

# **Chapter 1**

## **Proposed Project**

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### **1.1 Introduction**

The California Department of Transportation (Caltrans), in cooperation with the Santa Cruz County Regional Transportation Commission and the County of Santa Cruz, proposes to widen State Route 1 to include auxiliary lanes, accommodate Bus-on-Shoulder operations between the Freedom Boulevard and State Park Drive interchanges, and construct Coastal Rail Trail Segment 12. Caltrans, as assigned by the Federal Highway Administration, is the lead agency under the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA). This project is currently programmed through the Santa Cruz County Regional Transportation Improvement Plan and the State Transportation Improvement Program.

One Build Alternative and the No-Build Alternative are proposed for further consideration. The project is located in Santa Cruz County on State Route 1 from post mile 8.1, south of Freedom Boulevard, to post mile 10.7, north of State Park Drive, with 1.14 miles of trail along the Santa Cruz County Regional Transportation Commission-owned Santa Cruz Branch Rail Line between State Park Drive and Rio Del Mar Boulevard. The total length of the project on State Route 1 is 2.6 miles, and on the Santa Cruz Branch Rail Line is 1.14 miles. Within the limits of the proposed project, State Route 1 is a controlled access freeway with two 12-foot lanes; shoulder width varies within project limits. The average width of the inside shoulders is approximately 5 feet, and the average width of the outside shoulders is approximately 10 feet. Within the project area, the existing railroad right-of-way is generally in the range of 40 to 55 feet wide, with the existing railroad tracks generally in the center of the right-of-way. The existing railroad has at-grade crossings at State Park Drive, Aptos Creek Road, and Trout Gulch Road, with bridges over State Route 1 at two locations, Aptos Creek/Soquel Drive and Valencia Creek/Soquel Drive. The Santa Cruz Branch Rail Line crosses under Rio Del Mar Boulevard. The Santa Cruz Branch Rail Line is currently an active freight railroad. The project vicinity and location are shown in Figures 1-1 and 1-2, respectively. Figure 1-3 shows the project components.

### **1.2 Purpose and Need**

#### **1.2.1 Purpose**

The purpose of the project is to do the following.

- Reduce delay and improve system reliability and safety along State Route 1.
- Improve traffic operational movements, local circulation, and transit operations.

- Enhance bicycle and pedestrian connectivity and safety, including access across State Route 1 within the project limits.
- Promote the use of alternative transportation modes to increase transportation system capacity and reliability, improve health and reduce mortality, as well as to reduce vehicle miles of travel and vehicular emissions.

### **1.2.2 Need**

#### ***Reduce Delay and Improve System Reliability***

The State Route 1 corridor within project limits currently experiences high traffic volumes leading to travel delays, primarily during peak periods. The State Route 1 northbound direction during the AM peak period and the State Route 1 southbound direction during the PM peak period are the peak directions of travel. Under existing conditions, traffic volumes for the peak directions are approaching or equal to the capacity of the freeway. In addition, the presence of queuing on the corridor along the peak directions indicates that the peak direction traffic demand exceeds the capacity.

According to the Traffic Operations Analysis Report (CDM Smith 2021), average weekday daily mainline traffic on State Route 1 under No Build conditions and within the project limits are expected to grow between the Existing Year (2019) and the Opening Year (2025) by 4.2 percent in the northbound direction and 5.7 percent in the southbound direction and between the Existing Year (2019) and the Horizon Year (2045) by 17.4 percent and 20.9 percent, respectively. In addition, average weekday daily ramp traffic (off-ramps and on-ramps combined total) on State Route 1 under No Build conditions is expected to grow between the Existing Year (2019) and the Opening Year (2025) by 3.6 percent in the northbound direction and 3.5 percent in the southbound direction and between the Existing Year (2019) and the Horizon Year (2045) by 12.3 percent and 11.1 percent, respectively.

Several bottlenecks along State Route 1 in the southbound and northbound directions cause delays during peak hours. The Build Alternative also provides critical bottleneck relief.

#### ***Improve Overall Operations with Auxiliary Lanes***

Cut-through traffic, or traffic on local streets, is increasing because drivers are seeking to avoid delays on State Route 1.

According to the Traffic Operations Analysis Report, the auxiliary lanes would result in a significant increase in travel speed in the southbound State Route 1 during PM peak period from 32 miles per hour in the Existing Year (2019) to 58 miles per hour in the Opening Year (2025). Similar benefits would be anticipated also in the northbound State Route 1 during AM peak period, however, the Traffic Operations Analysis Report also found that a potential

bottleneck in the northbound direction, west of the Soquel Dr interchange, would result in small northbound travel speed benefits.

Daily vehicle hours of delay in northbound and southbound directions combined would reduce from 4,120 vehicle-hours per day the Existing Year (2019) to 2,430 vehicle-hours per day in the Opening Year (2025), that is, by 41 percent.

According to the Traffic Operations Analysis Report, improved travel conditions due to reduced delays and increased speeds on State Route 1 would shift vehicles from local roads back to State Route 1, reducing neighborhood cut-through traffic (CDM Smith 2021).

The Traffic Operations Analysis Report assumed that the existing 91X transit route would change to a 91X express service by using State Route 1 between Main Street interchange near Watsonville Transit Center and Morrissey Boulevard interchange near Santa Cruz Transit Center and avoiding Soquel Drive between State Park interchange and Soquel Drive interchange. Due to the bus-on-shoulder and auxiliary lane operations and the routing change, this project would reduce 91X transit route travel times between Santa Cruz and Watsonville by 15 minutes in the northbound direction during the AM peak travel period and would reduce travel times by 18 minutes in the southbound direction during the PM peak travel period in the opening year (2025).

Within the project limits on the mainline segments, fatal plus injury collision rates (fatal and injury collision rates combined) as well as total collision rates are higher than the statewide average. On two out of fourteen ramps, fatal plus injury collision rates as well as total collision rates are higher than the statewide average, on two out of fourteen ramps, the total collision rate is higher than the statewide average, and on two out of fourteen ramps, fatal and injury collision rates are higher than the statewide average. On average 60 percent of the collisions on all State Route 1 northbound mainline segments are rear-end type; while on the State Route 1 southbound mainline segments this is 39 percent on average. Sideswipe incidents form around 16 percent of the collisions on the mainline in both directions of State Route 1. Collisions at all three interchanges are mainly rear-end type. Some of these types of collisions may be attributed to the lack of auxiliary lanes.

Incidents in the peak directions blocking a lane on the two-lane (each way) State Route 1 have a compound effect. Delay can also cause incidents. Drivers of vehicles approaching the end of the queue may fail to slow down or stop due to following too closely or excessive speed resulting in rear-end collisions. Distracted driving under stop-and-go conditions can also lead to such collisions. Adding auxiliary lanes will improve the freeway merge/diverge operations and reduce collisions.

The project would add auxiliary lane segments that are each less than one mile in length, which means that it is exempt from a vehicle miles traveled analysis under the Caltrans Traffic Analysis Framework and Traffic Analysis under CEQA guidelines. In addition, the auxiliary lane segments of the project would act independently and thus are not expected to have cumulative effects on freeway mainline capacity, which means that the auxiliary lanes would not result in significant changes in vehicle miles traveled.

### ***Enhance Bicycle and Pedestrian Connectivity and Safety***

There are limited opportunities for pedestrians and bicyclists to safely cross State Route 1 and navigate the project corridor, even though portions of the project area are designated as regional bicycle routes. Coastal Rail Trail Segment 12 would provide new access to Aptos Village and across State Route 1 for bicycle and pedestrian modes of travel. The new trail overcrossings of State Route 1 would provide high-visibility pedestrian and bicycle crossing facilities and improve pedestrian and bicycle connectivity between the areas on the north and south sides of the State Route 1 corridor.

The project would result in per trip bike and walk travel time savings of up to 7 minutes each, which translates to 17.2 person-hours per day of bike travel time savings and 5.0 person-hours per day of pedestrian travel time savings under 2025 Build conditions.

The project would result in a reduction of nearly 18.6 active-transportation-involved crashes per year on average under 2025 Build conditions.

### ***Promote Alternative Transportation Modes***

Currently there are insufficient incentives to increase transit service in the State Route 1 corridor because delay threatens reliability and cost-effective transit service delivery. The addition of the bus-on-shoulder component and construction of Segment 12 of the Coastal Rail Trail would increase the use of alternative transportation modes. Delays on State Route 1 can discourage transit use. However, peak period peak direction travel times between the Santa Cruz Metro Transit Center in the north and the Watsonville Transit Center in the south are expected to improve with bus-on-shoulder operations. In addition, it is anticipated that by reducing trip lengths with new pedestrian/bicycle crossings and by increasing overall connectivity with Segment 12 of the Coastal Rail Trail, more auto drivers will utilize alternative modes of transportation.

The project would result in a reduction of 0.076 mortalities per year due to the health-related benefits of increased use of active transportation modes.

Due to bus-on-shoulder and trail improvements, the project would result in a net decline of 6,952 vehicle miles traveled per day and 8,094 vehicle miles traveled per day under 2025 and 2045 Build conditions, respectively.

### 1.2.3 Independent Utility and Logical Termini

Regulations from the Federal Highway Administration (23 Code of Federal Regulations 771.111(f)) require that the project evaluate:

- If the proposed project has logical termini,
- If the proposed project has independent utility, and
- If the proposed project does not restrict the consideration of alternatives for other transportation improvements.

The Federal Highway Administration defines logical termini as rational endpoints for a transportation improvement and a review of environmental impacts for the transportation improvement.

The proposed project possesses logical termini because it connects two logical endpoints for the project and is of sufficient length to address matters on a broad scope. The proposed improvements would not restrict the consideration of alternatives for other reasonably foreseeable transportation improvements. Continuing coordination between Caltrans, Santa Cruz County Regional Transportation Commission, and the County of Santa Cruz would avoid potential conflicts with alternatives for this project and other planned area transportation improvements.

Independent utility is a Federal Highway Administration requirement that highway projects are usable and are a reasonable expenditure even if no additional transportation improvements in the area are made. The Federal Highway Administration states that “as long as a project would serve a significant function by itself (i.e., it has independent utility), there is no requirement to include separate but related projects in the same analysis.”

The proposed project has independent utility and logical termini. The auxiliary lanes and Bus-on-Shoulder improvements would specifically improve congested conditions on the State Route 1 corridor between the Freedom Boulevard interchange and the State Park Drive interchange. The proposed auxiliary lanes and Bus-on-Shoulder improvements between these two interchanges would function without requiring additional improvements outside the project area. Additionally, the proposed Coastal Rail Trail Segment 12 would provide improved safety for pedestrian and bicycle travel along the State Route 1 corridor between Rio Del Mar Boulevard and State Park Drive, addressing the need to safely cross State Route 1 and safely navigate the corridor independent of other safety and alternative transportation improvements outside the proposed project area. Development of the proposed project would not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

## 1.3 Project Description

This section describes the proposed project that meets the purpose and need while avoiding or minimizing environmental impacts. The alternatives are the Build Alternative and the No-Build (No-Action) Alternative.

The project is located in Santa Cruz County on State Route 1 from post mile 8.1, south of Freedom Boulevard, to post mile 10.7, north of State Park Drive, with 1.14 miles of trail along the Santa Cruz County Regional Transportation Commission-owned Santa Cruz Branch Rail Line between State Park Drive and Rio Del Mar Boulevard. The total length of the project on State Route 1 is 2.6 miles, and on the Santa Cruz Branch Rail Line is 1.14 miles. Within the limits of the proposed project, State Route 1 is a controlled access freeway with two 12-foot lanes; shoulder width varies within project limits. The purpose of the project is to reduce delay on State Route 1, enhance bicycle and pedestrian connections, promote use of alternative modes of transportation, and provide Coastal Rail Trail access across State Route 1.

### 1.3.1 Build Alternative

The components of the Build Alternative are discussed in detail below.

#### ***Auxiliary Lanes***

The proposed Build Alternative (Figure 1-3) would involve the construction of auxiliary lanes on both the northbound and southbound sides of State Route 1 between the Freedom Boulevard and Rio Del Mar Boulevard interchanges and between the interchanges of Rio Del Mar Boulevard and State Park Drive. The auxiliary lanes are designed to improve merging operations and reduce conflicts between traffic entering and exiting State Route 1 by connecting the on-ramp of one interchange to the off-ramp of the next. The auxiliary lanes are not designed to serve through traffic.

The total roadway widening would be approximately 2.6 miles in length. Southbound, the auxiliary lanes would begin at the existing State Park Drive loop on-ramp and end at the existing off-ramp to Freedom Boulevard. Northbound, the auxiliary lanes would begin at the existing Freedom Boulevard on-ramp and end at the existing diagonal off-ramp to State Park Drive.

The new auxiliary lanes would be 12 feet wide. From Freedom Boulevard to Rio Del Mar Boulevard, the width needed for the new lane would be added in the median. The existing median barrier would be reconstructed in its current location. From Rio Del Mar Boulevard to State Park Drive, the width needed for the new lane would be added outside the existing shoulders; the outside shoulders would be standard 10 feet wide.

Moosehead Drive to the south of State Route 1, south of Aptos Creek, would be realigned where it runs parallel to State Route 1 due to the outside

widening of State Route 1. A new retaining wall would be placed along the outside freeway shoulder to support the realignment that would include horizontal and vertical adjustments. Moosehead Drive is not a through street, however at the end of Moosehead Drive there is emergency access available through a locked gate to the adjacent Carrera Circle residential area. Temporary closures of Moosehead Drive to conform to existing pavement at each end of the realigned segment of roadway may be necessary.

### **Structures, State Route 1**

The Build Alternative would include the replacement of the two Santa Cruz Branch Rail Line railroad bridges over State Route 1 and widening of the State Route 1 bridge over Aptos Creek and Spreckels Drive to accommodate the proposed auxiliary lanes.

The existing two-span Santa Cruz Branch Rail Line railroad bridges (underpass structures) are proposed to be replaced with longer spans. In addition to the railroad bridges, new trail overcrossings would be constructed adjacent to the new railroad bridges for the ultimate trail configuration of the Coastal Rail Trail Segment 12 for the State Route 1 improvements.

The widening of the State Route 1 bridge over Aptos Creek and Spreckels Drive would occur on the south side of State Route 1 only and require abutment walls along the existing embankments along the south side of Aptos Creek and the embankment on the north side of Spreckels Drive. The widened bridge would accommodate six lanes, each 12 feet wide (four through-lanes plus an auxiliary lane in each direction), 10-foot-wide outside shoulders, and a 9-foot-wide median with a 2-foot-wide inside shoulder in the northbound direction and 5-foot-wide inside shoulder in the southbound direction.

A program level design to establish a Corridor Investment Program on State Route 1 is listed on Santa Cruz Regional Transportation Commission's 2045 Regional Transportation Plan which was approved in June 2022. The Santa Cruz Regional Transportation Commission's approach is to prioritize funding for the initial phases of the project, including reconstructing most interchanges and replacing existing structures along State Route 1.

### **Retaining Walls, State Route 1**

The Build Alternative would include retaining walls at the following locations along State Route 1 where existing hillsides need to be set back to allow for freeway widening and where fill will be brought into embankments (Figure 1-3). See Appendix G, Geometric Approval Drawings, for location of station numbers.

Direction	Location	Length	Maximum Height
Northbound	post mile 9.6-9.7 (258+90 – 261+26)	235 feet	23 feet
Northbound	post mile 9.8-9.9 (269+26 – 273+42(Modification of an existing retaining wall))	416 feet	8 feet
Northbound	post mile 10.2-10.3 (289+00 – 295+30)	611 feet	21 feet
Southbound	post mile 9.6-9.7 (258+55 – 263+01)	445 feet	23 feet
Southbound	post mile 9.8 (265+55 – 268+46)	280 feet	19 feet
Southbound	post mile 9.85 (269+71 – 270+70)	100 feet	9 feet
Southbound	post mile 9.95 (273+20 – 277+02)	395 feet	20 feet
Southbound	post mile 10.0 (277+02 – 278+92)	191 feet	20 feet
Southbound	post mile 10.05 (281+58 – 284+41)	283 feet	22 feet
Southbound	post mile 10.1-10.35 (284+41 – 292+80)	860 feet	27 feet

### Sound Walls, State Route 1

Of the ten sound walls analyzed in the Noise Abatement Decision Report, the Build Alternative evaluates the following reasonable and feasible sound walls at the following locations along State Route 1 to abate noise impacts (Figure 1-3). See Appendix G, Geometric Approval Drawings, for location of station numbers. See Chapter 2, Section 2.2.7 for information about the requirements for sound wall consideration.

Direction	Location	Length	Maximum Height
Northbound	post mile 9.7-9.8 (261+81 – 267+49)	606 feet	16 feet
Southbound	post mile 9.95-10.1 (276+62 – 284+41)	885 feet	14 feet

### Bus-on-Shoulder Features

The proposed project would include construction of transit-only shoulder lanes within interchanges (off-ramp to on-ramp). The shoulder improvements would allow buses to drive on the new auxiliary lanes between interchanges and the outside shoulder through the interchanges. At the Freedom Boulevard, Rio Del Mar Boulevard, and State Park Drive interchanges, the project would widen and improve State Route 1 shoulders, which currently



lack the width and pavement structural section to support bus operations. Bus-on-shoulder lanes would be used by Santa Cruz Metropolitan Transit District buses only when the general traffic speed on the highway drops below 35 miles per hour.

### **Cross Section, State Route 1 Bus-on-Shoulder**

The added auxiliary lanes coupled with the Bus-on-Shoulder improvements allow the transit operator to use the auxiliary lane in between interchanges and use the shoulder between the off-ramp and on-ramps through the interchanges. Within the Freedom Boulevard, Rio Del Mar Boulevard, and State Park Drive interchange areas, the highway shoulders would be 12 feet wide.

### **Other Features, State Route 1 Bus-on-Shoulder**

New signs would be installed to advise motorists that only buses are allowed to use the highway shoulders through interchanges during peak traffic hours. Along northbound State Route 1, a sign would be provided south of each of the three interchanges in the project area. Along southbound State Route 1, a sign would be installed north of each interchange. Shoulders would be painted red to indicate bus-only use.

### **Coastal Rail Trail Segment 12**

The limits of Coastal Rail Trail Segment 12 extend from the southern terminus of the trail segment at Sumner Avenue, just south of the Rio Del Mar Boulevard underpass, to the northern terminus at State Park Drive. The proposed Coastal Rail Trail Segment 12 includes the construction of a paved bicycle and pedestrian shared use trail within the Santa Cruz Branch Rail Line right-of-way on the inland side of the tracks, consistent with the approved Monterey Bay Sanctuary Scenic Trail (MBSST) Network Master Plan (MBSST Network Master Plan) (Santa Cruz County Regional Transportation Commission 2014: 4-67) (Figure 1-4), with an optional first phase. The trail segment would include a new at-grade trail connection to Sumner Avenue just south of the Rio Del Mar Boulevard underpass where the existing railroad tracks pass under Rio Del Mar Boulevard and a new sidewalk on the north side of Sumner Avenue between the terminus of the trail and the existing sidewalk on Rio Del Mar Boulevard.

The Santa Cruz County Regional Transportation Commission wishes to preserve the Santa Cruz Branch Rail Line corridor for transportation uses, which includes recreational passenger rail, freight rail, a multiuse trail, and future commuter rail transit. The ultimate configuration to accommodate all proposed transportation uses along the Santa Cruz Branch Rail Line is a bicycle and pedestrian shared-use trail adjacent to railroad tracks. The Santa Cruz Branch Rail Line is currently an active freight railroad with Santa Cruz County Regional Transportation Commission owning the right-of-way. The Santa Cruz County Regional Transportation Commission contracts to serve

freight and recreational passenger rail along the freight easement. The Santa Cruz County Regional Transportation Commission's contracted freight operator has indicated that they may file for abandonment of freight along the Santa Cruz Branch Rail Line.

As a method of preserving the right-of-way of a corridor that otherwise could be abandoned, the Santa Cruz County Regional Transportation Commission could consider railbanking the corridor. The Department of Interior defines railbanking as the preservation of a railroad corridor for future rail use. Railbanking is accomplished under the National Trails System Act through provisions that allow a railbanked corridor to be used for interim trail use purposes through a voluntary agreement reached between a railroad and a trail manager. The right-of-way is preserved for future freight reactivation and could allow the removal of the railroad tracks and construction of a trail in the interim condition.

Consequently, an optional first phase is being considered for Segment 12 of the Coastal Rail Trail, where all or a portion of the trail could be located along the alignment of the existing railroad tracks.

## **Ultimate Trail Configuration**

### Trail Alignment

The ultimate trail configuration includes construction of a paved bicycle and pedestrian shared-use trail alongside the existing railroad track alignment. New trail bridge crossings of State Route 1 at two locations and adjacent to the existing railroad bridges at Aptos Creek/Soquel Drive, and Valencia Creek/Soquel Drive would be constructed. New at-grade trail crossings will be constructed at Aptos Creek Drive, Parade Street, and Trout Gulch Road. New trail bridges over Soquel Drive may require temporary overnight closures to support construction of the new bridge spans over the local streets. An at-grade trail connection from the new trail to the Aptos Village County Park between Aptos Creek and Aptos Creek Road would be constructed, and potential temporary overnight closures may occur.

### Structures

- At the two locations where the existing railroad bridges cross over State Route 1, the Rail Trail will be placed adjacent to the reconstructed rail underpasses on separate independent structures.
- Where the Rail Trail crosses over Aptos Creek, Valencia Creek, and Soquel Drive, the existing structures have been evaluated for their loadbearing capacities, and it has been determined there is not enough data to cantilever the Rail Trail. Therefore, the project would include construction of new Rail Trail bridges adjacent to the existing railroad structures on separate independent structures.

- For areas where the Rail Trail is on an independent structure from the railroad bridges or grade, the separation between the two structures would be a minimum of 5 feet.

### *Retaining Walls*

Retaining walls would be constructed in the following locations for the Coastal Rail Trail Segment 12 alignment. See Appendix G, Geometric Approval Drawings, for location of station numbers.

Direction	Location (Station)	Length	Maximum Height
Trail Northbound	999+79 – 1006+50	660 feet	6 feet
Trail Northbound	1007+00 – 1016+15	915 feet	8 feet
Trail Northbound	1022+22 – 1024+56	245 feet	8 feet
Trail Northbound	1035+00 – 1038+32	335 feet	18 feet
Trail Northbound	1041+32 – 1044+49	310 feet	20 feet
Trail Northbound	1052+75 – 1054+25	150 feet	1 foot
Trail Northbound	1056+00 – 1059+25	325 feet	1 foot
Trail Northbound	1060+00 – 1063+78	350 feet	27 feet
Trail Southbound	999+79 – 1012+00	1235 feet	8 feet
Trail Southbound	1035+56 – 1038+67	311 feet	18 feet
Trail Southbound	1047+42 – 1048+50	110 feet	6 feet

### *Fencing*

Fencing may be used to separate trail users and the railroad for the ultimate trail improvements (Figure 1-4). In accordance with the Federal Railroad Administration guidelines, there would be a 10-foot offset from the centerline of the railroad to the edge of the trail, although an 8-foot, 6-inch offset from the centerline of the railroad may be allowed in some circumstances. The fencing type is undetermined at this time but could be constructed using concrete posts (4 feet, 6 inches in height) etched to resemble wood, and multiple smooth wire strands. Fence post construction is anticipated to require 3-foot-deep excavation. The new trail bridges over Aptos Creek, Valencia Creek, and Soquel Drive would include a railing.

### **Optional First Phase**

It is possible that the common carrier could file for abandonment of freight operations with the Surface Transportation Board along the Santa Cruz Branch Rail Line at any time, in which case all or a portion of the Santa Cruz Branch Rail Line would likely be railbanked to preserve the corridor for future freight reactivation but could then be used for a multiuse trail as an interim condition. The Optional First Phase includes three parts: implementation of the interim trail, demolition of the interim trail and rebuilding the rail line, and construction of the ultimate trail configuration.

### *Trail Alignment*

All or a portion of the trail would be constructed in approximately the same location of the existing railroad tracks by removal of the rails and ties from just south of Rio Del Mar Boulevard at the southern terminus with Sumner Avenue to the northern terminus at State Park Drive, as shown in Figure 1-5. The two existing railroad bridges over State Route 1 would be removed and two new trail overcrossings over State Route 1 would be constructed in their place. The existing railroad bridges at Aptos Creek and Valencia Creek/Soquel Drive (south) would be repurposed for the new trail by removing the railroad decking and replacing with a new trail deck and railing system. The existing single-span railroad bridge superstructure over Soquel Drive (north) would be removed and replaced with a new trail deck and railing system.

Stair access between the new trail and existing Soquel Drive (north) is proposed. A stair connection from the trail to Soquel Drive would begin on the south side of the trail west of the existing railroad bridge over Soquel Drive with a terminus at the Soquel Drive/Spreckels Drive signalized intersection. A new crosswalk would be provided at the Soquel Drive/Spreckels Drive signalized intersection. All trail users can access Soquel Drive via the at-grade trail crossing with Aptos Creek Road as an alternative to using the stairs. The alternative route would be identified with new signage. An at-grade trail connection from the new trail to the Aptos Village County Park between Aptos Creek and Aptos Creek Road would be constructed.

New at-grade trail crossings would be constructed at Trout Gulch Road, Parade Street, and Aptos Creek Drive in the approximate location of the existing railroad tracks.

### *Structures*

- At the two locations where the existing railroad bridges cross over State Route 1, the existing railroad bridges would be removed, and new single-span trail overcrossings would be constructed over State Route 1 in the same general location as the existing railroad bridges. The bridge abutments constructed on either side of State Route 1 would be constructed to freight railroad standards and be positioned and sized to account for the ultimate trail configuration.
- Where the trail crosses over Valencia Creek, Soquel Drive (south) and Aptos Creek, the existing bridge structures would remain, the railroad tracks removed, and new trail constructed along the existing rail centerline.
- The existing single-span railroad bridge superstructure over Soquel Drive (north) would be removed and replaced with a new trail deck and railing system.
- Slight modifications of the existing railroad bridge abutments are proposed to meet current seismic requirements.

### *Retaining Walls*

Retaining walls would be constructed in the following locations:

<b>Direction</b>	<b>Location (Station)</b>	<b>Length</b>	<b>Maximum Height</b>
Trail Northbound	1037+00 – 1038+40	140 feet	6 feet
Trail Southbound	1035+25 – 1038+40	315 feet	18 feet
Trail Southbound	1040+68 – 1041+25	57 feet	5 feet

See Appendix G, Geometric Approval Drawings, for location of station numbers

### *Fencing*

The new trail overcrossings over State Route 1 would include railings with fencing and the repurposed bridges over Aptos Creek, Valencia Creek, and Soquel Drive would have fencing added. No additional fencing is anticipated due to the railroad tracks being removed.

### Removal

If all or a portion of the optional first phase of the trail is implemented, and railroad operations are reactivated, the trail along the existing railroad track alignment would need to be removed and the Ultimate Trail configuration would be built as described above. The railroad tracks would be reinstalled in their approximate existing location and the at-grade railroad crossings of Trout Gulch Road, Parade Street, and Aptos Creek Drive would be reconstructed.

### *Structures*

- At the two locations where new trail overcrossings are constructed over State Route 1 as part of the optional first phase improvements, the trail overcrossings would be relocated to be adjacent to the existing railroad alignment, and new railroad bridges would be constructed over State Route 1 adjacent to the trail overcrossings, as described by the ultimate trail configuration. Construction of the new two-span railroad bridges over State Route 1 would require the construction of support columns in the median of State Route 1 to support the new railroad bridges.
- Repurpose bridges over Soquel Drive (south), Aptos Creek, and Valencia Creek from trail use to rail use by removing the trail deck and railing system and reconstructing railroad infrastructure.
- The trail deck and railing system over Soquel Drive (north) would be removed and replaced with a single -span railroad bridge with reconstructed railroad infrastructure.

### **Design Standards**

Coastal Rail Trail Segment 12 would be designed as a multiuse paved path per the guidelines identified in Chapter 5 of the MBSST Network Master Plan. The design standards used for this segment of the Coastal Rail Trail follow the MBSST guidelines and are listed under Cross Section Standards. The

MBSST Network Master Plan incorporates and refers to design elements from the Class I Bikeways identified in Chapter 1000 of the Highway Design Manual.

In areas where existing constraints limit the available width for the trail to be adjacent to the railroad tracks, other alternative design standards than those listed in the MBSST Network Master Plan may be utilized for design.

#### Cross-Section Standards

- The paved traveled way of the Coastal Rail Trail would be a minimum of 12 feet wide but may be reduced to 10 feet in areas with existing constrained conditions.
- Shoulders would be provided on each side of the traveled way and would be 2 feet in width where possible.
- For accessibility and drainage, the cross slope of the traveled way would be between 1% and 2%.
- The shoulder cross slope would be between 2% and 5% and would angle away from the surface of the traveled way.

#### Horizontal Design

- The design speed for the trail would be established at 20 miles per hour and correlates to a minimum stopping sight distance of 125 feet.
- To meet a minimum stopping sight distance of 125 feet, a radius of no less than 500 feet would be used for the Coastal Rail Trail alignment where possible.
- The minimum horizontal clearance between the railroad centerline and the edge of the Coastal Rail Trail, inclusive of shoulders, is 8 feet, 6 inches.
- Where roadways are adjacent to the trail, such as Soquel Drive through Aptos Village, a minimum horizontal separation of 12 feet on straight sections and 10 feet on curves is recommended between edge of pavement of the roadway and edge of the trail. This standard would be modified at constrained locations along the corridor where necessary to maintain the absolute minimum horizontal separation. Such separation variances may include vertical separation, fence, or other barriers.

#### Vertical Design

- The vertical grade slope for the Coastal Rail Trail would be limited to no more than 5%.
- Vertical obstructions and signs would be 10 feet above the entire Coastal Rail Trail, except in limited situations where the vertical clearance may be reduced to 8 feet over the traveled way and 7 feet over the shoulders.
- The Coastal Rail Trail would either be constructed following closely the existing grade or on widened segments and new bridges requiring new

cuts/fills and retaining walls. Minor grading of the existing ground surface in segments on existing grade is anticipated and may involve excavation of approximately 1-foot depth.

### ***Vegetation Removal and Planting***

Construction work for the Build Alternative would require removal of existing mature landscape plantings along State Route 1 and along the Coastal Rail Trail Segment 12 route. For highway construction, where proper setback requirements allow, plantings would be replaced as per Caltrans' policies, and include an automated irrigation system and a 3-year plant establishment period. The replacement planting effort would include vegetation affected by the contractor's staging, storage, and construction activities. Vegetation needed for the optional first phase trail improvements is significantly less than for the ultimate trail improvements. For trail construction, the Regional Transportation Commission could allow replanting on the trail side of the railroad tracks where right-of-way and topography allows. Offsite replanting will also be pursued.

### ***Construction Activities***

Construction work for the Build Alternative would be done primarily during daylight hours from 7:00 a.m. to 6:00 p.m. However, nighttime work and temporary closures of State Route 1, Soquel Drive, and Spreckels Drive may be necessary to avoid major disruption for tasks that could interfere with traffic or create safety hazards such as demolition of the existing railroad bridges. Detours would be required for any temporary closures of State Route 1 or local roadways. Construction activities would include excavation, drilling, dewatering, pavement demolition, bridge demolition, mass grading, concrete form work, pavement installation, storm system installation, landscaping and irrigation, sign installation, striping operations, and traffic control. Such activities would require the use of the following types of equipment: drilling rig, forklift, scissor lift, backhoe, track excavator, compactor, concrete pump, crane, bulldozer, grader, front-end loader, dump truck, jackhammer, and vibratory roller. These activities may require temporary freeway, ramp, and local street partial lane closures or full closures with possible detours.

A Transportation Management Plan would be developed as part of the project construction planning phase. The Transportation Management Plan would address potential impacts on circulation of all modes of travel (i.e., transit, bicycles, pedestrians, and vehicles). Roadway and/or pedestrian access to all occupied businesses and respective parking lots would be maintained during project construction. The Transportation Management Plan would include an evaluation of potential detour impacts and would also include measures to minimize, avoid, and/or mitigate impacts on alternate routes. The Transportation Management Plan would address coordination with local agencies for traffic through or near the construction zone. Staging areas would be located within the existing Caltrans right-of-way and within the

Santa Cruz Branch Rail Line right-of-way along Coastal Rail Trail Segment 12.

### **Construction Schedule**

Construction of the State Route 1 and Coastal Rail Trail improvements including the auxiliary lanes and Bus-on-Shoulder features is anticipated to begin in 2025 subject to availability of funds for construction and is estimated to take approximately 3 years to complete.

### **Demolition**

Demolition work would generally comprise removal of existing bridge structures, abutments, columns, overhead sign foundations, and rails and ties; clearing and grubbing; and removal of trees, pavement, and drainage systems. Building demolition would occur where properties are acquired.

### ***Stormwater Drainage and Treatment Facilities***

The Build Alternative would include drainage system improvements and permanent stormwater treatment facilities for the State Route 1 and Coastal Rail Trail Segment 12 improvements. Hydromodification measures would be included, if needed. During construction, the contractor would be required to develop and implement a Stormwater Pollution Prevention Plan in compliance with the statewide Construction General Permit and consistent with the guidelines and procedures in Caltrans' Statewide Stormwater Management Plan. The Stormwater Pollution Prevention Plan will provide detailed, site-specific information regarding Best Management Practices to avoid and minimize water quality impacts. The project would be constructed to minimize erosion by disturbing slopes only when necessary, minimizing cut and fill areas to reduce slope lengths, providing cut and fill slopes flat enough to allow revegetation to limit erosion rates, and providing concentrated flow conveyance systems such as storm drains, ditches, and gutters.

### ***Utilities***

Existing utilities located in areas subject to construction that conflict with the proposed improvements would be relocated as needed. This is anticipated to include sanitary sewer and electric utility poles adjacent to Moosehead Drive and a gas line along the Coastal Rail Trail Segment 12 route for the ultimate trail improvements, and other utility appurtenances. One utility pole near Aptos Wharf Road would also be relocated.

### ***Acquisitions and Temporary Construction Easements***

The Build Alternative would require full or partial acquisitions for the construction of the State Route 1 (Table 1-1) and Coastal Rail Trail Segment 12 ultimate trail improvements (Table 1-2), as well as temporary easements



for construction activities such as the construction of sound walls and retaining walls along State Route 1 and the Santa Cruz Branch Rail Line.

Table 1-1 lists the temporary and partial property acquisitions that would occur for the State Route 1 improvements, as well as underground and aerial easements.

Along the Santa Cruz Branch Rail Line corridor, the acquisitions shown in Table 1-2 would be needed for the construction of the proposed ultimate trail configuration of Coastal Rail Trail Segment 12. No new property acquisitions would be needed to construct the optional first phase of the Coastal Rail Trail Segment 12, but the Surface Transportation Board would have to approve railbanking the corridor. Right-of-way exhibits are in Appendix F.

**Table 1-1. State Route 1 Property Acquisitions**

<b>Assessor's Parcel Number.</b>	<b>Street Address</b>	<b>Temporary Construction Easement (square feet)</b>	<b>Partial Acquisition (square feet)</b>	<b>Underground Easement (square feet)</b>
041-052-03	9016 Soquel Drive	329	None	None
041-052-08	9028 Soquel Drive	723	None	None
041-052-14	9012 Soquel Drive	1,757	None	None
041-052-15	9010 Soquel Drive	1,154	None	None
041-052-19	9018 Soquel Drive	1,185	None	None
041-052-20	9020 Soquel Drive	1,212	None	None
044-282-10	421 Robin Drive	522	None	None
044-282-11	414 Robin Drive	838	None	None
041-052-16	9006 Soquel Drive	1,219	None	None
042-067-15	326 Moosehead Drive	2,135	None	None
042-067-16	Moosehead Drive - Vacant	1,519	566	None
042-067-17	Moosehead Drive - Vacant	1,271	742	None
042-067-18	345 Moosehead Drive	1,260	641	None
042-071-01	345 Moosehead Drive	665	466	None
042-071-02	345 Moosehead Drive	874	314	None
042-071-03	345 Moosehead Drive	1,134	13	None
042-073-24	240 Carrera Circle	558	None	None
042-073-25	230 Carrera Circle	241	None	None
042-073-26	220 Carrera Circle	254	None	None
042-073-39	361 Moosehead Drive	259	None	None
042-071-10	351 Moosehead Drive	837	None	None
042-073-40	Carrera Circle - Vacant	1,915	None	None
039-233-12	246 Seacliff Drive	3,239	None	None
039-233-13	335 Spreckels Drive	None	None	291
042-066-21	321 Moosehead Drive	681	None	None
039-231-09	7960 Soquel Drive	None	None	3,840

Assessor's Parcel Number.	Street Address	Temporary Construction Easement (square feet)	Partial Acquisition (square feet)	Underground Easement (square feet)
039-232-03	7992 Soquel Drive	None	None	405
042-041-48	56 Seacliff Drive	2,994	None	402

**Table 1-2. Coastal Rail Trail Segment 12 Ultimate Trail Configuration Property Acquisitions**

Assessor's Parcel Number	Street Address	Temporary Construction Easement (square feet)	Partial Acquisition (square feet)	Underground Easement	Aerial Easement
044-282-47	369 Sandalwood Drive	3,829	45	None	None
041-042-11	Soquel Drive - Vacant	3,317	387	None	None
041-052-16	9006 Soquel Drive	471	None	None	561
041-052-17	Soquel Drive - Vacant	6,884	2,407	None	None
044-282-48	369 Sandalwood Drive	2,732	3,407	None	None
039-241-02	Aptos Village County Park	15,007	1,219	None	1,221
041-011-35	8049 Soquel Drive	None	1,752	None	None
041-011-41	15 Parade Street	None	177	None	None
041-011-42	10 Parade Street	None	155	None	None
041-011-55	8045 Soquel Drive	None	1,777	None	None
041-561-04	8019 Soquel Drive	1,005	None	None	None
041-561-11	8035 Soquel Drive	None	1,670	None	None
039-231-09	7960 Soquel Drive	59	None	None	None
039-232-01	7996 Soquel Drive	1,127	1,646	None	None
039-232-02	7994 Soquel Drive	312	385	None	None
039-232-03	7992 Soquel Drive	1,168	1,331	None	None
039-233-10	347 Spreckels Drive	267	None	None	None
039-471-10	7957 Soquel Drive	7,331	None	None	None
041-561-04	8019 Soquel Drive	8,109	None	None	None
042-011-06	280 State Park Drive	9,954	None	None	None

### **Standard Measures**

This project contains a number of standardized project measures that are used on most, if not all, Caltrans projects and were not developed in response to any specific environmental impact resulting from the proposed project. These measures are addressed in more detail in the Environmental Consequences sections in Chapter 2.

### **Cultural Resources**

- **Standard Measure CR-1:** If previously unidentified cultural materials are unearthed during construction, it is Caltrans' policy that work be stopped in that area until a qualified archaeologist can assess the significance of the find.

### **Hydrology**

- **Standard Measure HY-1:** Coordination with local, state, and federal water resources and floodplain management agencies would be conducted as necessary during all aspects of the proposed project.

### **Water Quality and Stormwater Runoff**

- **Standard Measure WQ-1:** Comply with the conditions of the Construction General Permit, including the preparation and implementation of a Stormwater Pollution Prevention Plan.
- **Standard Measure WQ-2:** Implement temporary construction site Best Management Practices.
- **Standard Measure WQ-3:** Dewatering activities would comply with the Caltrans Standard Specifications, and, if required, a separate dewatering permit would be obtained before construction starts.
- **Standard Measure WQ-4:** Implement the California Office of Emergency Services' Hazardous Material Incident Contingency Plan, which provides a program for response to spills involving hazardous materials.
- **Standard Measure WQ-5:** Implement permanent stormwater treatment measures and design pollution prevention Best Management Practices.
- **Standard Measure WQ-6:** Implement treatment control Best Management Practices consistent with Caltrans' Municipal Separate Storm Sewer System permit.

### **Air Quality and Greenhouse Gases**

- **Standard Measure AQ-1:** The construction contractor shall apply water or dust palliative to the site and equipment as frequently as necessary to control fugitive dust emissions.

- **Standard Measure AQ-2:** The construction contractor shall spread soil binder on any unpaved roads used for construction purposes and on all project construction parking areas.
- **Standard Measure AQ-3:** The construction contractor shall wash off trucks as they leave the right-of-way as necessary to control fugitive dust emissions.
- **Standard Measure AQ-4:** The construction contractor shall properly tune and maintain construction equipment and vehicles.
- **Standard Measure AQ-5:** The construction contractor shall use low-sulfur fuel in all construction equipment as provided in California Code of Regulations Title 17, Section 93114.
- **Standard Measure AQ-6:** The construction contractor shall develop a dust control plan documenting sprinkling, temporary paving, speed limits, and expedited revegetation of disturbed slopes as needed to minimize construction impacts on existing communities.
- **Standard Measure AQ-7:** The construction contractor shall locate equipment and material storage sites as far away from residential and park uses as practical. Construction areas shall be kept clean and orderly.
- **Standard Measure AQ-8:** All on-road and off-road diesel equipment shall not idle for more than 5 minutes. The contractor shall post signs in the designated queuing areas and/or job sites to remind drivers and operators of the 5-minute idling limit. For non-diesel equipment, idling time for lane closures during construction shall be restricted to 10 minutes in each direction.
- **Standard Measure AQ-9:** The construction contractor shall use track-out reduction measures, such as gravel pads, at project access points to minimize dust and mud deposits on roads affected by construction traffic.
- **Standard Measure AQ-10:** The construction contractor shall cover all transported loads of soils and wet materials before transport or provide adequate freeboard (space from the top of the material to the top of the truck) to reduce particulate matter (10 micrometers or smaller) and deposition of particulate matter during transportation.
- **Standard Measure AQ-11:** The construction contractor shall remove dust and mud that are deposited on paved, public roads due to construction activities and traffic to decrease particulate matter.
- **Standard Measure AQ-12:** The construction contractor shall route and schedule construction traffic to avoid peak travel times as much as possible to reduce congestion and related air quality impacts caused by idling vehicles along local roads.
- **Standard Measure AQ-13:** The construction contractor shall install mulch or plant vegetation as soon as practical after grading to reduce windblown particulate matter in the area.

## **Biological Resources**

- **Standard Measure BIO-1:** Protect migratory and nongame birds, their occupied nests, and their eggs by avoiding construction during the nesting season, stopping all work within a 100-foot radius of a discovery, notifying the project engineer, and implementing protective measures.
- **Standard Measure BIO-2:** Contractor-supplied biologists would be used to monitor regulated species, ensure construction activities comply with any applicable permits, licenses, agreements, and certifications, and prepare notifications and reports.

## ***Transportation Demand Management and Transportation System Management Alternatives***

The proposed project includes a number of transportation demand management and transportation system management features, including auxiliary lanes and Bus-on-Shoulder operations along the project corridor, a new pedestrian and bicycle overcrossing at State Route 1 at two locations and adjacent to the existing railroad bridges at Aptos Creek and Valencia Creek/Soquel Drive, and complete streets improvement that would add connectivity for local residents. Therefore, a separate transportation demand management or transportation system management alternative is not necessary.

## **1.4 Project Alternatives**

### **1.4.1 No-Build (No-Action) Alternative**

Under the No-Build Alternative, there would be no construction of auxiliary lanes or Bus-on-Shoulder features on State Route 1 within the project area, and Coastal Rail Trail Segment 12 would not be constructed. Delays on State Route 1 and cut through traffic would continue and overall improvements to operations and auxiliary lanes would not occur. There would be less bicycle and pedestrian connections along with fewer incentives to increase transit service on State Route 1. The existing transportation facilities within the project area would remain unchanged. The No-Build Alternative assumes the construction of other planned and programmed projects in the region, including other auxiliary lanes projects on State Route 1 and other segments of the Coastal Rail Trail. Routine maintenance activities would continue.

## **1.5 Comparison of Alternatives**

After comparing and weighing the benefits and impacts of all feasible alternatives, the project development team, which includes Caltrans and other relevant stakeholders, has identified the Build Alternative as the preferred alternative, subject to public review. Final identification of a preferred alternative would occur after the public review and comment period.

After the public circulation period, all comments would be considered, and Caltrans would select a preferred alternative and make the final determination

of the project's effect on the environment. Under CEQA, Caltrans would certify that the project complies with CEQA, prepare findings for all significant impacts identified, prepare a Statement of Overriding Considerations for impacts that would not be mitigated below a level of significance, and certify that the findings and Statement of Overriding Considerations have been considered before project approval. Caltrans would then file a Notice of Determination with the State Clearinghouse that would identify whether the project would have significant impacts if mitigation measures were included as conditions of project approval, that findings were made, and that a Statement of Overriding Considerations was adopted. Similarly, if Caltrans, as assigned by the Federal Highway Administration, determines NEPA action does not significantly affect the environment, Caltrans would issue a finding of no significant impact. If it is determined that the project is likely to have a significant effect on the environment, an environmental impact statement would be prepared.

## **1.6 Alternatives Considered but Eliminated from Further Discussion**

During the project development process and identification of feasible and reasonable alternatives, and through coordination between Santa Cruz Regional Transportation Commission and the project development team, several alternatives were considered but eliminated from further discussion. Three alignment alternatives were considered specifically for the Coastal Rail Trail Segment 12, including an Inland Alternative (i.e., the current Build Alternative), a Coastal Alignment Alternative, and a Hybrid Alignment Alternative. The three different trail alignment alternatives were compared to a list of evaluation criteria in order to select the preferred alignment. The evaluation criteria included whether or not the alignment alternative would satisfy the purpose and need of the project (i.e., project objectives), as well as comparing safety, access, constructability, cost efficiency, environmental impacts, and right of way impacts. The alignment alternatives were scored based on the results of the evaluation criteria analysis, which are described in more detail below. Ultimately the Inland Alignment Alternative scored significantly higher than the other two alternatives.

The State Route 1 corridor is geographically limited. Nevertheless, an alternative to widen to the outside of the highway was considered by the project development team, as well as alternatives to several aspects of the widening including the Aptos Creek Bridge replacement and Bus-on-Shoulder component. These alternatives considered and dismissed are discussed in more detail below.

### **1.6.1 Rail Trail Coastal Alignment Alternative**

During project development a Rail Trail Coastal Alignment Alternative was considered. Under the Rail Trail Coastal Alignment Alternative, Coastal Rail

Trail Segment 12 would be located on the coastal side of the railroad tracks from Rio Del Mar Boulevard to Aptos Creek Road. The trail segment would include a grade crossing of the railroad tracks at Aptos Creek Road. From Aptos Creek Road to State Park Drive this alternative would be identical to the Build Alternative. The southern terminus of the rail trail segment would be at Rio Del Mar Boulevard, and the trail would have an at-grade connection to Aptos Beach Drive. The trail segment would terminate just north of the existing Rio Del Mar overcrossing above the railroad right-of-way. Access from the trail segment to Rio Del Mar Boulevard would be via Aptos Beach Drive. Other features are unique to this alternative. This alternative would include a retaining wall from Rio Del Mar Boulevard to the southern railroad bridge over State Route 1. The retaining wall would range in height from 24 feet at Rio Del Mar Boulevard to 8 feet at the southern railroad bridge over State Route 1.

This alternative provided less access than the Inland Alignment and Hybrid Alignment alternatives and would only provide access to Aptos Village. Due to access constraints from the coastal side of the railroad tracks, this alternative would provide less bicycle and pedestrian connectivity and less enhancement of alternative modes of travel. Due to property acquisitions and retaining walls, it would not reduce environmental impacts in comparison with the Build Alternative. Furthermore, the Trout Gulch Road to Rio Del Mar Boulevard segment on the coastal side would not provide logical termini. It would require a ramp up to the residential area on Aptos Beach Drive, additional retaining walls, and would end on a road with no bicycle and pedestrian access. In terms of safety, this alternative placed the trail next to high-speed vehicular traffic along Soquel Drive. In terms of environmental impacts, this alternative has the most impacts to floodplains and hydrology due to the encroachment that would be required in Aptos Creek. There would be more substantial visual impacts compared to the Inland Alignment Alternative due to tall retaining walls that would block views for several residents. Several properties abut this alignment and would be impacted by the change of use of the railroad right-of-way, and there would be five parcels impacted including a full take of one property. This alternative also had the highest construction cost due to the complexity of the Aptos Creek overcrossing and tall retaining walls. This alternative was eliminated from further discussion because it had more environmental and right-of-way impacts, and it would not feasibly attain most of the basic objectives of the project, as it provided the fewest access and safety benefits to bicycles and pedestrians.

### **1.6.2 Rail Trail Hybrid Alignment Alternative**

Under the Rail Trail Hybrid Alignment, Coastal Rail Trail Segment 12 would be located on the coastal side of the railroad tracks from Rio Del Mar Boulevard to Trout Gulch Road. The trail segment would include a grade crossing of the railroad tracks at Trout Gulch Road. From Trout Gulch Road to State Park Drive this alignment would be identical to the Rail Trail Inland



Alignment. The southern terminus of the rail trail segment would be at Rio Del Mar Boulevard, and the trail would have a ramp up to an at-grade connection to Aptos Beach Drive. The trail segment would terminate just north of the existing Rio Del Mar overcrossing above the railroad right-of-way. Access from the trail segment to Rio Del Mar would be near the intersection of Aptos Beach Drive and Rio Del Mar Boulevard. A variant of this alignment with crossing at Aptos Creek Road was also considered but rejected because of the congested roadway section in this area.

This alternative provided more access than the Coastal Alignment Alternative, but less access opportunities than the Inland Alignment Alternative (i.e., the Build Alternative). In terms of safety, this alternative placed the trail next to high-speed vehicular traffic along Soquel Drive similar to the Coastal alignment Alternative, whereas the Inland Alignment Alternative places the trail away from vehicular traffic. This alternative also had constructability issues at the Valencia Creek bridge due to its proximity to Soquel Drive. There would be more substantial visual impacts compared to the Inland Alignment Alternative due to tall retaining walls that would block views for several residents. Several properties abut this alignment and would be impacted by the change of use of the railroad right-of-way, and there would be three parcels impacted. The construction cost is lower than the Coastal Alignment Alternative but higher than the Inland Alignment Alternative. After review, this alternative was rejected. Because of limited available width, this option resulted in a sub-standard roadway and trail width that was considered unsafe. Portions of the trail would be located near high-speed traffic along Soquel Drive, and it would require tall retaining walls that would impact views, and result in more property impacts.

### **1.6.3 Bus-on-Shoulder Only Alternative**

A Bus-on-Shoulder only alternative was considered, in which only Bus-on-Shoulder improvements would be implemented and auxiliary lanes would not be added. For this alternative, the bus could use the outside shoulder between and through the interchanges. This alternative would require the outside shoulder at and between the interchanges to be reconstructed with a new structural section and widened to 12 feet. For southbound State Route 1 between the Freedom Boulevard and Rio Del Mar Boulevard interchanges, the outside shoulder widening would occur into the Valencia Lagoon environmentally sensitive area. The transition zone across the off/on-ramps is more problematic as transit vehicles would need to enter or exit the outside shoulder between interchanges by driving across the exit lane to the off-ramp or entry lane from the on-ramp as no auxiliary lanes are provided. This alternative was reviewed and rejected because the construction cost is comparable to the construction cost of auxiliary lanes, but the improvement does not attain most of the basic objectives of the project because the improvement does not substantially reduce delay along the corridor. Furthermore, the existing railroad bridges over State Route 1 would still need

to be replaced and the Aptos Creek Bridge widened with similar temporary impacts during construction along Aptos Creek and Valencia Creek passing under State Route 1. It would also be inconsistent with Bus-on-Shoulder improvements to be constructed just to the north between 41st Avenue and Soquel Avenue and between Bay Avenue/Porter Street and State Park Drive that include auxiliary lanes between the interchanges.

#### **1.6.4 Outside Widening for Auxiliary Lanes**

An alternative to leave the number 1 and number 2 lanes as is and widen to the outside for the proposed auxiliary lane was considered. This alternative was reviewed and rejected for its substantial impacts on adjacent creeks, trees, embankment slopes, and environmentally sensitive areas adjacent to southbound State Route 1 between the Freedom Boulevard and Rio Del Mar Boulevard interchanges, including Valencia Lagoon, which is a known occupied habitat for the Federally listed and State fully-protected Santa Cruz long-toed salamander. Any work in this lagoon would result in take of this species. This alternative would also have substantial right-of-way impacts compared to the Build Alternative.

#### **1.6.5 Aptos Creek Bridge Replacement**

An Aptos Creek bridge replacement alternative was considered, to replace the existing Aptos Creek Bridge along State Route 1 with a longer and wider bridge to provide standard width for the auxiliary lanes. This alternative was reviewed and rejected for its impacts on the adjacent creeks and embankment slopes. Many alignment adjustments would be needed for vertical clearance over Spreckels Drive. It was also rejected for its substantial cost, and its lack of standard stopping sight distance at the vertical curve location where State Route 1 crosses Aptos Creek. The Valencia Creek Arch Culvert crossing under SR 1 would also be impacted due to the longer span bridge requiring modification or replacement. Ultimately this alternative was dismissed from further consideration due to the biological and safety impacts compared to the Build Alternative, which would both reduce impacts and cost less to construct.

### **1.7 Permits and Approvals Needed**

Table 1-3 lists the permits, licenses, agreements, and certifications required for project construction.

**Table 1-3. Permits and Approvals**

<b>Agency</b>	<b>Permits, Licenses, Agreements, and Certifications</b>	<b>Status</b>
U.S. Fish and Wildlife Service	Coordination regarding threatened and endangered species. Section 7 formal consultation and Biological Opinion for Central California coast Steelhead and Tidewater Goby	To be obtained before approval of the final environmental document.
National Marine Fisheries Service	Coordination regarding threatened and endangered species. Section 7 formal consultation and Biological Opinion for Central California coast Steelhead and Tidewater Goby	To be obtained before construction starts.
U.S. Army Corps of Engineers	Section 404 Permit	To be obtained before construction starts.
California Department of Fish and Wildlife	Section 1602 Department of Fish and Game Code Streambed Alteration Agreement	To be obtained prior to construction starts.
California Coastal Commission	Coastal Development Permit	To be obtained before construction starts.
State Historic Preservation Officer	National Historic Preservation Act Section 106 Concurrence	To be obtained before approval of the final environmental document.
State Water Resources Control Board	Construction General National Pollutant Discharge Elimination System Permit requirements through Caltrans National Pollutant Discharge Elimination System Permit	To be obtained before construction starts.
Air Quality Management District	Formal notification prior to construction	To be obtained before construction starts.
Regional Water Quality Control Board	Section 401 Water Quality Certification and coverage under the existing Caltrans National Pollutant Discharge Elimination System Permit (Order Number 99-06-DWQ)  Construction General National Pollutant Discharge Elimination System Permit requirements through Caltrans National Pollutant Discharge Elimination System Permit  National Pollutant Discharge Elimination System Municipal Separate Storm Sewer Systems General Permit	To be obtained before construction starts.
Santa Cruz County Planning Department	Coastal Development Permit for development within the Coastal Zone within the Santa Cruz County Local Coastal Program area  Determination of any need to revise the Floodplain Map	To be obtained before construction starts.



Figure 1-1. Project Vicinity





Figure 1-2. Project Location



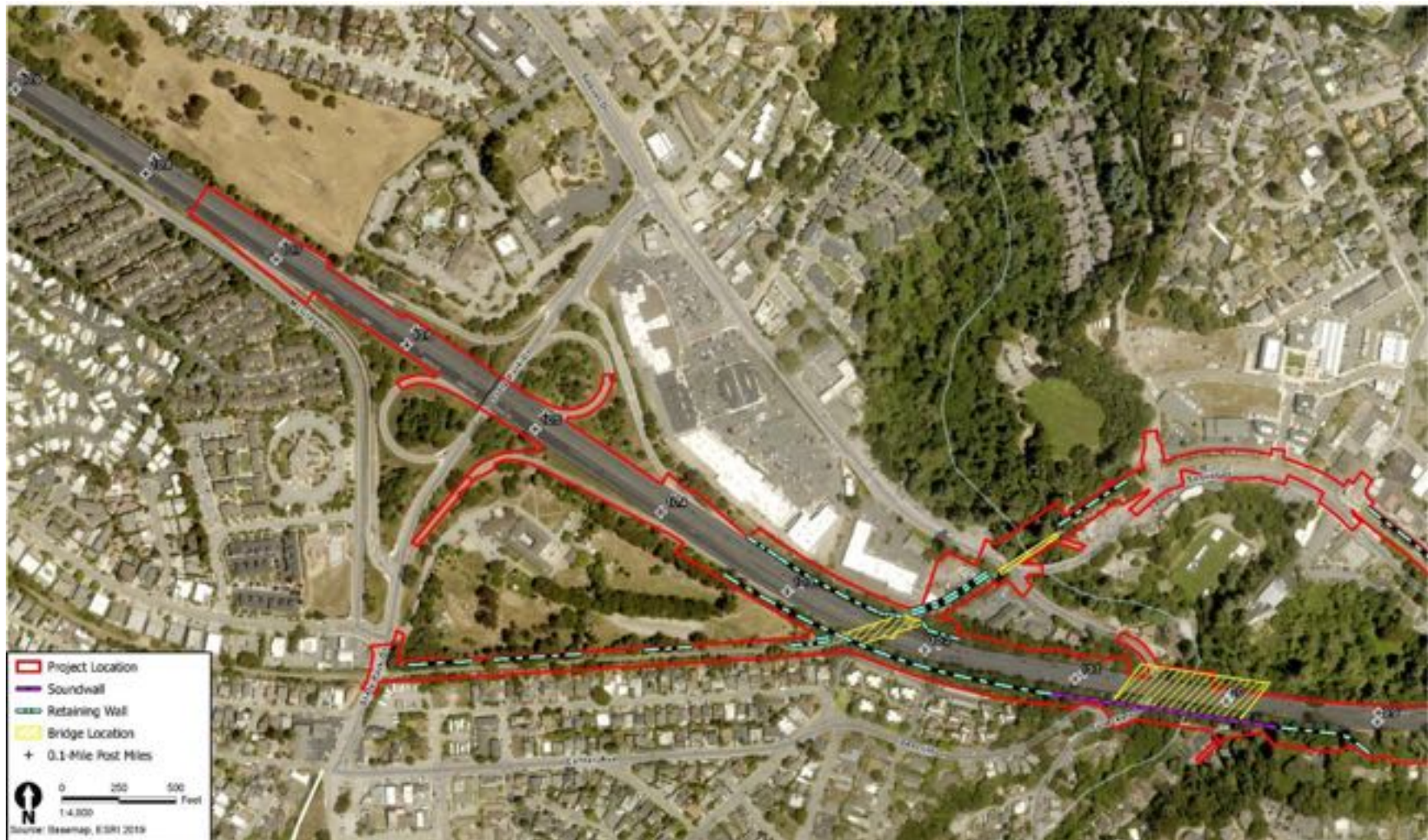


Figure 1-3a. Project Components, Sheet 1 of 3





Figure 1-3b. Project Components, Sheet 2 of 3





Figure 1-3c. Project Components, Sheet 3 of 3



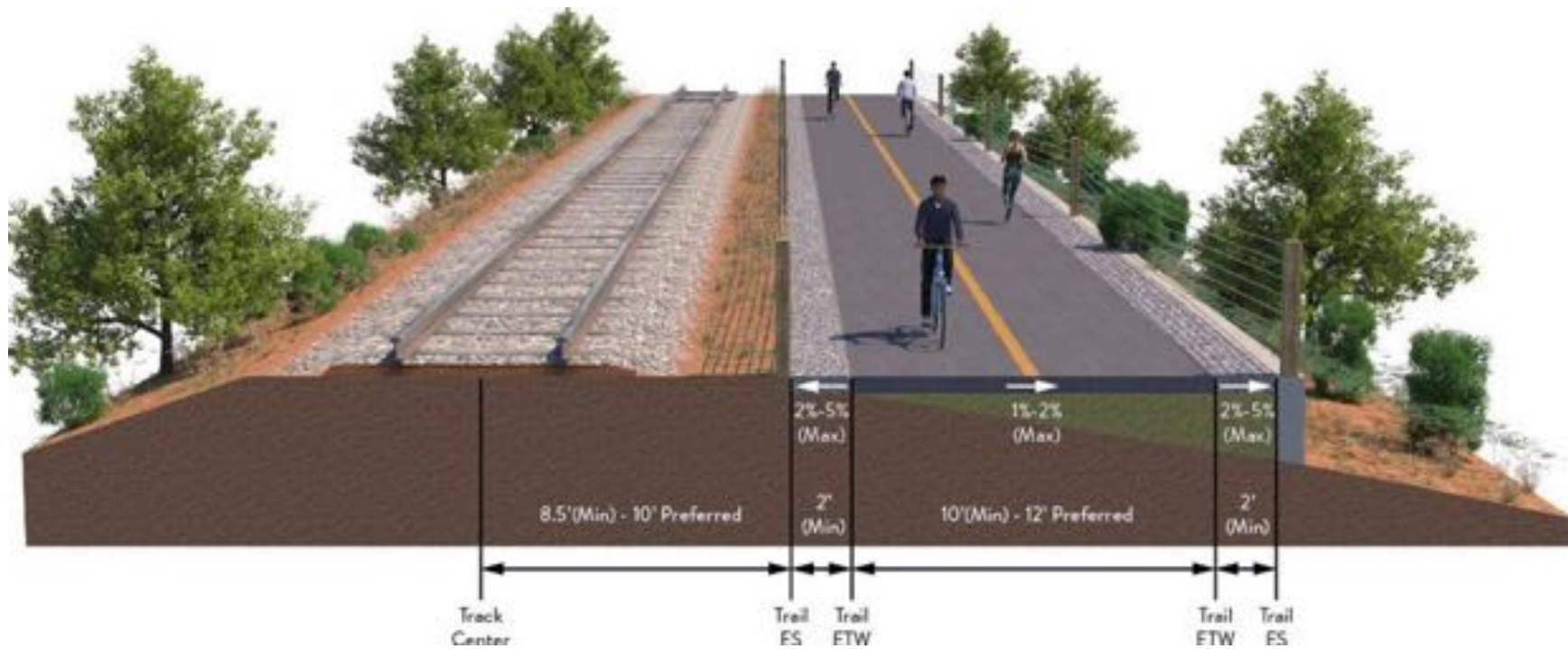


Figure 1-4. Ultimate Trail Configuration



Figure 1-5. Optional First Phase