

Chapter 2 Alternatives

2.1 Alternative Development Process

Two build alternatives and one “No-Build” Alternative are being considered for this project. The two build alternatives are similar. One creates slightly more environmental impact by proposing full uniform shoulders throughout the project limits. The other creates less environmental impact by not implementing full 2.4-meter (8-foot) shoulders throughout the entire project limits. The No-Build Alternative leaves the roadway as it is.

2.1.1 Alternatives Considered and Eliminated

Four build alternatives and the “No-Build” Alternative were developed for a 1997 Project Study Report. All four build alternatives would have achieved the route concept for this segment of U.S. Highway 395 by providing a 12-meter (40-foot) roadway cross-section and improving highway function.

Each of the four build alternatives included the following design elements:

- Constructing 2.4-meter (8-foot) shoulders on both sides of the roadway.
- Reconstructing the existing roadway’s structural section.
- Correcting the highway’s elevation.
- Constructing right- and left-turn lanes at Picnic Grounds Road (kilometer post 85.4, post mile 53.1).
- Eliminating the road connection at kilometer post 85.1 (post mile 52.9).
- Eliminating the eight existing pullouts.
- Improving private driveway and county road connections.
- Improving drainage, including a reinforced concrete box culvert at Tioga Lodge, and replacing existing 45.7-centimeter (18-inch) culverts with a 61-centimeter (24-inch) pipe culvert system.

While all four build alternatives would have achieved the route concept for this highway, the project development team dropped these build alternatives from consideration because they did not meet needed requirements. The project team had established criteria that the proposed project alternatives would have to meet. Each proposed alternative would have to:

1. Meet the purpose and need of the proposed project.
2. Meet current Highway Design Manual Standards
3. Minimize long-term visual impacts.
4. Minimize slope cuts west of the highway alignment.
5. Minimize the use of retaining structures.

All four of the alternatives that were proposed in the 1997 Project Study Report met the first two criteria, but they did not satisfy the remaining three criteria in an acceptable manner and, therefore, were withdrawn from further consideration for this project.

The four Project Study Report (PSR) alternatives differed primarily in how they proposed to physically construct the new roadbed, how the highway alignment would shift (horizontally) and how retaining structures or cut and fill slopes would be used to support the roadbed. Each alternative is detailed below. Cross-section views of the four build alternatives are shown in Figures 2.1 through 2.4.

Withdrawn PSR Alternative 1

This alternative proposed to build fill slopes at a ratio of 1 to 2 and cut slopes at a ratio of 1 to 1 ½ and to improve the horizontal alignment of the road with a centerline shifted up to 1.5 meters (5 feet). This alternative would have had the greatest impact on the environment because of the very large cut and fill slopes. The fill slopes would have moved the toe of the existing slope as much as 58 meters (190 feet) toward Mono Lake. This alternative would have required the purchase of a substantial amount of new highway right-of-way and relocation of four utility poles. See Figure 2.1 for a cross-section view of this alternative.

The realignment of the centerline for the first 1.6 kilometers (1 mile) of the project would have exposed a cut area more than 30 meters (98 feet) tall in addition to the existing cuts. This option would have increased the area of disturbed soil, potentially increasing the existing rockfall reported in a 1997 geotechnical study. In addition, this alternative would not have provided the rockfall retention area recommended by that study. The project development team felt the physical impacts of this alternative were not acceptable, given the sensitivity of the project location.

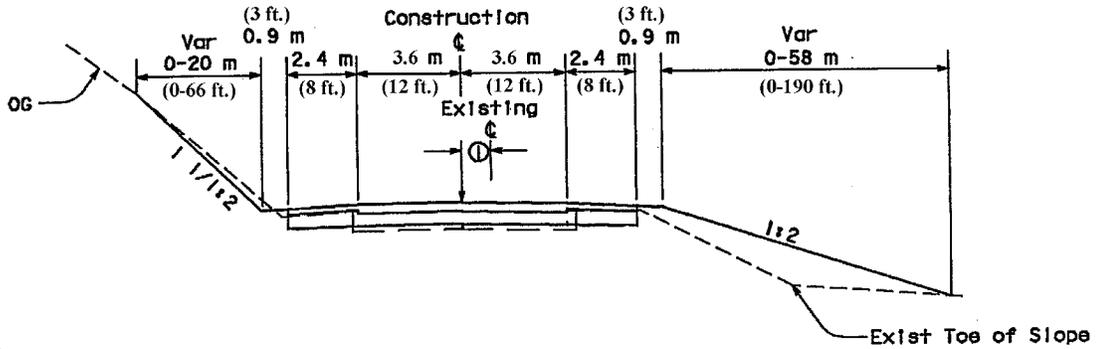


Figure 2.1: PSR Alternative 1

Withdrawn PSR Alternative 2

As with Alternative 1, this alternative proposed an improved highway alignment by occasional shifts of the centerline. Unlike Alternative 1, however, this alternative would include extensive use of earth-retaining systems (retaining walls) to reduce the environmental impact. This alternative required very little new highway right-of-way and affected no utilities along the highway. See Figure 2.2 for a cross-section view of this alternative.

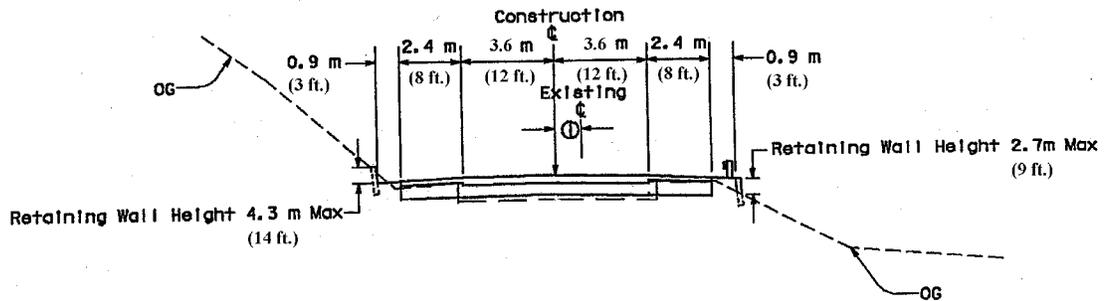


Figure 2.2: PSR Alternative 2

The “all wall” method of widening drew negative reaction from the public because of the expected long-term visual effects and potential safety concerns. Because of the permanent nature of the retaining walls and the increased maintenance required to remove accumulated debris behind them, west of the highway, the project development team felt that the use of retaining walls should be kept to a minimum. The use of retaining walls along western cut slopes had the potential to be launching platforms for debris onto the roadway.

The overall visual impacts associated with the use of retaining walls throughout the length of the project limits were not acceptable given the project's location. Although this alternative would have met the purpose and need of the project, the project development team felt those objectives could be met in a less obtrusive manner.

Withdrawn PSR Alternative 3

This alternative was similar in concept to Alternative 1 in that it proposed to construct fill slopes at a ratio of 1 to 2 ratio and cut-slopes at a ratio of 1 to 1 ½. It differed mainly in that it would have kept the existing highway centerline alignment. This alternative resulted in a substantial environmental impact due to very large cut and fill slopes. The fill slopes moved the toe of the existing slope as much as 40 meters (131 feet) toward Mono Lake. This alternative required the purchase of the greatest amount of new highway right-of-way and also required relocation of four utility poles. See Figure 2.3 for a cross-section view of this alternative.

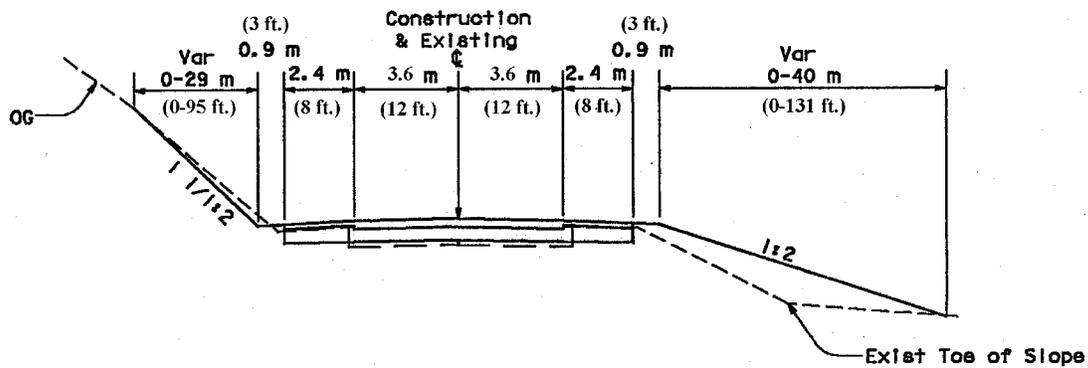


Figure 2.3: PSR Alternative 3

To maintain the existing highway centerline, improvements associated with the proposed shoulder widening would require larger road cuts to the west and larger fill slopes to the east. Larger fill slopes east of the highway could probably be replanted. But, larger cut slopes west of the highway were deemed unacceptable by the project development team. The widening for the first 1.6 kilometers (1 mile) of the project would expose cut areas to more than 40 meters (131 feet) high. Because of the extreme slopes of the adjacent mountains and the area required for the roadway improvement, the resulting cut scars would be large and visible throughout most of Mono Basin. This was unacceptable to the public and resource agencies. The project development team felt that the project could be constructed fulfilling the purpose and need for the project while at the same time minimizing new large cuts west of the

existing alignment. Fill slopes east of the highway alignment were preferred to retaining structures.

Withdrawn PSR Alternative 4

This alternative was similar to Alternative 2 in that it included the extensive use of earth-retaining systems (retaining walls) to reduce the long-term impacts to the environment. Unlike Alternative 2, however, this alternative proposed to maintain the existing highway centerline alignment. This alternative required the purchase of little new highway right-of-way and affected no utilities along the highway. See Figure 2.4 for a cross-section view of this alternative.

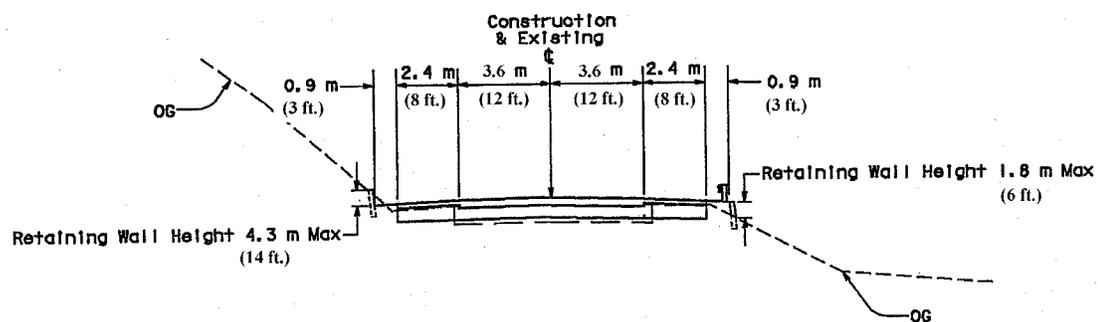


Figure 2.4: PSR Alternative 4

Similar to Alternative 3, Alternative 4 would maintain the existing highway centerline. Similar to Alternative 2, Alternative 4 would use retaining walls throughout the project limits to support the expanded roadbed. Because of the topography of the project's location, very large retaining walls would be required to accommodate a symmetrical expansion of the roadbed. The concept of this alternative received the same negative public reactions that Alternatives 2 and 3 did. The long-term visual impact associated with the extensive use of large retaining walls was considered not acceptable by the project development team. The project development team felt that the project could be constructed in a way that would minimize the use of retaining walls.

2.1.2 Alternatives Selected for Detailed Study

Although the project development team dropped the original four build alternatives, their concepts were not entirely discarded. The best design attributes of each were combined to form the two proposed build alternatives described in Section 2.2. The proposed build alternatives incorporate design details from all four of the build

alternatives proposed in the 1997 Project Study Report. By mixing design concepts throughout the project limits, the project engineers were able to create two new alternatives that best meet the project team's criteria, while minimizing overall environmental impacts.

The alternatives being considered for this project consist of two build alternatives and a "No-Build" Alternative, described in Section 2.2. Final selection of an alternative will not be made until after the full evaluation of environmental impacts, consideration of public hearing comments, and approval of this environmental document.

2.2 Project Alternatives

U.S. Highway 395 is situated in a unique location within the Mono Basin. To the west are the Sierra Nevada Mountains whose slopes taper down onto the highway. To the east is Mono Lake, a revered natural resource. Fluctuating lake levels on one side and steep mountain slopes on the other require that a narrow highway corridor be maintained through this region of Mono Basin. The closeness of Mono Lake, in particular, has limited the designs that can be developed for potential project alternatives here. As a result, the proposed build alternatives that have been developed are very similar in design, with subtle variations in horizontal alignment. The No-Build Alternative would leave the highway as it is.

Through the project limits, the posted speed limit is 96.5 kilometers per hour (60 miles per hour). South of the project area, the project is preceded by an 88.5-kilometer-per-hour (55-mile-per-hour) speed zone and north of the project area, it is followed by a 104.6-kilometer-per-hour (65-miles-per-hour) speed zone. Both build alternatives were designed for a speed zone standard of 96.5 kilometers per hour (60 miles per hour) within the project limits. To meet this standard, the two curves within the project limits (in Segment 3 and in Segment 6) would be expanded. The curve expansion would have minimal impact to the project area. Fill embankments required for an alignment shift to the east would create short-term visual impacts. Biological and cultural resources are not present at these locations.

For comparison of the two build alternatives, the project was divided into 10 segments of approximately equal length for study purposes. These segments are roughly 500 meters (1,640 feet) long, starting from the southern end of the project area (see Appendix F).

2.2.1 Build Alternative 1

This alternative proposes to construct 3.6-meter (12-foot) lanes and 2.4-meter (8-foot) shoulders throughout the length of the project for both northbound and southbound lanes. The project stretches from kilometer posts 85.0 to 90.0 (post miles 52.8 to 55.9). Retaining walls would be used in certain locations to reduce ground disturbance to wetland and riparian areas and to reinforce cut slopes. All other locations would be constructed using fill slopes. This alternative requires the purchase of 3.7 hectares (9.07 acres) of additional right-of-way. A little under half of this property lies adjacent to land owned by the Inyo National Forest, the remainder of the right-of-way needs split among 7 private property owners with the Bureau of Land Management owning one parcel at the northern limits of the project.

The estimated cost of Alternative 1 is \$14,164,040. Alternative 1 would also include the following:

- Shifting the existing alignment in areas affected by rockfall east to provide a rockfall retention area west of the proposed alignment.
- Using guardrail at locations where deemed necessary.
- Improving five pullout locations, and constructing one new scenic vista.
- Improving cross drainage facilities within the project limits is being proposed.
- Modifying county road intersections and private driveways to current Caltrans standards.
- Improving the intersection at Picnic Ground Road to meet current standards for California semi-trailer wheel tracks with a 15-meter (49-foot) radius.
- Leaving access to the highway, limited to encroachment standards for residential use.
- Using retaining walls in wetland and riparian areas to minimize impacts.
- Adding drainage facilities to the Cemetery Road intersection area to provide more drainage.

Segment 1

Segment 1 consists of the following improvements:

1. One retaining wall is proposed within Segment 1. This wall would help accommodate a proposed improvement to the Picnic Ground Road intersection. The wall would be approximately 270 meters (885 feet) long and range from 1 to 3 meters (3 to 10 feet) high. It would be constructed to allow for a deceleration lane toward Picnic Ground Road (see Appendix F).

2. A northbound deceleration lane into Picnic Ground Road is proposed beginning in Segment 1 and ending in Segment 2.
3. No alignment shift or expansion of shoulder width is proposed for this segment. The addition of a deceleration lane and the improvement of the existing exposed slope are the only improvements proposed for Segment 1.
4. 100 percent of Segment 1 already contains 2.4-meter (8-foot) shoulders.

Segment 2

Segment 2 consists of the following improvements:

1. The retaining wall that starts in Segment 1 would end at the Picnic Ground Road intersection.
2. An alignment shift of up to 1 meter (3 feet) toward the lake is proposed for Segment 2. This would allow for the creation of a rockfall retention zone immediately adjacent to the western edge of road. The retention area would be a minimum of 4.5 meters (15 feet), including the paved shoulder width.
3. The project would improve and expand the existing northbound and southbound shoulder width throughout the entire segment to 2.4 meters (8 feet), increasing the total length of 2.4-meter (8-foot) shoulders from 42% to 100% of Segment 2. The new roadbed would be supported by a combination of retaining wall and fill embankment.
4. The intersection of U.S. Highway 395 and Picnic Ground Road would be improved with the addition of right- and left-turn lanes, acceleration lanes and deceleration lanes.
5. A new retaining wall is proposed just north of the Picnic Ground Road intersection. This wall would be approximately 220 meters (722 feet) long and range from 2 to 4 meters (7 to 13 feet) high. The remaining portion of Segment 2 would consist of fill slope. The retaining wall and fill embankment are proposed only for the portion of Segment 2 that is east of U.S. Highway 395.
6. All existing exposed cut slopes west of the highway would be cleaned of debris and have modern rockfall/erosion controls applied, mainly wire mesh blanketing.
7. There are two proposed pullout locations within Segment 2—to the east, Pullout Site 1, and to the west, Pullout Site 2 (see Appendix F). Both of these are established pullouts that would be improved. Access to and from the highway into these locations would be improved.

Segment 3

Segment 3 consists of the following improvements:

1. Segment 3 would improve and expand existing shoulder width throughout the entire segment length to 2.4 meters (8 feet). Segment 3 currently lacks 2.4-meter (8-foot) shoulders. The new roadbed would be supported by fill embankment. The fill area would be approximately 479 meters (1,572 feet) long and range 8 to 16.5 meters (26 to 54 feet) high at the northern end.
2. Two existing exposed cut slopes would be improved and covered (wire mesh netting and fiber blanketing with vegetation). No new cuts are proposed within this segment.
3. The highway alignment would be shifted east approximately 3.5 meters (11.5 feet) to accommodate a curve correction. This would allow for the creation of a rockfall retention zone right next to the western edge of the highway. The retention area would be a minimum of 4.5 meters (15 feet), including the paved shoulder width.
4. Pullout Site 3 is located within Segment 3, along the northbound lane (see Appendix F). This is an existing pullout that would be improved as part of this alternative.
5. A 36-meter (118-foot) retaining wall would be constructed at the northern end of Segment 3 (see Alternative 1 Map, Appendix F). This is a portion of the wall discussed in Segment 4 (see below) that overlaps into Segment 3.

Segment 4

Segment 4 consists of the following improvements:

1. Segment 4 currently has a limited amount—approximately 39% of the segment—of 2.4-meter (8-foot) shoulders for both the northbound and southbound lanes. The shoulders within this segment would be expanded to 2.4 meters (8 feet) and made uniform throughout the entire segment.
2. Pullout Site 4 is located within Segment 4, along the southbound lane (see Appendix F). This location would be improved and become a secondary “chain-up” location (where motorists stop to put chains on their vehicles in case of snow) for southbound traffic. The site would have capacity for nine vehicles.
3. No cuts are proposed west of the alignment.
4. The alignment would shift slightly to the east, 2.5 meters (8.2 feet), in accordance with the curve correction in Segment 3. This would allow for the creation of a rockfall retention zone right next to the western edge of road. The retention area would be a minimum of 4.5 meters (15 feet), including the paved shoulder width.
5. A retaining wall would support the improved highway. Willow and wetland vegetation located outside the project study area limit the use of fill in the

southeastern portion of Segment 4. In this section, a wall approximately 200 meters (656 feet) long, ranging 3 to 6 meters (10 to 20 feet) high would be constructed. The wall would be constructed in a way that would minimize visual impact to the area (see Section 3.15.3 for details) and avoid encroachment into future lake water levels.

Segment 5

Segment 5 consists of the following improvements:

1. About half of this segment already has 2.4-meter (8-foot) shoulders. The shoulders of the remaining portion of Segment 5 would be expanded to 2.4 meters (8 feet) to complete the entire segment.
2. A fill embankment would support the expanded highway to the east. The proposed fill would be approximately 254 meters (804 feet) long and range from 9.6 to 10.2 meters (31 to 33 feet) high.
3. One cut is proposed within Segment 5. It would be located north of Tioga Lodge on the southbound side. The cut slope would require the construction of a small retaining wall that would be approximately 125 meters (410 feet) long and 1 meter (3 feet) high (see Appendix F).
4. A culvert just north of Tioga Lodge would be improved. The existing culvert would be enlarged to allow greater water flow, while decreasing debris blockage.
5. A portion of Pullout Site 4 overlaps into Segment 5. Improvements to this pullout location are discussed under Segment 4 above.
6. A portion of Pullout Site 5 overlaps into Segment 5. Improvements to this pullout location are discussed under Segment 6 below.

Segment 6

Segment 6 consists of the following improvements:

1. Segment 6 currently does not have 2.4-meter (8-foot) shoulders. The existing shoulders would be expanded to 2.4 meters (8 feet) throughout the entire segment.
2. An alignment shift is proposed within Segment 6 to improve sight distance for motorists traveling the route. The alignment would be shifted approximately 4 meters (13 feet) to the east at the southern end of Segment 6 and approximately 1.5 meters (5 feet) to the west at the northern end. This would result in a slight widening of the existing curve within this segment.
3. A new fill embankment east of the existing highway would be required to support both the shoulder expansion and highway alignment shift. This new fill is broken into three sections within the segment. Fill at the southern end would be

- approximately 215 meters (705 feet) long and range from 3.5 to 4.5 meters (11 to 15 feet) high. A small fill required near the middle of the section would be approximately 37 meters (121 feet) long and be approximately 3.8 meters (12 feet) high. Fill at the northern end of the segment transitions into Segment 7. The portion within Segment 6 would be approximately 90 meters (295 feet) long and range from 4.5 to 8.5 meters (15 to 28 feet) high. Fill encroachment at its widest location is about 6 meters (20 feet) to the east. (See Appendix F.)
4. A fill along the southbound lane is also proposed that would be approximately 130 meters (427 feet) long and range from 1 to 3.5 meters (3 to 11.5 feet) high midway through the segment.
 5. A cut area is proposed to the west to improve sight distance. The cut would lie on the northern half of Segment 6. The cut area to the west would be approximately 120 meters (427 feet) long and range from 1 to 4.5 meters (3 to 15 feet) high. (See Appendix F).
 6. One existing pullout, Pullout Site 5 along the northbound lane, would be improved within Segment 6.

Segment 7

Segment 7 consists of the following improvements:

1. A very small portion—approximately 7%—of Segment 7 currently contains 2.4-meter (8-foot) shoulders. The existing shoulders would be expanded to 2.4 meters (8 feet) and made uniform throughout the entire segment.
2. An alignment shift of approximately 2 meters (6.5 feet) to the west is proposed. The proposed alignment shift and shoulder expansion would require cut slopes to the west and fill embankment to the east.
3. The proposed cut area would be approximately 255 meters (837 feet) long and range 4.5 to 6.2 meters (15 to 20 feet) high.
4. Total proposed fill embankment within Segment 7 would be approximately 520 meters (1,706 feet) long and 4.5 to 8.5 meters (15 to 28 feet) high.
5. Realignment of the McPherson Subdivision Road intersection.
6. End portions of the retaining walls proposed for Segment 8 are located at the northern end of Segment 7. These walls are discussed in greater detail in Segment 8.

Segment 8

Segment 8 consists of the following improvements:

1. Segment 8 currently does not have 2.4-meter (8-foot) shoulders. The existing shoulders would be expanded to 2.4 meters (8 feet) throughout the entire segment for both the northbound and southbound lanes.
2. A small wetland area lies next to the highway in Segment 8. Two vertical retaining walls are proposed at this location to avoid wetland impacts: one approximately 120 meters (394 feet) long and 1.8 to 3.7 meters (6 to 12 feet) high to the east and one approximately 335 meters (1,099 feet) long and 1.5 to 3.7 meters (5 to 12 feet) high to the west.
3. One cut with a retaining wall near the northern end of Segment 8 is proposed. The cut would be approximately 70 meters (230 feet) long and 2 meters (6.5 feet) high on the southbound lane. The cut would improve sight distance for an access road at this location.
4. A minimal alignment shift—1.5 meters (5 feet)—would be made to the west.

Segment 9

Segment 9 consists of the following improvements:

1. No 2.4-meter (8-foot) shoulders currently exist within Segment 9. The existing shoulders would be expanded to 2.4 meters (8 feet) throughout the entire segment for both the northbound and southbound lanes.
2. Two cut slopes are proposed toward the northern end of Segment 9. The current slopes at this location are being cut back to a gentler slope to promote vegetation growth and create more room for the shoulder expansion. The cut west of the alignment would be approximately 120 meters (394 feet) long and 7 to 8 meters (23 feet) high. The cut east of the alignment would be approximately 120 meters (394 feet) long and 2.5 to 3.5 meters (8 feet to 11 feet) high (see Alternative 1 Map, Appendix F).
3. The parts of Segment 9 that do not need cut slopes would have fill embankments and retaining walls where necessary.
4. Segment 9 contains wetland habitat next to the existing southbound highway embankment. A retaining wall, approximately 150 meters (492 feet) long and 1 to 1.4 meters (3 to 5 feet) high, is proposed there.
5. Combined fill embankments south of the proposed cuts would measure approximately 167 meters (548 feet) long and 3.5 to 4.8 meters (11 to 16 feet) high along the northbound side. This fill area is separated by a gap of approximately 140 meters (459 feet) in which no additional fill is required (see Alternative 1 map, Appendix F). The fill along the southbound lane, minus the

- retaining wall portion, would be approximately 140 meters (459 feet) long and 1 to 1.4 meters (3 to 5 feet) high south of the proposed cuts.
6. Fill would also be necessary at the northern end of Segment 9 as the improvement transitions into Segment 10. Fill at this location would be approximately 120 meters (394 feet) long and 1 to 1.4 meters (3 to 5 feet) high on the southbound side and approximately 165 meters (541 feet) long and 2 to 3.5 meters (7 to 11 feet) high on the northbound side.

Segment 10

Segment 10 consists of the following improvements:

1. About 79% of Segment 10 currently has 2.4-meter (8-foot) shoulders. The remaining narrow shoulders would be expanded to 2.4 meters (8 feet) throughout the entire segment.
2. The construction of a new vista site, Pullout Site 6, is proposed for Segment 10. Cemetery Road would be used to access the site, which would accommodate six autos and three recreational vehicles. The vista site would measure approximately 100 meters by 60 meters (328 feet by 197 feet).
3. Improved drainage is proposed at the intersection of U.S. Highway 395 and Cemetery Road.
4. Fill area within Segment 10 is part of the discussion of fills within the northern portion of Segment 9. The fill embankments transition from one segment into another.

2.2.2 Build Alternative 2

This alternative is the same as Alternative 1, except that it would construct roadway improvements with fewer disturbances to environmental resources along the northbound lane. Alternative 2 proposes 2.4-meter (8-foot) shoulders for all of the southbound lane and approximately 87% of the northbound lane. Estimated cost of Alternative 2 is \$10,204,920.

Alternative 2 differs from Alternative 1 in the following ways:

- Less alignment shift for the rockfall retention area.
- No intersection improvements at Picnic Ground Road.
- Portions of Segments 2, 3, 4, 8, and 9 would have northbound shoulders less than 2.4 meters (8 feet) in width. A design exception would be required for the lack of uniform shoulder width throughout the project limits (see map of Alternative 2 in Appendix F).

Improvements to Segments 5, 6, 7, and 10 of Alternative 2 are identical to those of Alternative 1. The following segments vary slightly from Alternative 1:

Segment 1

Segment 1 consists of the same improvements as described in Alternative 1, except no retaining wall would be constructed and the northbound deceleration lane would not transition into Segment 2 (see map of Alternative 2 in Appendix F).

Segment 2

1. No alignment shift is proposed for this segment.
2. Only about 113 meters (371 feet) of new 2.4-meter (8-foot) shoulder would be proposed for the northbound lane leading into Segment 3. This would leave about 202 meters (663 feet) of the northbound lane without the full 2.4-meter (8-foot) shoulder width (see map of Alternative 2 in Appendix F).
3. The intersection of U.S. Highway 395 and Picnic Ground Road would not be improved. No turn lanes or acceleration/deceleration lanes would be constructed.
4. The retaining wall north of the Picnic Ground Road intersection would not be constructed (see map of Alternative 2 in Appendix F).
5. Segment 2 would not change or improve the highway shoulders near the heavy vegetation just north of the marina access on the northbound lane (see map of Alternative 2 in Appendix F).

Segment 3

1. A small portion of the northbound shoulder would not be widened to the full 2.4-meter (8-foot) width. This would leave about 40 meters (131 feet) without full shoulders just before Segment 4 (see map of Alternative 2 in Appendix F).
2. Fill would avoid vegetation on the northbound side for the last 35 to 40 meters (115 to 131 feet) of Segment 3.
3. No retaining wall would be constructed in this segment.

Segment 4

The southbound shoulder would be widened to 2.4 meters (8 feet) throughout the segment. About 160 meters (525 feet) of the northbound shoulder would not be expanded to 2.4 meters (8 feet). This area lies at the southeastern end of Segment 4 (see map of Alternative 2 in Appendix F). This would avoid impacts to resources that lie beyond the project study area to the east and minimize impacts to a cluster of

willow thicket that would be lost otherwise. The retaining wall proposed in Alternative 1 would not be constructed.

Segment 8

To avoid a riparian habitat within this segment, no shoulder expansion would occur in a 20-meter (66-foot) section just south of Segment 9. The project development team developed this plan to minimize impacts to that location (see map of Alternative 2 in Appendix F). All other improvements proposed in Segment 8 of Alternative 1 are the same for this segment of Alternative 2.

Segment 9

Alternative 2 proposes full 2.4-meter (8-foot) shoulders for the entire length of the southbound lane in this segment. For the northbound lane, only about 190 meters (623 feet) would receive 2.4-meter (8-foot) shoulders, starting near the middle of Segment 9 and continuing north into Segment 10. About 185 meters (607 feet) of the northbound lane would be left without a full 2.4-meter (8-foot) shoulder. (See map of Alternative 2 in Appendix F.) Fill embankment south of the proposed cuts in Alternative 1 would take place only along the southbound lane in Alternative 2. Because shoulder improvements are not proposed for this portion of the northbound lane, fill is not required. Improvements north of the proposed cuts are the same as those stated for Alternative 1.

2.2.3 No-Build Alternative

The No-Build Alternative would leave the highway as it is, with two 3.6-meter (12-foot) lanes and, on average, 1.2-meter (4-foot) paved shoulders. The eight existing unpaved widened areas that currently serve as pullouts would remain. No paved deceleration or acceleration lanes and no turn lanes would be provided. The driveways and dirt roads within the project limits that intersect the highway at acute angles would remain as they are. The narrow shoulders would continue to present operational concerns with regard to conflicts between bicyclists and vehicles. The No-Build Alternative would not meet the purpose and need requirements of this project.

2.2.4 Pullouts

Currently, eight unpaved areas dispersed throughout the project limits serve as pullouts for motorists. A goal of the project development team was to incorporate pullouts in the proposed alternatives. The project development team identified eight

locations that could accommodate pullouts and still allow for the proper design of the proposed alternatives. After further analysis and a desire to minimize impacts to natural resources, the project development team decided to drop two of the locations and proceed with only six. The six locations would provide motorists with a variety of viewing opportunities and still achieve the desired shoulder expansion. Both Alternatives 1 and 2 propose to improve five existing pullout locations and construct one new vista point within the project limits.

The pullouts would only be signed for the direction that the pullout is on. For example, a pullout on the east side of Highway 395 would only be accessible by northbound traffic and a west side pullout by southbound traffic. The design for the five pullouts will be very similar to each other. They would consist of a parking area adjacent and parallel to the traffic lane, separated by a 3-meter-wide (10-foot-wide) island. Two 15-meter (49-foot) tapered sections, one at each end of the parking zone, would provide an entrance to and an exit from the pullout. Capacity for each individual pullout will depend on the size (length and width) of the parallel parking provided beyond the 3-meter-wide (10-foot-wide) island separating the highway from the pullout. Topography of the land, location along the highway, engineering constraints, and current use of existing pullouts would determine the desired capacity for each pullout.

The vista point would be signed for both northbound and southbound traffic. Left-turn and right-turn auxiliary lanes, in addition to the through lanes, would be provided at the intersection of Highway 395 and Cemetery Road. Below is a brief summary of each location in its current state (see Appendix F).

Pullouts

- Site 1 is located on the northbound side of U.S. Highway 395 within Segment 2, near kilometer post 85.2 (post mile 53). This location currently serves as a picnic ground and boat launch on U.S. Forest Service land. It can hold eight autos and six recreation vehicles. Both build alternatives would improve the access road leading into this area.
- Site 2 is located on the southbound side of U.S. Highway 395 within Segment 2, near kilometer post 85.8 (post mile 53.3). This location is currently used as a chain-up area (where motorists can stop to put chains on their tires) for southbound traffic during bad weather. It can hold about five vehicles.

- Site 3 is located on the northbound side of U.S. Highway 395 within Segment 3, near kilometer post 86.1 (post mile 53.5). This location is currently used as a pullout. It can hold two vehicles.
- Site 4 is located on the southbound side of U.S. Highway 395 within Segments 4 and 5, just south of Tioga Lodge, near kilometer post 86.9 (post mile 53.9). This location is not currently used as a pullout. It is within the Caltrans right-of-way and can hold about nine vehicles.
- Site 5 is located on the northbound side of U.S. Highway 395 within Segments 5 and 6, just north of Tioga Lodge, near kilometer post 87.3 (post mile 54.3). This location is currently an unpaved pullout, which can hold about seven vehicles.

Vista Point

Both build alternatives propose to construct one new vista point within the project limits (Site 6). For both alternatives, the proposed site is located on the northbound side of U.S. Highway 395 within Segment 10, just north of Cemetery Road, near kilometer post 89.7 (post mile 55.7). New right-of-way would be acquired for this site from the Los Angeles Department of Water and Power, which would hold approximately six autos and three recreation vehicles. Access would not be directly from U.S. Highway 395, but from Cemetery Road.