the private sector to support and incorporate context sensitive solutions in planning, programming, and developing transportation facilities and services.

District Directors:

- Provide leadership in the application of context sensitive solutions in all planning, programming, project development, construction, maintenance, and operational activities of the district.
- Proactively ensure early and continuous involvement of stakeholders.
- Are responsive to requests by local communities, resource and other agencies, and the general public for context sensitive solutions.
- Assure that context sensitivity is applied to local and other projects within the State right-of-way.
- Train staff in the application of context sensitive solutions.

APPLICABILITY

All employees and others involved in the planning, development, construction, maintenance, and operation of State transportation and support facilities.

Originally Signed by ***11-29-01***

JEFF MORALES
Director

Date Signed

California Department of Transportation

DEPUTY DIRECTIVE

Number:	DD-31
Refer to Director's Policy:	04-Environment
Effective Date:	12-15-94
Supersedes:	New

Title: Protection of Scenic Corridors

POLICY

Caltrans ensures the protection of scenic corridors, in planning and designing transportation facilities, with consideration for safety, economy, and function, to the maximum extent feasible. Caltrans utilizes advanced planning strategies and local partnerships to encourage land use decisions that are compatible with scenic corridor protection. Caltrans, in cooperation with affected communities, identifies impacts to scenic corridors as an integral part of its project planning and project development process, taking into account local perspectives, and is sensitive to the obstruction or degradation of any scenic view open to the public.

Caltrans examines and implements innovative and alternative methods and the latest technology in planning and designing transportation facilities, to avoid, minimize or mitigate visual impacts of transportation projects to scenic corridors, particularly facilities with the highest potential for scenic view obstruction or degradation (e.g., noise barriers, structures, signing or utilities).

Caltrans installs noise barriers along scenic corridors, here installation of such barriers is the most reasonable and feasible means to attenuate noise levels according to Caltrans' noise standards, and the barriers are demonstrably consistent with land use policies of the local governing body. Where local land use policy allows residential development within scenic corridors which requires noise mitigation, construction of noise barriers within the State right of way may be allowed under permit if no other alternatives are reasonable and feasible.

BACKGROUND/ DEFINITION

California's scenic areas contribute greatly to the public's quality of life and the State's economic vitality. In 1963, the State Legislature established the California Scenic Highway Program to identify, protect and enhance the State's scenic corridors as an element of the highway system. This Directive communicates Caltrans' ongoing commitment to utilize proactive planning and innovative design which balances the goal to protect scenic corridors with the needs of the local affected residents, their governing body and the highway user when providing new or improved transportation facilities.

In general, scenic corridors consist of land that is visible from, adjacent to, and outside the highway right of way, and are predominantly comprised of visually unique natural, cultural and historical features, or any combination thereof, and include, but are not limited to, designated State scenic highways and highways eligible for designation as listed in the Streets and Highways Code, Section 263.

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RESPONSIBILITIES

Deputy Directors ensure that Caltrans takes a leadership role in promoting the protection of the State's scenic corridors and that planning and design practices are consistent with this Directive.

The Planning Program Manager:

- Develops transportation planning program guidelines (system planning, regional planning, intergovernmental review) to ensure that Caltrans' planning activities enhance the linkage between transportation, land use and scenic corridor protection in decision-making.
- Coordinates Caltrans' involvement in the development of the State's General Plan Guidelines for noise, open space, land use and circulation elements with the Governor's Office of Planning and Research.

The Environmental Program Manager provides direction for determining significance of visual impacts related to CEQA requirements and for evaluating project alternatives that avoid, minimize or mitigate those impacts.

The Traffic Operations Program Manager develops guidelines for ensuring the encroachment permit process includes consideration of visual impacts to scenic corridors as provided in this Directive and the project planning and project development process.

The State and Local Project Development Program Manager develops guidelines and standards for early identification of visual impacts to scenic corridors as part of the project development process, including special consideration for highway facilities which have potential to obstruct or degrade scenic views (e.g., noise barriers, structures, signing or utilities).

The Chief, Office of Landscape Architecture, as the Department's Scenic Highway Program Manager, provides direction to the Districts on visual impact analysis along scenic corridors.

The Chief, Office of Project Planning and Design:

- Actively seeks to identify and evaluate alternative noise reduction technology to avoid, minimize or mitigate visual impacts of noise barriers along scenic corridors, and advises the Districts of the most current design standards.
- Approves exceptions from Mandatory Design Standards for noise barrier placement and location on highways in scenic corridors.

District Directors:

- Coordinate and communicate with local public agencies and utility companies the Department's long-range transportation goals that,

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when appropriate, include considerations for scenic corridor protection.

- Utilize transportation planning program guidelines (system planning, regional planning, intergovernmental review) to ensure that Caltrans' planning activities enhance the linkage between transportation, land use and scenic corridor protection in decision-making.
- Utilize the Intergovernmental Review Process to alert lead agencies of potential impacts to scenic corridors when reviewing proposed developments.
- Ensure that designated State scenic highways and highways eligible for designation and other scenic corridors are identified in all District route-specific planning documents.
- Ensure transportation and related facilities on State right of way, regardless of funding source, are planned and designed with full consideration and early involvement by local affected residents and their governing body to determine potential visual impacts as provided by the Environmental Handbook and Project Development Procedures Manual.
- Obtain demonstrable concurrence of the appropriate local affected residents and their governing body in the authorization or installation of noise barriers along scenic corridors.
- Identify alternative designs or mitigation measures that address potential or perceived visual impacts on scenic corridors.
- Ensure District employees involved in planning and design of transportation facilities understand the goals and objectives of the scenic highway program.
- With cooperation of local public agencies, verify that corridor protection plans for scenic highways are enforced.

APPLICABILITY

All Caltrans employees involved in planning and design of transportation facilities.

R. P. WEAVER
Deputy Director for Project Development

Distribution: B

2. Public Perception

Overall, public reaction to highway noise barriers appears to be positive. There is, however, a wide diversity of specific reactions to barriers. Residents adjacent to barriers have stated that conversations in households are easier, sleeping conditions are better, a more relaxing environment is created, windows are opened more often, and yards are used more in the summer. Perceived non-noise benefits include increased privacy, cleaner air, improved view and sense of ruralness, and healthier lawns and shrubs. Negative reactions have included a restriction of view, a feeling of confinement, a loss of air circulation, a loss of sunlight and lighting, and poor maintenance of the barrier. Motorists have sometimes complained of a loss of view or scenic vistas and a feeling of being "walled in" when traveling adjacent to barriers. Most residents near a barrier seem to feel that barriers effectively reduce traffic noise and that the benefits of barriers outweigh the disadvantages of the barriers.

3. Design Considerations

A successful design approach for noise barriers should be multidisciplinary and should include architects/planners, landscape architects, roadway engineers, acoustical engineers, and structural engineers. Noise reduction goals influence acoustical considerations and in conjunction with non-acoustical considerations, such as maintenance, safety, aesthetics, physical construction, cost, and community participation, determine various barrier design options.

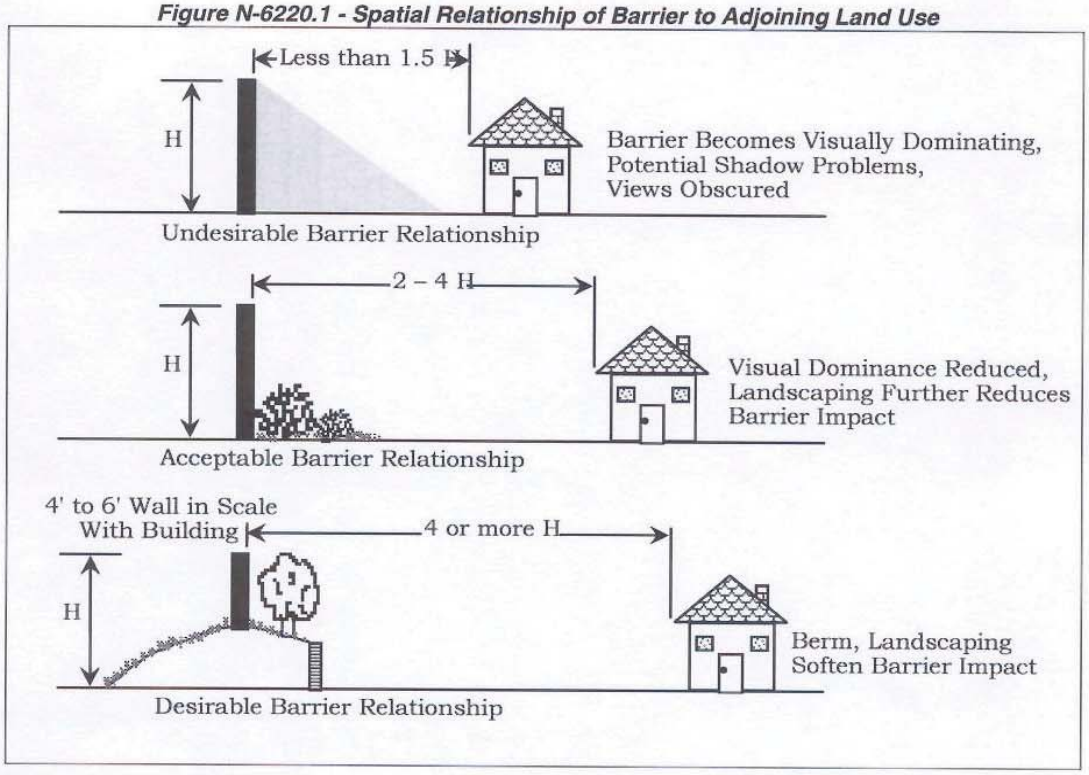
A major consideration in the design of a noise barrier is the visual impact on the adjoining land use. An important concern is the scale relationship between the barrier and activities along the roadway right-of-way. A tall barrier near a low-scale single family detached residential area could have a severe adverse visual effect. In addition, a tall barrier placed close to residences could create detrimental shadows. One solution to the potential problem of scale relationship is to provide staggered horizontal elements to a noise barrier to reduce the visual impact through introduction of landscaping in the foreground. This can also allow for additional sunlight and air movement in the residential area. In general, it is desirable to locate a noise barrier approximately four times its height from residences and to provide landscaping near the barrier to avoid visual dominance.

The visual character of noise barriers should be carefully considered in relationship to their environmental setting. The barriers should reflect the character of their surroundings as much as possible. Where strong architectural elements of adjoining activities occur in close proximity to barrier locations, a relationship of material, surface texture, and color should be explored in the barrier design. In other areas, particularly those near roadway structures or other transportation elements, it may be desirable that proposed noise barriers have a strong visual relationship, either physically or by design concept, to the roadway elements. Aesthetic views and scenic vistas should be preserved to the extent possible. In general, a successful design approach for noise barriers is to utilize a consistent color and surface treatment, with landscaping elements used to soften foreground views of the barrier. It is usually desirable to avoid excessive detail which tends to increase the visual dominance of the barrier.

The psychological effect on the passing motorist must be taken into consideration too. Barriers should be designed differently to fit dense, urban settings or more open suburban or rural areas and should also be designed to avoid monotony for the motorist. At normal roadway speeds, visual perception of noise barriers will tend to be of the overall form of the barrier and its color and surface texture. Due to the scale of barriers, a primary objective to achieve visually pleasing barriers is to avoid a tunnel effect through major variations in barrier form, material type, and surface treatment.

The design approach for noise barriers may vary considerably depending upon roadway design constraints. For example, the design problem both from an acoustic and visual standpoint is substantially different for a straight roadway alignment with narrow right-of-way and little change in vertical grades than for a roadway configuration with a large right-of-way and variations in horizontal and vertical alignments. In the former

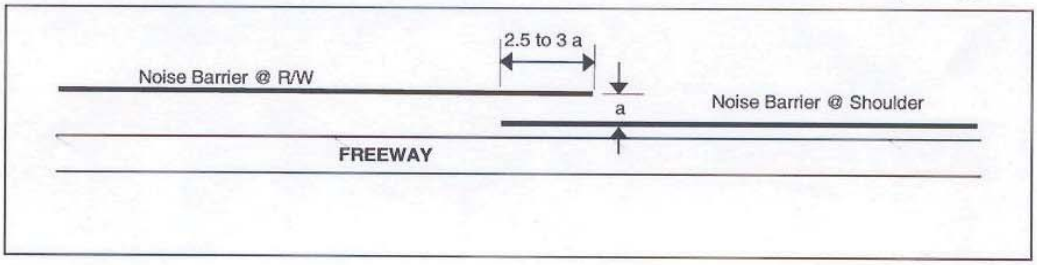
Figure N-6220.1 - Spatial Relationship of Barrier to Adjoining Land Use



N-6230 Maintenance

Access to the back side of noise barriers must be provided if the area is maintained by Caltrans. If access is not available from local streets access gates or openings from the highway must be provided along the noise barrier. Openings created by overlapping barriers must have an overlap distance of at least 2.5 to 3 times the width of the opening (distance between overlapping barriers) (see Figure N-6230.1).

Figure N-6230.1 - Barrier Overlap 2.5 to 3 times the Width of the Access Opening.



Appendix | Public Outreach Summary

I-5 North Coast Visual Assessment Public Involvement

October 2000 – I-5 Corridor Enhancement Value Analysis Study

City staff and private citizens representing Solana Beach, Encinitas, Carlsbad, and Oceanside met with Caltrans project team members to identify possible mitigation and enhancement measures to integrate natural and cultural resources into freeway improvements. Basic functions of the study were identified as "enhance visual characteristics", and "preserve community character". The team developed 71 mitigation and enhancement strategies to support these functions. Results were presented to elected officials of each city.

March – June 2001 – I-5 Corridor Environmental Scoping Meetings

Public information meetings were held in Encinitas, Carlsbad, and Oceanside. The meetings were conducted in an open house format.

January – March 2004 - I-5 Corridor Environmental Scoping Meetings

Additional public scoping meetings were held in San Diego, Del Mar, Solana Beach, Encinitas, Carlsbad, and Oceanside. Visual resource survey data were collected at each meeting.

January 2005 – September 2006 – Draft I-5 North Coast Community Enhancement Plan Meetings

Multiple meetings were held with council and staff members of San Diego, Del Mar, Solana Beach, Encinitas, Carlsbad, and Oceanside.

Meetings were held with representatives from the following public agencies:
- United States Fish and Wildlife
- California Fish and Game
- Torrey Pines State Reserve
- California Coastal Commission
- San Diego County Parks and Recreation
- San Dieguito River Park Joint Powers Authority

Meetings were held with the following public organizations and planning groups:
- Batiquitos Lagoon Foundation
- San Elijo Lagoon Foundation
- Agua Hedionda Lagoon Foundation
- San Diego Council of Design Professionals
- Civic Solutions
- Torrey Pines Community Planning Group
- Torrey Hills Community Planning Group
- Carmel Valley Community Planning Group

Appendix | Public Outreach Summary

Public Open House Meetings were held at the following locations:

- City of San Diego
- City of Encinitas in the following communities: Cardiff, Encinitas, Leucadia
- City of Carlsbad
- City of Oceanside