VISUAL IMPACT ASSESSMENT

Lawson Valley Bridge Replacement Project

Lawson Valley Road Crossing Lawson Creek East Fork (Bridge No. 57C-0726)

May 29, 2009

District 11 – County of San Diego – Lawson Valley Road
PM 4.5
Federal Number BRLO-5957(057)

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TABLE OF CONTENTS

I. PURPOSE OF STUDY 1

II. PROJECT DESCRIPTION 2

III. ASSESSMENT METHOD 7
- A. Federal Highway Administration Guidelines
- B. Applicable Federal, State and Local Planning Policies

IV. VISUAL ENVIRONMENT OF THE PROJECT 9
- A. Project Setting
- B. Landscape Units
- C. Project Viewshed

V. EXISTING VISUAL RESOURCES AND VIEWER RESPONSE 15
- A. FHWA Method of Visual Resource Analysis
- B. Existing Visual Resources
  - 1. Existing Visual Character
  - 2. Existing Visual Quality
- C. Methods of Predicting Viewer Response
- D. Existing Viewer Sensitivity
- E. Existing Viewer Groups, Viewer Exposure, and Viewer Awareness

VI. VISUAL IMPACT ASSESSMENT 21
- A. Method of Assessing Project Limits
- B. Definition of Visual Impact Levels
- C. Analysis of Key Views
  - Key View 1
  - Key View 2
  - Key View 3
- D. Summary of Project Impacts

VII. VISUAL MITIGATION 39
- A. Mitigation Elements
- B. Environmental Mitigation Considerations
- C. Visual Impacts During Construction
- D. Maintenance
- E. Conclusions

VIII. REFERENCES 47

FIGURES

Figure 1: Project Location Map **1**
Figure 2: Project Vicinity Map and Aerial Photo **2**
Figure 3: Area of Potential Effects (APE) **6**
Figure 4: Project Viewshed Map **14**
Figure 5: Key View Location Map **23**

TABLES

Table A Visual Quality Assessment **34**
Table B: Viewer Response Assessment **35**
Table C: Visual Impact Assessment **36**

ATTACHMENTS

Lawson Valley Road Bridge Plan
Area of Potential Effect (APE)
Project Impact Area (PIA)
Approach Roadway Plan and Profile

I. PURPOSE OF STUDY

The purpose of this study is to assess the potential visual impacts of the proposed project and to propose measures to mitigate any adverse visual impacts associated with the replacement of the existing Lawson Valley Road Bridge and the associated road realignment on the surrounding visual environment. The study area refers to the project area and adjacent areas where viewers can observe the visual changes resulting from the project.

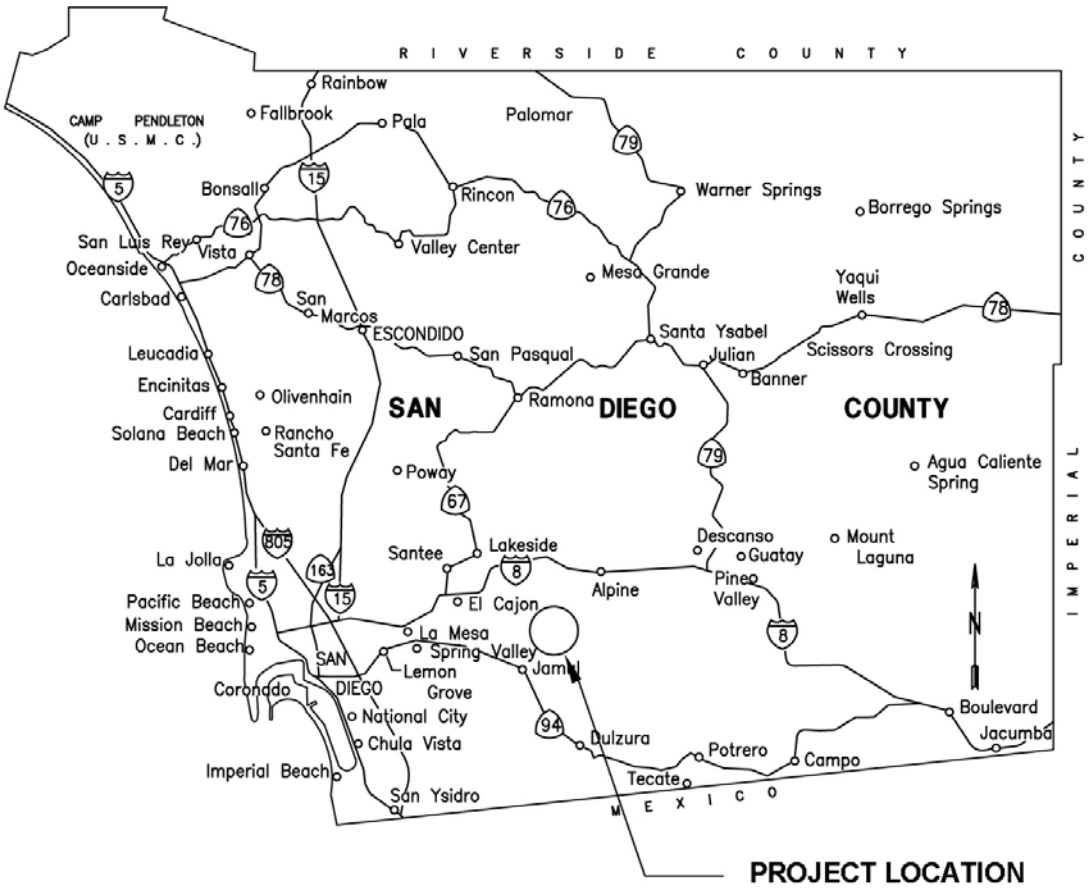
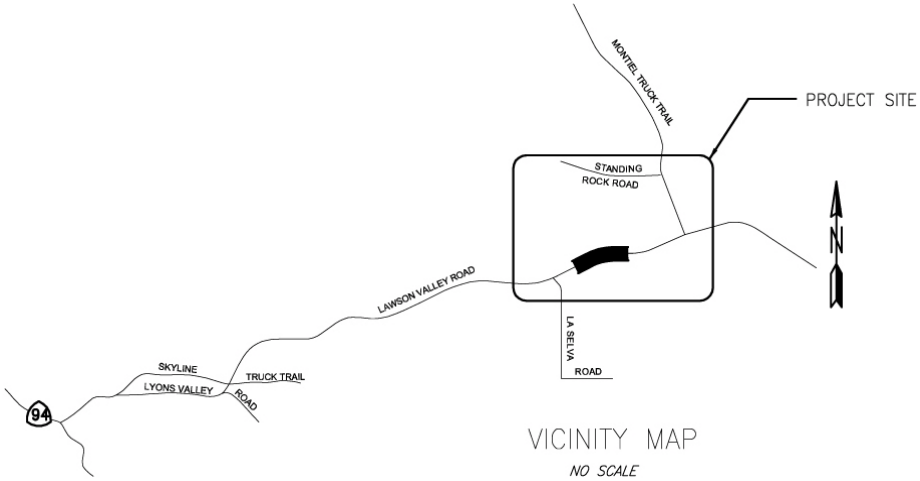


Figure 1 - Project Location Map

II. PROJECT DESCRIPTION

The project is located in eastern San Diego County in the unincorporated area of Lawson Valley. The project proposes to replace the existing Lawson Valley Road Bridge (BR. No. 57C-0374), which spans the east fork of Lawson Creek 1,000 feet west of the intersection of Lawson Valley Road and Montiel Truck Trail (USGS Alpine Quadrangle: T16S, R2E, Section 26 NE ¼) (Thomas Brothers page 1274 B3). The project will be federally funded.



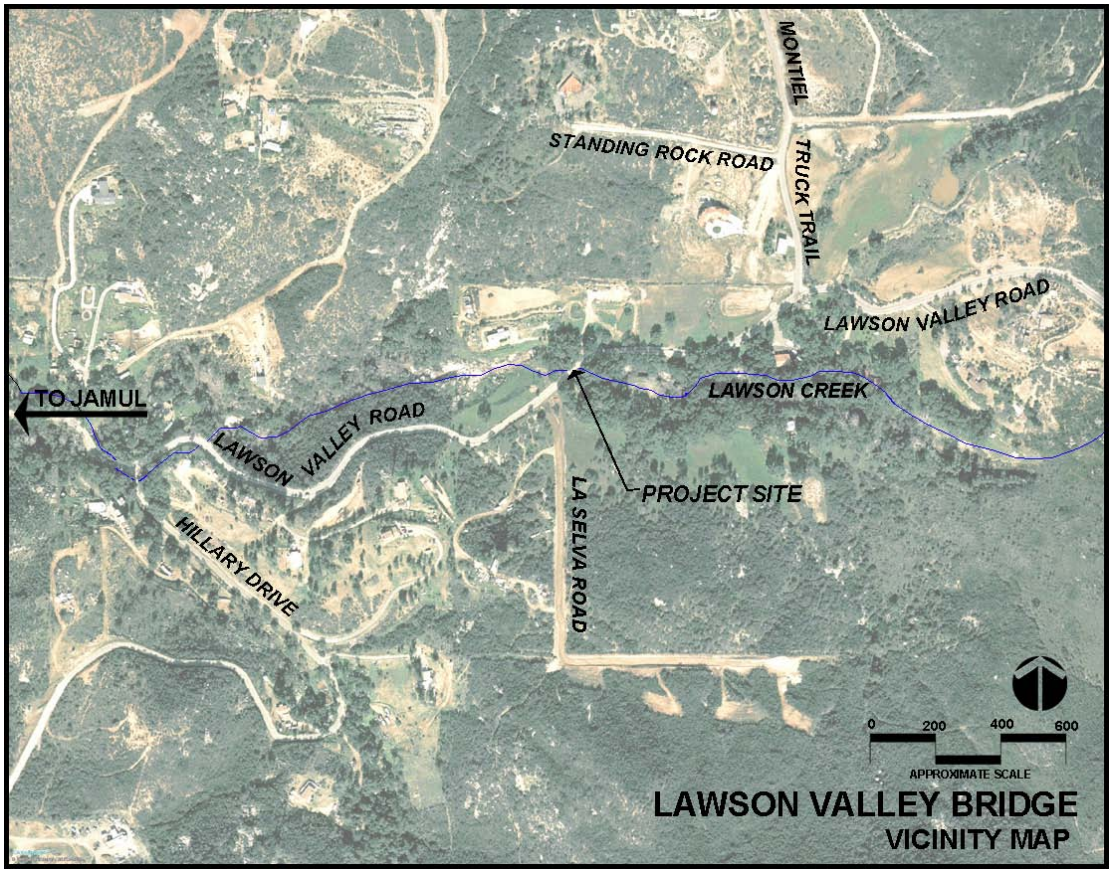


Figure 2 - Vicinity Map and Aerial Photo

The existing Lawson Valley Road Bridge has been classified as Structurally Deficient in the Caltrans Inspection Report dated 04/29/08. Therefore the bridge is eligible for replacement using Federal bridge replacement funds. The bridge currently has braced abutments.

Existing Lawson Valley Bridge at Mile Post 4.5

The project proposes to construct a new bridge over Lawson Creek at milepost 4.5, to replace the existing bridge.

Two construction alternatives were proposed in the Bridge Type Selection Report, February 2009, By Nolte Associates Engineering:

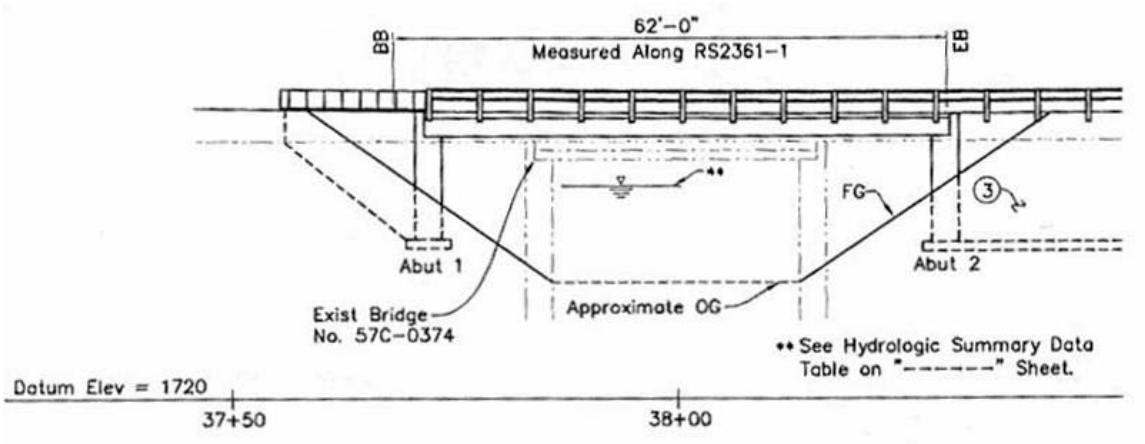
1) Precast and pre-stressed, voided concrete slab bridge with seat-type abutments on spread footings. The bridge would be 36 feet in width and 2'-6" in depth with an AC surface layer.

2) Cast-in-place post-tensioned concrete slab bridge with seat type abutments on spread footings. The bridge would be 32'-8" wide and 2' deep with a concrete surface.

Alternative Two was selected by the County due to a lesser effect on the environment.

Description of Proposed Bridge and Approach

The roadway centerline alignment will change slightly to accommodate staged construction and to provide better geometrics. The single span, cast-in-place pre-stressed, reinforced concrete slab bridge, approximately 62 feet long will be constructed across the watercourse. The bridge will be supported on two concrete abutments approximately 20 feet deep, and embedded one-foot into granitic rock. Retaining walls were added to minimize impacts to adjacent oak trees. Since retaining walls will be constructed beyond the ends of the wing-walls, the wing-walls may be constructed on spread footings as opposed to being cantilevered.



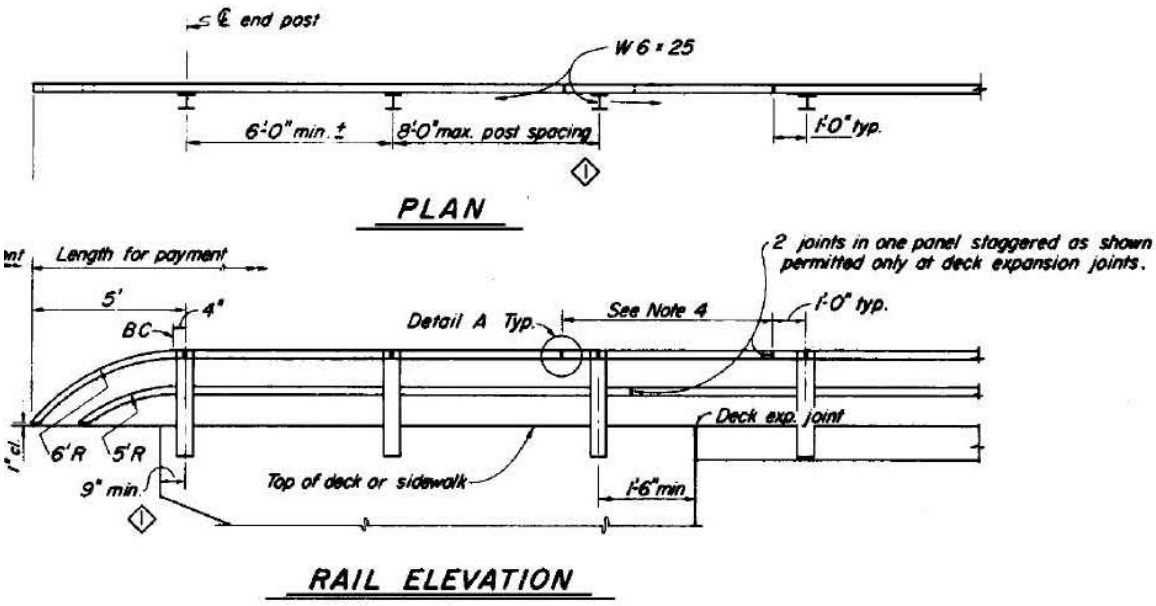
Proposed Bridge Elevation

The bridge deck surface is proposed to be Portland cement concrete with double yellow stripes and will be approximately 3 feet higher than the existing bridge to allow passage of the 100-year storm flow.

Plans currently show rip rap designed as energy dissipaters for the outlet ends of storm drain pipes and where water will flow over the edge of the southeasterly wingwall. The need for rock slope protection or other form of stabilization will be determined during the final hydraulic analysis after bridge design is near 70% complete.

A roughly 50' long retaining wall is proposed at the northwest corner of the bridge to minimize impacts to an adjacent mature oak tree. A retaining wall of approximately 95' in length will also be required on the southeast corner of the bridge to prevent the roadway embankment from impacting adjacent trees at that location. Textured masonry liners for the wing walls and retaining walls are proposed to help the structure blend with the natural, rustic surroundings.

The bridge railing will be a standard galvanized tubular steel two rail metal bridge rail (type 115, modified). The bridge railing will extend to the end of the northwest retaining wall and terminate with a SHORTRACC or similar terminal system crash cushion. On the southeast corner the bridge railing will extend to the end of the retaining wall where it will will connect to a metal beam guard railing terminal system, which will extend to approximately Station 39+90 Rt. SHORTRACC or similar terminal systems will be installed at the ends of the metal tube bridge railing on the northwest corner of the bridge to eliminate drilling for metal beam guard rail (MBGR) posts. On the southeast corner MBGR will connect to the end of the Type 115 barrier rail. The SHORTRACC type crash cushion will also be used on both the southwest and northeast corners to allow access to adjacent driveways.



The project is in an area of riparian woodland, surrounded by California Live Oaks and granite rock outcrops. The design has been adjusted to reduce the impact to the native vegetation while striving to satisfy road design standards. One oak tree is proposed to be removed to accommodate the staged construction which will avoid the need for a temporary detour road. Other trees have been protected by minimizing grading and installing retaining walls to minimize fills.

The bridge provides the only paved access to the fire station and residences east of the bridge, which will remain open to public traffic at all times. The project will be constructed in stages to avoid increased environmental impacts that would result from the construction of a temporary detour road. One 11 foot wide lane of the existing bridge will remain open for public traffic during Phase 1. After the Phase 1 half of the new bridge is completed, traffic will be shifted to the new Phase 1 bridge and the existing bridge will be removed. The Phase 2 half of the bridge will be constructed and the two halves connected. Construction is scheduled to take approximately 18 months assuming construction begins no later than July 1.

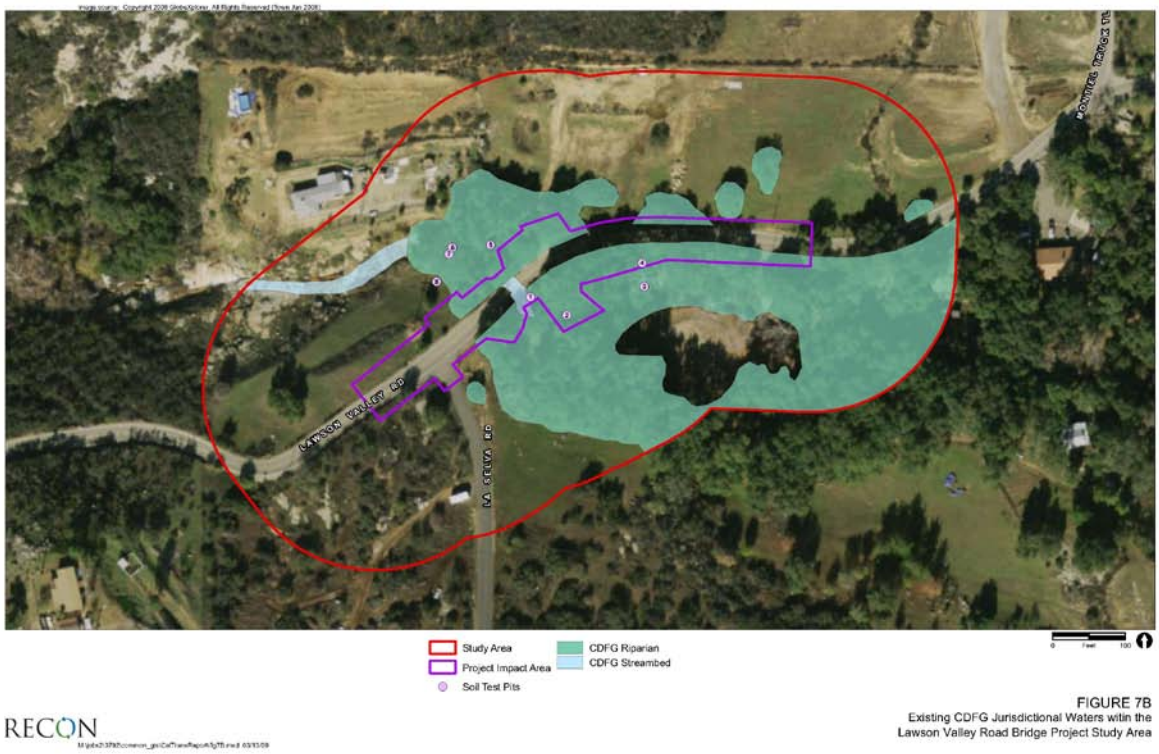


Figure 3 - Area of Potential Effects (APE)

III. ASSESSMENT METHOD

This visual impact analysis is based on a combination of site observations by driving and walking the site, photographic surveys, and analysis of the existing conditions and proposed bridge improvements. Site observations and photo documentation were performed in February of 2004, July of 2005 and April, 2009. Photographs for key view simulations were taken in April of 2009. The visual analysis was conducted in conformance with the guidelines itemized below.

A. Federal Highway Administration Guidelines

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:

1. Define the project setting and viewshed.
2. Identify key views for visual assessment.
3. Analyze existing visual resources and viewer response.
4. Depict the visual appearance of project alternatives.
5. Assess the visual impacts of project alternates.
6. Propose methods to mitigate adverse visual impacts.

B. Applicable Federal, State and Local Planning Policies

Following is a summary of the regulations and laws pertaining to visual impact studies for highway projects. The guidelines under these laws are used to determine potential effects of a project on the visual and aesthetic environment.

<u>National Environmental Protection Act (NEPA):</u>
NEPA requires that proposed federal projects consider potential effects that the project will likely have on the environment. Visual resources are considered an integral part of the environment. Consequently, the topic is included in NEPA, which is concerned with the protection of the existing visual appearance of scenic highways, Section 4(f) lands (public parks, recreation areas, wildlife and waterfowl refuges, and historic sites), lands managed by the U.S. Forest Service and the Bureau of Land Management, significant cultural and historic resources, lands associated with the National Wild and Scenic Rivers system. In general, NEPA addresses areas with high visual quality.

<u>Historic Preservation Act of 1966:</u> This Act and the 1976 regulations implementing it define "the criteria of adverse effect (Section 800.8), including the introduction of visual, audible or atmospheric elements that are out of character with the property or alters its setting".

<u>Department of Transportation Act, Section 4(f):</u> This law is intended to protect and preserve the natural beauty of public park and recreational lands, wildlife and waterfowl refuges, and historic sites. The act encourages planning to minimize harm to any of these natural and recreational areas. There are no currently recognized historic Section

4(f) resources within the project study area. Lawson Creek includes Coast Live Oak, riparian woodland, and streambed habitats and may qualify as a refuge under section 4(f).

California Department of Transportation (the Department): A State Scenic Highway is any freeway, highway, road, or other public right-of-way designated by the Department that traverses an area of exceptional scenic quality. There are no roads within the study area designated as State Scenic Highways.

County of San Diego, Jamul/Dulzura Subregional Plan, San Diego County General Plan: The project site is located within the County of San Diego, and development is subject to the policies and guidelines of the County General Plan and the Jamul Subregional Plan. This area of Lawson Valley Road is not categorized as a scenic highway and no scenic or historic resources are identified for the project area in the applicable planning documents. There are several goals and policies that provide an understanding of the objectives of the community. Goal 1 of the Land Use Element is to retain the existing rural atmosphere of the community. The Circulation Element of the regional plan encourages the preservation of the rural character of the community. "Road design within the community shall be compatible with the topography and landscape and minimize grading. All road improvements shall be designed to maximize environmental and aesthetic considerations." Circulation element policies require replacement of mature trees lost during highway maintenance or improvement projects. There is also a policy to retain dark skies to protect the rural character.

Bridge Type Selection Report, Lawson Valley Bridge Crossing Lawson Creek East, February, 2009. The Project Description includes the statement:

"The local community has expressed their desire to retain the existing rural ambience of the project site and minimize impacts as much as possible. The community would also like to reduce to the maximum extent possible, the taking of existing mature oak trees, and to have the proposed replacement structure mimic the current bridge to maintain the same aesthetics and rural environment."

IV. VISUAL ENVIRONMENT OF THE PROJECT

A. Project Setting

The regional landscape establishes the general visual environment of the project, however, the specific visual environment upon which this assessment will focus is determined by defining landscape units and the project viewshed. This section provides a broad overview of the project setting and key visual elements and themes.

The Lawson Valley Bridge is located at the 4.5 mile marker on Lawson Valley Road in an unincorporated area of the County of San Diego. It is approximately 8 miles east of Jamul and 9 miles south of Alpine and Interstate 8. The area is located at an elevation of approximately 1,750 feet in the mountain foothills between the urbanized greater San Diego metropolitan area and the western reaches of the Cleveland National Forest. The regional landscape is typical of rural eastern San Diego County with homes on large lots and occasional agricultural land uses overlaid on the existing natural terrain.

Lawson Valley Bridge over Lawson Creek As seen from eastbound Lawson Valley Road

The project lies in a rugged area of valleys and steep rock covered mountains. The hillsides are covered in dense chaparral, while the valleys are typically oak woodland. The vegetation is primarily native to the area with some introduced species near the inhabited areas and non-native grasslands in the grazed areas. Predominant character features of the immediate area include the granite rock outcrops seen among the vegetation, and the Live Oak trees that shade the valleys and watercourses.

Rugged terrain from Montiel Truck Trail

La Selva Rd. ascends from Lawson Creek Bridge, hidden beneath middle-ground rise

The surrounding visual setting consists of a developing area of large home sites and small ranches. New construction of homes is on-going, and is changing the character from rural and natural, to large lot residential and ranchettes. The residences contrast with the natural setting, introducing structures, grading and landscaping that blend or contrast with the natural appearance to varying degrees. Currently, the character remains rural and is strongly influenced by the native landscape and dramatic landforms.

Residences adjacent to Lawson Creek

Oaks conceal the bridge on left of photo

B. Landscape Units

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

Lawson Valley Bridge is located within the context of the larger Lawson Creek drainage area, which is surrounded by foothills, ridges and mountain peaks. All of these geographic features define the perimeter of the Lawson Creek landscape unit that includes the bridge. This landscape unit exists as an area of distinct visual character and is a blend of elements contained within this defined geographic area. It includes the creek and all landscape within the drainage, as defined by the surrounding upland terrain visible on the skyline. Elements of the landscape unit include the mountain peaks, ridges, roadways, residential homes and landscape, corrals, grassland, chaparral riparian vegetation and the creek. Throughout the landscape unit, the views of the bridge location are limited by foreground terrain, vegetation, and the oak woodland immediately surrounding the bridge.

Landscape unit defined by ridges

Enclosed space at bridge

Contained within the Lawson Creek landscape unit, the intersection of Lawson Creek with Lawson Valley Road at the bridge is an enclosed space defined by the canopy of the oak woodland. The area around the streambed is distinguished from the surrounding environment by its low elevation along the road, by its tree canopy of California Live Oaks, and by the moist and shady stream corridor itself. These qualities combine to create an area with a sense of enclosure. It is green and shaded from the surrounding area of chaparral and grasslands.

C. 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. The Lawson Valley Bridge viewshed is composed of close-up views, where the bridge is well defined, and middle-ground and distant views, in which the oak trees surrounding the bridge are visible, but the bridge is not.

The primary elements of the of the Lawson Valley Bridge viewshed consists of the focused view that drivers and passengers experience when approaching the bridge from either direction on Lawson Valley Road. This is a relatively short duration view due to the curvature of the road, and dense trees, especially from the eastern approach. The bridge is visible primarily as a foreground view as the road rounds curves to allow a view of the bridge. From La Selva Road, the bridge side view is visible in the middle-ground, partially concealed by oak trees. These three views are visible from public roads and comprise the primary viewshed of the bridge.

Western approach

Eastern approach

View from La Selva Road

In the larger context of the viewshed, the area of the bridge is visible as middle-ground from several private residences to the north and south and the forested property to the south.

View from property south of bridge

View from property north of bridge

Additionally the viewshed includes residences on various ridges and elevated areas from which the area of the bridge appears as a dense forest of oak trees. In these more distant views, the site appears as a portion of oak forest, undistinquished from other portions of the creek vegetation. From middle-ground and background viewpoints, the bridge is concealed by the surrounding oak trees. In views from Secuan Mountain and other peaks, the bridge environs are a minor component of the view, which is dominated by scattered new home construction, grading, road cuts and exotic landscaping superimposed on the native terrain. Consequently, the area of the bridge will be a minor component of distant views.

View from top of La Selva: Bridge is at center left of photo behind ridge
Oaks conceal bridge from middle-ground and background

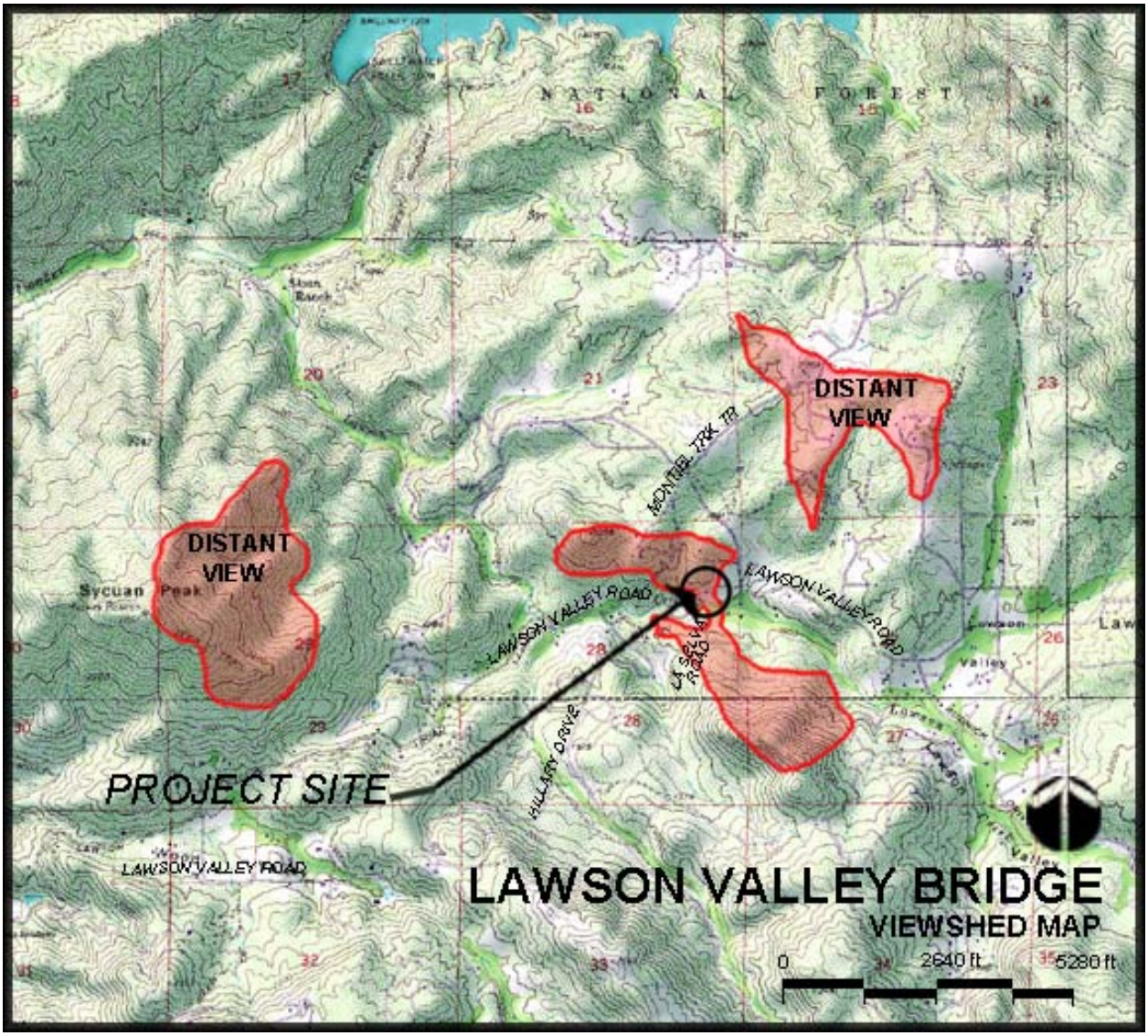


Figure 4 - Map of Project Viewshed

V. EXISTING VISUAL RESOURCES AND VIEWER RESPONSE

A. 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 a 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. The FHWA states that this method should correlate with public judgments of visual quality well enough to predict those judgments. 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. 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-built landscape and its freedom from encroaching elements. It can be present in well-kept urban and rural landscapes, as well as 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 components in the landscape.

B. Existing Visual Resources

1. Existing Visual Character

The existing visual character of the regional landscape within which the bridge is located can be described as predominantly rural. The landscape consists of grasslands for grazing horses and cattle interspersed with native vegetation. Chaparral and grassland dominate in the uplands, with Live Oak woodlands growing along the watercourses. The low mountains and valleys provide interesting topographical variety and views to the mountains to the east. Large boulders and rock outcrops accent the landscape, especially along the streambed.

Rock outcrops and boulders

Rural landscape character

Human impacts in the landscape are also rural in character. The roads are two-lane or smaller and follow the contours of the hills. Development consists primarily of large lots with residences situated back from the road. Wood and barbed wire fences often line property limits.

Rural character near the bridge

The visual character of the specific landscape area around the bridge is influenced by a dip in elevation of the road, and the enclosure and shade provided by mature California Live Oaks. Large boulders and rock outcrops can be seen along the streambed. Because of the intermittent stream and increased vegetation, the area appears greener and cooler than its surroundings. The stream follows its natural course and Lawson Valley Road follows contours, creating curved, naturalistic forms as opposed to straight, formal edges.

View west from bridge

2. Existing Visual Quality

Following is an analysis of the visual quality of the project viewshed as a whole. Visual quality and other variables are rated on a scale of 0 (none) to 4 (high).

Vividness

The visual experience of driving along Lawson Valley Road is vivid. The curves, elevation changes, and varying views through scenic, rural landscapes provide a memorable experience. In the project vicinity, the shade and enclosure from the tree canopy defines a unique visual character. While the visual experience is not as intense and memorable as that experienced at a scenic viewpoint, the overall sense of the visual environment, with its variations and pleasant rural aspect, can be considered vivid. *Vividness rating: 3.0 on a scale of 0 to 4.*

Intactness

The landscape unit is relatively intact. While it is not a purely natural area, it is a mixture of natural and rural, human elements that blend harmoniously. Many of the human additions to the landscape can be described more as contributing elements to the character than as encroachments. Most construction near the bridge (the road, bridge, fences, and houses) is simple and non-intrusive. The road is narrow and follows the natural contours. Houses are set back from the road and often not visible from the street. Fences tend to be wooden or wire.

There are a few large houses being built in the area where natural vegetation has been replaced with exotics, and do not fit as well in the landscape. The visibility of this new construction, and the scale of the homes introduce disparate visual elements within the landscape unit. *Intactness rating: 2 on a scale of 0 to 4.*

Unity

The bridge streambed area appears as a coherent unit within the regional landscape and has a sense of compositional unity. Although it was not consciously designed with the intent of creating unity, nor is it an undisturbed natural variety of unity, the area of the bridge has compositional integrity. Human impact and “design” has been functional and related to the natural environment, from the historic traces of Native American milling in nearby boulders to the current road configuration and pastures. This rural landscape has a moderately

high degree of unity when viewed from the approaches. *Unity Rating: 3 on a scale of 0 to 4.*

C. 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 make up the 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.

Viewer exposure is typically assessed by measuring the number of viewers exposed to the resource change, type of viewer activity, the duration of their view, the speed at which the viewer moves, and the position of the viewer. High viewer exposure heightens the importance of early consideration of design, art, and architecture and their roles in managing the visual resource effects of a project.

D. Existing Viewer Sensitivity

The existing rural quality of the area can be considered one of its greatest assets. People choose to visit this area or live here because they are drawn to its rural qualities. This results in a relatively high degree of concern for scenic quality.

Planning documents can help define the potential viewer sensitivity to visual impacts. Although Lawson Valley Road is not mentioned in the Scenic Highway Element of the Jamul/Dulzura Regional Plan, goal 1 of the Land Use Element is to retain the existing rural atmosphere of the community. The Circulation Element of the regional plan encourages the preservation of the rural character of the community. "Road design within the community shall be compatible with the topography and landscape and minimize grading. All road improvements shall be designed to maximize environmental and aesthetic considerations." Circulation Element policies require replacement of mature trees lost during highway maintenance or improvement projects. There is a policy to retain dark skies to protect the rural character.

As noted in the Bridge Type Selection Report, in meetings with the County, "The local residents have expressed a desire to retain the existing rural ambience of the project site and minimize the impacts as much as possible. The community would also like to reduce the taking of existing mature oak trees, and to have the proposed replacement structure mimic the current bridge to maintain the same aesthetics and rural environment." These statements provide a clear indication

of the attitudes and awareness of the community to visual change, indicating a high degree of viewer sensitivity.

Although some viewers might not currently be sensitive to the appearance of the bridge as they are approaching and driving over it, additions to the area that would disrupt this rural quality would probably have an impact on the viewers in the area. Large, concrete, "urban" structures, structures that do not fit within the topography or natural forms of the stream, construction that results in a noticeable loss of vegetation and increase in man-made structures would be likely to result in a negative reaction to the changes.

Drivers and passengers in vehicles, pedestrians, equestrians and cyclists include a high proportion of local residents. Their concern for scenic quality might be considered moderately high since their awareness of changes to the scene would be heightened due to the contrast with the surrounding natural environment. The sensitivity rating is considered to be moderately high: 3 on a scale of 0 to 4.

Viewers from the surrounding residences may observe the bridge and landscape from a state of relaxation from a stationary point, or when walking their property. This increases their awareness of detail. However, their views of the bridge and surrounding area are typically a partially or fully obscured view due to the number of trees and vegetation in the vicinity. Sensitivity rating of these viewers is rated moderately high: 3 on a scale of 0 to 4.

Overall viewer sensitivity rating: 3 on a scale of 0 to 4.

E. Existing Viewer Groups, Viewer Exposure, and Viewer Awareness

The viewer group with the most frequent exposure to the bridge/streambed would be drivers observing the area from their vehicles as they traverse the area. Traffic counts in this area are low, since there is no public paved outlet to the east. Traffic typically returns along the same route. SANDAG records of traffic counts for Lawson Valley Road indicate 700 vehicles per day for Lawson Valley Road in the vicinity of the Skyline Truck Trail and Lyon's Valley Road. It can be expected that the counts would be lower at the bridge location at mile 4.5, since Lawson Valley Road is not a through road, and a large amount of traffic would turn off before the bridge.

Viewing this area from a driving speed of approximately 35 miles per hour, due to the curving approach, viewers have only a quick glance at the bridge, which is is not visible in profile. Details are not noticeable, but viewers would be aware of larger changes to the visual environment along the roadway. Travel speeds are at a moderate rate allowing the driver to observe the surroundings in moderate detail. Exposure rating for drivers is considered to be moderate: 2 on a scale of 0 to 4.

Cyclists traveling on Lawson Valley Road compose a minor percentage of viewers. The road is narrow with no shoulder, and while traffic volume is light the paved road does not allow access to other county roads. The view for cyclists

would be similar to the one experienced from vehicles but with a longer exposure and more sensitivity to details. Cyclists would be especially cognizant of the surrounding environment, and more sensitive to changes than drivers. The exposure rating for cyclists is considered to be moderately high: 3 on a scale of 0 to 4.

Pedestrians walking on the road would experience the visual environment with the greatest detail and would be likely to be the most sensitive to the visual effects of the bridge. The slow speed of travel and the exposure to environmental conditions promotes high viewer sensitivity. The pedestrian sensitivity rating is considered to be high: 4 on a scale of 0 to 4.

Residents with property adjacent to the streambed compose another viewer group. Their views of the streambed from their property could potentially be affected. Although this group is smaller in numbers than the previous groups listed, their exposure will be more frequent and more sustained. This group will have the highest exposure to changes in the landscape, although views are partially to fully obscured by the existing vegetation. Exposure rating for residents is considered to be moderately high: 3 on a scale of 0 to 4.

Overall viewer exposure rating: 3 on a scale of 0 to 4.

VI. VISUAL IMPACT ASSESSMENT

A. Method of Assessing Project Impacts

The visual impacts of project alternatives are determined by assessing the visual resource change due to the project and predicting viewer response to that change.

Visual resource change is the sum of the change in visual character and change in visual quality. The first step in determining visual resource change is to assess the compatibility of the proposed project with the visual character of the existing landscape. The second step is to compare the visual quality of the existing resources with projected visual quality after the project is constructed.

The viewer response to project changes is the sum of viewer exposure and viewer sensitivity to the project as determined in the preceding section.

The resulting level of visual impact is determined by combining the severity of resource change with the degree to which people are likely to oppose the change.

B. Definition of Visual Impact Levels

None – No or very low degree of visual change to the existing visual resource. Does not require mitigation. Numerical designation: 0.

Low – Minor adverse change to the existing visual resource, with low viewer response to change in the visual environment. May or may not require mitigation. Numerical designation: 1.

Moderate – Moderate adverse change to the visual resource with moderate viewer response. Impact can be mitigated within five years using conventional practices. Numerical designation: 2.

Moderately High – Moderate adverse visual resource change with high viewer response or high adverse 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. Numerical designation: 3.

High – A high level of adverse change to the resource or a high level of viewer response to visual change such that architectural design and landscape treatment cannot mitigate the impacts. Viewer response level is high. An alternative project design may be required to avoid highly adverse impacts. Numerical designation: 4

C. 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 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.

The key views have been selected to illustrate the most critical visual changes, which affect the largest number of viewers. Three key views have been selected to illustrate the visual effects of the completed bridge. The viewpoints illustrate the locations where the proposed construction features are most visible and will have the greatest visual impact on the public. Because the typical view of the bridge is from a relatively close range while the observers are traveling approximately 35 miles per hour, the views have been selected to represent this visual experience.

Key View Selection:
Key view locations selected to illustrate the visual impacts include the following:

Key View 1:
View from the western approach to the bridge from Lawson Valley Road, approximately 230 feet west of the bridge.

Key View 2:
View from eastern approach to the bridge along Lawson Valley Road, approximately 180 feet east of the bridge.

Key View 3:
View from La Selva Road looking north toward the bridge, approximately 400 feet south of the bridge and approximately 100 feet above the bridge.

Pedestrians, equestrians and bicyclists would primarily view the project from the bridge approaches. Lingering on the bridge would not be comfortable due to the approach of vehicles, and there is no long-range scenic view from the bridge, so the bridge does not function as a viewpoint. For this reason, the key views illustrate the approach to the bridge with the longest sustained public view.

The visual simulations in this study were created by applying the designs proposed in the project construction plans to the key views to show the anticipated condition following completion of construction and establishment of plant material. The visual simulations represent typical views and the potential changes that can be expected. The visual simulations are for conceptual analysis and are not intended to provide a precise, scaled depiction of the proposed project. The proposed views illustrate the potential visual character for the project area approximately 5 years after project completion.

The location and direction of the key views are shown in Figure 5. Each key view is discussed in detail in the sections below, including orientation, existing visual quality, proposed project features, changes to visual character, viewer response and the resulting visual impact.

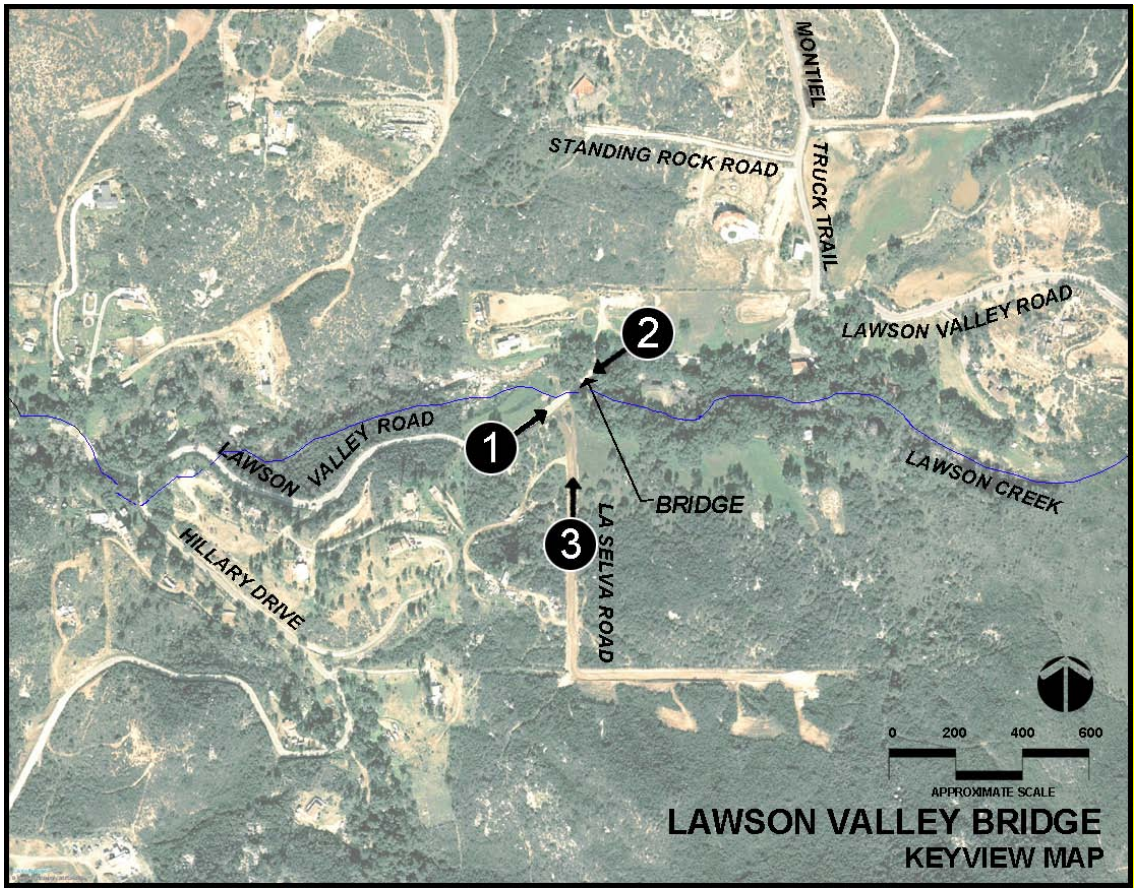


Figure 5 - Key View Location Map

Key View 1

Orientation

Key View 1 illustrates the view looking east from eastbound Lawson Valley Road approximately 230 feet from the bridge. This view represents the first public view of the bridge as drivers, cyclists, pedestrians or equestrians enter the vicinity on the dead end road. This viewpoint allows a full view of the bridge and the surrounding oak woodlands, which will be minimally affected by the project.

Existing Visual Quality/Character: Moderately high (2.5)

The existing visual character is typical of the Lawson Valley Road area, with the rural county road curving through native vegetation, fields, pastures and scattered home sites. At this location the viewer passes through the shady oak woodland of the creek, which contrasts moderately with the previously experienced area of mixed chaparral and oaks. A glimpse of hills to the east adds visual context. The view can be considered to have a moderate to moderately high degree of vividness. *Vividness rating: 2.7*

The view is relatively intact due to the dense appearance of the oak forest, and the lack of development on the visible portion of the ridge. The surrounding homes are screened from this view. However, the intactness is disturbed by the existing road cutting directly through the oak forest, and the verticality of the telephone pole, directly in the line of sight, that draws the eye and detracts from the view of the ridges in the middle-ground and background. Street signs, fences and the damaged bridge structure are elements which detract from the intactness of the scene. The intactness of key view 1 is considered to be moderate (*Intactness rating: 2.0*).

The unity of the view, with its balanced elements of oaks, central view through the trees, and curving road has a moderately high degree of compositional harmony, and unity. *Unity rating: 2.8*

Combining vividness, intactness and unity the overall existing visual quality rating is calculated to be 2.5 (moderately high).

Proposed Project Features

From this viewpoint, the most visible project features will be:

1. The proposed bridge seen from the end view, which minimizes the exposure to the bridge, making it appear to be part of the road.
2. The widening and realignment of the road at the bridge.
3. The removal of one large oak tree which visually opens the view along the bridge.
4. The proposed railings, crash cushion, and guardrails, which define the bridge from this viewpoint.

Change to Visual Quality/Character: Low (-0.3)

The primary change to the visual character is the widening, straightening and raising of the road grade necessitated by the need to respond to safety requirements and resistance to flooding. This change represents a moderate increase in the scale of the impact of built elements over the existing condition. The proposed road and bridge conforms less to the contours of the land than the existing condition. The reduction in the oak tree canopy as a result of removal of one tree, partially visible in

this view, results in a thinning of the woodland and the ability to see farther into the creek area on both sides of the bridge. There will also be a reduction of the deep shade near the road. The framed view of the hillsides and ridges beyond the bridge is opened to view, providing a more expansive view of the ridges beyond. The impacts of grading and rock rip-rap are concealed to a large degree by the depth and steepness of the creek bed.

Although the proposed bridge is in the foreground of this view, it is not visually dominant in the scene. The addition of bridge rails, crash cushions, and extended guardrails introduce new elements to the area which are not part of the existing scene. The existing telephone pole remains a distracting element directly in the line of sight that draws the viewer's attention.

The essential visual quality of the view remains, but the expansion of the road width and the increase in the centerline radius results in a minor change to the visual quality. Based on the simulations, the vividness of the scene remains essentially unchanged at 2.5, however, the combination of increasing the centerline radius and the addition of longer and more visible railings, guardrails and crash cushions results in a minor reduction to the intactness to moderately low: 1.7. The unity of the scene remains compositionally balanced, but the perception of a reduction in the sinuous quality of the road when viewed from this approach reduces the compositional connection with the terrain and landscape resulting in a decrease in unity to 2.3. Combining vividness, intactness and unity, the visual quality rating can be calculated to be 2.2, a decrease of -0.3 from the existing.

<u>Viewer Response: Moderately high (2.5)</u>
Viewer response to the changes in this view is likely to be moderately high. The region is valued for its rural character and visual resources. Since the viewers will be primarily local residents frequently traversing the area, viewers would be sensitive to changes that would negatively impact the visual quality of the scene. Many residents of the community choose to live in the area due to its rural character and visual quality. Consequently, changes would be noticeable to these viewers. Although this is not a through road, and the number of non-resident visitors can be expected to be relatively low due to the termination of the road, and lack of public facilities, a small number of visitors may be attracted to the area to enjoy its rural qualities. *Sensitivity rating: 3.0.*

The direction of the road focuses attention on the area of the bridge. However, due to the curving road, and moderately high travel speeds, most observers will have a relatively quick exposure to the view, not permitting detailed focus on the details of the scene. The viewer exposure to this key view is considered to be moderate. *Exposure rating: 2.0*.

<u>Resulting Visual Impact: Low (-0.75)</u>
Combining the moderately high viewer response with the moderate change to visual quality, the resulting visual impact is moderately low. Tables summarizing the calculations are included in the following section.

Key View 1 – Existing

Key View 1 – Proposed

Key View 2

Orientation

Key View 2 is the view of the bridge as drivers leave the valley westbound on Lawson Valley Road. The view shows the approach to the bridge with approximately half of the existing bridge visible behind the trees. The view illustrates the width of the approach and the proposed guardrails, the widened driveway and concrete brow ditch to be added as part of the construction, and the effect on existing vegetation. The large tree on the left is to remain adjacent to the paving.

Existing Visual Quality/Character Moderately high (2.3)

The curved roadway, flanked by barbed wire fences and large oak trees are the key elements of this view. The dense oak forest and trees arching overhead create a unique atmospheric quality that contrasts to the more open areas of Lawson Valley Road. Although the central focus in this view is the yellow sign pointing toward the bridge, the combination of natural and rural elements creates a pleasing scene that is moderately vivid in its contrast to more open vegetation in the surrounding area. *Vividness rating 2.5*

The intactness of the view is moderate since the natural features that set the character are diminished by the distracting elements of the asphalt road, power pole, directional sign, fencing, and graded slope. These elements are impositions on the natural scene. *Intactness rating: 2.0*

This view has a moderate degree of unity, which is developed by the overlapping portions of oak forest with the road curving out of sight. The wire fences help to reinforce the composition, defining and enhancing the curve to the left. The telephone pole and turn indication signs are the major impositions on this view. *Unity rating: 2.5.*

Combining vividness, intactness and unity, the overall existing visual quality rating is calculated to be 2.3 (moderate).

Proposed Project Features

From this viewpoint, the most visible project features will be:

1. The proposed bridge seen from the end view.
2. The widening and realignment of the road leading to the bridge.
3. The removal of one large oak tree which visually opens the woodland and reduces the overhead canopy.
4. The proposed railings, and crash cushions, which define the bridge from this viewpoint.
5. The proposed concrete lined drainage ditch and slope on the right side of the view.

Change to Visual Quality/Character: Low (-0.3)

The addition of the railing, crash cushions and concrete-lined ditch adds a group of visual images not contained in the original view. The removal of the tree between the viewer and the bridge results in a change to the density of the vegetation, although the trunks and dense foliage mass continues to provide the sense of woodland. The concrete brow ditch on the right adds a new visual element leading

into the turn. The telephone pole remains as an existing visual element that disrupts the intactness and unity of the view. The crash cushion on the left draws the eye and extends a visual element that is an imposition on the otherwise rural scene. Although the galvanized materials are part of the design elements already existing in the area, the concentration of these elements at the bridge distracts from the previously more natural and low intensity surroundings.

The key visual elements that establish the memorability of the view from this location are the curving road, and the surrounding woodlands. These components will remain after construction of the bridge. Consequently, the vividness of the view will remain unchanged. *Vividness rating: 2.5.*

The intactness of the scene is affected by the imposition of the concrete brow ditch, the wider road, the bridge rail elements and longer, more visible guardrail. Taken in total, these elements result in a reduction of the intactness of the view. *Intactness rating: 1.5.*

The unity of the view based on the compositional quality of the view remains similar to the existing condition, however, the elements of the concrete ditch, and the railings and guardrails distract from the simplicity of the composition. Also a contributing factor, the removal of the large tree results in a diminished sense of enclosure. Consequently, the unity is diminished. *Unity rating: 2.0.*

Combining vividness, intactness and unity, the net visual quality is 2.0 (moderate), a net reduction of -0.3 from the existing condition.

<u>Viewer Response: Moderate (2.3)</u>
Similar to key view 1, viewer sensitivity is expected to be moderately high due to the community focus on rural character, changes may be easily perceived and would evoke a strong reaction. *Sensitivity rating: 3.0.*

Due to the curvature of the road, viewers have a very short duration view of the bridge from the westbound approach, which is partially obscured by trees. The view will be constantly changing through the curve instead of providing drivers with a longer duration focused view as in key view 1. The number of viewers is moderately low. *Exposure rating: 1.5.* Combining Viewer Sensitivity and Viewer exposure, the Viewer response is anticipated to be moderate.

<u>Resulting Visual Impact: Low (-0.75)</u>
The visual impact of the proposed bridge on the scene is a combination of the viewer response with the degree of change to visual quality. There is likely to be some negative reaction to the removal of the one highly visible large oak tree adjacent to the road resulting in the opening of the view and reduction of density in the canopy. The addition of the guardrails and brow ditch will provide elements that detract from the composition, and reduce the unity of the view. Combining the moderate viewer response with the change to visual quality, the resulting visual impact is low. Tables summarizing the calculations are included in the following section.

Key View 2 – Existing

Key View 2 - Proposed

Key View 3

Orientation

Key View 3 shows the view descending from La Selva Road directly toward Lawson Valley Bridge. The existing trees in the vicinity of the creek provide a dense buffer between the viewer and the bridge, although a portion of the existing bridge is visible directly in line with the roadway. This view also shows some of the surrounding land, which has been partially disturbed by ranching and single family home development. Recently installed power poles and wires are highly visible in key view 3, in contrast with the view in 2005 shown below. While this view is focused on the bridge, the larger context of this view includes the skyline of rolling hills and ridges, and several large residential compounds are highly visible and contrast strongly to the natural condition of the area. This key view was selected due to its location on a public road above the bridge construction project. Distant views of the project site from public places are few, due to the location of the bridge in a grove of oak trees in the valley of the creek. Views from public roads, other than Lawson Valley and La Selva, are obscured by foreground vegetation or topography.

Broad view of Key View 3 in 2005 prior to power pole installation

Existing Visual Quality/Character: Moderate (2.1)

The existing visual character is defined by the oak woodlands with a backdrop of coastal sage and chaparral vegetation, open grassy pastures and homes in the middle-ground. The vividness of the view is moderately high. *Vividness rating 3.0*.

The intactness of the scene is disturbed by the straight section of road in the foreground, areas of disturbed land, power poles, and the homes and exotic landscaping on the hill. The home at the far right of the broader view has a large number of queen palms which will create a strong visual impact on the natural scene. *Intactness rating: 1.2 low.*

The scene has a moderate degree of unity. Although the hills and vegetation create a subtly pleasing composition, the visual elements of the straight road and the graded home sites on the left detract from a unified composition. *Unity rating: 2.0.*

Combining vividness, intactness and unity the overall existing visual quality rating is calculated to be 2.1 (moderate).

Proposed Project Features

From this viewpoint, the most visible project features will be:

1. The removal of one oak tree which visually opens the woodland canopy.
2. The proposed bridge seen between the trees.
3. The proposed railings and crash cushion, which are only partially visible from this viewpoint due to trees in the foreground.

Change to Visual Quality/Character: Very low (-0.1)

The change to visual quality is minimal from this viewpoint due to the screening provided by the existing oak woodland, and especially the trees in the foreground, which will remain. Due to the growth of the existing trees, the bridge is less visible in 2009 than when originally studied in 2005.

The crash cushions and bridge rails are largely hidden by the existing grouping of trees, and many of the details of the new construction will be obscured by shadows of the oak trees. These trees are to remain, so it is anticipated that the bridge will be obscured even more in the future.

This key view is focused on the bridge area, however, given the expansiveness of the full scene visible from this location (as shown in the broader view photo), the bridge is a relatively minor element in a more complex and expansive scene. The key difference in this view is the reduction in the tree canopy due to the removal of one large oak tree, which is a relatively minor change given that only the top of the tree is visible from this viewpoint. There may be additional pruning required to conform the canopy to the new road curve, but this difference will be mainly seen as a thinning of the forest's density.

The vividness of the view from this location appears to be unaffected by the changes to the bridge. *Vividness rating remains unchanged at 3.0.*

The intactness of the view will experience minor change due to the new and more visible guardrail and the perception of a slightly wider road. However, when compared to the greater visual impacts of the existing recently installed power poles across La Selva and the wide range of elements visible in the overall scene from this viewpoint, the change is considered to be minimal. The oak forest will appear relatively intact due to the large trees in the foreground. *The intactness is 1.0, slightly lower than existing.*

Considering that the compositional elements of the view will remain essentially unchanged, especially compared with the imposition of new homes, power poles, wires, and the exotic landscape across the valley, little change to the unity is expected as a result of the bridge construction. *Unity rating remains unchanged at 2.0.*

Viewer Response: Moderately high (3.0)

Viewer groups experiencing this viewpoint would be primarily residents and visitors to the homes on la Selva Road. The resident viewers' sensitivity to change would be relatively high, since they are exposed to the view every day and the bridge can be considered part of their neighborhood. Based on a rendering presented to the community, the proposed bridge design, with its stone textured retaining walls, has been praised and admired by adjacent property owners, indicating a probable

favorable response to the structure aesthetics. The viewers are anticipated to be sensitive to changes to the view. *Viewer sensitivity rating: 3.0, moderately high.*

Viewers are exposed to the view for longer duration than the other viewpoints due to the direct approach from an elevated viewpoint, straight down towards the bridge. Speeds on La Selva are likely to be lower than on Lawson Valley Road, allowing a longer duration view. *Exposure rating: 3.0.*

Resulting Visual Impact: Very low (-0.3)
The visual impact of the bridge construction on this key view is considered minimal, especially when the broader view of the surrounding area is considered. The bridge comprises a small portion of the larger view, and is not highly visible due to the screening of the oak trees. Combining visual change with visual response, the resulting visual impact is very low (-0.3).

Key View 3 – Existing

Key View 3 - Proposed

D. Summary of Project Impacts

Visual Quality

Each of the key views has been assessed for visual quality for both its existing condition and its appearance following the completion of the proposed project based on the criteria and evaluation methods elaborated in this report. The evaluations of the proposed project and the key views represent the estimated mitigated appearance five years following the completion of the project. A summary of the aesthetic analysis for the key viewpoints is provided in Table A.

The proposed project would add new visual elements and alter the appearance of the area. However, from the assessment of the key views and the impact of the proposed project on the visual quality of these views, it can be concluded that the resulting visual impact of the proposed project would be low. The proposed bridge would be in the same location as the existing bridge, and would be approximately 10 feet wider and approximately 30 feet longer. The proposed bridge design is not substantially different from the existing bridge. From the primary public viewpoints, the bridge is not visible from the side view. The proposed bridge is larger, but its primary visual impact would be from the loss of one large oak tree, and the additional rails and crash cushions visible from the roadways.

With the mitigation in place, the net change in visual quality is projected to be low for the project. To further reduce the visual impact of the proposed bridge, additional mitigation measures should be applied as discussed in the mitigation section. Considering both the distant views and views from the proximity of the bridge, it is considered that the proposed project would result in a low degree of impact to the existing visual character and quality of the project area.

Table A - Visual Quality Assessment

Visual Quality	**Key View Evaluation**					
Key View #	**1**	**1**	**2**	**2**	**3**	**3**
Existing/Proposed	**E**	**P**	**E**	**P**	**E**	**P**
Vividness	2.7	2.5	2.5	2.5	3.0	3.0
Intactness	2.0	1.7	2.0	1.5	1.2	1.0
Unity	2.8	2.3	2.5	2.0	2.0	2.0
Total Visual Quality	2.5	2.2	2.3	2.0	2.1	2.0
Visual Quality Change (Proposed Visual Quality minus Existing Visual Quality)	-0.3		-0.3		-0.1	

Evaluation Basis
4 - high
3 - moderately high
2 - moderate
1 - low
0 – none

Key View Evaluation
E - Existing
P - Proposed

Viewer Response
As defined in section V.C of this report, viewer response is a combination of viewer sensitivity and viewer exposure. A summary of the aesthetic analysis for the key viewpoints is provided in Table B.

For the purposes of this project, viewer sensitivity considers the viewer's observation and understanding of the existing rural visual conditions, combined with the concern for preserving and enhancing the regional visual context expressed in the Jamul Dulzura Sub-regional Plan. The viewer sensitivity is considered to be moderate to moderately high.

Viewer exposure in this location is primarily short term. Due to the short duration views of the bridge, the speed of travel, and the need to pay close attention to curving road conditions, the viewer exposure is considered to be moderately low, but varies based on location.

Table B – Viewer Response Assessment

Viewer Response	Key View		
	1	2	3
Viewer Sensitivity	3.0	3.0	3.0
Viewer Exposure	2.0	1.5	3.0
Average Viewer Response $\frac{(VS + VE)}{2}$	2.5	2.3	3.0

Evaluation Basis
4 - high
3 - moderately high
2 - moderate
1 - low
0 – none

Key View Evaluation
E - Existing
P - Proposed

Summary of Visual Impacts
The visual impacts resulting from the proposed project have been evaluated based on the combination of the degree of change in visual quality, and the anticipated viewer response to that change. A summary of the visual impact assessment for the key viewpoints is provided in Table C, indicating a very low degree of visual impact.

Table C – Visual Impact Assessment

Visual Impact	Key View		
	1	2	3
Visual Quality Change	-0.3	-0.3	-0.1
Viewer Response	2.5	2.3	3.0
Visual Impact (VQC x VR)	-0.75 Low	-0.75 Low	-0.3 Low

Evaluation Basis
-13 to -16 = high degree of negative impact
-9 to -12 = moderately high degree of negative impact
-4 to -8 = moderate degree of negative impact
-1 to -3 = low degree of negative impact
0 = neutral visual impact (no impact)

It is considered that, although this analysis indicates a low degree of net reduction in visual quality, based on the analysis of the key views, this change is relatively minor, allowing the effects to be mitigated as described in the following section of this study. While elements of the proposed project would initially have a minor adverse effect on the visual quality, after mitigation and normal growth of vegetation, the overall aesthetic quality of the project area viewed from the public areas would result in a very low level of visual change with implementation of the proposed project. Establishment of new planting to blend the new construction with the adjacent natural riparian woodland and grassland areas, and use of compatible materials and colors for engineering elements would enhance the visual quality of the disturbed areas of the project and would mitigate potential adverse impacts resulting from the proposed project.

It should be noted that this bridge replacement project was specifically engineered to minimize the removal and disturbance of existing trees, and to preserve existing biological and archeological assets, while addressing the safety and structural requirements. The project design and alignment evolved over a period of years, with the input of the public, resulting in the current design. As a result, the potential visual impacts have been greatly reduced from the initial designs.

Light and Glare
The proposed bridge appears not to affect the light and glare contributed to the area. Since the bridge is flat, headlights will not project up into the air or increase the illuminated area around the bridge. The bridge will continue to be unlit, so there are no impacts from the addition of bridge lights. Given that the new bridge should not increase the amount of light and movement in the existing bridge, increased light and glare are not expected to have a noticeable visual impact.

Construction Related Visual Impacts
During the construction period, demolition, grading, bridge falsework, temporary crash cushions, cranes, heavy machinery and other vehicles associated with construction will be highly visible and will have a temporary impact on the viewers

during construction. Storage of construction equipment, fences, orange safety markings, barricades, temporary warning lights, signs and other construction related items will create a temporarily disturbed and degraded view. These are temporary visual impacts associated with the requirements of construction and are not considered in the evaluation of visual change for the purposes of this analysis.

Analysis of Cumulative Visual Impacts

Cumulative visual impacts consider the impact that a project may have when combined with other development in the area, or aspects of the project that may contribute to changes beyond the project area.

The project area includes a range of land uses that are compatible with the rural character, including large lot residential, grazing, fire station, and agricultural land uses. There are no designated historic or scenic resources identified in the project area. The anticipated changes to the visual character as a result of the project include the straightening and widening of the roadway, removal of one oak tree, minor grading, installation of rock rip-rap, addition of crash cushions, and increasing the length and complexity of the bridge rails. There will be a net reduction in the vegetation canopy due to the removal of oak tree and pruning associated with the new alignment, opening the site and increasing the sunlight on the bridge area.

Lawson Valley Bridge is being replaced at a similar visual scale as the existing bridge and approach, and occupies a highly visually protected position in the viewshed. Therefore, its contribution to regional visual change is very limited. There appears to be a very low amount of visual change as a result of the project. The removal of one large oak tree, as well as pruning and branch removal to accommodate the minor change in road alignment will result in a low level of visual change that could be considered to minimally contribute to the reduction of the existing scenic character in Lawson Valley associated with the incremental development of the area. This is a relatively minor contributor to visual change in comparison with the construction of homes, driveways, utilities, vehicle storage and the planting of large exotic plant materials such as palms by nearby residents. In the context of surrounding development, there appears to be very little cumulative visual impact as a result of this project.

Conclusions

This bridge replacement project will serve the community by improving access to the upper portions of Lawson Valley, replacing an existing structurally deficient bridge, improving traffic safety and reducing possible flood damage. This Visual Impact Analysis indicates that the proposed replacement bridge and its accompanying grading, tree removals, paving and guardrails appears to result in a small net decrease in visual quality. However, through the visual mitigation measures proposed in the next section, the negative effects on the viewshed can be reduced. This approach appears to be consistent with long-range land use planning for the area as expressed in the Jamul Dulzura Subregional Plan.

The proposed bridge has been analyzed to determine the visual impact on viewers using the area, including motorists, bicyclists, pedestrians, equestrians and surrounding residents. Through the key view analysis process, before and after representations have been reviewed and impacts identified. It appears that the negative impacts, observed from the key view locations representing the primary public views, contribute only a very low degree of impact. Impacts on views from individual private driveways immediately adjacent to the site may be more noticeable, but will not be viewed from areas open to the public. Mitigation measures are proposed in the following section of this report to reduce the visual impact for all views of the bridge, both public and private.

The proposed project would add new structural elements, a longer bridge, wider and slightly higher roadway, longer bridge rails, and would remove one mature oak tree. However, after the mitigation measures are implemented and maintained for a period of 5 years the overall change to the visual character of the area is anticipated to be very low as summarized in Table C. With the mitigation measures in place, it is considered that the proposed project would result in a very low impact to the existing visual character and quality of the project area.

VII. VISUAL MITIGATION

Caltrans and the FHWA mandate that a qualitative/aesthetic approach be taken to mitigate for visual quality loss in the project area. This approach fulfills the letter and the spirit of FHWA requirements because it addresses the actual cumulative loss of visual quality that will 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 key view assessments and summarized in the previous section will consist of adhering to the following design requirements in cooperation with the Caltrans District Landscape Architect. The requirements are arranged by project feature and include design options in order of effectiveness. All visual mitigation will be designed and implemented with the concurrence of the District Landscape Architect.

The visual mitigation measures described below are intended to help maintain and restore the existing visual character of the project area as a part of the construction of the bridge. The suggested measures and concepts are designed to be consistent with the existing rural character of the location featuring colors and elements that harmonize with the surroundings

A. Visual Mitigation Measures

The visual mitigation measures described below are to be incorporated into the project plans and specifications as an integral part of the project design. The implementation and proper execution of the mitigation measures is a requirement for project acceptance. Substantial compliance with the mitigation measures will be verified during and following construction through the Mitigation, Monitoring and Reporting Program in place for this project.

<u>Preservation of Existing Trees</u>
Native Oak trees and other trees existing on the site should be protected in place wherever possible. The current plan indicates that only one oak tree conflicts directly with the alignment and will be removed during construction. The other trees will be protected in place. In some cases grading around the trees will be minimized by construction of retaining walls to maintain the level of the existing soil to the advantage of tree survival. Retaining walls should be constructed to be minimally invasive to the tree.

Flexibility during design and construction are critical to allow adaptation of the improvements to the conditions of the site to maximize tree preservation. Oak trees may suffer from grading around the drip line of the trees. Both cut, and fill over the root zone may change the soil environments sufficiently to result in the decline of oak specimens. The construction should be executed to protect the trees, avoid soil compaction over the root zones, preclude parking and driving over the soil under the trees, and minimize changes to the root zone to the greatest extent possible.

Where possible, oak trees should remain in place rather than be transplanted, since long-term survival of transplanted trees is typically uncertain and survival rates low.

All work in the vicinity of existing oak trees should be performed under the direction of a certified arborist expert in native oak tree preservation methods.

Tree Planting

California Live Oak trees and other native species such as willows are to be planted after construction per the Biological Mitigation and Monitoring Pan to supplement the existing trees and mitigate for site changes. The trees will be planted at seedling size, and will have little visual affect the first 5 years in comparison with the existing trees. Over time the new trees should provide screening and contribute to the canopy density. The seedling size trees provide the greatest ability to establish in native conditions. Planting larger trees that would provide a more rapid visual effect may be difficult to establish given the soils and moisture available. Trees will be planted throughout the disturbed area per the mitigation plan, but consideration should be given to planting in strategic locations to screen the view of the bridge and roadway from the existing residence northwest of the bridge. Locations shall be selected carefully to maximize potential for survival with consideration for depth of soil, and availability of moisture.

Revegetation

All areas disturbed by construction, and all exposed slopes and adjacent eroded slopes should be planted with vegetation native to the vicinity of the project as recommended in the Biological mitigation component of the Environmental Document (NES). The design should carefully establish planting types compatible with the soils and moisture available to allow full establishment with a minimum of supplemental watering. All disturbed areas should be seeded with seed mixes containing coastal sage scrub, mixed chaparral, grassland, or oak woodland/riparian species depending on the location. The seed mixes should contain only species native to the vicinity of the site, and shall be free of weeds and invasive species. The seed mixes should be supplemented with liner size and container shrubs to be planted to screen views of the structure and rock slope protection. Seed mixes and container plant species selection should include plants that will thrive in the deeply shaded growing locations on the site as well as sunny locations. All vegetation should be required to meet predetermined success standards and verification by a qualified landscape architect or plant restoration ecologist to verify successful establishment of the plant material over a 5 year period.

Plants that will tend to grow to help obscure the edges of the retaining walls and erosion control infiltration facilities should be planted in locations adjacent to these structures. These should be comprised of native varieties of prostrate or spreading plants with the ability to creep and partially grow over the rock structures such as Buckwheat, California Grape, and California Rose.

Grading

Grading should be minimized due to minimize impacts to the oak trees in the project area. All grading for the project should be visually softened using contour grading methods to reduce the contrast of manufactured slopes with existing grades and slopes. Grading should mimic the existing grades and slope transitions. However, preservation of the existing trees should take precedence over contour grading where disturbance or placing fills around the existing roots would be required. Rocks and boulders generated during grading should be preserved on site and worked into the planting areas or used to construct the rip-rap slope protection.

Native granite rock outcrops

Erosion Control Infiltration Facilities

The grading plans specify rock slope protection for the creek channel slopes adjacent to the bridge. Any cemented material should be reduced to the minimum area required, since it does not allow growth of vegetation to replace that removed during construction. Native rock, or imported rock that matches the existing rock on site should be used to construct the rip-rap. The design intent is to closely match the color and appearance of existing rock outcrops. The rock should be placed so that the smooth weathered faces of the boulders are exposed, and the broken or fragmented rock is hidden. Where concreted rock slope poretection is necessary, it is recommended that the concrete used to cement the rock is colored or stained to match the existing soils. Joints should be raked back to create shadow lines and relief so that the rocks project above the concrete.

Rock slope protection should mimic existing rock and soil appearance on site.

Bridge Structure Concrete

The bridge is proposed to be constructed of natural gray concrete which will harmonize with the color of the gray granite outcroppings in the immediate vicinity. It is recommended that the finish of the bridge abutments match the finish of the retaining walls described below. The textured surface will help blend the structure into the surrounding landscape, and reduce the brightness and reflectance of the new concrete. Shadow lines and textured surfaces will be especially helpful in reducing the visual impact when viewed from adjacent private properties, which feature side views of the bridge.

Retaining Walls

Retaining walls and bridge abutment walls should be rock faced similar to the example below photographed at a nearby Lawson Valley Road creek crossing.

Granite rock faced retaining wall at bridge downstream

Alternatively, stone finish concrete form liners could be used to create a rock texture similar to a field stone wall as shown below. A light application of weathering stain should be used with form liners to match the existing granite. Shadows and textures matching the other components of the design will help to unify the various structural elements. A medium sandblast finish can be used to texture the surface and expose aggregates within the concrete to provide a more natural appearance and texture.

Bridge Railings

The bridge design indicates a modified type 115, two rail square tubular steel rail with a galvanized finish. This simple, open design is in keeping with the rural surroundings and will allow views through the rail to the creek. The galvanized finish will become less bright over time, and its dull silver-gray color, which is a common visual element throughout the Lawson Valley Road corridor, will relate well with the gray granite rock outcrops.

Galvanized steel bridge rail

Galvanized steel rail – Type 115 Modified

Rails for Retaining Walls

The modified type 115 metal tube bridge barrier rails will extend to the ends of the retaining walls providing visual continuity between the structures. The barrier rail will be constructed directly over the concrete retaining wall. The top of the wall would be visible, but flush with the top of road surface.

Metal Beam Guardrails

Standard metal beam guard rails are proposed at the south east sector of the bridge approach. This type of rail is typical of the safety rails found in other sections of Lawson valley Road, and on the existing bridge.

Typical Metal Barrier Guardrail

Crash Cushions

The standard crash cushions designed for the bridge are galvanized steel with a similar appearance to a metal beam guardrail. The yellow reflective warning markings on the ends of the crash cushions are highly visible, and are anticipated to create one of the most striking visual changes to the existing condition. To minimize the visual impact, the size and extent of the color and striping on the cushions should be minimized within the safety parameters required.

Typical examples of SHORTRACC crash cushions

Concrete Brow Ditch

The concrete brow ditch introduces a strong horizontal line in direct sight of the viewers. If the concrete brow ditch cannot be eliminated, or combined with the roadway paving, the concrete should be stained, or integrally colored to match the color of the soil. The color should be selected to create a weathered, and shadowed appearance that blends with the soil rather than a strong color. The brow ditch size should be reduced to the minimum required to handle the amount of drainage. Alternatively, a vegetated or rock lined swale would be preferable visually to solid concrete, and would allow water quality treatment of run-off.

Concrete brow ditch for drainage

B. Environmental Mitigation Considerations

In addition to the mitigation measures listed above, habitat mitigation measures would be implemented in conformance with the recommendations of the environmental documents, and the Lawson Valley Road Bridge Project NES. It is anticipated that the environmental mitigation measures would be highly compatible with the landscape concept, since the concept relies on establishment of the native plant materials proposed by the environmental mitigation. The proposed plant materials will be compatible and blend with the vegetation of adjacent natural slopes, oak woodland and riparian areas.

C. Visual Impacts During Construction

Temporary visual impacts will occur during the project construction as described in the Visual Assessment Section of this analysis. Limits of construction impacts, and staging areas will be clearly defined to limit the impacts of construction operations. Construction impacts will cease following completion of the project. Visual mitigation for the construction period is not considered necessary due to the changing and temporary nature of these impacts. The permanent mitigation measures are to be implemented as construction is completed.

D. Maintenance

The mitigation measures rely on growth, maintenance and time to reach a size and maturity to perform their intended function. It is anticipated that the permanent mitigation measures itemized in this document will become effective upon implementation, and the planting will become effective within 5 years of implementation. The maintenance for the project area will be the responsibility of the County of San Diego. Maintenance agreements will be designed to promote the full potential of the mitigation measures proposed.

E. Conclusions

The mitigation measures proposed in this document are designed to improve the overall visual quality of the proposed construction for the bridge and promote a positive viewer response from motorists, pedestrians, bicyclists and equestrians in the project area. The measures mitigate the impact of the project on distant views, the selected key views, and views from adjacent private driveways and residences by blending the appearance of the proposed project into the existing character of the site. This is accomplished through construction detailing and landscape treatments that can be implemented with construction, and have an effect within five years of construction. The mitigation recommendations propose a wide range of visual enhancements to improve project aesthetics and connect the design to the regional context. These improvements compensate for the addition of new, highly visible features including the wider, longer bridge, the extended roadway width and realignment, grading and retaining walls and slope protection that are required to increase floodwater capacity and improve traffic safety.

The mitigation design features and principles described above would minimize the potential temporary and permanent visual impacts of the project and would enhance visual quality related to new and modified project features. With the implementation

of the mitigation measures and project features listed in Section VII, the visual impacts would be reduced to a very low degree of impact for the proposed project. It is considered that the net loss or gain of the visual quality resulting from mitigation will balance the effects of the proposed construction. The project is not anticipated to result in cumulative adverse impacts relating to visual quality.

Visual impact is only one factor to evaluate in considering the proposed project. The resulting visual impacts must be evaluated along with other factors such as cost, public safety, convenience, biological impact and impacts to archeological resources. This Visual Impact Assessment does not attempt to weigh these priorities, or state that visual impact should supersede these other factors. Determination of priorities is not a component of this report.

VIII. REFERENCES

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.

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Jamul/Dulzura Subregional Plan, San Diego County General Plan, Adopted December 19, 1979, Amended January 11, 1995, GPA 95-01.

National Environmental Policy Act (NEPA). 1969, as amended.

Bridge Type Selection Report, Lawson Valley Bridge Crossing Lawson Creek East, Nolte Associates, Inc, February, 2009.

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ATTACHMENTS

Lawson Valley Road Bridge Plan
Area of Potential Effects (APE)
Project Impact Area (PIA)
Approach Roadway Plan and Profile