This document presents a compilation of multiple resources on highway aesthetics. It is intended to work in concert with the Caltrans project development process and existing policies and practices.

This resource serves as a tool to inform and facilitate an awareness of existing policy and procedures pertaining to highway project aesthetics. Photographs in this document are for illustrative purposes only. The projects highlighted in this document are intended to serve as examples of aesthetic design elements and should not be considered universally applicable to all projects.
Message from the District 5 Director

District 5 is a unique place that is known for its diverse natural landscapes. When traveling through the central coast, beauty is found in open fields, ocean views, historical and architectural characteristics, and roadside landscaping and vegetation. These aesthetic elements are considered by the project development team when designing a roadway project in order to create an enhanced visual experience for travelers.

Aesthetics is one element of roadway design considered in highway improvement, maintenance, and safety projects. We value designing highway projects that are compatible with the adjacent visual environment, local heritage, and community values while furthering statewide goals for a transportation system that is safe, sustainable, and integrated.

Collaborating together with our local and regional partners, I work to maintain a highway that is safe, functional, and also visually attractive for decades to come; preserving our unique sense of place on the central coast and providing a positive traveling experience for all.

Sincerely,

TIMOTHY GUBBINS
District 5 Director
Provide a safe, sustainable, integrated and efficient transportation system to enhance California’s economy and livability - Caltrans Mission
# TABLE OF CONTENTS

## INTRODUCTION
- Document Purpose  
- Background  
- Scope

## TRANSPORTATION AESTHETICS
- Visual Quality Concepts
- Aesthetic Elements in the Highway Environment

## BUILDING PARTNERSHIPS
- Local Planning
- Regional Coordination
- Public Input

## PROJECT DEVELOPMENT
- Project Development Process
- Project Development Teams

## ENVIRONMENTAL REQUIREMENTS
- CEQA and NEPA
- Visual Impact Assessment
- Legal Obligations

## PROJECT EXAMPLES
1. State Route 1 - Camp San Luis Median Barrier
2. US 101 - Paso Robles Median Barrier
3. State Route 156 - San Juan Bautista Soundwall
4. US 101 - Cuesta Grade Retaining Wall
5. US 101 - Brizzolarra Soundwall
6. US 101 – San Juan Road Interchange
7. US 101 - Los Osos Valley Road Interchange
8. US 101/State Route 41 Interchange
9. US 101 - Goleta Cathedral Oaks Bridge Replacement
10. State Route 1 - Carmel Climbing Lane
11. State Route 46 - Whitley Gardens Landform Grading
12. State Route 1 - Pitkins Curve/Rain Rocks Bridge and Rockshed
13. State Route 17 - Glenwood Curves Shoulder Widening
14. State Route 227 - South Street Improvements
15. US 101 - Milpas to Hot Springs Highway Planting
16. State Route 46 Shandon Roadside Rest

## RESOURCES AND REFERENCES
- Glossary of Terms and Principles
- List of Acronyms
- Federal and State Resources
- District 5 Contacts
INTRODUCTION

Document Purpose

Explore how aesthetics are factored into transportation planning, project development, design, and construction decisions in District 5.

Objectives

• Promote sustainability and livability.
• Enhance transparency in decision-making.
• Strengthen partnerships for corridor aesthetics.
• Deliver improvements that are maintainable long-term.
Background

This document was initiated from a desire to have a cohesive approach to aesthetics planning and design for highway projects. It is intended to serve as a tool to enhance communication between all stakeholders regarding aesthetic issues, decision making, and funding priorities.

Caltrans is dedicated to developing projects that balance and integrate statewide transportation needs with local community values, environmental goals, and cultural and historic context using a collaborative and interdisciplinary approach. Highway aesthetic elements reflect community values and heritage, foster local economic vitality, and enhance the beauty and integrity of natural surroundings. Achieving sustainability of aesthetic features in highway projects requires innovative design and working with our local and regional partners to identify, plan, and secure funding for long-term maintenance of these improvements.

Scope

Information presented in this guide is largely applicable to all State Highway System (SHS) routes in California but features transportation projects that showcase innovation in aesthetic design in Caltrans District 5. This includes projects in the counties of Santa Barbara, San Luis Obispo, Monterey, San Benito and Santa Cruz. Aesthetic considerations in transportation projects are also important given the significant economic impact of the millions of people who visit the central coast each year. Especially notable to the region is State Route 1 which is designated a Scenic Highway offers breathtaking views of the pacific coast that attract visitors from around the world. Continual cultivation of an appealing visual appearance is a key part of the regions’ future vitality.
The highway and adjacent roadsides are often the first and frequently the only impression travelers have of a community. Community identity and commerce are, therefore, affected by the highway’s appearance. Views to and from the highway contribute to the quality of a place – the character of the region and the perception of its communities by residents and visitors.

The aesthetic properties of a transportation facility have purpose deeper than creating a pleasant view that is focused on the function and safety of the facility. An aesthetically pleasing highway is one that provides its users with a clear picture of what is going on around them and what is expected. This is accomplished by using techniques and materials that provide better definition of the elements of the facility, to visually highlight important information, and to reduce the stress on users that results from operating a vehicle, bicycling, or walking in a complex environment.

Almost all transportation project decisions along a corridor have the potential to influence the visual quality of the corridor. It is important that aesthetics be systematically considered and appropriately applied to the planning, development, construction, and maintenance of all highway projects along the route. This is also known as context sensitive design which requires consideration of natural, ecological, cultural, economic, and social influences related to that landscape.
Visual Quality Concepts

The individual aesthetic experience of the view from the highway corridor is a function of what one sees over time and space. This perspective is unique compared to other types of design which focus on static spaces that are experienced as individual places such as a park, civic plaza, or backyard garden.

Highway corridors are large-scale landscapes, revealed to users as a sequence of visual experiences. In this context, the aesthetic quality of a corridor is the sum of visual experience over time and not necessarily the quality of any single view. In other words, a highway may have some visually unpleasant elements, while presenting an overall favorable visual impression for users. The physical and visual relationship of the highway to its surroundings is a key factor in the aesthetics of the roadway. A highway corridor is essentially a long, narrow passageway. This linear nature of the roadway is considered as a movement through space and time.

Did you know that the visual character of a corridor tends to change more rapidly in an urbanized area than in a rural setting?

**URBAN** characteristics that affect aesthetic design
- Social and cultural influences
- Impact of adjacent land use
- Visual complexity
- Views
- Bicycle and pedestrian access
- Environmental mitigation constraints

**RURAL** characteristics that affect aesthetic design
- The natural or agricultural landscape dominates the visual field
- Viewers perceive more of the adjacent land
- There is less visual change in the landscape
- The landscape is visually simple
- Views extend far beyond the right-of-way
- The scale of the highway is perceived as smaller in relation to the rural landscape

As travelers move along the highway corridor, their perceptions change as the character of roadway and the surrounding landscape change. Sections of roadway usually maintain a particular character for a distance, which can also be described as a unit of time. Areas that are visible for a longer period of time tend to take on greater significance in the viewer’s perception of a place. The experiential limits of a transportation corridor are essentially defined by the character of the landscape and the perception of the resident population of a city or region. An essential part of understanding the context of a project is understanding the character of the surrounding community. Often this requires working with local residents to identify meaningful corridor segments for the design of aesthetic treatments and landscape plans. The visual relationship between the transportation corridor and the adjacent properties is critical when making aesthetic and landscapes decisions.
Aesthetics typically considers one of the following design objectives:

- Blend the highway with the surrounding landscape
- Contrast the highway with the surrounding landscape
- Screen the highway from the adjoining properties

Although the word ‘aesthetics’ is most often associated with a sense of beauty, aesthetics in transportation design is not a cosmetic embellishment added at the end of a project. Aesthetics are key design considerations integral to all facets of the site and all phases of project development. Aesthetics by definition is a “particular theory or conception of beauty or art; a pleasing appearance or effect.” In the context of a transportation project, aesthetics may be characterized as integration of highways and other transportation modes into the fabric of a landscape. The intent is to blend with or complement the natural and cultural setting to improve safety and operations.

Transportation planners and designers consider appearance in design along with safety, operations, and cost. While it is true that personal tastes differ, aesthetics is not simply a matter of taste alone.

Components of Good Design Include:
Proportion, Order, and Symmetry.

Factors in Viewer Perception Include:
Location, Proximity, Activity, and Duration.

When generally accepted qualities of good design such as proportion, order and symmetry are applied well, people will usually agree that the result has aesthetic value and that a rational method of decision-making has been applied to aesthetic choices. When aesthetics are not adequately considered or aesthetic treatments appear to have been applied randomly or poorly, the result can often be public discontent.

Design solutions tailored to livability and community-centric portions of the highway must also take into account their contribution to the regional appearance as a whole and how they will benefit both local and statewide users of the highway. Aesthetics and the perception of visual quality is the result of an interaction between the viewer and the environment. Visual quality, visual impacts, and visual preferences are not intrinsic characteristics of the environment or people, but rather occur as a result of an interaction between viewers and their surroundings.

Visual analysis and related processes make it possible to anticipate what viewers value in their relationship with their visual environment and how they would likely respond to visual changes proposed by a transportation project. The two primary types of viewers who might experience a highway project are those using the highway facility and those not using the highway but able to see it. These potential viewer groups’ perception of aesthetics is often modified by location and proximity, activity, and duration.
The Estrella River Bridges Project completed in 2010 is part of a major multi-phase project to upgrade 15 miles of SR 46 from a two-lane highway to a four-lane expressway.

The Bixby Creek Bridge is located on State Route 1 in Monterey County. Completed in 1932, the structure compliments the surrounding natural environment and remains one of the most admired civil engineering accomplishments in California.
Aesthetic Elements in the Highway Environment

A transportation corridor can be broken down into a palette of basic structural design elements – those in the roadway and on the roadside. Each of these elements has aesthetic design properties that can be manipulated to change visual character. They can increase safety and function and work in concert with other corridor structures to express a unique sense of place in a community.

**Roadway Elements**

1. **Topography:** Landform has a major influence on driver perception of the highway and the surrounding landscape. Roadway alignment, profile and right-of-way are set early in the design process and greatly influence the overall character of the highway.

2. **Alignment:** Roadway and right-of-way are usually existing. If a new alignment or an alteration in the existing alignment is proposed, it should be determined early in the project development process. Alignment decisions determine character of the subsequent landform, are key to assessing visual impacts and right-of-way needs, and offers opportunities for sensitive placement of the roadway within its topographic and visual setting.

3. **Lanes:** Highway travel lane width is set by Caltrans design standards. The number of lanes is determined by capacity needs based on facility type and context which considers the number of users and the flow of traffic.

4. **Shoulders:** The space between the white line and the edge of pavement is set by Caltrans design standards.

5. **Sidewalks:** Sidewalks may be both roadway or roadside elements – when they occur on structures, and roadside elements – within highway related facilities such as Park and Ride Lots or at Transit stops or where they connect into the local transportation network.

**Top:** US 101 on the Cuesta Grade in San Luis Obispo County offers scenic views of the surrounding rolling hillside. **Bottom:** San Luis Obispo’s South Street (formerly SR 227) Road Diet project demonstrates how appearance and function factor into aesthetic design. This project integrated traffic calming elements, pedestrian refuges, and bicycle lanes to address community needs.
Earthwork/Grading: Earthwork can significantly improve highway compatibility with natural or human-made surroundings. Earthwork is an element of both the roadway and the roadside. Grading techniques can be used to blend new facilities into existing terrain; to screen undesirable views or to reveal or frame scenic vistas.

Intersections: Intersections are complex transportation elements that include crossing traffic and numerous potential turning movements. For this reason aesthetic and landscape development in an intersection requires careful consideration to ensure that safety is not compromised.

Interchanges: Interchanges are typically large-scale solutions intended to separate traffic or different modes of travel. Interchanges can have a substantial effect on the visual quality of an area and aesthetic considerations are recommended early in the planning and design process.

Ramps and Gores: Entrance and exit ramps are the primary means of accessing both the highway and the community. Gore areas are the paved "triangles" between ramps and travel lanes.

Bridges: Bridges and their approaches are usually the largest single structures in the roadway. Their appearances may have a positive or negative effect on the image of the highway and the surrounding community.

Barriers: Barriers are also called traffic safety systems are available in several different types and materials. Each type has particular attributes which are appropriate for a variety of site conditions.
Roadside Elements

Walls: Wall structures are prominent, high cost components of the highway system and the aesthetic treatments incorporated into them are permanent. Wall Structures include Concrete Cantilever walls, Soil Reinforcement System walls, walls independent of other structures, and those part of a bridge structure. Other aesthetic benefits of retaining walls include limiting the roadway footprint and allowing the preservation of mature trees.

Fencing: Fencing is commonly seen along the right of way line and on structures such as bridges and walls. Fencing and gates limit access, visually define areas, improve safety and separate uses. Installation of decorative fencing beyond standard design, typically requires maintenance and funding agreements with local entities.

Lighting: There are many aesthetic considerations associated with roadway lighting. Light pollution and glare are substantial concerns in the visual impact analysis. Lighting or luminaries in the freeway context are largely standardized to minimize cost and maintenance needs. In a local community context, there is greater opportunity to examine other types of lighting features that coincide with the community character. Decorative lighting is often funded and maintained by local entities.

Signals and Signage: Signs, signals and other traffic control and monitoring devices have an impact on the aesthetic character of the roadway. The configuration of traffic control devices used on the highway follows State guidelines that are based on safety and visibility criteria. This information is provided in the California Manual of Uniform Traffic Control Devices.
The success of a transportation project is based upon strong partnerships built on common values. On the SHS, this often includes coordination and collaboration with our local and regional partners, special interest groups, and the public. This begins in the early stages of planning and continues through securing funding, project development, construction, and maintenance.

**Local Planning**

Local planning that captures community aesthetic values serves as an important resource when making improvements to the SHS. It informs planners and designers of the specific characteristics that have been vetted by the community, and supports additional discussion with agency staff when making aesthetic decisions.

Local policies regarding visual quality are considered in highway projects in several ways. As part of the environmental review process, the visual assessment will often refer to local policies, goals, and planning resources as an indicator of viewer sensitivity and potential visual impacts. A community’s aesthetic values are often expressed through its General Plan and related planning documents. By reviewing these, Caltrans planners and designers gain an understanding of community values of the visual environment, in terms of aesthetic character and scenic resources.

Local planning documents often describe specific visual elements such as local hills and ridgelines, stands of trees, vistas and other features, as resources to be protected. The State of California is not subject to local planning policies and ordinances, however it does attempt to be consistent with local regulations. The California Environmental Quality Act (CEQA) process requires public disclosure regarding a project’s consistency with local policy for certain projects.
Projects with more complicated visual issues, Aesthetic Design Advisory Committees (ADAC) made up of community members and Caltrans designers can be formed to help better understand local values and to explore aesthetic design solutions. A preliminary step in the ADAC process is to identify and discuss local aesthetic and visual policies so they can be applied to the project as appropriate. Caltrans utilizes Project Development Teams (PDTs) to help guide and communicate project-related issues between Caltrans and its stakeholders. As members of PDTs, local government representatives inform the team and speak for their agency’s aesthetic and visual policies. Caltrans’ transportation planning studies, including Transportation Planning Concept Reports completed for each state route, also serve as a valuable communication tool for the project development process that can include corridor specific local and regional aesthetic planning recommendations and policies.

Opportunities for stakeholder input regarding project aesthetics is often provided at the agency board, council, and committee meetings within the District. City and county architectural review boards and planning commissions are often part of the formal review process for a local jurisdiction. Community advisory groups are a valued source for understanding community aesthetic interest and preferences. Advisory group aesthetic sub-committees provide valuable input and recommendations regarding specific aesthetic features of a project. Official aesthetic recommendations from communities are also welcomed during project presentations at county board of supervisors or city council meetings.

**Regional Coordination**

Caltrans staff acts as an ex-officio member of each Metropolitan Planning Organization (MPO) and Regional Transportation Planning Agency (RTPA) in District 5. In this capacity, Caltrans district management and staff have multiple opportunities each month to coordinate on planning and project specific topics. For example, in San Luis Obispo County, Caltrans attends and regularly shares information at monthly or bimonthly San Luis Obispo Council of Governments (SLOCOG) board meetings and technical advisory committee meetings in addition to other project or planning specific meetings. At board meetings, Caltrans often provides the Caltrans District 5 Director’s Report for board agendas which includes a project update list with information about projects in development and in construction throughout the county. During this time, board members are encouraged to ask project questions.

All of these meetings and reports provide opportunities and resources for transportation stakeholders and members of the public to ask questions and raise preliminary concerns regarding potential aesthetic issues. Input received in these settings regarding project aesthetics and visual values provide an opportunity for Caltrans to better understand stakeholder interest and sentiment. MPO and RTPA meetings also allow for early information-sharing related to funding and maintenance responsibilities of aesthetic elements.

![Santa Maria River Bridges Widening Project with a Class I path was constructed through partnership with regional partners SLOCOG and SBCAG - completed 2014.](image)
Public Input

Public input regarding aesthetic issues on the SHS can begin in the context of local planning efforts but also occurs during the environmental phase of project development as part of National Environmental Protection Act (NEPA) and California Environmental Quality Act (CEQA).

Public participation is a cornerstone of the NEPA process. It is the intent that agencies encourage and facilitate public involvement in decisions which affect the quality of the human environment. This includes providing and encouraging opportunities for interagency coordination and public involvement during scoping and public review of environmental documents.

Additionally, public meetings on environmental documents are often held if a project is controversial, complex, or when otherwise requested. In preparing environmental documents including Environmental Assessments (EAs) and Environmental Impact Statements (EIS), federal agencies must involve resource agencies, applicants, and the public to the extent practicable. When a project is statutorily or categorically exempt/excluded, no environmental document is required, so all information must be provided in the Project Report (PR).

CEQA also sets forth policy on public disclosures, early public involvement and public review of Regional Transportation Plans, Initial Studies/Negative Declarations (IS/ND), Mitigated Negative Declarations (MND) and Draft Environmental Impact Reports (DEIR). CEQA also establishes policy on public availability of Notices of Determination and Exemption, public review periods, and response to public review comments. Per CEQA regulations, Caltrans requires that all Environmental Impact Reports (EIRs) include the opportunity for public and agency review and comment. The availability of CEQA Initial Studies and Negative Declarations for a project are generally provided to interested agencies and advertised to the public. For these types of environmental documents, formal public meetings must be held upon request. In all cases, opportunities are available to make comments regarding a project’s potential visual effects and any related measures. CEQA Categorical Exemptions (CE) by definition are used for projects that have been determined to have no potential significant environmental impacts, visual or otherwise.

Optional informational meetings and workshops not required as part of the environmental process can also be conducted to gain public input regarding aesthetic values. These are useful for identifying issues and achieving an open exchange of information, with the potential for reaching acceptable solutions. Informational meetings may be held with an individual, group, association, business, or other community group having a direct interest in the project. Often conducted as an informal introduction to the project, an informational meeting can provide a useful exchange of dialogue relating to the physical appearance of a project. Hearing these initial visual concerns allows Caltrans to better align aesthetic decision priorities with those of the community. Informational meetings also serve as important avenues to let stakeholders know about subsequent opportunities for input on project aesthetics.
Consideration of aesthetics is integral throughout development of a highway project. There are a variety of elements that influence the extent of aesthetic evaluation during the project development process and include project type, purpose, scope, cost, schedule, and funding source. These all influence when interested partner agencies, special interest groups and the public can provide input on a project. The key to successful implementation of aesthetic enhancements is through clear and continual communication. This entails collaboration between the Caltrans team and project partners and a clear understanding of each other’s role in the project development process.

**Project Development Teams**

Caltrans acts in a lead or oversight capacity on SHS projects based on project purpose, need, and funding. Regardless of if the project is led by Caltrans or other local, regional, or state agencies, PDTs are often developed to aid in coordination and communication throughout the project development process, from feasibility studies to the completion of the project. Essentially, the PDT is the steering committee for the project.

The group refines the project’s purpose and need, develops and evaluates alternatives, makes recommendations, and carries out the project work plan. Members participate in meetings including public hearings and community involvement. They are responsible for conducting studies and accumulating data. They typically include a wide range of disciplines, and often representatives from partner agencies and community groups.

Early in the project development process, the PDT identifies community interest and attitude toward the project in order to develop approaches to address these interests. As early as possible, the group will contact local, regional, state, and federal agencies with even a minor stake in a project. By working together from the earliest stages, it is possible to reduce the chance of conflict at critical times which supports a better end project.

A Caltrans project landscape architect participates as member of all PDTs for projects with potential aesthetic considerations including those relating to planting, vegetation management, roadside rest areas, noise barriers, and scenic highways. They ensure that overall aesthetics, visual impacts, conservation and management of roadside vegetation, and site planning is appropriately addressed in the project.
For projects with large or unique structures, such as walls and bridges, a bridge architect is considered for PDT membership to assist in development of architectural treatments. Assistance in the selection comes from the Caltrans Headquarters Office of Structure Design.

Existing advisory groups and processes established by local agencies are often consulted to ensure due consideration of aesthetic issues. Examples of such groups include: architectural review boards, design review committees, community advisory boards, etc. Where such groups do not exist, it is important to consult the local agency as to the best method for obtaining citizen participation on aesthetic issues when appropriate.
Project Development Process

Planning and Programming

Planning and Programming is the first opportunity where Caltrans and regional and local agencies can lay the foundation for aesthetic expectations or desires for a state highway corridor. Conceptual planning and feasibility studies identify corridor need and improvement opportunities that generate the purpose and need for a project. The purpose and need is first documented in a Project Initiation Proposal. Operational, capacity increasing, safety, and maintenance improvements are more common types of projects developed on the SHS and aesthetics is considered and addressed as an enhancement and/or mitigation depending on the level of environmental impact, if any.

Once the purpose and need is determined a priority by a local or regional agency or Caltrans, the implementing agency can request Caltrans develop a Project Initiation Document (PID). This identifies preliminary engineering and environmental studies needed, informs potential alternatives, and documents the scope, cost, and schedule for the project. Prior to development of the PID, a multidisciplinary project development team is assembled that can include local and regional agencies and the public as well as Caltrans. This provides an opportunity to collaborate and provide input relating to aesthetics. Once the PID is complete, funding must be secured for the project.

State highway roadway, safety, and operational improvement projects are funded on a consistent basis primarily through the State Highway Operation and Protection Program (SHOPP) and Statewide Transportation Improvement Program (STIP). The SHOPP funds are managed by Caltrans while STIP funds are managed by RTPAs. The amount of funding that can be proportioned for aesthetic purposes is determined on a project by project basis and can also vary based on the type of project and scope. In some counties, local measure funds are also used to supplement state and federal funding for highway improvements. Caltrans’ also oversees federal and state funds available annually to cities, counties, and regional agencies for the purpose of improving transportation infrastructure or providing transportation services on the local or state transportation system.

Environmental Document and Project Approval

During the environmental phase, the project development team carries the project through the Project Report (PR) which is the decision document that presents the project’s final scope. Commonly, larger complex projects will require a higher level environmental document such as a Negative Declaration (ND) or Environmental Impact Report/Environmental Impact Statement (EIR/EIS). A project can receive a Categorical Exemption (CE) if it meets the appropriate criteria. A Visual Impact Assessment (VIA) and Scenic Resource Evaluation (SRE) can also be completed during this phase. If a VIA is required and if the project is within the limits of an officially designated State Scenic Highway, a SRE must also be prepared for the project.
After the draft environmental document is produced, agency stakeholders and the public are provided the opportunity to review and comment on the draft document as well. This presents another opportunity to collect input from agencies and the public on all matters including, but not limited to, aesthetics. Once the draft environment document is thoroughly reviewed and comments are amended to the draft, the final environmental document and PR are approved (Refer to the Environmental Requirements chapter for more information).

**Design and Construction**

Once the environmental document is complete and the project approved, the final design plans are prepared for construction. The design phase is often the key opportunity when aesthetic features are designed and integrated into a project. Input regarding aesthetic features of the project is provided by members of the PDT which includes Caltrans staff, and may include other state entities, local and regional agency stakeholders such as architectural review advisory committees and the planning commission, and the public.

**Maintenance**

Once a project is complete, maintenance efforts focus on keeping the facility functional and extending the service life of all assets within Caltrans right-of-way. It is Caltrans goal to maintain the facility in a state of good repair to minimize traveler cost and delay. When planning for and ultimately designing aesthetic elements, long-term maintainability factors into the design. This includes designing roadway features to maximize maintenance worker safety and minimize long-term maintenance costs. For example, statewide, landscaping design trends towards drought tolerant designs that are easily maintainable and conserve water. Innovations in texture treatments that can enhance the visual quality of walls, bridges, and median barriers that support graffiti abatement is another example of how aesthetic improvements address maintainability. In some cases, like for construction of a decorative fence or lighting, a maintenance agreement with a local agency may be required.

*Did you know that approximately $100,000 is spent annually on graffiti removal in District 5?*

*This is one example of why the maintainability of surface treatments is important to consider in the design of state highway system projects.*
ENVIRONMENTAL REQUIREMENTS

The aesthetic environment and visual effect of transportation projects are considered important quality of life issues by both the Federal and State government. By statute, all transportation projects in the State of California are required to comply with the CEQA. Transportation projects which receive federal funding must also adhere to NEPA.

CEQA and NEPA

*California Environmental Quality Act (CEQA)*

CEQA explains that the first basic purpose of the act is to “inform governmental decision makers and the public about the potential, significant environmental effects of proposed activities” (CEQA guidelines, Section 15002). Aesthetics, as used in this context relates to the potential visual impacts of a project. Public disclosure is an important aspect of the CEQA environmental review process, and the potential visual consequences of a project are a critical factor regarding the public’s understanding of a project’s possible effects. CEQA requires that all EIRs include the opportunity for public and agency participation (CEQA Guidelines, Section 15201).

This includes providing adequate time for review and comment on a DEIR or ND and can also include holding a public hearing or public meeting (CEQA Guidelines, Sections 15202 and 15203). The availability of CEQA Initial Studies and Negative Declarations for a project are generally provided to interested agencies and advertised to the general public. For these types of environmental documents, formal public hearings or meetings must be held upon request. In all cases, opportunities are available to make comments regarding a project’s potential visual effects and any related measures.

CEQA Categorical Exemptions (CEs) by definition are used for projects that have been determined to have no potential significant environmental impacts, visual or otherwise. Accordingly, CEQA CEs are filed with the Governor’s Office of Planning and Research and State Clearinghouse and typically only offered for public or agency review and comment upon request. The CEQA Environmental Checklist requires that the following aesthetic issue areas be considered when assessing potential visual impacts:

Would the project:

- Have a substantial adverse effect on a scenic vista?
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
- Substantially degrade the existing visual character or quality of the site and its surroundings?
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Above: The SR 1 Salinas Road Interchange project in Monterey County features an artichoke into the design, reflecting the agricultural character of the area.
National Environmental Protection Act (NEPA)

When a project includes federal funding, it must comply with NEPA. Visual impacts and the aesthetic environment are mentioned in NEPA and the Council on Environmental Quality regulations to implement NEPA. These regulations identify aesthetics as one of the elements or factors in the human environment that must be considered in determining the effects of a project. Further, Title 23, USC 109(h) cites “aesthetic values” as a matter that must be fully considered in developing a project.

An important aspect of NEPA is to provide citizens and communities an opportunity to learn about and be involved in environmental analyses that are part of the Federal agency decision making process. The NEPA process includes three primary levels of environmental analysis, which may differ in the type and extent of public or agency involvement. A Categorical Exclusion (CE) is an action taken when the responsible government agency has determined a project would not individually or cumulatively have a significant effect on the quality of the human environment. NEPA CEs are published in the Federal Register, and typically do not include additional public participation. If it is determined that significant environmental effects related to a project are uncertain, an Environmental Assessment (EA) is prepared. In this case federal regulations require that the responsible agency involve the public to the extent practicable, and that citizens are entitled to receive environmental documents involved in the environmental process. A Finding of No Significant Impact (FONSI) is prepared when the EA determines a project will not have a significant impact. An Environmental Impact Statement (EIS) is prepared when the responsible agency has determined that a project may or will result in significant environmental impacts. Federal law requires that a EIS include the appropriate level of public involvement during the project scoping phase and during the review and comment period of Draft EIS circulation. Request for such involvement is often advertised in publications, direct mailers, and other means.

<table>
<thead>
<tr>
<th>State and Federal Environmental Review Comparison Table</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CEQA</strong></td>
</tr>
<tr>
<td>Categorical Exemption (CE)</td>
</tr>
<tr>
<td>Initial Study (IS)</td>
</tr>
<tr>
<td>Negative Declaration (ND)</td>
</tr>
<tr>
<td>Environmental Impact Report (EIR)</td>
</tr>
</tbody>
</table>
Visual Impact Assessment

Methods

Several established methodologies exist for the analysis of the visual environment. The federal government has developed guidelines and processes suitable for their particular needs. In addition, several states have created or adopted assessment methods based on their laws and circumstances. Local jurisdictions often implement the principles of defined Federal or State guidelines and/or impacts thresholds. A common theme to the various assessment methodologies is the concept that Visual Impact is a product of physical change combined with viewer response.

The Federal Highway Administration (FHWA) has developed a visual impact assessment process specifically for the analysis of roadway projects. This methodology has been adapted by Caltrans for use in California and is particularly relevant to projects requiring NEPA review. Direction on how to conduct the Caltrans/FHWA visual impact assessment methodology can be found in Chapter 27 of the Caltrans Standard Environmental Reference. The State of California considers the Caltrans/FHWA visual impact assessment methodology to be appropriate for CEQA analysis of highway projects, if used to address the issue areas required in the CEQA Environmental Checklist.

Visual Assessment and the Environmental Process

Potential changes to the visual environment are identified as an environmental quality issue by both the Federal Government and the State of California. Accordingly, the visual effect a project must be considered along with other environmental resource areas such as biology, archeology, and others as appropriate. The Visual Impact Assessment (VIA) may be a stand alone technical report referenced in the environment document, or may be written directly as a section of the environmental document. In either case, the environmental findings and subsequent mitigation measures identified in the VIA create legal obligations in the same way as those identified for other resource areas.

Categorical Exemptions and Scenic Resources

Under CEQA, the California Code of Regulations Title 14, Chapter 3 states that: “A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway”. What this means is that during a project’s scoping phase, a preliminary assessment must be made regarding the potential effects on scenic resources. If it is determined that the project may adversely affect a Scenic Resource on a State Scenic Highway, an environmental document rather than a CE determination must be used. Portions of state routes 1, 68, 154 and 156 are officially designated Scenic Highway in Caltrans District 5.
Mitigation vs. Enhancement

The distinction between mitigation and aesthetic enhancement is an important one. Mitigations are actions determined necessary in order to avoid, minimize, rectify or offset identified significant environmental impacts caused by a proposed project. Mitigations create a legal obligation on the project for their funding and implementation. Aesthetic enhancements on the other hand are not requirements based on the existence of specific CEQA and/or NEPA impacts, but instead are features added to a project to augment its appearance. Aesthetic enhancements can theoretically be added to any project, subject to funding availability, maintenance and safety considerations.

Legal Obligations

The environmental review process helps determine the type and extent of potential visual impacts associated with a proposed project. If significant visual impacts are found, mitigation measures are identified to avoid, minimize, rectify, reduce, or compensate for those impacts (CEQA Guidelines, Section 15370). These measures, as identified in the CEQA and/or NEPA environmental analysis, become a legal obligation for the project. It should be noted that aesthetic issues are considered for the majority of projects, and in many instances, basic aesthetic features are included on a project simply as a matter of good design practice. For projects with no identified significant visual impacts, expenditure of public funds, safety, and maintainability are primary considerations when determining if and to what extent aesthetic features are included.
PROJECT EXAMPLES

Caltrans developed this resource to provide an overview of existing policies, procedures, and guidelines pertaining to aesthetic considerations on the SHS. This section highlights projects and supporting processes that led to successful implementation of aesthetic improvements throughout the five counties within Caltrans District 5. These include the counties of Santa Barbara, San Luis Obispo, Monterey, Santa Cruz and San Benito. The project examples presented in this chapter demonstrate how successful implementation of aesthetic improvements on the SHS is possible through partnership.

1. State Route 1 - Camp San Luis Median Barrier

LOCATION: San Luis Obispo county north of Westmont Drive to north of Education Drive (PM 18.1-22.9).

PROJECT TYPE: Construct Concrete Median Barrier (textured in muted earth tones in a random stone pattern to match with the surrounding hillside and natural rocks).

PROJECT TEAM: Caltrans took the lead and coordinated project development with county of San Luis Obispo and citizens group, Morro Bay Beautiful.

PROCESS: This important safety project placed a concrete median barrier on State Route 1 through the Chorro Valley. Because of the route’s designation as a State Scenic Highway, the Environmental Document for the project determined that adding an earth-tone color to the new barrier would allow it to visually blend with the natural setting and be appropriate mitigation to off-set its potentially urbanizing character.

SLOCOG, the city of San Luis Obispo, and San Luis Obispo county were given the opportunity to review the project and its proposed aesthetic treatment as part of Caltrans’ context-sensitive project review process. As a result of that process, SLOCOG offered funds to augment the aesthetic treatment of the barrier to include stone-like texturing in addition to the coloring required in the Environmental Document. The texturing was successfully added to the project, as one of the first in the State to utilize newly-developed barrier-construction technology.

FUNDING: SHOPP - $2.1 Million

PROJECT STATUS: Completed Winter 2006
2. US 101 - Paso Robles Median Barrier

LOCATION: In El Paso de Robles from South El Paso de Robles to north of the US 101/SR 46 interchange (PM 55.8-57.9).

PROJECT TYPE: Median Barrier Construction.

PROJECT TEAM: Caltrans, the city of El Paso de Robles, and SLOCOG.

PROCESS: The removal of mature shrubs and trees from the Highway 101 median was required as part of this safety project to improve roadway sight distance through the city of El Paso de Robles. The potential visual consequences of the project were increased due to vegetation removal and its location through the center of town.

Caltrans, the city, and SLOCOG conducted workshops and collaborated on a barrier design which referenced the Adelaida rock walls historically used in the region. Trees and shrubs from the city’s master plant list were replanted where they could be safely maintained. This highly successful project demonstrates how public safety and community aesthetic values can both be achieved through meaningful collaboration efforts.

FUNDING: SHOPP - $2 Million

PROJECT STATUS: Completed Summer 2011
3. State Route 156 - San Juan Bautista Soundwall

LOCATION: In San Juan Bautista from east of Monterey Street to Alameda Street (PM 2.5-3.0).

PROJECT TYPE: Highway Widening.

PROJECT TEAM: Caltrans and the city of San Juan Bautista.

PROCESS: To improve safety and operations of State Route 156 through the community of San Juan Bautista, the route was widened to four lanes and the environmental review process determined that soundwalls would be required as part of the project. Mission San Juan Bautista serves as a prized community landmark, which accordingly provides a rich historic heritage for the region. Working with the city and local residents, an innovative soundwall was designed that referenced the historic architecture of the mission period, including the appearance of adobe plaster, red clay tile, and heavy wooden details. Native landscaping, now mature, further integrates this necessary highway feature into the visual character of the surrounding community.

FUNDING: STIP - $3.8 Million

PROJECT STATUS: Completed 1996
4. US 101 - Cuesta Grade Retaining Wall

LOCATION: In San Luis Obispo county near the city of San Luis Obispo, at the top of the Cuesta Pass (PM 32.3-35.5).

PROJECT TYPE: Retaining Wall.

PROJECT TEAM: Caltrans, SLOCOG, and local citizens.

PROCESS: Widening of US 101 over Cuesta Pass required construction of a large retaining wall located at the summit of the highway along the southbound lanes. Because of the proposed wall size and location, it was highly visible to travelers on US 101 and had the potential to substantially alter the visual character of the rural setting. As a result, the environmental impact report for the project required that aesthetic treatment be incorporated into the wall design, based on input from the community.

To accomplish this, an aesthetic advisory committee was formed which included local citizens and agency stakeholders. Workshops were held over an approximately one year period, resulting in specific recommendations related to wall profile and form, stone texture, appearance and color scheme, as well as the integral planting of native trees. This collaborative effort became a model for the more aesthetically sensitive, highly visible highway projects on the Central Coast. In 2004, this project was a Caltrans “Excellence in Transportation” award recipient and the American Society of Civil Engineers “Outstanding Civil Engineering” award recipient for San Luis Obispo County.

FUNDING: STIP - $4 Million (retaining wall), $46 Million (total project cost)

PROJECT STATUS: Completed 2003
5. **US 101 - Brizzolarra Soundwall**

**LOCATION:** In the city of San Luis Obispo, northbound US 101 between Marsh Street and Broad Street (PM 28.4-28.7).

**PROJECT TYPE:** Soundwall (Concrete soundwall resembling wood).

**PROJECT TEAM:** Caltrans and the city of San Luis Obispo.

**PROCESS:** Residents along Brizzolarra Street in San Luis Obispo were subject to high levels of freeway noise due to their close proximity to US 101. As a result, the area qualified for a soundwall funding opportunity. Construction of the new wall, however, would potentially require the removal of a number of mature trees and would be highly visible from the highway as well as the adjacent neighborhood. Caltrans and the city team worked together to implement an innovative design with a staggered alignment and footing that avoided impacting the majority of trees and even allowed for new landscaping. In addition, the aesthetic treatment was added to the wall, with concurrence of the city’s Architectural Review Board.

**FUNDING:** SHOPP - $1.1 Million

**PROJECT STATUS:** Completed 2004
6. US 101 – San Juan Road Interchange

**LOCATION:** In Monterey County north of Prunedale near the San Benito County line (PM 101.1).

**PROJECT TYPE:** Interchange Construction.

**PROJECT TEAM:** Caltrans, Monterey county and TAMC.

**PROCESS:** This important project implemented operational and safety improvements on US 101 and the local road network north of Prunedale. Construction of the new interchange promoted a more efficient and safe interface between the community and the highway. In order to construct this large-scale project, retaining walls were required in order to minimize the project’s footprint on the landscape.

Through the environmental review process and community presentations, it was determined that aesthetic treatment should be applied to the retaining walls. With input from the construction engineers, a tiered sculpted concrete wall was selected that would aesthetically fit the rural heritage of the region. The faux rock sculpting, along with the stepped-back form successfully reduced the visual scale of the wall and minimized its engineered quality. Integral native planting, once mature will further visually blend the wall and the interchange into the adjacent community.

**FUNDING:** RIP, IIP, CMIA, Local and STIP - $69 Million

**PROJECT STATUS:** Completed Summer 2015
7. US 101 - Los Osos Valley Road Interchange

LOCATION: In the city of San Luis Obispo at US 101 and Los Osos Valley Road (PM 25.5-26.3).

PROJECT TYPE: Reconstruct Interchange.

PROJECT TEAM: City of San Luis Obispo and Caltrans.

PROCESS: The Los Osos Valley Road interchange project will provide much needed relief from increasing traffic congestion throughout the southern section of the city of San Luis Obispo. At the same time, the project offers an opportunity to support the city’s aesthetic goals at an important gateway into town. This locally sponsored project was designed by the city of San Luis Obispo with Caltrans oversight review and approvals.

This important project, which affected both local roadways and the SHS required close collaboration between agencies in order to create a unified aesthetic theme across jurisdictional boundaries. Shared funding and maintenance responsibilities provide the opportunity for project features such as architectural pilasters, custom light posts, textured paving, and other aesthetic enhancements.

FUNDING: RIP and Developer Fees - $24 Million

PROJECT STATUS: Completed Spring 2016
8. US 101/State Route 41 Interchange

LOCATION: In the city of Atascadero on US 101 north of Curbarail Avenue to Atascadero Creek Bridge and on SR 41 east of Atascadero Avenue to east of El Camino Real (PM 45.2-45.7 (101) and PM 15.8-16.0 (41)).

PROJECT TYPE: Interchange Improvements.

PROJECT TEAM: Caltrans, the City of Atascadero, and SLOCOG.

PROCESS: The Highway 41/101 interchange located near the historic center of the city in Atascadero was required to meet growing operational demands and increase mobility in the area. The interchange required the construction of new bridges, the reconfiguration of on- and off-ramps, and the removal of substantial vegetation. The environmental document for the project recognized the potential loss of visual character for the area, and required that aesthetic treatments be included in the new bridge design and new landscaping be planted.

Through a series of community meetings, an aesthetic plan for the interchange was developed which took visual cues from the historic civic buildings seen in the community. Aesthetic treatments were implemented for viewing by motor vehicles, pedestrians, and bicyclists. Replacement landscaping was also included to reestablish the vegetated visual character of the highway corridor and the downtown core.

FUNDING: STIP - $16 Million

PROJECT STATUS: Completed Winter 2011
9. US 101 - Goleta Cathedral Oaks Bridge Replacement

LOCATION: In the city of Goleta at the US 101/Cathedral Oaks overcrossing (PM 26.5-27.1).

PROJECT TYPE: Bridge Replacement.

PROJECT TEAM: Caltrans and the city of Goleta.

PROCESS: Replacement of the existing Cathedral Oaks bridge was necessary to ensure safety for the travelling public. In order to minimize traffic disruptions and bring the bridge up to current standards, the structure was rebuilt at a slightly different location and alignment.

This important bridge at one of the western gateways to Goleta, was understood by the project team to have important value in terms of community access as well as local aesthetic identity. Caltrans presented the community with the opportunity for aesthetic design treatment options on the bridge for the slope-facing the highway. The community selected a design in support of the city’s iconic imagery. Bridge rail and extensive landscaping completed the aesthetic picture at this highly visible coastal location.

FUNDING: SHOPP - $6.7 Million

PROJECT STATUS: Completed August 2011
10. State Route 1 - Carmel Climbing Lane

LOCATION: In Carmel from south of Atherton Drive to north of South Carmel Hill Drive (PM 73.0-73.5).

PROJECT TYPE: Climbing Lane.

PROJECT TEAM: Caltrans and the city of Carmel-by-the-Sea.

PROCESS: Increasing traffic on State Route 1 through Carmel caused significant delays for both the local citizens as well as the visiting tourists and was impacting the local economy. The problem was worsened by slow-moving trucks travelling northbound along a moderate uphill grade of the route through the middle of town. The solution to this operational problem was the addition of a climbing lane to facilitate trucks and other slower-moving vehicle movement through the corridor. The widening of the highway to build the climbing lanes necessitated the construction of a retaining wall along the southbound roadside.

In response to community input, Caltrans developed a design which supported the aesthetic vision of the stakeholders. This collaborative effort resulted in a rock texture which successfully reflects the “golden granite” stonework in the region.

FUNDING: SHOPP - $3.8 Million

PROJECT STATUS: Completed 2002
11. State Route 46 - Whitley Gardens Landform Grading

LOCATION: In San Luis Obispo county near El Paso de Robles west of Geneseo Road to east of Almond Drive (PM 36.3-41.2).

PROJECT TYPE: Landform Grading.


PROCESS: The construction of two additional lanes to Highway 46 east is one of the largest state highway projects ever undertaken in San Luis Obispo county. As such, it presented a number of challenges, particularly at Whitley Gardens and the Estrella River bridge. Because of the varied topography, road construction required the excavation of several large, highly visible cut slopes adjacent to the highway.

In anticipation of this, the project’s Environmental Document required that the large cut slopes be designed and constructed to minimize the engineered appearance and to mimic the natural topography of the region. In order to achieve this requirement, a design and construction technique called landform grading was successfully implemented through collaborative, multiple disciplinary/planning efforts. As a result, the rural, natural visual character of the corridor has largely been preserved. In addition, aesthetic treatment was included in the design of the new bridges, and native planting was installed at key locations.

Due to the unique and innovative landform grading that allowed the roadway to blend with the rural setting and rolling topography, the project received the 2015 Caltrans “Excellence in Transportation Award” (rural category).

FUNDING: IIP TE - $1.2 Million

PROJECT STATUS: Completed Summer 2015
12. State Route 1 - Pitkins Curve/Rain Rocks Bridge and Rockshed

LOCATION: In Monterey county on the Big Sur Coast south of Lucia (PM 21.3-21.6).

PROJECT TYPE: Bridge and rockshed construction.

PROJECT TEAM: Caltrans, the county of Monterey, California Coastal Commission, California State Parks.

PROCESS: Continuing landslides and falling rock at this location in southern Monterey county caused inherent safety issues as well regular disruptions to the local economy in terms of road closures along this Officially Designates State Scenic Highway and National Scenic Byway. Working with the county of Monterey and the California Coastal Commission, it was determined that the most effective and sustainable solution was to construct a bridge to span the landslide area, and a rockshed (the first in the State) to deflect falling rocks. An Aesthetic Design Advisory Committee (ADAC) was created to help guide the visual appearance of this landmark project overlooking the Pacific Ocean. The ADAC consisting of local residents, the county of Monterey, agency stakeholders and Caltrans met for over two years toward the development of the aesthetic design of the bridge and rockshed. The project has garnered acclaim for not only its engineering qualities, but also for its appearance and community involvement efforts.

FUNDING: SHOPP - $33 Million

PROJECT STATUS: Completed 2014
13. State Route 17 - Glenwood Curves Shoulder Widening

LOCATION: In Santa Cruz county south of Glenwood Drive (PM 9.4-10.1).

PROJECT TYPE: Shoulder Widening Safety Project.

PROJECT TEAM: Caltrans and the county of Santa Cruz.

PROCESS: Narrow roadway shoulders and steep topography along this section of curvilinear highway created sight-distance issues and safety concerns. The project solution was to widen the paved shoulders, which required the construction of retaining walls at three locations.

Optimizing public safety while maintaining the rural scenic quality of State Route 17 was important in determining the architectural treatment for the retaining walls. In order to minimize disruptions to the travelling public during construction, wall types were selected that would shorten construction time. The natural-appearing rock treatment chosen for the project, seen in other rural roadways in the area, was presented to Santa Cruz county for review and approval.

The Glenwood Curves project represents the successful convergence of context-based aesthetics, public safety, and resource stewardship.

FUNDING: SHOPP Program

PROJECT STATUS: Completed 2014
14. State Route 227 - South Street Improvements

LOCATION: In the city of San Luis Obispo from east of San Luis Obispo Creek Bridge to west of Madonna Road overcrossing (PM R10.9-R14.2).

PROJECT TYPE: Rehabilitate Roadway.

PROJECT TEAM: Caltrans, SLOCOG, and city of San Luis Obispo.

PROCESS: The South Street Corridor Rehabilitation Project (State Route 227 prior to relinquishment to the city) is an excellent example of collaboration between the surrounding neighborhood community, local San Luis Obispo agencies and Caltrans. In response to neighborhood safety concerns, the city and Caltrans hosted several town hall meetings and invited volunteers from the community to discuss these issues. The goal was to develop recommendations for viable, community-supported improvements that the agencies could implement.

Caltrans led a focus group comprised of 11 community members including staff from the local elementary school, the San Luis Obispo Police Department, and city staff. This project ultimately rehabilitated the roadway, widened the San Luis Obispo Creek Bridge to provide for a 5-foot wide sidewalk which included new bridge rails with texture on the north and south sides. This project is considered a “Road Diet” project as it reduced the number of travel lanes to two (one in each direction) and provided bicycle and pedestrian enhancements. Removal of an existing wall fronting the roadway created the opportunity to develop a new aesthetically pleasing masonry wall with landscaping. The medians were designed with irrigation lines beneath the roadbed and two feet of topsoil in preparation for the city of San Luis Obispo to plant their own selection of shrubs and trees.

Providing these elements in the project allowed the city to easily implement new landscaping without having to excavate into the roadbed. The medians will not only add a visual enhancement but once planting is established, will contribute to traffic calming measures by promoting greater driver attentiveness. This project was a Caltrans 2011 “Excellence in Transportation” Award recipient.

FUNDING: SHOPP - $7.7 Million

PROJECT STATUS: Completed Summer 2010
15. US 101 - Milpas to Hot Springs Highway Planting

LOCATION: In the city of Santa Barbara from the Olive Mill Road overcrossing to the Milpas Street undercrossing (PM 10.8-12.8).

PROJECT TYPE: Highway landscaping.

PROJECT TEAM: Caltrans, the city of Santa Barbara, and SBCAG.

PROCESS: The previous construction of operational improvements along US 101 through the eastern portion of Santa Barbara required the removal of much of the existing roadside landscaping. As part of Caltrans’ commitment to highway aesthetics, a separate follow-up planting project was designed and implemented.

In conjunction with the city of Santa Barbara and SBCAG, a comprehensive landscaping plan was developed which reinforced the aesthetic goals of the city, and also met the sustainability principles of the community and the State in terms of resource efficiency, safety, and maintainability.

FUNDING: STIP - $1.1 Million

PROJECT STATUS: Completed 2014
16. State Route 46 Shandon Roadside Rest

LOCATION: In San Luis Obispo county near Shandon (PM 49.5).

PROJECT TYPE: Rehabilitate Roadside Rest.

PROJECT TEAM: Caltrans.

PROCESS: This project reconstructed the original 1979 rest area east of Shandon on State Route 46. The facility included new expanded restroom facilities, upgrades to parking, pedestrian safety improvements and repair and replacement of electrical, sewer and water systems. The project was awarded “Rest Stop Project of the Year” in 2012 by the California Transportation Foundation.

FUNDING: ARRA - $3 Million

PROJECT STATUS: Completed Spring 2011
Glossary of Terms and Principles

Continuity: The uninterrupted flow of pattern elements, maintenance of visual relationships between immediately connects or related landscape components or features.

Dominance: Components or specific features in a scene may be visually dominant because of prominent positioning, contrast, extent, or importance of pattern elements.

Intactness: The integrity of visual order in the natural and built landscape, and the extent to which the landscape is free from visual encroachment.

Landscape Type: An area of landform plus land cover forming a distinct, homogeneous component of a landscape, differentiated from other areas by its topography, natural, and cultural land cover.

Form: The form of a proposed highway is also instrumental in determining visual impacts. An important contributing factor to visual character of the highway and its surroundings is the roadway’s horizontal and vertical alignment. The visual attributes of the project’s linear or curvilinear geometrics can greatly affect the visual character of the viewing experience.

Nodes: Points, the strategic spots in a city or area into which an observer can enter, and which are the intensive foci to and from which he or she is travelling. They may be primarily junctions, places of a break in transportation, a crossing or convergence of paths, moments of shift from one structure to another. Or the nodes may be simply concentrations, which gain their importance from being the condensation of some use or physical character.

Scale: The scale of a project has potential to impact visual quality. For highway projects, scale can relate to the number of lanes and the typical cross-section of those lanes, the size of structures such as bridges and retaining walls, and the width of the associated medians, shoulders, ditches, and clear zones. It also refers to the length of the project.

Sightline: The unobstructed line of sight between an observer and viewed object.

Texture: The visual or tactile surface characteristic of various elements in the landscape.

Unity: The degree to which the visual resources of the landscape join together to form a coherent, harmonious visual pattern. Unity refers to the compositional harmony or intercompatibility between landscape elements.

Viewer Response: Measures of a viewer reaction to changes in visual resources include viewer exposure, viewer sensitivity, cultural significance, and local values.

Vividness: The memorability of the visual impression received from contrasting landscape elements as combined to form striking and distinctive visual patterns.

Visual Character: The visual character of a landscape is formed by the order of the patterns composing it. The elements of these patterns are the form, line, color, and texture of the landscape’s visual resources. Their interrelationships can be objectively described in terms of dominance, diversity, continuity, etc.
List of Acronyms

ADAC - Aesthetic Design Advisory Committee
CE - Categorical Exemption (CEQA) Categorical Exclusion (NEPA)
CEQA - California Environmental Quality Act
DEIR - Draft Environmental Impact Report
EIR - Environmental Impact Report
EA - Environmental Assessment
EIS - Environmental Impact Study
FHWA - Federal Highway Administration
IS - Initial Study
ND - Negative Declaration
MND - Mitigated Negative Declaration
MPO - Metropolitan Planning Organization
NEPA - National Environmental Protection Agency
PDT - Project Development Team
PID - Project Initiation Document
PR - Project Report
RTPA - Regional Transportation Planning Agency
SBCAG - Santa Barbara County Association of Governments
SHOPP - State Highway Operation and Protection Program
SHS - State Highway System
SLOCOG - San Luis Obispo Council of Governments
SRE - Standard Environmental Reference
STIP - State Transportation Improvement Program
VIA - Visual Impact Assessment
Resources and References

**Federal and State Resources**

California Environmental Quality Act:  [http://resources.ca.gov/ceqa/](http://resources.ca.gov/ceqa/)


Caltrans District 5 System Planning:  [http://www.dot.ca.gov/dist05/planning/system_planning.htm](http://www.dot.ca.gov/dist05/planning/system_planning.htm)

Caltrans Division of Transportation Planning:  [http://www.dot.ca.gov/hq/tp](http://www.dot.ca.gov/hq/tp)


Caltrans Landscape Architecture Program:  [http://www.dot.ca.gov/hq/LandArch/](http://www.dot.ca.gov/hq/LandArch/)


Manual on Uniform Traffic Control Devices:  [http://mutcd fhwa dot gov/index.htm](http://mutcd fhwa dot gov/index.htm)

National Environmental Policy Act:  [https://www.epa.gov/ne](http://https://www.epa.gov/ne)


Scenic Highways Guidelines:  [http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/scenic_hwy.htm](http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/scenic_hwy.htm)


Transportation Funding in California:  [http://www.dot.ca.gov/hq/tp/offices/eab/fundchrt.html](http://www.dot.ca.gov/hq/tp/offices/eab/fundchrt.html)

**District 5 Contacts**

**Robert G. Carr**  
District 5 Scenic Highway Coordinator/Landscape Architect  
bob.carr@dot.ca.gov  
805-549-3083

**Corby Kilmer**  
District 5 Landscape Architect  
corby.kilmer@dot.ca.gov  
805-542-4679

**Melissa Streder**  
District 5 Associate Transportation Planner  
melissa.streder@dot.ca.gov  
805-549-3800