

Trail Connection I Assessment

Alma Bridge Road is a two-lane County-maintained road that winds along the north and east sides of the Lexington Reservoir, including on a bridge across the spillway of the Lenihan Dam. On the east side of Highway 17 there is a separate lane from the Bear Creek Road Overcrossing north to Alma Bridge Road that acts as an on-ramp to Highway 17 north and as an off-ramp from Highway 17 south to Alma Bridge Road.

This road is a challenging route for trail users or road bicyclists because it is narrow and winding, often with little or no shoulder, and with slopes dropping off steeply from the hills above and to the reservoir below. The challenge is compounded by heavy truck traffic generated by the Lexington Quarry to the northeast of the reservoir, local residential and recreational traffic, and periodically construction traffic for work related to the dam and water facilities. The road is a popular route to access parking areas for Lexington Reservoir County Park east of the dam, which also provides parking for access to the Los Gatos Creek Trail to the west, and Midpeninsula Regional Open Space District's (Midpen) St. Joseph's Hill Open Space Preserve (OSP) to the north and Sierra Azul OSP via Limekiln Trail to the east, and the continuation of the Ridge Trail to the east on the Priest Rock Trail.

A detailed assessment of potential Alma Bridge Road trail improvements was included in Appendix A of the 2016 Preliminary Alternatives Report for the wildlife and trail crossing study and has been included and updated for the current study. This includes a potential alternative eastside trail connection that could possibly reduce the length of Alma Bridge Road improvements needed to establish a Bay Area Ridge Trail (Ridge Trail) connection to the east. Reduction of trail improvements along Alma Bridge Road could reduce overall trail connection cost and increase separation of recreational uses from vehicular traffic.

Depending on which trail connection alternative may be feasible, and which highway trail crossing is used, different portions of Alma Bridge Road might need to be improved with a trail connection. The overall route of connection I is broken down into 5 sub-segments:

Connection I(1) from Highway 17 east to the potential connection to Southern Overcrossing (Alternative 3) to the construction yard entrance west of the dam

Connection I(2) from the construction yard entrance west of the dam to the County of Santa Clara Department of Parks and Recreation (Santa Clara County Parks) Parking Area and the start of the Jones Trail – also connects to the Los Gatos Creek Trail.

Connection I(3) from the Santa Clara County Parks parking and the start of the Jones Trail to the point where the eastern end of Trail Connection J would intersect

Connection I(4) from the point where the eastern end of Trail Connection J would intersect to the existing Limekiln Trail

Connection I(5) from the Limekiln Trail to the Priest Rock Trail.

Depending on the highway crossing utilized, eastern trail connections implemented, and implementation of north-south trail connections, all or portions of Connection I could be implemented.

To aid in conceptual cost estimation, Connection I has been further divided into five subsections I(1) – I(5), as shown in Figure 1.

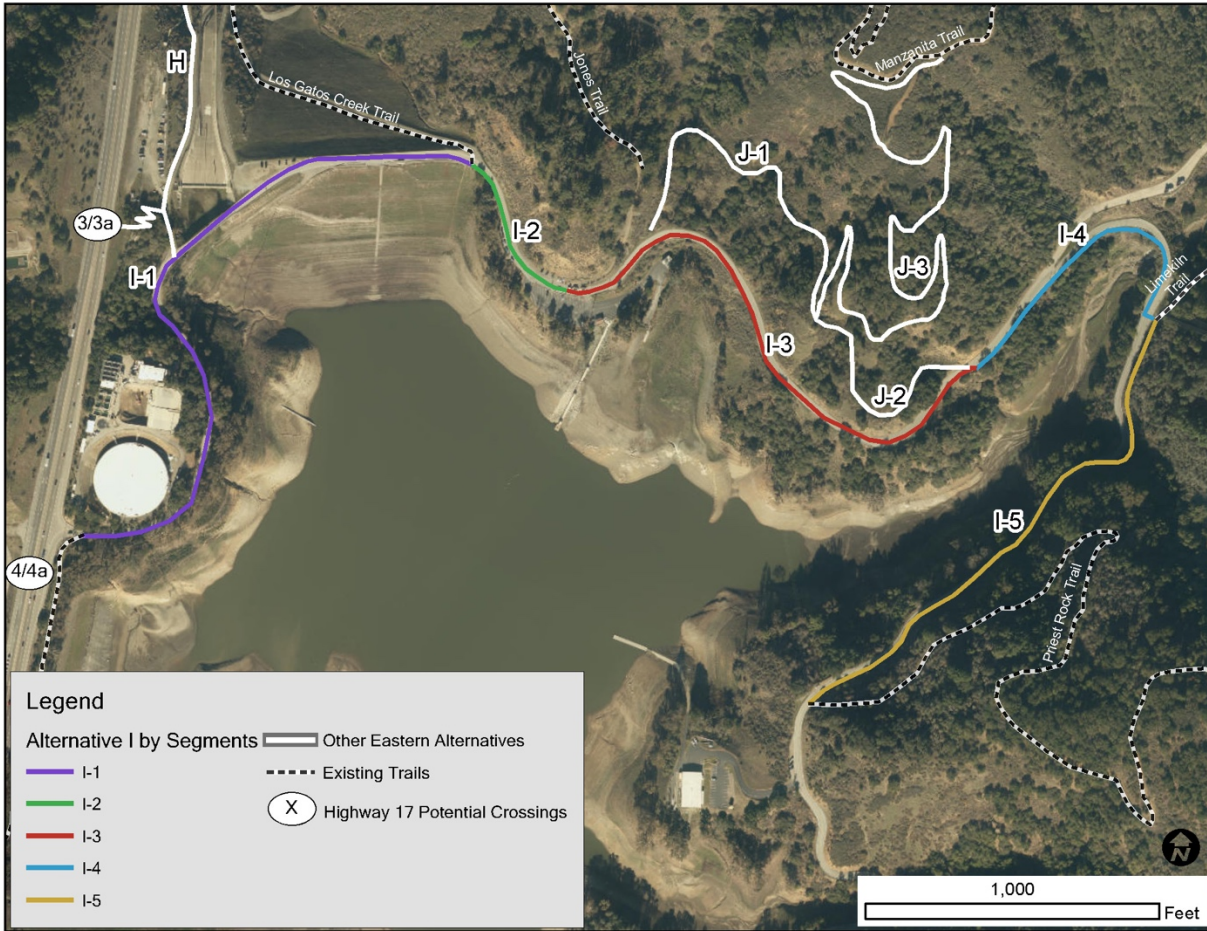


Figure 1. Alma Bridge Road Trail Improvements

Subsection I(1) has cost estimate of \$5.3 million and is particularly complicated because it includes a cantilevered trail section and a new trail bridge over the dam spillway. Construction of I(1) would need to be closely coordinated with Santa Clara Valley Water District (Valley Water, formerly SCVWD) and any future changes to the dam would impact the recreational trail improvements here. If either Montevina Undercrossing (Alternative 4) or Northern Overcrossing (Alternative 5) are implemented as the recreational trail crossing, I(1) would be required to achieve a north/south regional trail connection. However, I(1) could be avoided if the Southern Overcrossing (Alternative 3) and Connection M on Montevina Road are implemented. Subsection I(4) begins west of the Lexington Quarry driveway and ends at the Limekiln Trailhead. I(4) includes a large drainage crossing over Limekiln Creek. If the trail is implemented on the northeast/east side of the road in subsection I(4), a longer drainage crossing would be required but this alignment would eliminate the need for two crossings across Alma Bridge Road.

Assessment Objectives

Creation of a trail along Alma Bridge Road was discussed with County of Santa Clara Department of Roads and Airports (Santa Clara County Roads and Airports) staff and Valley Water staff. SCVWD is opposed to construction of a trail on the slopes between the road and the reservoir because of concerns about the impact on water quality. This implies that the trail would have to be constructed by utilizing the road shoulder, including widening it where necessary, in many segments requiring retaining walls to create the additional width. Valley Water is also opposed to construction of an additional bridge across the spillway due to potential impacts on spillway functions and dam stability and maintenance. A portion of Alma Bridge Road has a *de facto* trail – a maintenance road along the dam. Other portions have varying shoulder widths and challenges for widening as discussed below.

1.1. Assessment Methodology

The condition of the road shoulders and slopes within the Alma Bridge road right-of-way (ROW) was assessed from Highway 17 to Priest Rock Trail. The assessment focused on the reservoir side of the road, because this is where most of the opportunity space is, and because trail users are likely to prefer to be on the water side of the road. This area is owned by Valley Water and is further encumbered by easements and agreements held by Santa Clara County Parks and others. Access permissions and agreements would have to be obtained for this connection. The assessment looked at some options for bridges across the reservoir that would eliminate part of the improvements along the roadway, as explained below.

The objective would be to create a separate Class I paved trail at least 8 feet wide with grades that would be Americans with Disabilities Act (ADA) compliant. Ideally the trail would be separated from the roadway by a guardrail and/or be located down the slope with a vegetated buffer between the trail and the road. Improving trail access along Alma Bridge Road would be a significant connection in its own right, but it would be very beneficial in completing the regional trail connection and supporting the anticipated higher levels of recreational trail and non-motorized transportation use in the Lexington Basin.

Trail Improvement Condition Types

The shoulders or ROW adjacent to the road were classified into four categories based on the challenge of creating a trail parallel to the road in the road ROW or connecting to bridges across the reservoir, as described below, with colors corresponding to the segment lines on Figure 2.

Type 1 – Green: Has an existing service road/trail approximately 8' wide. This only occurs at the maintenance road along the dam that doubles as trail. There is a “pinch point” at the control structure shown in the photo. A retaining wall would be needed to create a full width bypass.



Type 2 – Yellow: Has space to construct a trail – relatively level wide turnouts, or areas where there is a berm adjacent to the road that could be graded down to create at least 5 feet of space for a trail. Some of these also function for maintenance access to water facilities, and this would have to take precedence over trail access. Some are pullouts or roadside parking. The trail would reduce the amount of available parking.

A trail could potentially be routed through the existing County parking lot if the parking was reorganized



Typical Type 2 segment: assumes the berm could be graded down to create more space

Type 2 segment where trail would displace roadside parking



Type 3 – Orange: Has narrow shoulder and steep slope (approx. 2:1 to 1:1) beyond, often with guardrail. Creating a trail would require constructing a retaining wall or cantilevered surface. Many portions are heavily wooded. Between Highway 17 and the dam spillway, some eucalyptus trees may have to be removed to create space for the trail; in some other areas, native trees may need to be removed.



Typical Type 3 segment east of the dam

More challenging Type 3 segment east of the dam





Typical Type 3 segment west of the dam

Type 3: Above large culvert at Limekiln Creek



Type 4 – Red: A nearly vertical drop-off or washout that would have to be repaired, or a parallel trail bridge or sidehill viaduct would have to be constructed.

Type 4: Drop-off at culvert just east of where Alma Bridge Road connects to Highway 17



Type 4: Bridge over the spillway: a parallel bike/pedestrian bridge would be required – potentially attached to the existing bridge

1.2. Assessment Results

The assessment is conceptual, based on general information on site conditions. The cost and feasibility of the trail improvements would depend on the specific design objectives and standards, and on more specific evaluation of site conditions.

Figure 2 shows the assessment map summarizes the results of analysis of the alternatives, which include four basic options, with sub-options for an unpaved trail east of the Santa Clara County Parks parking area:

1. A route to create a trail the entire distance along Alma Bridge Road to the Priest Rock Trail;
2. A route to create a trail along Alma Bridge Road to the Priest Rock Trail, except that the old graded road in Lexington Reservoir County Park (Connection J described below) would be used as a bypass for some segments (see Figure 6).
3. Other option is only needing I2 (or I1 and I2 if Montevina Undercrossing is chosen) and then using J to get up to St. Joseph's Hill and K to get to Limekiln Trail.

An alternative with a greater extent in the higher constraint categories (Trail Condition Types 3 and 4), will be more constrained and thus expensive to construct. The unpaved trail categories 2 and 3 will be much less expensive to construct than their paved counterparts. Type 4 is assumed to require a similar bridge in either the unpaved or paved scenarios.

Alternative 1, trail improvement the entire way on Alma Bridge Road, Alternative 3, the 240' bridge alternative, eliminates 1607 feet (0.3 miles) of trail construction. The bridge would likely be significantly less expensive than that extent of paved trail, but more expensive than the equivalent unpaved trail, so it has more benefit if a Class I path the entire distance is desired.

Compared with Alternative 1b, Alternative 4, a bypass of part of Alma Bridge Road using the old graded road in St. Joseph's Hill OSP, is interesting, because it eliminates a significant amount of Type 3 heavy construction for presumed Type 2U light construction. Alternative 4 could potentially be combined with Alternative 3, featuring the 240' bridge.

These assessment results are not intended to result in a decision, but are provided to support further studies of the alternatives. The GIS maps and Excel spreadsheets created for the assessment should be useful tools for this purpose.



Figure 2. Alma Bridge Road Trail Improvement Assessment