

# Chapter 1 Proposed Project

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## 1.1 Introduction

The California Department of Transportation (Caltrans) proposes to upgrade the deteriorating masonry rock wall parapets at seven locations within the proposed project limits (PM 66.7/67.8) on US Highway (US) 50 in El Dorado County from Robbins Run Sidehill (PM 67.1) to Rockwall Sidehill 2 (PM 67.6) by constructing modified Type 736 concrete barriers on Portland cement concrete slabs. The proposed project will also include replacement or lining of existing cross culverts, digging out and replacing areas of loose and damaged asphalt concrete pavement and placing a ¾ inch asphalt overlay. The District 3 Traffic Safety Branch initiated the proposal for this project on April 2, 2004. This project is programmed for funding in the 20010/11 State Highway Operations and Protection Program (SHOPP) under the 015 (Collision Severity Reduction program) at an estimated cost of \$6,097,000.

## 1.2 Purpose and Need

### 1.2.1 Purpose

The primary purpose of this project is to improve safety along the section of US 50 known as Upper Meyers Grade at Echo Summit. The secondary purpose of this project is to improve drainage features within the project limits.

### 1.2.2 Need

The existing roadway and its features, such as the rock wall parapets and the drainage systems, were built in 1939. The masonry rock wall parapets along this section of roadway have severely deteriorated over the years requiring an excessive degree of maintenance and do not meet current state and federal safety standards. In addition, the drainage systems within the project limits are in poor condition and in need of repair. All culverts that outlet from the rock retaining walls are corroded or damaged.

## 1.3 Background / Environmental Setting

US Highway 50 is a major east-west route of the National Highway System, stretching just over 3000 miles from West Sacramento, California, to Ocean City Maryland, on the Atlantic Ocean.

US 50 is a two-lane facility at this location that winds along a steep hillside with two 12-foot lanes and very narrow shoulders. A steep cut slope abuts the westbound edge of shoulder and a steep drop-off runs along the eastbound edge of the shoulder that is protected by seven masonry rock parapet walls. Constructed in approximately 1939, these rock wall parapets have been identified as contributing elements to a larger historic property determined eligible for the National Register of Historic Places (National Register) that is on the California Register of Historical Resources.

The project is located on the Echo Lake USGS 7.5-minute topographic quadrangle within the Lake Tahoe Basin. The Lake Tahoe Basin is an intermountain basin formed by the faulting of the rocks of the Sierra Nevada to the west and the Carson Range on the east. The study area along US 50 reaches an elevation of approximately 7,380 feet at Echo Summit and decreases to approximately 7,100 feet at the northern edge of the project area. The surrounding terrain is characterized by steep rocky slopes of decomposed granite interspersed with large outcrops of granite and scattered granite boulders. Sunny dry summers and cold snowy winters characterize the climate of the Tahoe Basin area. Temperatures within the basin may range from approximately 85 to 90 degrees Fahrenheit in the summer and from 15 to 35 degrees Fahrenheit in the winter. Total precipitation for the year ranges from about 20 inches along the eastern shore in Nevada to up to 50 inches along the western edge of the basin in California, including an average total 100 to 130 inches of snow at the lower elevations.

The location of the proposed project is within the scenic region of the Lake Tahoe recreational area of northern California. The region is recognized for its picturesque natural setting and beauty, as well as its recreational attractions, which draw millions of visitors to the basin annually. The visual landscape of the Lake Tahoe Basin has a quality of its own. The region's distinctiveness is due to its rugged granitic mountainous terrain combined with heavily forested slopes and a backdrop of a vast blue serene lake. The combination of these elements truly makes the region extraordinary.

The United States Congress, the Department of Agriculture, and the states of California and Nevada through a Bi-State Tahoe Regional Planning Compact, which was approved in 1980 under public law 96-551, have recognized the Lake Tahoe Basin as a unique and environmentally sensitive area. The Tahoe Regional Planning Agency (TRPA) has adopted environmental thresholds required by the Tahoe Regional Planning Compact. The threshold standards define a level of environmental

quality that the region desires to achieve. The TRPA is the responsible transportation-planning agency for the Tahoe Basin and carefully evaluates environmental impacts for each project.

## 1.4 Alternatives

### 1.4.1 Build Alternative

The masonry parapet walls are above roadway grade guardrail structures that were placed on top of a masonry retaining wall at the time of construction, approximately 1939. The parapets can be removed without damaging the existing retaining wall. The existing parapets will be replaced with a Type 736 concrete barrier rail that will be cast from a mold of the existing walls and aesthetically treated to mimic the texture and color of the existing walls.

Roadway excavation of approximately 1.5 to 3 feet deep and 8-feet wide will be necessary to place a Portland Concrete Cement (PCC) slab foundation under the existing eastbound lane of the highway. The new Type 736 barrier will be placed and anchored on top of the new barrier rail slab, so that no direct connection will be made to the existing retaining wall.

Thirteen cross culverts currently exist within the project limits are in need of repair or replacement.

The existing Metal Beam Guard Rail (MBGR) between the rock wall parapets will be reconstructed.

Roadway asphalt will be ground down and replaced with an overlay of approximately 3 inches of hot mix asphalt.

#### *Potential Lane Closure Options*

The following methods of detours and closures are proposed on US 50 in order to construct this proposed project.

#### **Option 1: One-Way Reversing Control; two lanes available on weekends**

On the two-lane, two-way section of US 50, one lane would be open at all times during all construction periods. A pilot vehicle will guide traffic through the traffic control zone during reverse control procedures. No work would occur after 12:00 pm (noon) on Fridays, weekends, legal holidays, and special event days. The two lanes

of US 50 would remain open at all times when construction is not actively in progress. The duration of the project using this option has been estimated at 261 working days under normal working conditions (this option assumes daytime working hours: five day work weeks, eight hour work shifts, 21 working days per month).

This option will cause minimum daily traffic delays; however, it will have the longest cumulative delays due to the length of time that it will take to complete the project. It is estimated that it will take three construction seasons to complete the project with this lane closure option.

**Option 2: One-Way Directional Closure; close eastbound lane behind k-rail, shift eastbound traffic to westbound lane, and direct westbound traffic to detour route.**

This option would keep one lane of US 50, dedicated to eastbound traffic, open for the duration of the project, with the highway closed to westbound traffic at all times during the construction period. There would be continuous flow of traffic in the eastbound direction (into the Lake Tahoe area) and a detour would be provided for the westbound (leaving the Lake Tahoe area) traffic flow.

Westbound traffic would be detoured at the US 50/SR 89 junction, follow SR89 to SR88 to SR49 and would terminate at US 50 in Placerville. The detour is 113 miles long and takes 2 hours 30 minutes to negotiate. The existing route along US 50 is 53 miles and takes 1 hour and 5 minutes to travel from the US50/SR89 junction to Placerville.

The duration of the project using this option has been estimated at 149 working days under the assumption that with use of the K-rail, work could proceed on a 24/7 schedule. It is estimated that it will take two construction seasons to complete the project with this lane closure option.

**Option 3: Reversing Control 24/7; close eastbound lane behind k-rail, provide one-way reversing control**

Option 3 is similar to Option 1, with one lane of US 50 kept open at all times during construction periods and traffic guided by a pilot vehicle through the traffic control zone during reverse control procedure. The major difference between the two options is that closure of one lane of US 50 through the construction zone would be allowed 24 hours a day, seven days a week under Option 3.

The duration of the project using this option has been estimated at 149 working days under the assumption that with use of the K-rail, work could proceed on a 24/7 schedule. It is estimated that it will take two construction seasons to complete the project with this lane closure option.

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**Option 4: One-Way Reversing Control with Movable Barrier; two lanes available on weekends**

This option is similar to Option 1 except that movable barrier will be used from Monday to Friday to allow work to continue on a 24/7 schedule and since the barrier can easily be moved, both lanes will be open to traffic Friday at noon through Sunday.

The duration of the project using this option has been estimated at 222 working days under the assumption that with use of the movable barrier, work could proceed on a 24/7 schedule during the week. It is estimated that it will take two construction seasons to complete the project with this lane closure option.

**Option 5: Full Closure of US 50; direct all traffic to detour route**

This option will include a complete closure of US 50 in El Dorado County from PM 66.6 to PM 67.8 during the construction period. Eastbound traffic will be detoured from US 50 to SR 49 in Placerville, to SR 88, then to SR 89, and back to US 50 near Meyers; westbound traffic will be detoured using the reverse route. The closure will affect both eastbound and westbound traffic on US 50, coming in and out of the Tahoe Basin. The detour route is 113 miles long and takes approximately two hours and 30 minutes to negotiate. The existing route along US 50 is 53 miles long and takes approximately one hour and five minutes to travel from Placerville to the US 50/ SR 89 junction.

With the detour, it is estimated that the project could be built in 44 days (approximately seven weeks), with extended working conditions (five day work weeks, three eight-hour or two 12-hour work shifts). Full closure of the highway is expected to last 18-24 days. Following the full closure there will be a period of standard reversing traffic control for 20 working days (similar to Option 1). This 20-day period will only occur on weekdays and there will not be traffic control in place

from Friday at noon to Sunday. Work is anticipated to begin in early May and be completed prior to the Fourth of July weekend of the construction year (it is anticipated that the full closure portion of construction will be complete prior to Memorial Day weekend).

#### **1.4.2 No-Build Alternative**

The No-Build Alternative for this project would entail leaving the existing rock parapet walls in their current condition. This alternative is not feasible or prudent as the existing rock parapet walls in their current damaged condition presents a potential safety concern to the traveling public and requires correction. Furthermore, the existing masonry parapets do not meet the current state and federal safety standards and would not meet the standards with routine maintenance and repair.

#### *Final Decision- Making Process*

After the public circulation period for this environmental document, all comments will be considered, and Caltrans will make the final determination of the project's effect on the environment. In accordance with the California Environmental Quality Act, if after mitigation no significant adverse impacts are identified, Caltrans will prepare a Mitigated Negative Declaration. Similarly, if Caltrans determines the action does not significantly impact the environment, Caltrans, as assigned by the Federal Highway Administration, will issue a Finding of No Significant Impact in accordance with the National Environmental Policy Act.

#### **1.4.3 Alternatives Considered and Withdrawn**

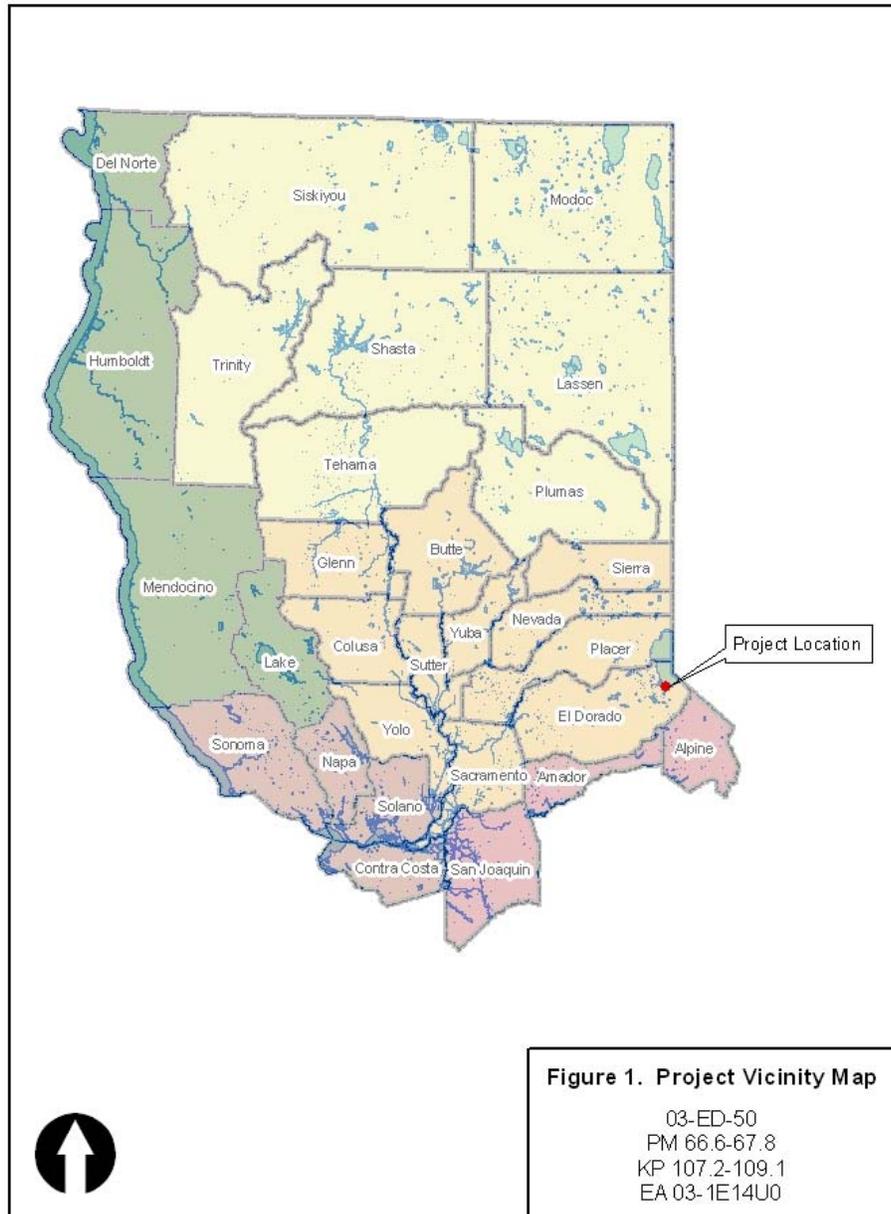
Several alternatives have been considered for improvement to this segment of U.S US 50.

- Widen existing roadway to 39 feet.
- Widen existing roadway to 31 feet.
- Construct new east bound roadway.

Due to the cost and potential environmental impacts associated with widening the highway or constructing a new lane at this location, these alternatives have not been advanced further in the planning stages.

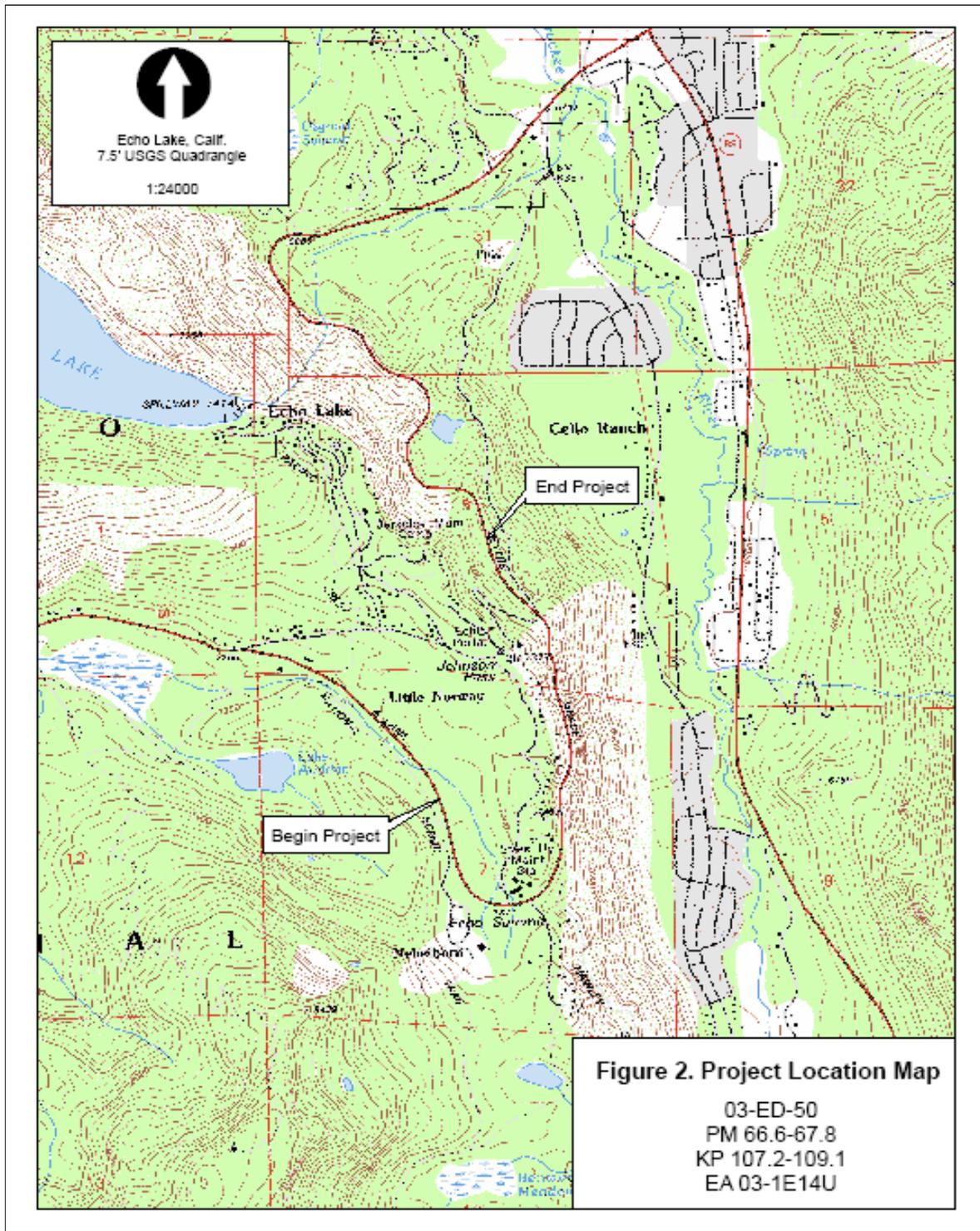
Although there were other options considered for widening the highway at this location to provide for wider shoulders and other highway features, all of the options

included replacement of the rock wall parapets as a necessary feature of each alternative considered.



**Figure 1-1 Project Vicinity Map**

*Echo Summit Rock Wall Parapet Replacement/Water Quality Improvement Project  
Initial Study/Environmental Assessment/4(f) Evaluation*



**Figure 1-2 Project Location Map**

## 1.5 Permits and Approvals Needed

The following permits, reviews, and approvals would be required for project construction:

Agency	Permit/Approval	Status
US Forest Service Lake Tahoe Basin Management Unit (LTBMU)	Special Use Permit Amendment	Preliminary discussions have occurred with USFS
Tahoe Regional Planning Agency	Construction Permit	Initiated preliminary discussions with TRPA
State Historic Preservation Officer	Concurrence on Findings of Effect and Memorandum of Agreement	Completed. Signed by SHPO, USFS, Caltrans, and sent to Advisory Council on Historic Preservation

