Chapter 2 Affected Environment; Environmental Consequences; and Avoidance, Minimization, and/or Mitigation Measures

This chapter explains the project-related impacts on the human, physical, and biological environments in the project area. It describes the existing environment that could be affected by the project; potential impacts from each of the alternatives; and proposed avoidance, minimization, and/or mitigation measures. Any indirect impacts are included in the general impacts analysis and discussions that follow.

Topics Considered but Determined Not to be Relevant

As part of the scoping and environmental analysis carried out for the project, the following environmental issues were considered but no adverse impacts were identified. As a result, there is no further discussion about these issues in this document.

Existing and Future Land Use

The project area is within the County of Santa Cruz and the County of Santa Cruz Aptos Planning Area. It is entirely built out, primarily with residential uses, with urban open space in the area south of the railroad and north of State Route 1, where Aptos and Valencia creeks converge (County of Santa Cruz 1994). The proposed project would not alter the existing surrounding land use or zoning patterns or affect existing or future uses. Therefore, no impact would occur, and this topic is not discussed further. The project would require some temporary construction easements and new right-of-way/property acquisitions along the project limits (Tables 1-1 and 1-2). These temporary and permanent acquisitions are discussed in detail in Section 2.1-4.

Consistency with State, Regional and Local Plans and Programs

The proposed project would be subject to the County of Santa Cruz General Plan and Local Coastal Program (County of Santa Cruz 1994), Aptos Village Plan (Santa Cruz County 2010), 2045 Santa Cruz County Regional Transportation Plan (Santa Cruz County Regional Transportation Commission 2022), and Santa Cruz County Bicycle Plan (County of Santa Cruz 2011). The project would be consistent with all applicable goals and policies contained in local and regional planning documents (Community Impact Assessment, September 2022). Because the proposed project would reduce delay, the objectives are consistent with adopted local planning goals and policies for improving the existing State Route 1 corridor.

Wild and Scenic Rivers

According to the National Wild and Scenic Rivers System, there are no wild and scenic rivers in the project area. (National Wild and Scenic Rivers System 2022). The proposed project would not affect designated Wild and Scenic rivers.

Farmlands/Timberlands

There is one agricultural area in use in the project study area consisting of an orchard/vineyard located just south of the southbound State Route 1 Rio Del Mar Boulevard off-ramp. The orchard/vineyard is not identified as prime farmland, unique farmland, or farmland of statewide importance (California Department of Conservation, 2016). All improvements associated with the proposed project would be constructed and operated within existing highway right-of-way in the vicinity of this orchard/vineyard and no temporary or permanent effects to the operation of this land would result from the proposed project.

The project area is mostly comprised of urban and built-up land with small portions of forested areas on the northern and southern edges of State Route 1. These forested areas serve as vegetation buffers between State Route 1 and adjacent land uses and none serve as active lumber production or other timberland uses. Accordingly, no further discussion of Farmlands/Timberlands is required.

Mineral Resources

Much of County of Santa Cruz is designated as Mineral Resource Zone 1. However, the project involves work within the existing, already disturbed right-of-way, and the project would not impede the extraction of any known mineral resources. This topic is not discussed further.

Environmental Justice

Caltrans prepared a Community Impact Assessment in September 2022 that included an analysis of minority and low-income populations. Census data shows that the study area contains minority populations and poverty levels lower than the county as a whole. Impacts related to construction and operation of the proposed project borne by residents of minority or low-income populations would be no greater than impacts borne by all populations within the project area. Residents in the project area would benefit from reduced delay and enhanced accessibility. Construction-related impacts from noise, traffic delays, and air quality emissions would be temporary and would be spread out over the entire corridor, not concentrated in any one place. No minority or low-income populations have been identified that would be adversely affected by the proposed project (Caltrans 2022). Therefore, this project is not subject to the provisions of Executive Order 12898. This topic is not discussed further.

Standard Measures and Avoidance, Minimization, and Mitigation Measures

In each of the sections below, Avoidance, Minimization, and Mitigation Measures are included where necessary. Avoidance measures avoid the impact altogether by not taking a certain action or parts of an action. Minimization measures minimize impacts by limiting the degree or magnitude of the action and its implementation. Avoidance and minimization measures are used where there are no significant impacts. Mitigation Measures, which can include enhancement and compensation, are designed to reduce a project's significant environmental impacts. Standard measures are part of the project and are listed in Chapter 1.

References

California Department of Conservation. 2016. California Important Farmland Finder. Available at: https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed May 2022.

California Department of Transportation. 2022. State Route Highway 1 Auxiliary Lanes and Bus-on-Shoulder Improvements—Freedom Boulevard to State Park Drive—and Coastal Rail Trail Segment 12 Project, Community Impact Assessment. September.

County of Santa Cruz. 1994. 1994 General Plan and Local Coastal Program for the County of Santa Cruz, California. Adopted May 24. Available at: https://www.sccoplanning.com/planninghome/sustainabilityplanning/generalplan.aspx. Accessed May 2, 2022.

County of Santa Cruz. 2010. Aptos Village Plan. Available at: https://www.sccoplanning.com/Portals/2/County/Planning/policy/AVP%20Current.pdf. Accessed May 2, 2022.

County of Santa Cruz. 2011. Santa Cruz County Bicycle Plan. Available at: https://sccrtc.org/wp-content/uploads/2011/08/2011BikePlan_SC_County.pdf. Accessed May 3, 2022.

National Wild and Scenic Rivers System. 2022. California Map. Available: https://www.rivers.gov/california.php. Accessed: June 1, 2022.

Santa Cruz County Regional Transportation Commission. 2022. 2045 Regional Transportation Plan for Santa Cruz County. Final-June 2022. Available at: https://sccrtc.org/wp-content/uploads/2022/06/Final%202045%20RTP.pdf. Accessed February 20, 2023.

2.1 Human Environment

2.1.1 Coastal Zone

Regulatory Setting

This project has the potential to affect resources protected by the Coastal Zone Management Act of 1972. The Coastal Zone Management Act is the primary federal law enacted to preserve and protect coastal resources. The Coastal Zone Management Act sets up a program under which coastal states are encouraged to develop coastal management programs. States with an approved coastal management plan are able to review federal permits and activities to determine if they are consistent with the state's management plan.

California has developed a coastal zone management plan and has enacted its own law, the California Coastal Act of 1976, to protect the coastline. The policies established by the California Coastal Act are similar to those for the Coastal Zone Management Act. They include the protection and expansion of public access and recreation; the protection, enhancement, and restoration of environmentally sensitive habitat areas; the protection of agricultural lands; the protection of scenic beauty; and the protection of property and life from coastal hazards. The California Coastal Commission is responsible for implementation and oversight under the California Coastal Act. Pursuant to the Coastal Zone Management Act and due to federal funding for the project, a Federal Consistency Certification from the California Coastal Commission will be required for this project. The Federal Consistency Certification process will be initiated prior to the final environmental document and will be completed to the maximum extent possible during NEPA process.

Just as the federal Coastal Zone Management Act delegates power to coastal states to develop their own coastal management plans, the California Coastal Act delegates power to local governments to enact their own local coastal programs. This project is subject to the County of Santa Cruz's 1984 General Plan/Local Coastal Program and associated Coastal Zoning Ordinance. A portion of the project is located within the Seacliff Village Plan (County of Santa Cruz 2016) which is also part of the County's Local Coastal Program. Local Coastal Programs contain policies for development and protection of coastal resources in their jurisdiction consistent with the California Coastal Act and the Coastal Zoning Ordinance contains development standards to ensure consistency with the Local Coastal Program and California Coastal Act.

Affected Environment

This section was prepared using information from the Community Impact Assessment prepared by the California Department of Transportation

(Caltrans) in September 2022 and the Natural Environment Study prepared by SWCA Environmental Consultants in September 2022.

The entire segment of State Route 1 between Freedom Boulevard and State Park Drive lies within the coastal zone. The portion of Coastal Rail Trail Segment 12 located south of the northern (inland) right-of-way limits of State Route 1 is also within the coastal zone. Significant coastal resources, including Environmentally Sensitive Habitat Areas, include Aptos Creek, Valencia Lagoon, Valencia Channel, freshwater marsh/riverine habitat, and riparian forest. Valencia Lagoon and Valencia Channel are located on the south side of State Route 1, between Freedom Boulevard and Rio Del Mar Boulevard. Aptos Creek conveys perennial flows, draining an area of approximately 21 square miles to Monterey Bay. Valencia Channel is hydrologically connected to the Valencia Lagoon, and both contain riverine, freshwater marsh, scrub-shrub wetland, and riparian forest habitats. Freshwater marsh/riverine habitat is primarily located within Valencia Channel and Aptos Creek. Riparian forest is located between the Union Pacific Railroad tracks and Spreckels Drive and in pockets surrounding State Route 1 throughout the project. The coastal zone boundary is shown on Figure 2-1.

Environmental Consequences

Table 2-1 evaluates whether the proposed project is consistent with relevant policies from the local coastal program of the County of Santa Cruz as well as the California Coastal Act.

Table 2-1. Local Coastal Program Consistency Analysis, County of Santa Cruz 1994 General Plan and Local Coastal Program

County of Santa Cruz 1994 General Plan and Local Coastal Program Policies	Consistency Analysis for Build Alternative	Consistency Analysis for No-Build Alternative
Policy 5.10.2: Development within visual resources. Recognize that visual resources of Santa Cruz County possess diverse characteristics and that the resources worthy of protection may include, but are not limited to, ocean views, agricultural fields, wooded forests, open meadows, and mountain hillside views. Require projects to be evaluated against the context of their unique environment and regulate structure height, setbacks and design to	The project area is located within the Urban Services Area as designated in the General Plan/Local Coastal Plan. The Visual Impact Assessment prepared in June 2022 for the proposed project identified visual resources in the project area, including mature trees adjacent to State Route 1 and the Santa Cruz Branch Rail Line right-of-way and mountain hillside views. State Route 1 is not a state-designated scenic highway but is recognized in the County of Santa Cruz General Plan as a local scenic roadway. The County of Santa Cruz General	The No-Build Alternative would be consistent with this policy because it would not result in development within visual resources or modify views of surrounding visual resources.

County of Santa Cruz 1994 General Plan and Local Coastal Program Policies	Consistency Analysis for Build Alternative	Consistency Analysis for No-Build Alternative
protect these resources consistent with the objectives and policies of this section. Require discretionary review for all development within the visual resource area of State Route 1, outside of the Urban/Rural boundary, as designated on the General Plan/Local Coastal Program Visual Resources Map and apply the design criteria of Section13.20.130 of the County's zoning ordinance to such development; **Policy 5.10.3:** Protection of public vistas. Protect significant public vistas as described in policy 5.10.2 from all publicly used roads and vista points by minimizing disruption of landform and aesthetic character caused by grading operations, timber harvests, utility wires and poles, signs, inappropriate landscaping and structure design. Provide necessary landscaping to screen development which is unavoidably sited within these vistas; **Policy 5.10.12:** Development visible from urban scenic roads. In the viewsheds of urban scenic roads, require new discretionary development to improve the visual quality through siting, architectural design, landscaping, and appropriate signage. (See policies 5.10.18, 5.10.19 and 5.10.20); and **Policy 5.10.13:** Landscaping requirements. All grading and land disturbance projects visible from scenic roads shall conform to the following visual mitigation conditions: (a) Blend contours of the	Plan and Local Coastal Program Policy 5.10.2 require a review of projects for visual impacts. The zoning ordinance states that development, including walls, should be sited and designed so that it does not block or significantly affect significant public views and scenic character adversely. Consistent with Policy 5.10.2, the Visual Impact Assessment evaluated the proposed project against the context of its unique environment and incorporates design features to protect the resources described above. The project would not block or substantially affect scenic public views. Visual impacts would result from the removal of mature vegetation for the construction of sound/retaining walls and the widening of State Route 1 and the Aptos Creek Bridge. Avoidance, minimization, or mitigation measures would protect the identified visual resources, including preserving as much existing vegetation in the corridor as feasible; applying aesthetic treatments to sound walls and retaining walls; and including skyline trees in the planting palette to reduce the scale of the new highway elements. Therefore, the Build Alternative would be consistent with Policy 5.10.2, as well as Policies 5.10.3, 5.10.12, and 5.10.13.	

County of Santa Cruz 1994 General Plan and Local Coastal Program Policies	Consistency Analysis for Build Alternative	Consistency Analysis for No-Build Alternative
finished surface with the adjacent natural terrain and landscape to achieve a smooth transition and natural appearance; and (b) Incorporate only characteristic or indigenous plant species appropriate for the area.		
Policy 5.10.4: Preserving natural buffers. Preserve the vegetation and landform of natural wooded hillsides which serve as a backdrop for new development. Also comply with policy 8.6.6 regarding protection of ridgetops and natural landforms.	The proposed project would require the removal of mature trees adjacent to State Route 1 and the Santa Cruz Branch Rail Line but would not modify ridgetops. Some slopes immediately adjacent to State Route 1 and the Santa Cruz Branch Rail Line would require grading and construction of retaining walls; however, impacts on hillsides would be limited to areas along existing transportation corridors. During final design, the proposed project would develop aesthetic treatments for retaining walls and preserve existing natural vegetation that buffers adjacent development from State Route 1 to the extent feasible. Where existing trees would be removed, they would be replaced at various ratios, depending on the species of tree. For example, any coast live oak tree that is removed will be replaced at a 10 to 1 ratio and any removal of riparian trees will be offset by a replacement ratio as determined by the California Department of Fish and Wildlife in Section 1602 Streambed/Lakebed Alteration Agreement requirements. The following additional avoidance, minimization, or mitigation measures would also be implemented: survey exact locations for trees and include in the plan set; protect the drip zone of isolated trees and provide temporary fencing; and include skyline trees in the	The No-Build Alternative would be consistent with this policy because it would not result in adverse impacts on natural buffers, vegetation, or landforms.

County of Santa Cruz 1994 General Plan and Local Coastal Program Policies	Consistency Analysis for Build Alternative	Consistency Analysis for No-Build Alternative
	planting palette to reduce the scale of the new highway elements. With the incorporation of these measures, the project would be consistent with Policy 5.10.4.	
Policy 5.10.6: Where public ocean vistas exist, require that these vistas be retained to the maximum extent possible as a condition of approval for any new development.	The proposed project would be consistent with this policy because it would not obstruct public ocean vistas.	The No-Build Alternative would be consistent with this policy because it would not obstruct public ocean vistas.
Policy 5.10.8: Significant tree removal ordinance. Maintain the standards in the County's existing ordinance which regulates the removal of significant trees and other major vegetation in the Coastal Zone, and provide appropriate protection for significant trees and other major vegetation in areas of the County located within the Urban Service Line.	Within the County of Santa Cruz jurisdiction, "significant" trees are identified as single-trunk trees with 20-inch diameter at breast height or greater, clumps with more than four trunks of 12-inch diameter at breast height each, and all trees in a sensitive habitat defined in Chapter 16.32 of the Santa Cruz County Code. The proposed project would maintain the standards in the County's tree removal ordinance. Consistent with Policy 5.10.8, during final design, the project would identify significant trees and other major vegetation in the coastal zone to be protected in place, to the extent feasible. Where it is determined necessary to remove significant trees, the tree removal will be consistent with Finding F of Section 16.34.060 of the tree removal ordinance, for tree removal in conjunction with the project's Coastal Development Permit to allow Caltrans and the Santa Cruz County Regional Transportation Commission the transportation use of their respective rights-of-way, in accordance with the transportation use designation of the Coastal Land Use Plan. Where existing trees would be removed, they would be replaced at various ratios, depending on the species of	The No-Build Alternative would be consistent with this policy because it would not require removal of trees or other major vegetation within the coastal zone.

County of Santa Cruz 1994 General Plan and Local Coastal Program Policies	Consistency Analysis for Build Alternative	Consistency Analysis for No-Build Alternative
	tree. For example, any coast live oak county significant tree that is removed will be replaced at a 10 to 1 ratio and any removal of riparian trees will be offset by a replacement ratio as determined by the California Department of Fish and Wildlife in Section 1602 Streambed/Lakebed Alteration Agreement requirements. With the incorporation of these measures, the project would be consistent with Policy 5.10.8.	
Policy 5.1.4: Protection of sensitive habitats. Implement the protection of sensitive habitats by maintaining the existing Sensitive Habitat Protection ordinance. The ordinance identifies sensitive habitats, determines the uses which are allowed in and adjacent to sensitive habitats, and specifies required performance standards for land in or adjacent to these areas. Any amendments to this ordinance shall require a finding that sensitive habitats shall be afforded equal or greater protection by the amended language.	The Natural Environment Study (2022) prepared for the project identifies impacts on areas that may be considered sensitive habitat areas under the Local Coastal Program, which are immediately adjacent to the existing transportation infrastructure. These impact areas include: 0.562 acre of temporary and 0.061 acre of permanent impacts on coastal zone riparian non-wetlands, 0.135 acre of temporary impacts on coastal zone stream, totaling 0.697 acre of temporary impact and 0.061 acre of permanent impact on coastal zone riparian non-wetlands. Additional impacts include 1.564 acres of temporary impact and 1.019 acres of permanent impact on oak woodlands (canopy coverage). The Santa Cruz County Code Sensitive Habitat Ordinance (Chapter 16.32) includes various conditions that would be enacted for permit approval; however, Section 16.32.100 provides an exception to the standards in Section 16.32.090—specifically, if a road improvement along an existing facility is necessary to protect the public welfare, health, and safety, an exception can be granted upon approval of the environmental coordinator following a biotic review pursuant to Santa Cruz County Code	The No-Build Alternative would be consistent with this policy because no impacts on sensitive habitats would occur

County of Santa Cruz 1994 General Plan and Local Coastal Program Policies	Consistency Analysis for Build Alternative	Consistency Analysis for No-Build Alternative
	Section 16.32.070. The proposed project, which would provide auxiliary lanes and Bus-on-Shoulder facilities on State Route 1, a primary route that connects the southern and central areas of Santa Cruz County, is necessary to protect the public welfare, health, and safety along the only continuous commuter route that links Watsonville, Capitola, Aptos, Cabrillo College, Santa Cruz, and the University of California. Because the proposed project has the potential to result in temporary and permanent impacts on sensitive habitats, Caltrans has addressed requirements of the Sensitive Habitat Ordinance in the project's Natural Environment Study, which recommends avoidance, minimization, or mitigation measures to address the impacts to sensitive habitat areas, including restoration or compensatory mitigation for any area that is a degraded sensitive habitat or has caused or is causing the degradation of a sensitive habitat commensurate with the scale of the proposed transportation improvements. As described in the Natural Environment Study, the amount of riparian non-wetland is minimal. Because these small areas of land are immediately adjacent to an existing major highway, it is not anticipated that the project would constitute a significant disruption of habitat values. With the avoidance, minimization, and mitigation measures identified in the Natural Environment Study, the project is consistent with Policy 5.1.4.	
Policy 5.1.6: Development within sensitive habitats. Sensitive habitats shall be	The Natural Environment Study prepared for the project identifies impacts to areas that may be	The No-Build Alternative would be consistent with this

County of Santa Cruz 1994 General Plan and Local Coastal Program Policies	Consistency Analysis for Build Alternative	Consistency Analysis for No-Build Alternative
protected against any significant disruption of habitat values; and any proposed development within or adjacent to these areas must maintain or enhance the functional capacity of the habitat. Reduce in scale, redesign, or, if no other alternative exists, deny any project which cannot sufficiently mitigate significant adverse impacts on sensitive habitats unless approval of a project is legally necessary to allow a reasonable use of the land.	considered sensitive habitat areas under the Local Coastal Program, which are immediately adjacent to the existing transportation infrastructure. As described above, Section 16.32.100 of the Sensitive Habitat Protection ordinance provides an exception to the standards in Section 16.32.090—specifically, if a road improvement along an existing facility is necessary to protect the public welfare, health, and safety, an exception can be granted upon approval of the environmental coordinator following a biotic review pursuant to Santa Cruz County Code Section 16.32.070. The proposed project, which would provide auxiliary lanes and Bus-on-Shoulder facilities on State Route 1, a primary route that connects the southern and central areas of Santa Cruz County, is necessary to protect the public welfare, health, and safety along the only continuous commuter route that links Watsonville, Capitola, Aptos, Cabrillo College, Santa Cruz, and the University of California. Because the proposed project has the potential to result in temporary and permanent impacts on sensitive habitats, the proposed project's avoidance, minimization, and mitigation measures would protect sensitive habitats against any significant disruption of habitat values and will maintain or enhance the functional capacity of the habitat. During final design, the design of the project would seek to further minimize the impacts on sensitive habitat areas. The project is therefore consistent with Policy 5.1.6.	policy because no impacts on sensitive habitats would occur.

County of Santa Cruz 1994 General Plan and Local Coastal Program Policies	Consistency Analysis for Build Alternative	Consistency Analysis for No-Build Alternative
Policy 5.2.2: Riparian corridor and wetland protection ordinance. Implement the protection of Riparian Corridors and Wetlands through the Riparian Corridor and Wetland Protection ordinance to ensure no net loss of riparian corridors and riparian wetlands. The ordinance identifies and defines riparian corridors and wetlands, determines the uses which are allowed in and adjacent to these habitats, and specifies required buffer setbacks and performance standards for land in and adjacent to these areas. Any amendments to this ordinance shall require a finding that riparian corridors and wetlands shall be afforded equal or greater protection by the amended language. **Policy 5.2.3**: Activities within riparian corridors and wetlands. Development activities, land alteration and vegetation disturbance within riparian corridors and wetlands and required buffers shall be prohibited unless an exception is granted per the Riparian Corridor and Wetlands Protection ordinance. As a condition of riparian exception, require evidence of approval for development from the US Army Corps of Engineers, California Department of Fish and Game, and other federal or state agencies that may have regulatory authority over activities within riparian corridors and wetlands.	Potentially jurisdictional U.S. Army Corps of Engineers waters of the U.S. (other waters), Regional Water Quality Control Board waters of the state (streambed and riparian non-wetlands), the California Department of Fish and Wildlife streams and riparian areas, and coastal zone/California Coastal Commission streams and riparian non-wetlands were identified within the project area associated with creeks or drainages. The proposed project has the potential to result in temporary and permanent impacts on riparian and wetland resources. These areas are immediately adjacent to existing transportation infrastructure. As allowed in Section 16.30.050 of the Riparian Corridor and Wetlands Protection ordinance, the proposed project meets the following criterion for an exemption: (A) the continuance of any preexisting nonagricultural use, provided such use has not lapsed for a period of 1 year or more. During final design of the project, the project would obtain the following permits from agencies with regulatory authority over activities within riparian corridors and wetlands: Section 404 permit from U.S. Army Corps of Engineers, Section 401 Water Quality Certification from the Regional Water Quality Control Board, Section 1602 Streambed/Lakebed Alteration Agreement from the California Department of Fish and Wildlife, and CDP from Santa Cruz County. The project is therefore consistent with Policy 5.2.2., 5.2.3, 5.2.4, and 5.2.5.	The No-Build Alternative would be consistent with this policy because no impacts on riparian habitat or wetlands would occur.

County of Santa Cruz 1994 General Plan and Local Coastal Program Policies	Consistency Analysis for Build Alternative	Consistency Analysis for No-Build Alternative
Policy 5.2.4: Riparian corridor buffer setback (Local Coastal Program) Require a buffer setback from riparian corridors in addition to the specified distances found in the definition of riparian corridor. This setback shall be identified in the Riparian Corridor and Wetland Protection ordinance and established based on stream characteristics, vegetation and slope. Allow reductions to the buffer setback only upon approval of a riparian exception. Require a 10-foot separation from the edge of the riparian corridor buffer to any structure. **Policy 5.2.5:** Setbacks from wetlands. Prohibit development within the 100-foot riparian corridor of all wetlands. Allow exceptions to this setback only where consistent with the Riparian Corridor and Wetlands Protection ordinance, and in all cases, maximize distance between proposed structures and wetlands. Require measures to prevent water quality degradation from adjacent land uses, as outlined in the Water Resources section.		
		The No-Build Alternative would be consistent with this policy because no impacts on riparian habitat or wetlands would occur.
		The No-Build Alternative would be consistent with this policy because no

County of Santa Cruz 1994 General Plan and Local Coastal Program Policies	Consistency Analysis for Build Alternative	Consistency Analysis for No-Build Alternative
		impacts on riparian habitat or wetlands would occur.
		The No-Build Alternative would be consistent with this policy because no impacts on riparian habitat or wetlands would occur.
Policy 5.2.7: Allow compatible uses in and adjacent to riparian corridors that do not impair or degrade the riparian plant and animal systems, or water supply values, such as non-motorized recreation and pedestrian trails, parks, interpretive facilities and fishing facilities. Allow development in these areas only in conjunction with approval of a riparian exception.	The proposed project would be consistent with this policy. The portion of Coastal Rail Trail Segment 12 that would be in or adjacent to riparian corridors would be considered a compatible use, since it would support non-motorized transportation such as walking and bicycling, and with incorporation of impact avoidance and minimization measures discussed above, these uses would not impair or degrade plant and animal systems.	The No-Build Alternative would be consistent with this policy because no impacts on riparian habitat or wetlands would occur.
Policy 5.1.10: Species protection. Recognize that habitat protection is only one aspect of maintaining biodiversity and that certain wildlife species, such as migratory birds, may not utilize specific habitats. Require protection of these individual rare, endangered, and threatened species and continue to update policies as new information becomes available.	Occupied habitat for Santa Cruz long-toed salamander is present at the Valencia Lagoon adjacent to the Biological Study Area but is absent from the Biological Study Area. This species is fully protected. Repairs to the fence separating the Valencia Ecological Preserve from the State Route 1 right-of-way would be completed prior to the start of project activities and would prevent Santa Cruz long-toed salamander from entering the Biological Study Area. The project would benefit Central California coast steelhead because a fish passage barrier would be removed at Valencia culvert and a temporary fish passage solution would be implemented, which would result in species protection over the	The No-Build Alternative would be inconsistent with this policy because a temporary fish passage solution would not be constructed at Valencia culvert, which is currently a barrier for fish passage.

County of Santa Cruz 1994 General Plan and Local Coastal Program Policies	Consistency Analysis for Build Alternative	Consistency Analysis for No-Build Alternative
	next 5-7 years until a permanent solution is constructed under a planned future project.	
Policy 5.1.11: Wildlife resources beyond sensitive habitats. For areas which may not meet the definition of sensitive habitat contained in policy 5.1.2, yet contain valuable wildlife resources (such as migration corridors or exceptional species diversity), protect these wildlife habitat values and species using the techniques outlined in policies 5.1.5 and 5.1.7 and use other mitigation measures identified through the environmental review process.	Suitable travel corridors are present within the riparian habitat along the streams and drainages in the Biological Study Area for numerous species of birds and terrestrial wildlife migrating through the adjacent developed areas. Within the Biological Study Area, Valencia Creek drains into a culvert under State Route 1 before flowing into Aptos Creek. This culvert has been identified as a partial barrier to fish passage, and a temporary fish passage solution will be constructed as part of the project which would serve to improve migration for Central California coast steelhead until a permanent solution is constructed under a planned future project. No other impacts on wildlife migration corridors would occur. Therefore, the build alternatives would not conflict with this policy.	The No-Build Alternative would be inconsistent with this policy because a temporary fish passage solution would not be constructed at Valencia culvert, which is currently a barrier for fish passage.
Policy 5.4.3: Water pollution from urban runoff. Review proposed development projects for their potential to contribute to water pollution via increased storm water runoff. Utilize erosion control measures, on-site detention and other appropriate storm water Best Management Practices to reduce pollution from urban runoff; and **Policy 5.7.1.** Impacts from new development on water quality. Prohibit new development adjacent to marshes, streams and bodies of water if such development would cause adverse impacts on water quality which cannot be fully mitigated.	The Aptos Creek watershed, including Aptos Creek and Valencia Creek, is identified as a Critical Coastal Area by the California Coastal Commission as a coastal watershed where an impaired water body on the 303(d) list (Aptos Creek) flows into a federal Marine Managed Area (the Monterey Bay National Marine Sanctuary). Aptos Creek is impaired by indicator bacteria and sedimentation/siltation. As described in the project's Natural Environment Study and Water Quality Assessment Report (WRECO 2022), the project would include avoidance, minimization, and mitigation measures, including stormwater treatment facilities, to prevent water quality degradation.	The No-Build Alternative would be consistent with this policy because impacts on water quality would occur.

County of Santa Cruz 1994 General Plan and Local Coastal Program Policies	Consistency Analysis for Build Alternative	Consistency Analysis for No-Build Alternative
	Therefore, the project is consistent with Policy 5.4.3.	
Policy 5.19.3: Development around archaeological resources. Protect archaeological resources from development by restricting improvements and grading activities to portions of the property not containing these resources, where feasible, or by preservation of the site through project design and/or use restrictions, such as covering the site with earthfill to a depth that ensures the site will not be disturbed by development, as determined by a professional archaeologist.	Although the project area includes portions of two known archaeological sites, Caltrans has conducted Extended Phase 1 and Phase 2 Testing of these sites to determine the presence or absence of a subsurface deposit and, if present, define its horizontal and vertical extent, and assess its eligibility for listing in the National Register of Historic Places and California Register of Historical Resources. If a resource is found eligible, and an adverse effect on the resource is anticipated, a Memorandum of Agreement executed by the Federal Highway Administration, the State Historic Preservation Officer, and Caltrans would identify measures to resolve any adverse effects. In addition to any such measures, provisions regarding the inadvertent discovery of cultural materials or human remains would be implemented pursuant to California Health and Safety Code 7050.5 and Public Resources Code 5097.98. The resolution of any adverse effect through a Memorandum of Agreement would provide consistency with Policy 5.19.3.	The No-Build Alternative would be consistent with this policy because no ground disturbance or potential impacts on archaeological resources would occur.
Policy 3.14.2: Priority to recreational improvements. In the development of transportation improvement programs, consider giving priority to road improvements which provide access to recreational resources.	The proposed project would be consistent with this policy by reducing delay, providing efficient public transit facilities, and creating and improving pedestrian and bicycle facilities within the project area, which would provide greater access to recreational resources.	The No-Build Alternative would be inconsistent with this policy because delay would continue to worsen, and improvements would not be made to access, public transit, pedestrian, or bicycle facilities.
Policy 6.4.4: Located Public Facilities Outside Flood Hazard Areas. Require new	Portions of the project are within Zone AE, which is subject to flooding by the 100-year flood	The No-Build Alternative would be consistent with this

County of Santa Cruz 1994 General Plan and Local Coastal Program Policies	Consistency Analysis for Build Alternative	Consistency Analysis for No-Build Alternative
utilities, critical facilities, and non-essential public structures to be located outside the 10-year flood and coastal high hazard areas, unless such facilities are necessary to serve existing uses, there is no other feasible location, and construction of these structures will not increase hazards to life or property within or adjacent to the floodplain or coastal inundation areas.	event. A floodway has also been defined along Aptos Creek. While the railroad structures would cross over this creek, the improvements would be outside of the special flood hazard area. As described in Section 2.2.1, the project would not be a significant encroachment on the base floodplain. Therefore, the build alternative would not conflict with this policy.	policy because no facilities would be constructed in a flood hazard or coastal high hazard area.
Policy 6.4.7: New Construction to be Outside Flood Hazard Areas: Restrict new construction to the area outside the 100-year floodplain and area subject to coastal inundation if a buildable portion of the parcel exists outside such areas.	Portions of the project are within Zone AE, which is subject to flooding by the 100-year flood event. A floodway has also been defined along Aptos Creek. While the railroad structures would cross over this creek, the improvements would be outside of the special flood hazard area. As described in Section 2.2.1, the project would not be a significant encroachment on the base floodplain. Therefore, the build alternative would not conflict with this policy.	The No-Build Alternative would be consistent with this policy because no facilities would be constructed in a flood hazard or coastal high hazard area.
Seacliff Village Plan		
4.4.5 Rail Transit: The Santa Cruz County Regional Transportation Commission has adopted a Major Transportation Investment Strategy (MTIS) that includes rail transit between Watsonville and Santa Cruz utilizing the existing Union Pacific tracks. One of the proposed stations/platforms would be in the Seacliff Village, most likely at the northern end of Broadway. It is therefore important that adjacent development not preclude the possibility of a rail transit station or platform.	The proposed project is consistent with the future rail transit possibilities for this area. The interim first phase of the trail is intended to utilize the rail corridor until such date that rail transit is viable in corridor and includes replacing rail that is removed in the interim. The ultimate trail configuration would place the trail next to the rail. Neither option would preclude adjacent development.	The no-build alternative would be consistent with this policy because no construction would take place and adjacent development would not be precluded.

County of Santa Cruz 1994 General Plan and Local Coastal Program Policies	Consistency Analysis for Build Alternative	Consistency Analysis for No-Build Alternative
5.3.2: Scenic Views: The panoramic, scenic views from the Seacliff village area to the Monterey Bay National Marine Sanctuary and surrounding mountains shall receive the highest amount of attention and level of protection possible.	The proposed project would be consistent with this policy. The Seacliff Community Planning Area is located south of State Route 1. Therefore, no views towards the ocean would be affected and any tree or vegetation removal that occurs would also not affect views. Segment 12 of the Coastal Rail Trail bisects the Seacliff Village Community Plan Area, north of the existing residences.	The No-Build Alternative would be consistent with this policy because there would be no change in scenic views if the project is not constructed.
5.3.4. Walls and Fences, Lighting: Walls and fences provide needed screening in addition to privacy and security. When creatively designed and integrated with landscaping and/or other site development details, they can combine attractiveness with utility. Lighting within the village core area shall be kept to a minimum except where safety is an issue. In an effort to increase nighttime visibility, provide additional security and improve vehicular safety, appropriate overhead lighting shall be proposed for areas such as the neighborhood-serving commercial properties, public community centers, parking areas, key intersections and along the roadways as per County and PG&E standards.	The proposed project involves construction of several retaining walls and sound walls, but aesthetic treatments would ensure that they blend with the natural landscape and do not detract from views. Fencing may be implemented for the ultimate trail condition, but this would be a safety measure to separate the rail and the trail. Any fencing along the trail would be visible by trail users, rather than residents of Seacliff Village. Details regarding the type of fencing that could be used will be available during the design phase of the project. Lighting may also be used for both the optional first phase and the ultimate trail condition. Lighting would be similar to the lighting used on other segments of the trail and would be used to promote safety on a neighborhood-serving trail. Therefore, the build alternative would be consistent with this policy.	The No-Build Alternative would be consistent with this policy because no walls or fences would be constructed.
County of Santa Cruz Riparian Corridor and Wetlands Protection Ordinance		
The purpose of this Ordinance is to minimize and to eliminate any development activities in the riparian corridor, preserve, protect, and restore riparian corridors for: protection of wildlife habitat; protection of water	Potentially jurisdictional U.S. Army Corps of Engineers waters of the U.S. (other waters), Regional Water Quality Control Board waters of the state (streambed and riparian non-wetlands), the California Department of Fish and Wildlife	The No-Build Alternative would be consistent with this policy because no impacts on riparian habitat or wetlands would occur.

County of Santa Cruz 1994 General Plan and Local Coastal Program Policies	Consistency Analysis for Build Alternative	Consistency Analysis for No-Build Alternative
quality; protection of aquatic habitat; protection of open space, cultural, historical, archaeological and paleontological, and aesthetic values; transportation and storage of floodwaters; prevention of erosion; and to implement the policies of the General Plan and the Local Coastal Program Land Use Plan.	streams and riparian areas, and coastal zone/California Coastal Commission streams and riparian non-wetlands were identified within the project area associated with creeks or drainages. The proposed project has the potential to result in temporary and permanent impacts on riparian and wetland resources. As described with regard to Policy 5.2.2, these areas are immediately adjacent to existing transportation infrastructure. As allowed in Section 16.30.050 of the Riparian Corridor and Wetlands Protection ordinance, the proposed project meets the following criterion for an exemption: (A) the continuance of any preexisting nonagricultural use, provided such use has not lapsed for a period of 1 year or more. The proposed project would implement avoidance, minimization, and mitigation measures included in the Natural Environment Study to support the preservation, protection, and restoration of riparian corridors and the protection of wildlife habitat and aquatic habitat. The proposed project would implement avoidance, minimization, and mitigation measures included in the Water Quality Assessment Report (2022) to support the protection of water quality and aquatic habitat and prevent erosion. The proposed project would implement avoidance, minimization, and mitigation measures included in the Historic Resources Evaluation Report (2022) to protect historical and archaeological resources. The proposed project would implement measures included in the Visual Impact Assessment to protect aesthetic	

County of Santa Cruz 1994 General Plan and Local Coastal Program Policies	Consistency Analysis for Build Alternative	Consistency Analysis for No-Build Alternative
	values. The project is therefore consistent with the Riparian Corridor and Wetland Protection Ordinance.	
California Coastal Act		
30210: In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.	The proposed project would be consistent with this policy because the project would not impede public recreational opportunities. Delay on State Route 1 would be reduced, and the trail would increase connectivity. Overall, opportunities for access would be improved in the study area.	The No-Build Alternative is inconsistent with this policy because existing circulation and access deficiencies would persist or worsen. While the No-Build Alternative would not directly prevent access, delays would be exacerbated in the future.
30223: Upland areas necessary to support coastal recreational uses shall be reserved for such uses, where feasible.	The proposed project would not conflict with this policy because no conflicts with coastal recreational uses would occur. The proposed project indirectly improves coastal recreational uses by reducing delays on State Route 1, reducing cut through traffic on local streets, improving public transit, and improving and bicycle and pedestrian connectivity.	The No-Build Alternative would not conflict with this policy because no construction would occur and there would be no changes to upland areas.
30231: The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining	As described in the project's Natural Environment Study and Water Quality Assessment Report, the project would include avoidance, minimization, and mitigation measures, including stormwater treatment facilities, to prevent water quality degradation. Because the project is anticipated to have to comply with Caltrans' Municipal Separate Storm Sewer System post-construction permit requirements, treatment best management practices from the Caltrans list of approved treatment best management practices that allow stormwater infiltration will be considered for the project. This would reduce	The No-Build Alternative would be consistent with this policy because no construction would occur and there be no change related to water discharges or impacts to vegetation.

County of Santa Cruz 1994 General Plan and Local Coastal Program Policies	Consistency Analysis for Build Alternative	Consistency Analysis for No-Build Alternative
natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.	potential impacts on groundwater recharge. Mitigation Measure BIO-17 would ensure vegetation and tree removal would be replanted.	
30240(a): Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.	As described in the Natural Environment Study, potential dewatering could lead to a temporal loss of habitat for steelhead. Removal of Eucalyptus trees or vegetation during roosting season (October 1-March 1) could result in impacts to sensitive Monarch habitat. However, impacts to critical habitat for both of these species would be reduced and mitigated through implementation of avoidance, minimization, and mitigation measures described in Section 2.3.5. Therefore, the proposed project would not conflict with this policy.	The No-Build Alternative would be consistent with this policy because no construction would occur and there be no impacts on sensitive habitat.
30251: The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural landforms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.	The proposed project would not obstruct public ocean vistas. Natural landforms would not be altered. Trees and mature vegetation would be removed. The proposed project would require the removal of mature trees adjacent to State Route 1 and the Santa Cruz Branch Rail Line but would not modify ridgetops. Some slopes immediately adjacent to State Route 1 and the Santa Cruz Branch Rail Line would require grading and construction of retaining walls; however, impacts on hillsides would be limited to areas along existing transportation corridors. During final design, the proposed project would develop aesthetic treatments for retaining walls and preserve existing natural vegetation that buffers adjacent development from State Route 1 to the extent feasible. Where existing trees would be removed, they would be replaced at	The No-Build Alternative would be consistent with this policy because no construction would occur and there would be no changes to views or scenic areas.

County of Santa Cruz 1994 General Plan and Local Coastal Program Policies	Consistency Analysis for Build Alternative	Consistency Analysis for No-Build Alternative
	various ratios, depending on the species of tree. For example, any coast live oak tree that is removed will be replaced at a 10 to 1 ratio. Therefore, the proposed project would not conflict with this policy.	
30252: The location and amount of new development should maintain and enhance public access to the coast by (1) facilitating the provision or extension of transit service, (2) providing commercial facilities within or adjoining residential development or in other areas that will minimize the use of coastal access roads, (3) providing non-automobile circulation within the development, (4) providing adequate parking facilities or providing substitute means of serving the development with public transportation, (5) assuring the potential for public transit for high intensity uses such as high-rise office buildings, and by (6) assuring that the recreational needs of new residents will not overload nearby coastal recreation areas by correlating the amount of development with local park acquisition and development plans with the provision of onsite recreational facilities to serve the new development.	The proposed project includes the Bus-on-Shoulder component, which would expand transit opportunities throughout the corridor.	The No-Build Alternative would be consistent with this policy because no development would occur, although transit opportunities would not be improved.
30253: New development shall do all of the following: (a) Minimize risks to life and property in areas of high geologic, flood, and fire hazard. (b) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or	The Build Alternative would not result in any significant impacts related to geologic, flood, fire hazard, and air quality conditions. The highway, bridges, and rail trail would all be constructed with structural integrity and adhere to all applicable codes and standards and impacts related to erosion or other impacts to the surrounding areas would be mitigated. As	The No-Build Alternative would potentially be inconsistent with this policy because vehicle miles traveled would not be reduced.

County of Santa Cruz 1994 General Plan and Local Coastal Program Policies	Consistency Analysis for Build Alternative	Consistency Analysis for No-Build Alternative
destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs. (c) Be consistent with requirements imposed by an air pollution control district or the State Air Resources Board as to each particular development. (d) Minimize energy consumption and vehicle miles traveled. (e) Where appropriate, protect special communities and neighborhoods that, because of their unique characteristics, are popular visitor destination points for recreational uses.	shown in the countywide analysis, the project would reduce vehicle miles traveled	

Build Alternative

As shown in Table 2-1, the proposed project (as well as the ultimate trail configuration, optional first phase improvements and removal of optional first phase) is consistent with policies from the County of Santa Cruz Local Coastal Program. As discussed in Table 2-1, the project design and avoidance and minimization measures would ensure that impacts on coastal resources, including environmentally sensitive habitat areas and visual resources are reduced to the maximum extent, and would ensure protection against coastal hazards. The proposed project would provide a net benefit to coastal recreational resources and coastal access by preserving and enhancing park and recreational land uses and improving access to these resources by reducing delay along State Route 1.

No-Build 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. 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. The No-Build Alternative would be inconsistent with policies that relate to improving access to coastal and recreational resources because traffic conditions would

continue to worsen along State Route 1 and on nearby local streets. The No-Build Alternative would result in increased delay and would not improve pedestrian or bicycle facilities, public transit facilities, access to beaches, or recreational land uses.

Avoidance, Minimization, and/or Mitigation Measures

Project avoidance and minimization measures that would reduce impacts on the coastal zone are described in Table 2-1. No other measures related to the coastal zone are required.

References

California Department of Transportation. 2022. State Route Highway 1 Auxiliary Lanes and Bus-on-Shoulder Improvements—Freedom Blvd. to State Park Dr.—and Coastal Rail Trail Segment 12 Project Community Impact Assessment. September.

County of Santa Cruz. 2016. Seacliff Village Plan. Adopted May 20, 2003. Updated January 17, 2016. Available: https://www.sccoplanning.com/Portals/2/County/Planning/policy/SVP%20Current.pdf. Accessed November 4, 2022.

ICF. 2022. State Route Highway 1 Auxiliary Lanes and Bus-on-Shoulder Improvements—Freedom Boulevard to State Park Drive and Coastal Rail Trail Segment 12. Visual Impact Assessment. June.

SWCA Environmental Consultants. 2022. State Route Highway 1 Auxiliary Lanes and Bus-on-Shoulder Improvements—Freedom Blvd. to State Park Dr.—and Coastal Rail Trail Segment 12 Project, Natural Environment Study. September.

WRECO. 2022. State Route Highway 1 Auxiliary Lanes and Bus-on-Shoulder Improvements—Freedom Boulevard to State Park Drive and Coastal Rail Trail Segment 12 Project. Final Water Quality Assessment Report. April.

Figure 2-1. Coastal Zone Boundary

2.1.2 Parks and Recreational Facilities

Regulatory Setting

The Park Preservation Act (California Public Resources Code 5400–5409) prohibits local and state agencies from acquiring any property that is in use as a public park at the time of acquisition unless the acquiring agency pays sufficient compensation or land, or both, to enable the operator of the park to replace the park land and any park facilities on that land.

Affected Environment

This section was prepared using information from the Community Impact Assessment prepared by the California Department of Transportation (Caltrans) in September 2022 (Caltrans 2022).

As listed in Table 2-2 and shown on Figure 2-2, there are seven parks and recreational facilities within the project study area, one privately owned golf course and one privately owned tennis club open to the public. The numbers in the table correspond to locations shown on Figure 2-2. These facilities are operated by the California Department of Parks and Recreation; County of Santa Cruz Parks, Open Space and Cultural Services; or private operators.

As shown in Table 2-2, seven of the parks in the project study area are protected by the Park Preservation Act.

Table 2-2. Parks and Recreational Facilities Within 0.5 Mile of Project Area

Number	Park Name	Owner	Address/Location
1	Forest of Nisene Marks State Park	State of California	Aptos Creek Road/Soquel Drive, Aptos
2	Aptos Village County Park	County of Santa Cruz	100 Aptos Creek Road, Aptos
3	Seacliff Village County Park	County of Santa Cruz	McGregor Drive/Canterbury Drive/Sea Ridge Road, Aptos
4	Polo Grounds Park	County of Santa Cruz	2255 Huntington Drive, Aptos
5	Seacliff State Beach	County of Santa Cruz	State Park Drive, Aptos
6	Rio Del Mar State Beach	County of Santa Cruz	Rio Del Mar Boulevard, Aptos
7	Hidden Beach Park	County of Santa Cruz	Hidden Beach Way, Aptos
8	Seascape Golf Club	Privately Owned	Clubhouse Drive, Aptos
9	Tennis Club of Rio Del Mar	Privately Owned	Sandalwood Drive, Aptos

Environmental Consequences

Build Alternative

The proposed project would require a temporary construction easement in Aptos Village County Park, immediately adjacent to the Santa Cruz Branch Rail Line right-of-way, for construction of Coastal Rail Trail Segment 12. No other use of park land is proposed. Aptos Village County Park would remain open during construction; however, 15,810 square feet of the park would be temporarily unavailable to the public. This portion of the park includes vegetated open land. No structures or park amenities are located in this area. While land acquisitions would be required to complete Coastal Rail Trail Segment 12 in the vicinity of Aptos Village, the majority of the proposed project would occur entirely within the existing Caltrans right-of-way or Santa Cruz Branch Rail Line right-of-way, and would result in minor temporary impacts on Aptos Village County Park. No permanent impacts on Aptos Village County Park or any other public parks or recreational facilities would occur. At the Aptos Village County Park, the proposed trail connection to Aptos Village Road would allow for an integrated trail network and allow park users to access the coastal trail. The provisions of Section 4(f) of the U.S. Department of Transportation Act would not apply in this case because the connection to the County Park would not result in parkland being converted to a transportation use. Please see Appendix E for concurrence from Santa Cruz County Parks who is the agency with jurisdiction over the park.

A small portion (0.03 acre) of the privately-owned Tennis Club of Rio Del Mar would be permanently acquired as part of the Coastal Rail Trail Segment 12 improvements; however, no permanent effect to the tennis club operations would result. Since this is a privately-owned tennis club, provisions of Section 4(f) would not be triggered. Additionally, the proposed project would require temporary road and ramp closures and detours during construction along State Route 1. Temporary road and ramp closures during construction may affect certain routes to nearby parks, beaches, and other recreational facilities in the vicinity of the project; however, detours would be established to maintain access to those facilities throughout construction.

There are publicly owned parks and recreational facilities within the project vicinity that are protected by Section 4(f) of the Department of Transportation Act of 1966. However, this project will not “use” those facilities as defined by Section 4(f).

No-Build Alternative

The No-Build Alternative would not result in direct or indirect impacts on parks, beaches, or other recreational facilities. It would not affect access to parks, beaches, and recreational facilities; however, traffic conditions would continue to worsen along State Route 1, which would not ultimately improve access to such facilities, and the access connection at Aptos Village Park would not be constructed.

Avoidance, Minimization, and/or Mitigation Measures

Although no adverse impacts on parks or other recreational facilities are anticipated to occur as a result of the proposed project, a Transportation Management Plan will ensure appropriate detours are established such that access to all facilities is maintained throughout construction. The Transportation Management Plan will also require coordination with and notification of all proposed road closures and detours prior to implementation. Please refer to Section 2.1.7 for additional details regarding the Transportation Management Plan.

References

California Department of Transportation. 2022. State Route Highway 1 Auxiliary Lanes and Bus-on-Shoulder Improvements—Freedom Blvd. to State Park Dr.—and Coastal Rail Trail Segment 12 Project Community Impact Assessment. Final September.

Figure 2-2. Parks and Recreational Facilities

2.1.3 Growth

Regulatory Setting

The Council on Environmental Quality regulations, which established the steps necessary to comply with the National Environmental Policy Act of 1969, require evaluation of the potential environmental effects of all proposed federal activities and programs. This provision includes a requirement to examine indirect effects, which may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The Council on Environmental Quality regulations (40 Code of Federal Regulations 1508.8) refer to these consequences as indirect impacts. Indirect impacts may include changes in land use, economic vitality, and population density, which are all elements of growth.

CEQA also requires the analysis of a project's potential to induce growth. The CEQA Guidelines (15126.2(d)) require that environmental documents "…discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment…"

Affected Environment

This section was prepared using information from the Community Impact Assessment prepared in September 2022 (Caltrans 2022).

The study area for this analysis includes the larger region to conservatively capture any indirect growth effects of the proposed project. Specifically, the study area includes Santa Cruz and Monterey Counties; the cities of Santa Cruz, Capitola, Marina, and Watsonville; and the urban service areas of Live Oak, Aptos, and Freedom, which will make up over 70% of the total housing growth in Santa Cruz County between 2000 and 2030. Applicable planning documents were reviewed, and opinions of local planners and officials were sought to identify any new information that could affect growth. In 2020, the Santa Cruz County Regional Transportation Commission formed an expert panel of stakeholders and representatives from local planners and officials to gather their opinions about the growth potential for the region, which is described below.

Certain areas, such as San Benito County and the cities of San Juan Bautista, Hollister, and Salinas, are not included in the study area because growth in these areas is considered unlikely to be affected by the proposed project. Growth in these areas is not anticipated to occur as a result of modifications to the State Route 1 corridor because very few residents of these areas work in the city of Santa Cruz due to the difficult commute. Because San Juan Bautista is the gateway to the city of Hollister, a similar statement could be made about Hollister and San Benito County as a whole. Water has also become very expensive in these areas, particularly in San Juan Bautista, which is creating a resource constraint to growth. The

inventory of vacant mixed-use-zoned land in Salinas totals 16.5 acres. Although Salinas may be an area of future growth, it is not anticipated that this project would have any effect there given the number of "choke points" on the highways between Salinas and the project area, and there are no capacity improvements planned for the two-lane segment of State Route 1 south of Santa Cruz County. Planned residential developments in Salinas might sell out faster if commuting to Santa Cruz becomes easier but would not change the amount of planned growth in Salinas.

Environmental Consequences

Build Alternative

How, if at all, does the project potentially change accessibility?

Accessibility refers not just to the physical constraints associated with transportation projects, but rather reflects both the attractiveness of potential destinations and ease of reaching them, which, in turn, are related to land use and circulation issues. According to the Traffic Study prepared for the proposed project (CDM Smith 2021), proposed improvements to bus service as well as interim improvements from auxiliary lanes would reduce delay and travel times between Santa Cruz and Watsonville by 13 minutes in the northbound direction and 8 minutes in the southbound direction during the AM peak travel period, and would reduce travel times by 20 minutes in the northbound direction and 8 minutes in the southbound direction during the PM peak travel period in the opening year (2025). The project would reduce travel times between Santa Cruz and Watsonville by 3 minutes in the northbound direction and 8 minutes in the southbound direction during the AM peak travel period and would reduce travel times by 19 minutes in the northbound direction and 9 minutes in the southbound direction during the PM peak travel period in year 2045 (20 years after construction completion). Reduced delay and travel times on State Route 1 between Santa Cruz and Watsonville could improve access between employment centers, such as the city of Santa Cruz, and areas that have the potential to support new growth, such as the cities of Watsonville and Marina, and the unincorporated communities of Aptos, Live Oak, and Freedom.

Thus, the Build Alternative would make important areas of the Santa Cruz region more accessible in terms of travel times and travel behavior, especially for commuters and transit riders traveling north in the AM peak travel period and south in the PM peak travel period. In this regard, the proposed project would improve accessibility in the region as travel time savings and transit improvements would appeal to commuters within the study area. Further, it could also increase the appeal of housing in more affordable areas in southern Santa Cruz County and northern Monterey County.

How, if at all, does the project type, project location, and growth-pressure potentially influence growth?

Project Type

Certain transportation project types, such as auxiliary lane projects in an urbanized area with low growth rates and little remaining development capacity, are unlikely to cause growth-related impacts. Other types of projects, such as construction of new highways, may have more potential for such impacts. Typically, projects that create a new facility or new access require an analysis of growth-related impacts.

The Build Alternative would provide auxiliary lanes on both the northbound and southbound sides of State Route 1, extending approximately 2.6 miles between the State Park Drive and Freedom Boulevard interchanges. In addition, the Build Alternative would construct a bicycle and pedestrian trail along an approximately 1.14-mile segment of the Santa Cruz Branch Rail Line right-of-way, from Rio Del Mar Boulevard to State Park Drive. Other than the proposed trail segment, the Build Alternative would not provide new roads or new access to areas that are currently inaccessible. Rather, it would reduce existing and future freeway traffic delay and travel times during peak travel hours and provide for alternative modes of travel that do not currently exist along this freeway.

Regarding the proposed Coastal Rail Trail Segment 12, bicycle accessibility would be improved; however, the influence on growth would be small since the proposed trail segment is a part of a larger trail program that is intended as a scenic/recreational amenity rather than a transportation facility. Further, bicycle trails have limited utility for commuting and the proposed facility would only provide a parallel means of access to State Route 1 rather than opening a new corridor to a previously inaccessible location. Following completion of the project, State Route 1 may be more attractive for existing and potential future freeway users compared to the current condition, but proposed improvements would occur along a short section of an existing freeway corridor, addressing projected traffic volumes, and encouraging drivers to use public transit or non-motorized transportation.

Auxiliary lane projects in a highly urbanized area with low growth rates and little remaining development capacity are unlikely to cause growth-related impacts. Based on the project type, the urbanized condition of the project area, and the constraints to growth, such as the limited quantity of developable land and environmental constraints, the proposed project is not expected to result in direct impacts related to growth in the form of providing access to new areas that are currently inaccessible. However, it is possible that the project, including the associated reduced travel times, could make areas surrounding employment centers where developable land is still available, more appealing for future development if peak travel commute

times are reduced. This could result in indirect effects in the form of growth pressure on surrounding areas that can support future growth.

Project Location

Another important screening factor is project location—whether a project is located in an urban, suburban, urban/suburban fringe, or rural area, and whether the location of the project could influence growth. The project is located in a suburban area with limited developable land. Although it is suburban, the project area is subject to the "missing middle" housing demand and is a highly desirable community in which to live. As a result, housing pressure in the area is high and prices have risen while supply is limited. As confirmed by the expert panel, growth in the local job centers, such as the cities of Santa Cruz and Capitola, is limited to infill development due to the lack of developable land designated for future residential or commercial development. Infill development in these areas is expected to be planned development that would occur independent of improvements along State Route 1. The areas that have the potential to support new growth generally include the outlying areas in the southern portion of Santa Cruz County and northern portion of Monterey County, in the cities of Watsonville and Marina, and the unincorporated communities of Aptos, Live Oak, and Freedom, where developable land designated for residential and commercial uses is still available. These areas are planned for future growth through gradual development of higher-density housing, which will support planned job growth in the nearby employment centers, within and near the city of Santa Cruz.

The Build Alternative would not directly promote additional growth within the region; however, it could indirectly contribute to growth pressure in the region by making certain outlying areas in the vicinity of the city of Santa Cruz more appealing for future growth by reducing delay and improving travel times for commuters traveling to Santa Cruz from areas south where development could occur. Planned growth in the region is not dependent on the proposed project and is not expected to be substantially influenced by the proposed project. Therefore, in terms of project location, the proposed project would not be anticipated to result in direct growth-related impacts; however, it could result in indirect impacts in the form of growth pressure for areas in the vicinity of the city of Santa Cruz where additional development could occur.

Growth Pressure

The project is not expected to result in direct impacts related to growth; however, due to the high desirability and demand for housing in the area, it is possible that the reduced delay and improved travel time savings on State Route 1 between Santa Cruz and Watsonville achieved by the proposed project could indirectly contribute to growth pressure in areas where additional growth could occur. Growth in the cities of Santa Cruz and Capitola is expected to be limited to planned infill development that would occur independent of State Route 1 improvements. Additionally, based on

responses from the expert panel, it is evident that recent changes to state housing law have begun to put pressure on local jurisdictions to implement their housing elements and provide affordable housing. The cities of Watsonville and Marina and the unincorporated communities of Live Oak, Aptos, and Freedom have been identified as having developable land remaining that would be suitable for future development. Therefore, the proposed project could indirectly contribute to growth pressure in those areas by reducing commute times during peak travel periods from those areas to employment centers in the city of Santa Cruz and surrounding areas.

Whether or not project-related growth is "reasonably foreseeable."

Based on the suburban condition of the project area, availability of some developable land, and the project type, the proposed project is not expected to result in direct impacts related to growth. However, due to the high desirability and demand for housing in the area, it is reasonably foreseeable that the reduced delay and improved travel time savings on State Route 1 between Santa Cruz and Watsonville achieved by the proposed project could indirectly contribute to growth pressure in areas where additional growth could occur. The proposed project would not remove or change existing obstacles to growth, such as the availability of water or other utilities or service systems, the presence of resource constraints, public attitudes toward growth, land use policy or zoning constraints, or other market constraints; therefore, growth that could occur is expected to be in the form of planned growth, not unplanned growth. This planned growth is expected to occur in areas where developable land that is already zoned or designated for residential and/or commercial land uses is available. Based on review of applicable planning documents and feedback from the expert panel, planned growth is reasonably foreseeable in the cities of Watsonville and Marina and the unincorporated communities of Aptos, Live Oak, and Freedom.

If there is project-related growth, how, if at all, will that impact resources of concern?

Based on the analysis provided in this section, reasonably foreseeable growth is expected to be limited to planned growth that could occur as a result of growth pressure that could be indirectly influenced by the reduced delay and improved travel time savings on State Route 1 achieved by the proposed project. Future planned development in the cities of Santa Cruz and Capitola and surrounding developed areas is anticipated to be limited to infill development (building within unused land). Infill development is not expected to result in impacts on resources of concern other than water, if water availability is constrained at the time of future development. Future infill projects would be subject to environmental review and would be required to identify adequate water supplies prior to development.

New development or redevelopment is expected to occur in the form of planned development within existing undeveloped areas that are zoned or

otherwise designated for residential and/or commercial development in the cities of Watsonville and Marina and the unincorporated communities of Aptos, Live Oak, and Freedom. Areas that meet these criteria have been identified to assess the potential for impacts on resources of concern.

Some areas identified for potential future development are currently undeveloped, and some of them are entirely disturbed and surrounded by existing development. Within those areas, impacts on resources of concern other than water supply are not expected. Other areas where development could occur are next to and may support habitats for special-status species. Important resources of concern that have the potential to be affected include riparian and freshwater emergent wetland habitats; grassland and woodland habitats; nesting habitat for migratory birds; burrowing owl habitat; designated critical habitat and documented communities of Santa Cruz tarplant and robust spineflower; suitable habitat and documented communities of sand-loving wallflower, sandmat manzanita, Kellogg's horkelia, Monterey spineflower, white-rayed pentachaeta, and Eastwood's goldenbush; and habitat suitable for Townsend's big-eared bat and pallid bat.

Each new development project would be subject to discretionary approval and environmental review and would be required to identify adequate sources of water supply, as well as any other potential impacts on resources of concern before approval and development. Projects would be required to comply with the measures in local regulating plans that are designed to protect resources of concern, which may include, but are not limited to, the following.

- Implementing design guidelines, building height limitations and minimum setback standards, screening measures, landscaping and replanting measures, and review by local design boards to protect the visual character and scenic resources.
- Designating areas of high archaeological sensitivity and requiring reconnaissance by a qualified archaeologist and, where artifacts are identified, requiring measures that would protect and preserve such resources.
- Designating habitat reserve or other identified sensitive areas, requiring adequate buffer distances to protect sensitive habitats, minimizing the need for grading, requiring sediment control best management practices, requiring replanting with a native seed mix, and protecting or providing wildlife corridors or connections between sensitive habitat and other natural open space areas to avoid adverse impacts on biological resources.

Additionally, coordination with agencies with regulatory authority over sensitive habitats, such as the U.S. Army Corps of Engineers, California Department of Fish and Wildlife, and Central Coast Regional Water Quality

Control Board for wetland and water resources, would ensure potential impacts are adequately evaluated and mitigated.

In conclusion, based on the 2018 Association of Monterey Bay Area Governments Regional Growth Forecast, review of local planning documents, and input from the expert panel, it is possible that the peak travel time savings and reduced delay that would result from the project could make certain areas that still have the potential to support future growth more appealing for residents commuting to local employment in and surrounding the city of Santa Cruz. The project could indirectly contribute to growth pressure in the cities of Watsonville and Marina and the unincorporated communities of Live Oak, Aptos, and Freedom, where future growth could occur. Within those areas, if future growth does occur and is indirectly influenced by the project, such projects would require independent environmental review, and potential impacts on resources of concern would require evaluation and mitigation, as necessary, to avoid or minimize potential impacts.

No-Build Alternative

State Route 1 would not experience any improvements under the No-Build Alternative, and delay would continue to worsen. Accessibility and transportation capacity and modes would not be improved, and no unplanned growth would occur, so there would be no growth impacts under the No-Build Alternative.

Avoidance, Minimization, and/or Mitigation Measures

The project would not result in adverse impacts related to growth within the project study area; therefore, avoidance, minimization, or mitigation measures would not be required.

References

California Department of Transportation. 2022. State Route Highway 1 Auxiliary Lanes and Bus-on-Shoulder Improvements—Freedom Blvd. to State Park Dr.—and Coastal Rail Trail Segment 12 Project Community Impact Assessment.. February.

CDM Smith. 2021. *Highway 1 Auxiliary Lanes and Bus-on-Shoulder Improvements – Freedom Boulevard to State Park Drive – and Coastal Rail Trail Segment 12 Project DRAFT Traffic Operations Analysis Report (TOAR).* Santa Cruz, CA. Prepared for Santa Cruz County Regional Transportation Commission.

2.1.4 Community Character and Cohesion

Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969, as amended, established that the federal government use all practicable means to ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 United States Code 4331(b)(2)). The Federal Highway Administration in its implementation of NEPA (23 U.S. Code 109(h)) directs that final decisions on projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services.

Under the California Environmental Quality Act, an economic or social change by itself is not to be considered a significant effect on the environment. However, if a social or economic change is related to a physical change, then social or economic change may be considered in determining whether the physical change is significant. Since this project would result in physical change to the environment, it is appropriate to consider changes to community character and cohesion in assessing the significance of the project's effects.

Affected Environment

This section was prepared using information from the Community Impact Assessment technical report prepared for the project in September 2022 (Caltrans 2022).

For the proposed project, the study area for community character includes the project corridor and all census tracts overlapping the project corridor. This study area includes portions of the unincorporated communities of Aptos, Rio Del Mar, and Aptos Hills-Larkin Valley. Census tracts within the project corridor include 1220.02, 1220.03, 1221, 1222.01, 1222.02, 1222.03, and 1224.

Regional Population Characteristics

The following subsections provide descriptions of regional population characteristics within the study area. The most recent data available at the census tract-level is from the 2019 American Community Survey (U.S. Census Bureau 2019).

Race and Ethnicity

Race and ethnicity demographics for Santa Cruz County and the project area census tracts are shown in Table 2-3, which shows that racial and ethnic minorities comprise approximately 42.7% of the county's population and range from 10.2–25.6% of the population of project area census tracts.

Table 2-3. Study Area Race and Ethnicity Demographics

Census Category	Santa Cruz County	Census Tract 1220.02	Census Tract 1220.03	Census Tract 1221	Census Tract 1222.01	Census Tract 1222.02	Census Tract 1222.03	Census Tract 1224	Total / Average
Total Population	273,962	3,253	7,248	3,286	6,506	2,328	3,971	7,247	33,839
White	57.3%	89.7%	74.5%	76.3%	83.9%	76.1%	81.8%	74.4%	79.5%
Black	0.9%	0.7%	0.3%	0.7%	1.3%	0.4%	0.9%	0.3%	0.7%
American Indian and Alaska Native	0.1%	0.0%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Asian	4.6%	1.8%	3.3%	2.5%	3.6%	3.5%	2.2%	2.1%	2.7%
Hawaiian and Other Pacific Islander	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Some Other Race	0.2%	0.0%	0.0%	0.9%	0.0%	0.0%	0.6%	0.0%	0.2%
Two or More Races	3.2%	1.0%	5.1%	3.0%	1.9%	6.1%	3.8%	3.7%	3.5%
Hispanic	33.6%	6.7%	16.2%	16.7%	9.2%	13.9%	10.7%	19.5%	13.3%
Total Minority Population	42.7%	10.2%	25.5%	23.8%	16.0%	23.9%	18.2%	25.6%	20.5%

Source: U.S. Census Bureau 2019

Income

To evaluate income, this assessment looked at median household income and the percent of the population living below the poverty level. According to the California Department of Transportation (Caltrans) Standard Environmental Reference, *low-income* is defined as a person whose household income (or, in the case a community or group, whose median household income) is at or below the U.S. Department of Health and Human Services poverty guidelines. The U.S. Department of Health and Human Services' poverty guidelines are based on the U.S. Census Bureau's; therefore, the U.S. Census Bureau's poverty threshold statistics are presented in Table 2-4. The 2019 U.S. Census poverty threshold is $26,172 for a family of four.

Table 2-4. Study Area Income Data

Census Category	Santa Cruz County	Census Tract 1220.02	Census Tract 1220.03	Census Tract 1221	Census Tract 1222.01	Census Tract 1222.02	Census Tract 1222.03	Census Tract 1224	Total / Average
Total Population	273,962	3,253	7,248	3,286	6,506	2,328	3,971	7,247	33,839
Population 16 years and over	226,982	2,742	6,048	2,776	5,747	1,941	3,244	6,602	29,100
Population in Labor Force	144,847 (63.8%)	1,840 (67.1%)	3,882 (64.2%)	1,798 (64.8%)	3,429 (59.7%)	1,161 (59.8%)	1,933 (59.6%)	3,724 (56.4%)	17,767 (61.7%)
Median Household Income	$82,234	$149,545	$89,438	$77,896	$102,500	$115,919	$107,132	$113,352	$107,969
Percent Below Poverty Level	13.1%	4.2%	12.8%	8.3%	6.5%	6.0%	4.6%	11.3%	7.7%

Source: U.S. Census Bureau 2019.

As shown in Table 2-4, Santa Cruz County has an estimated median household income of $82,234, with 13.1% of the population living below the poverty level. Ranging from $77,896 to $149,545, all but one of the study area census tracts have median household incomes above the county average. The percent of the population below the poverty level for the study area census tracts ranges from 4.2% to 13.1%, with an average of 7.7%.

Neighborhoods/Communities/Community Character

Community cohesion is the degree to which residents have a “sense of belonging” to their neighborhood, a level of commitment to the community, or a strong attachment to neighbors, groups, and institutions, generally due to continued associations over time (Caltrans 2015).

- The proposed project would pass through portions of unincorporated Santa Cruz County that include a mix of uses, including single-family residential, multifamily residential, large-scale big box commercial, low-density commercial, professional and office, agriculture, and open space. Neighborhoods in the study area are within the unincorporated area of Aptos and include Aptos Village and Seacliff Village.
- Aptos Village centers on an 8-acre area of mixed uses and includes commercial retail, office, and residential, which are pedestrian oriented and served by a peripheral road system formed by Trout Gulch Road, Soquel Drive, Hopkins Road, and an extended Granite Way. The Village’s post office and historic Hotel Bayview are important functional and visual nodes in this area. The physical scale of Aptos Village is established by existing one- and two-story developments, represented by the Village Fair and other historic buildings in the Valencia Street block, as well as the

shops and offices along the Soquel Drive ridge. The natural setting of the Village formed by the riparian corridors of Aptos, Valencia, and Trout Creek are part of the Aptos community experience. Special use areas adjacent to the Village's 8-acre activity center provide additional commercial and residential areas.

- Seacliff Village, southwest of Aptos Village, includes a 21.3-acre commercial district situated on either side of State Park Drive, with surrounding residential neighborhoods to the east and west. This area is bounded by State Route 1 to the north and Seacliff State Beach and the Monterey Bay to the south. Primary access to Seacliff Village and Seacliff State Beach is provided by State Park Drive and local two-lane roads, which also provide views to Monterey Bay National Marine Sanctuary. The Village core is characterized by one-story commercial buildings and some two-story mixed-use buildings with ground floor commercial uses along Searidge Road and Center Street. There is one neighborhood park, Seacliff Village Park, and two churches, the Coastlands and the Episcopal Church of St. John, south and west of the State Park Drive interchange. Primary attractions in the area include Seacliff State Beach Campground and Seacliff State Beach. Currently, State Park Drive provides the only designated bikeway and there are a number of informal pedestrian pathways along road rights-of-way, within or along the edges of public properties, and some dedicated trails leftover from the formation of the Seacliff Park subdivision (County of Santa Cruz 2003).

Housing

Housing estimates for Santa Cruz County and project area census tracts are provided in Table 2-5. Household size and housing occupancy and vacancy rates vary between the project area tracts, but on average, household size for the tracts is slightly smaller than for the county as a whole and vacancy rates are somewhat higher.

All but one of the study area tracts has a higher percentage of owner-occupied units than the county average. This higher percentage of owner-occupied units indicates the presence of more long-term residents and likely increased community cohesion in the project study area.

Table 2-5. Study Area Housing Data

Census Data	Santa Cruz County	Census Tract 1220.02	Census Tract 1220.03	Census Tract 1221	Census Tract 1222.01	Census Tract 1222.02	Census Tract 1222.03	Census Tract 1224	Total/ Average
Total Housing Units	106,307	1,341	2,916	1,925	3,355	973	1,811	2,744	15,065
Occupied Housing Units	90.1%	88.1%	96.1%	80.2%	78.6%	93.4%	89.7%	95.0%	88.7%
Vacant Housing Units	9.9%	11.9%	3.9%	19.8%	21.4%	6.6%	10.3%	5.0%	11.3%

Census Data	Santa Cruz County	Census Tract 1220.02	Census Tract 1220.03	Census Tract 1221	Census Tract 1222.01	Census Tract 1222.02	Census Tract 1222.03	Census Tract 1224	Total/ Average
Owner Occupied	60.1%	86.6%	70.4%	58.8%	79.8%	89.7%	63.9%	80.8%	75.7%
Renter Occupied	39.9%	13.4%	29.6%	41.2%	20.2%	10.3%	36.1%	19.2%	24.3%
Average Household Size (Owner Occupied)	2.68	2.84	2.37	2.17	2.51	2.65	2.43	2.77	2.53
Average Household Size (Renter Occupied)	2.79	2.01	3.10	2.07	2.28	1.81	2.48	2.60	2.34
Total Housing Units	106,307	1,341	2,916	1,925	3,355	973	1,811	2,744	15,065

Source: U.S. Census Bureau 2019.

Population, Housing, and Employment Projections

Population, housing, and employment growth trends within Santa Cruz County are summarized in Table 2-6 and discussed below the table.

Table 2-6. 2025–2045 Population, Housing Unit, and Employment Growth

Location	2025 Population	2045 Population	% Change	2025 Housing Units	2045 Housing Units	% Change	2025 Employ-ment	2045 Employ-ment	% Change
Santa Cruz County	278,641	294,967	6%	109,208	113,797	4%	141,391	153,261	8%

Source: Association of Monterey Bay Area Governments 2020.

According to the Association of Monterey Bay Area Governments' 2022 Regional Growth Forecast, the population of Santa Cruz County is expected to continue growing. The county's average annual growth in population is projected to be 816 persons, resulting in a total population of 294,967 persons by the year 2045. While the county's population is expected to increase by 6%, employment is expected to increase by 8% during the same period, which suggests more employees could commute from other areas for jobs, or it could potentially reduce some commuting from Santa Cruz County to the San Francisco Bay Area. The number of housing units in the county would increase 4% between 2025 and 2045.

Environmental Consequences

Build Alternative

Auxiliary Lanes and Bus-on-Shoulder Features

The proposed improvements to State Route 1, including new sound walls, are primarily located within an existing highway right-of-way. These improvements would not result in dividing or introducing a new physical barrier between neighborhoods, nor separate residences from community facilities. The proposed auxiliary lanes and Bus-on-Shoulder features would result in reduced delay within the State Route 1 corridor, which is anticipated to have positive effects on the quality of life for communities in the study area.

As discussed in more detail in Chapter 1, *Proposed Project*, construction of the State Route 1 and Bus-on-Shoulder improvements would require permanent partial acquisitions from six properties. A maximum of approximately 2,742 square feet (0.06 acre) would be necessary for permanent partial acquisitions. No impacts on buildings, structures, driveways, or backyards are anticipated, with the exception of Assessor Parcel Number 042-066-21 at Moosehead Drive, which could result in driveway or access realignment.

Ultimate Trail Configuration

The ultimate trail configuration (including the optional first phase, and removal of optional first phase) has the potential to enhance neighborhood cohesion by providing new pedestrian and bicycle access within the project corridor. With two new pedestrian and bicycle overcrossings of State Route 1, Coastal Rail Trail Segment 12 would support pedestrian and bicycle connections between Aptos Village and neighborhoods located on the other side of State Route 1. Because the rail trail would be located within the existing railroad right-of-way, which already divides the neighborhood, the rail trail would not divide or introduce a new physical barrier between neighborhoods, nor separate residences from community facilities.

As discussed in more detail in Chapter 1, construction of Coastal Rail Trail Segment 12 would require permanent partial acquisitions from 19 properties. A maximum of approximately 19,100 square feet (0.44 acre) would be necessary for permanent partial acquisitions. Some impacts on buildings, structures, driveways, or backyards may occur on parcels along the following roadways:

- Soquel Drive: Assessor parcel numbers 039-232-03, 039-232-02, 039-232-01, 041-561-11, and 041-052-16
- Parade Street: 041-011-42, 041-011-41
- Sandalwood Drive: 044-282-47, 044-282-48
- Moosehead Drive: 042-071-01, 042-071-02, 042-071-03, and 042-067-18

Construction of Coastal Rail Trail Segment 12 could potentially remove up to 15 parking spaces on Aptos Street in Aptos Village. This would reduce the availability of parking for residents and businesses in Aptos Village in an area where parking is constrained. Coastal Rail Trail Segment 12 would, however, improve bicycle and pedestrian access for residents and businesses in Aptos Village. It is anticipated that the trail would be used primarily by local residents for transportation and recreation, and that most would bike or walk from their residence. For those who drive and park to access the trail, there is a parking lot with 27 spaces at Aptos Village County Park, and informal and on-street parking at various locations (e.g., throughout the commercial area along Soquel Drive and residential streets).

Optional First Phase

The optional first phase has the potential to enhance neighborhood cohesion by providing new pedestrian and bicycle access within the project corridor. Coastal Rail Trail Segment 12 would support pedestrian and bicycle connections between Aptos Village and neighborhoods located on the other side of State Route 1. Because the rail trail would be located within the existing railroad right-of-way, which already divides the neighborhood, the rail trail would not divide or introduce a new physical barrier between neighborhoods, nor separate residences from community facilities.

No permanent or temporary right-of-way impacts beyond those described for the auxiliary lanes and Bus-on-Shoulder features would occur for the optional first phase. There would be no property acquisitions or displacements associated with the optional first phase. No parking would be removed.

Construction Impacts

During construction, there would be potential for construction activities to temporarily disrupt neighborhood cohesion in the vicinity of construction areas, including rail trail construction activities within Aptos Village. Temporary impacts on neighborhood cohesion are anticipated to include temporary closures of highway ramps at the Freedom Boulevard, Rio Del Mar Drive, and State Park Drive interchanges, along roadway segments in the vicinity of these interchanges, and adjacent to rail trail construction. These temporary closures may temporarily disrupt neighborhood cohesion by temporarily restricting normal traffic, pedestrian, and bicycle movement through the area; however, signage would be posted in advance of closures, and detours would be established to provide alternate routes and maintain access to all residences and businesses throughout construction. Ramp closures would be staged so that successive off- or on-ramps are not closed at the same time to minimize temporary impacts on motorists and adjacent neighborhoods.

Temporary parking restrictions may be implemented along the segments of local roads described above, resulting in temporary loss of parking in these

areas, which may temporarily disrupt neighborhood cohesion by temporarily reducing the availability of parking spaces serving local residences and businesses.

Construction activities would generate dust, vehicle and equipment emissions, and noise impacts related to the operation and movement of heavy equipment, and other construction activity within the community of Aptos in the project vicinity. Slow-moving construction vehicles may temporarily contribute to traffic congestion on local roads.

Community cohesion involves many factors, some of which include businesses, homes, and activity centers. Impacts on these factors could occur when there are property acquisitions or displacements. Temporary construction easements along the State Route 1 right-of-way may be necessary for construction of retaining walls, sound walls, bridge structures, and portions of the rail trail at 25 properties. Approximately 28,775 square feet (0.66 acre) of temporary construction easements would be required along the State Route 1 right-of-way. Due to the limited number of parcels affected by permanent acquisitions, and the dispersal of the temporary impacts along the State Route 1 corridor, the overall adverse effect on neighborhood cohesion is anticipated to be limited.

Additionally, temporary construction easements along the Ultimate Trail Configuration are needed for construction of retaining walls, sound walls, bridge structures, and portions of the rail trail. Approximately 90,347 square feet (2.07 acres) of temporary construction easements would be required. Due to the limited number of parcels affected by permanent or temporary acquisitions, and the dispersal of these impacts along the rail trail corridor, the overall adverse effect on neighborhood cohesion is anticipated to be limited, in view of the benefits to neighborhood cohesion afforded by Coastal Rail Trail Segment 12, discussed above.

No-Build Alternative

The No-Build Alternative would not provide the benefits to community cohesion anticipated to be provided by Coastal Rail Trail Segment 12. Delay within the State Route 1 corridor would continue to worsen and may adversely affect the quality of life for communities in the study area. No property acquisitions, temporary construction easements, or temporary construction impacts would occur.

Avoidance, Minimization, and/or Mitigation Measures

Construction-related dust and air quality impacts are addressed by standard measures (AQ-1 through AQ-13) included in Chapter 1, *Project Description*. Construction-related noise impacts are addressed by avoidance and minimization measures described in Section 2.2.7.4 *Noise*. Construction-related traffic impacts on neighborhood cohesion would be reduced or

minimized by a Transportation Management Plan, as described in Section 2.1.7, *Traffic and Transportation/Pedestrian Bicycle Facilities*. As described in Section 1.4.1.8, *Acquisitions and Temporary Construction Easements*, permanent property acquisitions and temporary construction easements would conform to the requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. No additional avoidance, minimization, or mitigation measures are needed to address the impacts described above.

References

Association of Monterey Bay Area Governments. 2020. *2022 Regional Growth Forecast*. Approved November 18. Available at: https://www.ambag.org/sites/default/files/2020-12/Final%20Draft%202022%20Regional%20Growth%20Forecast_PDF_A.pdf. Accessed February 2021.

County of Santa Cruz. 2003. *Seacliff Village Plan*. Available at: https://www.sccoplanning.com/Portals/2/County/Planning/policy/svp.pdf?ver=is6BVvBu_tIAnGbHoPBIXQ%3d%3d. Accessed May 4, 2022.

California Department of Transportation. 2015. Community Impact Assessment, Santa Cruz Route 1 High Occupancy Vehicle Tier I Corridor Analysis of High Occupancy Vehicle Lanes and Transportation System Management Alternatives and Tier II Build Project Analysis 41st Avenue to Soquel Avenue/Drive Auxiliary Lanes and Chanticleer Avenue Pedestrian Overcrossing.

California Department of Transportation. 2022. State Route Highway 1 Auxiliary Lanes and Bus-on-Shoulder Improvements—Freedom Blvd. to State Park Dr.—and Coastal Rail Trail Segment 12 Project Community Impact Assessment. September.

Terry A. Hayes and Associates, Inc. 2022. State Route Highway 1 Auxiliary Lanes and Bus-on-Shoulder Improvements—Freedom Blvd. to State Park Dr.—and Coastal Rail Trail Segment 12 Project Air Quality Report. Final February.

U.S. Census Bureau. 2019. *2019 American Community Survey*. Available at: https://data.census.gov/cedsci/all?q=santa%20cruz%20county. Accessed May 4, 2022.

2.1.5 Relocations and Real Property Acquisition

Regulatory Setting

Caltrans' Relocation Assistance Program is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act), and Title 49 Code of Federal Regulations (CFR) Part 24. The purpose of the Relocation Assistance Program is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. Please see Appendix C for a summary of the Relocation Assistance Program.

All relocation services and benefits are administered without regard to race, color, national origin, persons with disabilities, religion, age, or sex. Please see Appendix B for a copy of the Department's Title VI Policy Statement.

Affected Environment

Department's Title VI Policy Statement.

Owners of private property have federal and state constitutional guarantees that their property will not be taken or damaged for public use unless they first receive just compensation. Just compensation is measured by the "fair market value" of the property to be taken. Where acquisition and relocation are proposed, the provisions of the Uniform Act, as amended, and all applicable regulations would be followed. All real property to be acquired would be appraised to determine its fair market value. An offer of just compensation, not less than the approved appraisal, would be made to each property owner. Each homeowner, renter, or business displaced as a result of the project would be given advance written notice and would be informed of eligibility requirements for relocation assistance and payments.

The area of properties proposed for partial acquisition is located along Aptos Wharf Drive and Soquel Drive on Assessor's Parcel Numbers 039-232-01, 039-232-02, and 039-232-03. These three parcels are under title to two owners. The 7992 Soquel Drive property has a 1,205-square-foot residence that was built in 1916 and does not appear to be updated. The second property comprised of 7994 and 7996 Soquel Drive contains a mixture of improvements constructed for residential and commercial uses. There is a residence (7996 Soquel Drive) with a large rectangular structure that appears to be used for housing (Apartments A and B). South of these residential units, a portion of the former commercial structure has been converted to a residential unit (Apartment C). These four units appear to be occupied (Table 2-7). According to the U.S. Census Bureau, the average number of persons per household in Santa Cruz County is 2.7 (U.S. Census Bureau 2022).

Table 2-7. Tenant Occupants of 7992, 7994, and 7996 Soquel Drive

Location	Type	Occupancy	Household Displacements
7992 Soquel Drive, Aptos, CA	House	Vacant	0
7992 Soquel Drive, Aptos, CA	Storage	Tenant	Personal Property
7994 Soquel Drive, Aptos, CA	Bungalow	Tenant	2.7 (Unit C)
7996 Soquel Drive, Aptos, CA	Apartment A	Tenant	2.7 (Unit A)
7996 Soquel Drive, Aptos, CA	Apartment B	Tenants	2.7 (Unit A)
7996 Soquel Drive, Aptos, CA	Commercial Retail Unit 1	Occupied	1 Business Displacee
7996 Soquel Drive, Aptos, CA	Commercial Retail Unit 2	Vacant	0 Business Displacees
7996 Soquel Drive, Aptos, CA	Commercial Retail Unit 3	Vacant	0 Business Displacees

Environmental Consequences

Build Alternative

Auxiliary Lanes and Bus-on-Shoulder Features

Construction of State Route 1 and Bus-on-Shoulder improvements may require the permanent partial acquisition of six properties along Aptos Wharf Road and Soquel Drive (Table 1-1). A maximum of approximately 2,742 square feet (0.06 acre) would be necessary for permanent partial acquisitions. These sliver takes would not affect any homes or businesses except Assessor Parcel Number 042-066-21, which may require driveway or access realignment.

Several properties along Moosehead Drive would require partial sliver acquisitions in order to construct the retaining wall and realign the roadway, including APNs 042-071-03, 042-071-02, 042-071-01, 042-067-17, and 042-067-16.

Additionally, temporary construction easements along the State Route 1 right-of-way may be necessary for construction of retaining walls and sound walls and for activities during construction such as contractor access. The full list of parcels that may require temporary construction easements, including those along Moosehead Drive, are listed in Table 1-1 (Chapter 1, Project Description). Approximately 28,476 square feet (0.65 acre) of temporary construction easements would be required at noise barrier locations for construction; no buildings, homes, or driveways are anticipated to be affected by temporary construction easements.

No residential or business displacements would result from construction of the State Route 1 and Bus-on-Shoulder improvements.

Ultimate Trail Configuration

Construction of Coastal Rail Trail Segment 12 may require the permanent partial acquisition of the 13 properties identified in Table 1-2 (Chapter 1-2,

Project Description). A maximum of approximately 16,358 square feet (0.38 acre) would be necessary for permanent partial acquisitions. Some impacts on homes, driveways, buildings, or backyards may occur on parcels along Aptos Wharf Drive/Soquel Drive.

As shown in Table 1-2, approximately 61,572 square feet (1.41 acres) of temporary construction easements would be required for construction of Coastal Rail Trail Segment 12; no buildings, homes, or driveways are anticipated to be affected by temporary construction easements.

Table 2-8 provides a summary of the potential displacements associated with construction of Coastal Rail Trail Segment 12. The buildings at 7992, 7994, and 7996 Soquel Drive are located on three parcels under title to two owners. A total of six tenant households could be displaced. In November 2022, the property at 7992 Soquel Drive was placed on the open market. Santa Cruz Regional Transportation Commission contacted the broker, who also represents 7994 and 7996 Soquel Drive. The Santa Cruz Regional Transportation Commission authorized staff to enter into negotiations and conduct physical investigations related to the potential acquisition of these three properties, needed to construct the project. The Santa Cruz Regional Transportation Commission approved a purchase on the 7992 Soquel Drive property in January 2023. Based on currently available information, no businesses would be displaced. All residential units are occupied by renters; there are no owner-occupied units.

Table 2-8. Displacements Associated with 7992, 7994 and 7996 Soquel Drive

Assessor's Parcel Number	Street Address	Type	Household Displacements
039-232-03	7992 Soquel Drive, Aptos	House	0 (vacant)
039-232-03	7992 Soquel Drive, Aptos	Storage	Personal Property
039-232-02	7994 Soquel Drive, Aptos	Bungalow	2.7 (Unit C)
039-232-01	7996 Soquel Drive, Aptos	Apartment A	2.7 (Unit A)
039-232-01	7996 Soquel Drive, Aptos	Apartment B	2.7 (Unit A)
039-232-01	7996 Soquel Drive, Aptos	Commercial Retail Unit 1	1 Business Displacee
039-232-01	7996 Soquel Drive, Aptos	Commercial Retail Unit 2	0 Business Displacees
039-232-01	7996 Soquel Drive, Aptos	Commercial Retail Unit 3	0 Business Displacees

Source: Monument 2022

As shown in Table 2-7, a total of three residential units could be relocated. The average household size for renter-occupied housing in the study area is 2.7 (U.S. Census Bureau 2022). Therefore, it is estimated that 9 residents would be relocated. There are 106,307 housing units in the study area, with an occupancy rate of 90.1%, which translates into approximately 95,783 occupied housing units in the study area. The three residential relocations

therefore represent less than 0.01% of the occupied housing units in the study area.

Optional First Phase

No permanent or temporary right-of-way impacts beyond those described for the auxiliary lanes and Bus-on-Shoulder features would occur for the optional first phase. There would be no residential or business displacements associated with the optional first phase.

No-Build Alternative

No property acquisitions or relocations would occur under the No-Build Alternative.

Avoidance, Minimization, and/or Mitigation Measures

The housing market analysis conducted for the proposed project's Relocation Impact Memorandum included sampling from 55 apartment rentals and 18 house rentals listed on Craig's List and 120 rentals on Realtor.com for available houses, apartments, mobile homes, and condominiums. The analysis found that, in general, there is sufficient decent, safe, and sanitary housing available to meet the needs of the potential displacees. The following measures would be implemented to address relocation impacts:

- The Caltrans Relocation Assistance Program would be applied to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons do not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole (see Appendix B for a summary of the Relocation Assistance Program).
- Relocation services and benefits would be administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (See Appendix A, Caltrans' Title VI Policy Statement).

References

Monument. 2022. *State Route Highway 1 Auxiliary Lanes and Bus-on-Shoulder Improvements – Freedom Boulevard to State Park Drive – and Coastal Rail Trail Segment 12. Relocation Impact Memorandum.* Sacramento, CA. Prepared for Mark Thomas.

U.S. Census Bureau 2022. *2019 American Community Survey*. Available at: https://www.census.gov/quickfacts/fact/table/santacruzcountyarizona,santacruzcountycalifornia,US/HSD310221. Accessed February 13, 2023.

U.S. Census Bureau 2019. *2019 American Community Survey*. Available at: https://data.census.gov/cedsci/all?q=santa%20cruz%20county. Accessed May 4, 2022.

2.1.6 Utilities/Emergency Services

Affected Environment

Utilities

Electricity and Natural Gas

Pacific Gas and Electric Company provides electric and gas service to the project area.

Water Supply

In Santa Cruz County, domestic water supply is derived from local surface water (streams and reservoirs: 20% of supply) and groundwater (80% of supply), which are fed entirely by precipitation and do not receive any imported water. Most stream water used is diverted from the San Lorenzo River Watershed, North Coast streams, and Corralitos Creek. There are three major groundwater basins in the county: the Santa Margarita, Santa Cruz Mid-County, and Pajaro. The project area is served by the Soquel Creek Water District (County of Santa Cruz 2021).

Wastewater

The Santa Cruz County Sanitation District runs and maintains a sewer collection/maintenance system for the communities of Live Oak, City of Capitola, and portions of Aptos and Soquel. The Santa Cruz County Sanitation District maintains pipelines transporting waste from the District to the Santa Cruz City Wastewater Treatment Facility, located at Neary Lagoon (Santa Cruz County Sanitation District n.d.).

Solid Waste

Solid waste collection, recycling, and yard waste disposal are provided by GreenWaste Recovery, Inc. through franchise agreements with the County of Santa Cruz. The County of Santa Cruz operates two solid waste facilities: the Buena Vista Landfill west of Watsonville and the Ben Lomond Transfer Station near the town of Ben Lomond.

Telecommunications

Telecommunications service to the project area is provided by AT&T and the main cable service provider is Comcast. These companies generally add improvements or relocations as the need arises to meet customer demand.

Emergency Services

Santa Cruz County Sheriff's Department

The Santa Cruz County Sheriff's Office serves unincorporated Santa Cruz County and has a Sheriff's Center located at 19 Rancho Del Mar near the

western part of the project area and a County of Santa Cruz Aptos/La Selva Sheriff's Service Center located in Aptos Village at 171 Aptos Village Way. The Sheriff's Office is divided into three bureaus: Administration, Corrections, and Operations. The Sheriff's Office is comprised of 11 service areas with deputies assigned to certain parts of the county during each shift. The Sheriff's Office receives around 110,000 calls for service annually (Santa Cruz County Sheriff's Office 2020).

California Highway Patrol

The California Highway Patrol Coastal Division operates 11 area offices, one resident post, two commercial vehicle inspection facilities, and three communication/dispatch centers staffed by approximately 700 uniformed and non-uniformed employees. The Coastal Division patrols more than 325 miles of incorporated and unincorporated interstate highways, and unincorporated roadways along the Central Coast (California Highway Patrol 2021). California Highway Patrol's closest office to the project site is at 10395 Soquel Drive near the eastern limits of the project area.

Central and Aptos-La Selva Fire Protection Districts

The Central and Aptos-La Selva Fire Protection Districts provide fire protection and emergency medical services to the unincorporated areas of Soquel and Aptos, portion of the project area. Of the seven stations, the station nearest the project site is Station 2 at 300 Bonita Drive, just east of Rio Del Mar Boulevard and south of State Route 1. Fire and emergency personnel respond to approximately 3,202 calls each year within the District boundaries. The District participates in the state mutual aid response system upon request of the California Emergency Management Agency.

Central Fire District also provides first response advanced life support paramedic services to Capitola City and the unincorporated areas of Soquel, Live Oak, Aptos, Rio Del Mar, and La Selva Beach in Santa Cruz County. The District operates several fully equipped advanced life support fire apparatuses with seven being fully staffed 24 hours a day, 365 days a year with a minimum of one paramedic and two emergency medical technicians. The District is a participant in master mutual aid in the event of major disasters (Central Fire District 2021).

Environmental Consequences

Build Alternative

Auxiliary Lanes and Bus-on-Shoulder Features

Utilities

Existing utilities located in areas subject to construction that conflict with the proposed improvements would be relocated as needed. Construction of the

new State Route 1 bridge over Aptos Creek and Spreckels Drive is anticipated to require the relocation of an electric utility pole near Moosehead Drive, and the overhead electric, telecommunication, and cable lines, relocation of one joint use pole on Aptos Wharf Road, as well as a sanitary sewer line near Moosehead Drive.

These temporary impacts could potentially result in a temporary interruption of utilities service. However, construction activities would not cause a substantial increase in the existing demand for electricity or require the development of new sources. No impacts on local solid waste facilities are anticipated.

Ground disturbance for the relocations and grade adjustments would be within the limits of disturbance needed for the proposed project. Utility relocations and grade adjustments would be conducted prior to or during construction. Early notification of utility service and communications providers would ensure that patrons are notified prior to any temporary loss of service.

Water use would be limited to dust control during construction and would be imported by the contractor. Irrigation for highway planting may be required and will be determined in the permitting phase. Water use for irrigation for highway planting would be similar to current conditions.

Emergency Services

During construction, short-term lane closures could be necessary on local streets, as described in Section 1.4.1.5, *Construction Activities.* Temporary closures have the potential to adversely affect access to and from Aptos/La Selva Fire Station Number 2, the California Highway Patrol Santa Cruz Area office, and the Santa Cruz County Sheriff's Center. Access and circulation would change in the project area during construction and postconstruction. Depending on the direction of travel of emergency service providers, the route could be shorter or longer. Implementation of the Transportation Management Plan, described in Section 2.1.7, would ensure that construction activities would not create major delays for emergency service providers and other roadway users. In addition, emergency service providers would be notified as early as possible to plan for lane closures and other delays related to construction activity.

In addition, the long-term effect of the Build Alternative would be to reduce delay and thereby enhance accessibility to the greater State Route 1 project area, which would benefit the response times for emergency service providers. The Build Alternative would improve merging operations, reduce conflicts between traffic entering and exiting State Route 1, and would provide Bus-on-Shoulder facilities, which would also allow emergency service providers to better respond to emergencies while using State Route 1 in this area.

Ultimate Trail Configuration

Utilities

Existing utilities 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. Preliminary design information indicates that relocations of utilities would be required, including the relocation of an electric utility pole and gas line at Aptos Street along the rail trail alignment and at Aptos Wharf Road, as well as the overhead electric line. Rail trail construction may potentially require the relocation of a water line near Aptos Creek Road and telephone line on Soquel Drive in the vicinity of Parade Street.

These temporary impacts could potentially result in a temporary interruption of service of the aforementioned utilities. However, construction activities would not cause a substantial increase in the existing demand for electricity or require the development of new sources. No impacts on local solid waste facilities are anticipated.

Emergency Services

Construction of the ultimate trail configuration would include the trail segment, which would include a new at-grade trail connection to Sumner Avenue. Temporary impacts from construction equipment or lane closures on Sumner Avenue would be reduced through the Transportation Management Plan and advance notice given to emergency service providers.

Optional First Phase

Utilities

Under the optional first phase, impacts on utilities and emergency services would be fewer than those described under the ultimate trail configuration as no utility relocations would be required.

Emergency Services

Construction of the optional first phase of the trail would include some construction near State Route 1 for new trail bridge crossings at two locations and removal of existing railroad bridges over the highway. These activities could require short-term lane closures as described in Chapter 1, *Proposed Project* Temporary closures could adversely affect emergency services through State Route 1. However, as described above for the auxiliary lanes and Bus-on-Shoulder features, the same Transportation Management Plan described in Chapter 1 would ensure that construction activities would not create major delays for emergency service providers and other roadway

users. Emergency service providers would be notified as early as possible to plan for lane closures and other delays related to construction activity.

No-Build Alternative

Under the No-Build Alternative, no direct, permanent, or temporary impacts on community facilities or emergency services would occur; however, traffic delay within the project area would continue to worsen, resulting in indirect adverse impacts related to access to community facilities and service provider response times. No utilities would be relocated, interrupted, or displaced and no impacts would be anticipated to occur.

Avoidance, Minimization, and/or Mitigation Measures

Standard Measure TR-1 (Chapter 1, Project Description) as well as the following avoidance and minimization measure would reduce potential short-term impacts during construction. No long-term impacts would occur; therefore, no additional avoidance, minimization, or mitigation measures would be required for operation.

- **AMM-UTI-1**: At least 30 days prior to construction activities that would require relocation of existing utilities, affected utility service providers will be notified of all affected utilities to ensure affected customers will be notified in advance by their service providers of potential service interruptions and to ensure that all utilities are relocated appropriately.

References

California Highway Patrol. 2021. Coastal Division. Available: https://www.chp.ca.gov/Find-an-Office/Coastal-Division. Accessed: November 22, 2021.

Central Fire District. 2021. EMS. Available: https://www.centralfiresc.org/2183/EMS. Accessed: November 22, 2021.

County of Santa Cruz. 2021. Santa Cruz County Major Water Purveyors. Environmental Health Department. Available: http://scceh.com/Home/Programs/WaterResources/WaterSupply/MajorWaterSuppliersorPurveyors.aspx. Accessed: November 23, 2021.

Santa Cruz County Sanitation District. n.d. Home. Available: https://sccsd.wpcomstaging.com/. Accessed: November 23, 2021.

Santa Cruz County Sheriff's Office. 2020. Annual Report. Santa Cruz, CA.

2.1.7 Traffic and Transportation/Pedestrian and Bicycle Facilities

Regulatory Setting

Caltrans, as assigned by the Federal Highway Administration, directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (23 Code of Federal Regulations 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

In July 1999, the U.S. Department of Transportation issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the U.S. Department of Transportation regulations (49 Code of Federal Regulations 27) implementing Section 504 of the Rehabilitation Act (29 United States Code 794). The Federal Highway Administration has enacted regulations for the implementation of the 1990 Americans with Disabilities Act, including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the Americans with Disabilities Act requirements to federal-aid projects, including transportation enhancement activities.

Caltrans has prepared the Transportation Analysis Framework and Transportation Analysis under CEQA to guide transportation impact analysis for projects on the State Highway System as part of the CEQA process. Caltrans has prepared these documents to guide implementation of Senate Bill 743 (Steinberg, 2013). The Transportation Analysis Framework provides guidance as to the methodology to be used in measuring the vehicle miles traveled impacts for projects on state highways.

According to the Transportation Analysis Framework, “addition of an auxiliary lane of less than one mile in length designed to improve roadway safety” is considered a project type “Not Likely to Lead to a Measurable and Substantial Increase in Vehicle Travel”. The project has four segments of auxiliary lanes, two in each travel direction. All of these segments are less than one mile in length, which means that it is exempt under the Transportation Analysis Framework and Transportation Analysis under CEQA guidelines. In addition, these auxiliary lanes are independent, meaning that they are not continuous through interchange areas. Their purpose is to improve operations and safety in the areas between interchanges. The mainline capacity of the freeway at the interchanges is unchanged by the project, which limits the type of time savings benefits to through traffic that could generate added vehicle miles traveled. However, as vehicle miles traveled management is a subject of considerable interest to the Santa Cruz County Regional Transportation

Commission, this document includes both qualitative and quantitative information on the likely vehicle miles traveled impacts of the project.

Affected Environment

This section was prepared using information from the Community Impact Assessment in September 2022 (Caltrans 2022) and Traffic Operations Analysis Report prepared for the project in March 2021 (CDM Smith 2021), as well as analysis conducted for the Senate Bill 1 Trade Corridor Enhancement Program grant application support (CDM Smith 2022).

Access, Circulation, and Parking

The Federal Highway Administration directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (23 Code of Federal Regulations 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

Caltrans and the Federal Highway Administration are committed to carrying out the Americans with Disabilities Act by building transportation facilities that provide equal access for all persons. The same degree of convenience, accessibility, and safety available to the general public will be provided to persons with disabilities.

This section describes the existing and planned transportation system within the study area, including the roadway network, transit services, and bicycle and pedestrian facilities, as discussed in the following subsections.

Roadway Network and Circulation

The roadway network and circulation in the project area are shown on Figure 2-3 and described in the following subsections.

State Route 1

State Route 1 is the state route connecting the coastal communities on the northern and central California coast. It varies between a two-lane highway in rural areas of the coast to multiple lanes in urban areas. In the project area, it is a four-lane freeway (two lanes in each direction) with average annual daily traffic from approximately 66,000 at the southern project limit near Freedom Boulevard to approximately 80,200 at the northern limit near State Park Drive (Caltrans 2019). North and west of the project area, it connects with State Route 17 and State Route 9 and traverses the city of Santa Cruz on city streets before becoming a two-lane highway along the coast north of Santa

Cruz. South of the project area, State Route 1 is a six-lane freeway through Watsonville, returning to a two-lane highway in northern Monterey County.

Soquel Drive

Soquel Drive is the main parallel route to State Route 1 in the study area. It lies north of the highway and runs for about 2.35 miles within the project limits, starting in the west at its intersection with State Park Drive and ending at Freedom Boulevard at the eastern end of the study area. East of State Park Drive, Soquel Drive is primarily an access road for State Route 1.

Rio Del Mar Boulevard

Rio Del Mar Boulevard provides the primary access route from State Route 1 to the community of Rio Del Mar. It runs north–south for 1.4 miles as a two-lane road from Beach Drive (private road) to Soquel Drive.

State Park Drive

State Park Drive, less than 1 mile long, is a short two-lane road providing access from State Route 1 to Seacliff Beach State Park to the south and Soquel Drive to the north. Its heavy volumes are a function of its connection with Soquel Drive and the Rancho Del Mar Shopping Center.

Parking

On-street and off-street parking are available throughout the project area, including on-street parking on various commercial and residential streets. The Initial Study for the Aptos Village Plan (County of Santa Cruz 2009) identified approximately 140 on-street spaces and about 375 spaces in parking lots for a total of about 515 spaces in the 35-acre Aptos Village Plan area. The Aptos Village Square shopping center at 7960 Soquel Drive, located just north of State Route 1 outside of the Aptos Village Plan area, has approximately 350 off-street spaces; the park-and-ride lots at Resurrection Church on Soquel Drive near State Park Drive have a combined 73 spots; and Rancho Del Mar Shopping Center, just east of the State Park Drive interchange, has approximately 500 spaces (Caltrans 2015).

Public Transportation

The transit network in the project area is shown on Figure 2-4, and available public transportation is described in the following subsections.

Santa Cruz Metropolitan Transit District

The Santa Cruz Metropolitan Transit District is the primary transit provider in Santa Cruz County. Santa Cruz Metropolitan Transit District operates one urban collector, one express, and two urban local bus feeder routes in the study area. These routes primarily serve local travel with the express route providing service to the cities of Santa Cruz and Watsonville.

The Santa Cruz Metropolitan Transit District routes serving the State Route 1 corridor are briefly described below.

Route 91X, Cabrillo Express

This bus line originates at the Santa Cruz Metropolitan Transit District Center in downtown Santa Cruz and terminates at the Watsonville Center near downtown Watsonville. Within the study area, this line serves the two park-and-ride lots at Resurrection Church and commercial shopping areas along Soquel Drive. Route 91 uses State Route 1 northbound and southbound between Santa Cruz and Watsonville. The one stop within the project area is located near Aptos Branch Library on Soquel Drive.

Route 55, Mid-County Service

Route 55 serves the areas of Capitola, Aptos, and Rio Del Mar. The bus line originates in the Capitola Mall and terminates in the Rio Del Mar area. This route includes numerous stops along Center Avenue, Rio Del Mar Boulevard, Clubhouse Drive, and Sumner Drive.

Route 69W, Capitola/Cabrillo

Route 69W originates at the Santa Cruz Metropolitan Transit District Center in the city of Santa Cruz and terminates at the Watsonville Center. Within the study area, Route 69W serves the two park-and-ride lots at Resurrection Church and commercial shopping areas along Soquel Drive. The one stop within the project area is located near Aptos Branch Library on Soquel Drive.

Route 71, Soquel/Freedom

Route 71 originates at the Santa Cruz Metropolitan Transit District Center in the city of Santa Cruz and terminates at the Watsonville Transit Center. Within the study area, Route 71 serves areas throughout the area of Aptos, including two park-and-ride lots at Resurrection Church and commercial shopping areas (e.g., Rancho Del Mar Shopping Center) along Soquel Drive, and commercial areas throughout the corridor within Aptos.

Santa Cruz Metropolitan Transit District ParaCruz

The Santa Cruz Metropolitan Transit District also offers shared ride, door-to-door paratransit service as a complement to its regular fixed-route bus service. The Santa Cruz Metropolitan Transit District ParaCruz service is available to anyone certified as unable to use regular fixed-route service as a result of a disability The Santa Cruz Metropolitan Transit District ParaCruz service is offered to any location within 0.75 mile of any regular Santa Cruz Metropolitan Transit District bus route, other than State Route 17 express commuter service.

Pedestrian and Bicycle Facilities

The Santa Cruz County Planning Department's Master Plan of Countywide Bikeways defines a countywide network of bikeways that complements the bikeway systems of local cities and adjacent counties. The bikeway network is made up of three types of facilities:

1. Class I bikeways (bike paths), which provide a separated right-of-way for the exclusive use of bicycles and pedestrians.
2. Class II bikeways (bike lanes), which provide a striped lane for one-way travel on a street or highway.
3. Class III bikeways (bike routes), which provide for shared use with pedestrian or motor vehicle traffic.

There are currently limited opportunities for pedestrians and bicyclists to safely cross State Route 1 in the project area, even though portions of the project area are designated as regional bicycle routes.

Bicycle Facilities

Many of the county's major collector and arterial roadways have, over the years, been established as Class II bikeways (bike lanes) with a focus on developing bicycle facilities in the higher-density urban areas and urban corridors of the county. There are few Class I bikeways (bike paths) in the county. Currently, Santa Cruz County has approximately 92 miles of bike lanes and 8 miles of bike paths. Bicycle facilities present within the project area are shown on Figure 2-5.

A number of the streets within the project area are equipped with Class II bicycle lanes, including State Park Drive between Soquel Drive and Center Avenue, Soquel Drive from State Park Drive to Freedom Boulevard, and Trout Gulch Road beginning at Soquel Drive. Class III bicycle lanes are also provided primarily south of State Route 1 on portions of State Park Drive, Las Olas Drive, Rio Del Mar Boulevard, Clubhouse Drive, Sumner Avenue, and Freedom Boulevard, allowing bicyclists to share the road with traffic. Existing options for crossing State Route 1 include a dedicated lane on State Park Drive and shared lanes on Rio Del Mar Boulevard and Freedom Boulevard.

Pedestrian Facilities

The existing pedestrian network includes sidewalks and foot paths throughout Aptos Village (e.g., Soquel Drive, Aptos Street, Trout Gulch Road) north of State Route 1, in Seacliff Village (e.g., State Park Drive, Center Avenue) south of State Route 1, and at the terminus of Rio Del Mar Boulevard, Venetian Road, and Aptos Beach Road near Rio Del Mar Beach. Foot paths also exist along the continuous stretch of Seascape State Beach and Rio Del Mar State Beach. The State Park Drive overcrossing has a sidewalk with protective railings to enable pedestrian access across State Route 1;

however, the Rio Del Mar Boulevard and Freedom Boulevard overcrossings have narrower sidewalks without any protective railings for safe pedestrian passage.

Residents of Aptos value maintaining and enhancing a pedestrian-friendly environment. Central to the design concept for Aptos Village is the creation and development of a pedestrian zone in the Village core that would connect residents with recreational opportunities in the region. Included in the *Aptos Village Plan* (County of Santa Cruz 2010) were proposals to construct a sea/mountain trail to run between the Forest of Nisene Marks and Seacliff State Beach along the Aptos Creek corridor, as part of the Santa Cruz Mountain Trail System, and to require a pedestrian orientation for development and revitalization within the Village. Existing pedestrian facilities are shown on Figure 2-5.

Methodology

The Traffic Operations Analysis Report's operational analysis evaluated existing conditions in the year 2019 and future traffic conditions for the years 2025 and 2045. The year 2019 was used for existing conditions because 2020 traffic volumes were heavily influenced by the impacts of COVID-19, and therefore the year 2019 represents the most accurate baseline. At the time of the NOP, the project was scheduled to be completed in 2025; therefore, the operational analysis uses the year 2025 to analyze traffic in the project's opening year. The operational analysis also evaluated conditions in the year 2045 to reflect an estimated 20-year design life for the project, representing the project's horizon year.

Traffic operations were analyzed using multiple performance measures. A corridor-wide operational performance summary (including the freeway mainline segments within the project limits and upstream of the project limits) assessed traffic conditions in terms of model volumes in vehicles per hour, vehicle miles traveled, density, average speed, vehicle hours traveled, and delay. Vehicle miles traveled estimates in the Traffic Operations Analysis Report are on the State Route 1 corridor only and not countywide estimates. The project's senate bill 743 regulation-related CEQA determination (Section 3.2.17) cannot be completed using the vehicle miles traveled estimates included in the Traffic Operations Analysis Report, they are for informational use only.

The Traffic Operational Analysis Report also does not contain information on Coastal Rail Trail Segment 12 Project element, and the Traffic Operational Analysis Report is not a comprehensive analysis of vehicle miles traveled for the project as a whole. For these reasons, this environmental impact report/environmental assessment includes additional traffic analysis (CDM Smith 2023) to provide a more comprehensive and representative view of VMT impacts. The additional traffic analysis provided: (a) quantified demand, operational, safety and health benefits information related to Coastal Rail Trail

Segment 12 Project element that adds to the purpose and needs of the Project; and (b) countywide vehicle miles traveled changes due to the project that supports the project's SB 743 regulation-related CEQA determination (Section 3.2.17).

Level of Service: Level of Service is an indicator of the operating performance of a roadway. It rates congestion and varies on a scale from Level of Service A to Level of Service F, where Level of Service A represents free-flow operations at free-flow speeds and Level of Service F, a roadway is considered over capacity and operates at forced-flow, jammed conditions. Per Caltrans' criteria, to indicate a satisfactory operating condition, the traffic analysis used Level of Service D or better (Level of Service A, B, C, or D) and an average speed of 45 miles per hour higher during the peak period analysis. A type of traffic model, FREQ, was used to analyze the freeway performance in terms of Level of Service and average speed under each scenario.

Vehicle Miles Traveled: Vehicle miles traveled represents the number of miles traveled by a vehicle or group of vehicles; this measurement can be narrowed to miles traveled on a specific roadway. A comparison of a roadway's vehicle miles traveled at a peak traffic period with its vehicle miles traveled at a time period with free-flow speed enables an analysis of traffic congestion.

Vehicle Hours Traveled: Measurement of vehicle hours traveled enables analysis of traffic congestion by multiplying the number of vehicles by the travel time of those vehicles on a given segment of a roadway. Vehicle hours traveled is an indicator of how additional travel demand influences congestion in the system from a travel time standpoint. It is commonly used as a system-wide measurement of travel demand.

Vehicle hours of delay: Delay reflects one vehicle stuck in traffic for one hour.

Density: Density is measured as vehicles per mile per lane.

Volume: Volume is measured as vehicles per hour.

Delay per vehicle: Delay per vehicle is measured in minutes per vehicle.

Existing (2019) Traffic Operations

The Traffic Operations Analysis Report (CDM Smith 2021) estimated existing weekday AM and PM period and daily total traffic volumes using the latest available Caltrans 7-day hourly mainline and ramp traffic counts and growth trend in average annual daily traffic data. Santa Cruz County Regional Transportation Commission's October 2016 weekday 15-minute interval mainline traffic counts were used to estimate 15-minute interval volumes. Hourly speeds and travel time estimates on the State Route 1 mainline

segments in the project limits were collected using Caltrans Performance Measurement System in the Fall of 2019 and Santa Cruz County Regional Transportation Commission's September 2016 INRIX speed and travel time data collected in a prior traffic study.

Tables 2-9 through 2-18 summarize existing traffic operations on State Route 1 in the project corridor. The tables and additional analysis in the Traffic Operations Analysis Report demonstrate that State Route 1 traffic volumes for the peak periods and peak directions. Peak periods are the time of day with the most traffic. The AM peak period in the project corridor is 6:00 a.m. to 12:00 p.m., and the peak hour is 7:00 a.m. to 8:00 a.m. The PM peak period is 2:00 p.m. to 8:00 p.m. and the peak hour is 4:00 p.m. to 5:00 p.m. The peak directions are northbound AM and southbound PM.

Supplemental traffic analysis found that the existing bike/pedestrian circulation route between Rio Del Mar community and Aptos activity centers is highly circuitous and strongly discourages walking as a transportation mode option for this movement. There is a need for a straighter and more direct bike/pedestrian connection crossing the State Route 1 (CDM Smith 2023).

The Traffic Operations Analysis Report estimated 156 collisions per year (both directions combined) on average exist on State Route 1 within the project limits. On the mainline segments, fatal plus injury 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 68 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 approximately 10 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 (CDM Smith 2021).

Additional traffic analysis found just over 10 vehicle and active transportation (bike or pedestrian) involved fatal or injury collisions per year on average exist on local streets in the project influence area. The construction of a protected bike/pedestrian facility has the potential to eliminate these type of collisions (CDM Smith 2023).

A supplemental traffic analysis estimated existing countywide daily vehicle miles traveled using 2015 countywide vehicle miles traveled from the Santa Cruz County Regional Transportation Commission's Unified Corridor Investment Study completed in January 2019 and Association of Monterey Bay Governments 2022 Regional Growth Forecast based population projections. Based on this, 5,477,870 vehicle miles of travel are estimated in Santa Cruz County on a daily basis (CDM Smith 2023).

Table 2-9. Estimated Weekday Volumes (in vehicles) by State Route 1 Northbound Mainline Segments and Ramps within the Project Limits

Location	AM Peak Period	AM Peak Hour	PM Peak Period	PM Peak Hour	Daily
Mainline	18,900	3,335	14,190	2,785	47,800
On-Ramps	11,350	2,470	8,910	1,490	26,200
Off-Ramps	5,840	1,130	6,090	1,110	15,300

Source: CDM Smith 2021

Table 2-10. Estimated Weekday Volumes (in vehicles) by State Route 1 Southbound Mainline Segments and Ramps within the Project Limits

Location	AM Peak Period	AM Peak Hour	PM Peak Period	PM Peak Hour	Daily
Mainline	15,580	3,070	19,690	3,890	47,000
On-Ramps	5,110	1,250	6,960	1,290	15,500
Off-Ramps	7,070	1,090	10,400	1,750	24,300

Source: CDM Smith 2021

Table 2-11. Summary of Northbound AM Existing (2019) Traffic Operational Performance within Corridor Limits

Performance Measure	Operational Performance
Peak Hour Volume (Vehicles/hour)	3,270
Peak Period Volume (Vehicles/hour)	3,142
Peak Hour Vehicle Miles Traveled	16,840
Peak Period Vehicle Miles Traveled	97,070
Peak Hour Vehicle Hours Traveled	590
Peak Period Vehicle Hours Traveled	2,747
Peak Hour vehicle hours of delay	318
Peak Period vehicle hours of delay	1,181
Peak Hour Density	57.2
Peak Period Density	44.4
Peak Hour Level of Service	F
Peak Period Level of Service	E
Peak Hour Average Speed	29
Peak Period Average Speed	35
Peak Hour Delay (minutes/vehicle)	5.8
Peak Period Delay (minutes/vehicle)	3.8

Source: CDM Smith 2021.

Table 2-12. Summary of Northbound PM Existing Traffic Operational Performance within Corridor Limits

Performance Measure	Operational Performance
Peak Hour Volume (Vehicles/hour)	2,822
Peak Period Volume (Vehicles/hour)	2,400
Peak Hour Vehicle Miles Traveled	14,535
Peak Period Vehicle Miles Traveled	74,149
Peak Hour Vehicle Hours Traveled	235
Peak Period Vehicle Hours Traveled	1,200
Peak Hour vehicle hours of delay	0
Peak Period vehicle hours of delay	4
Peak Hour Density	22.8
Peak Period Density	19.4
Peak Hour LOS	C
Peak Period LOS	C
Peak Hour Average Speed	62
Peak Period Average Speed	62
Peak Hour Delay (minutes/vehicle)	0.0
Peak Period Delay (minutes/vehicle)	0.0

Source: CDM Smith 2021.

Table 2-13. Summary of Southbound AM Existing Traffic Operational Performance within Corridor Limits

Performance Measure	Operational Performance
Peak Hour Volume (Vehicles/hour)	3,042
Peak Period Volume (Vehicles/hour)	2,873
Peak Hour Vehicle Miles Traveled	28,896
Peak Period Vehicle Miles Traveled	163,737
Peak Hour Vehicle Hours Traveled	486
Peak Period Vehicle Hours Traveled	2,738
Peak Hour vehicle hours of delay	14
Peak Period vehicle hours of delay	54
Peak Hour Density	24
Peak Period Density	22.4
Peak Hour Level of service	C
Peak Period Level of service	C
Peak Hour Average Speed	59
Peak Period Average Speed	60
Peak Hour Delay (minutes/vehicle)	0.2
Peak Period Delay (minutes/vehicle)	0.2

Source: CDM Smith 2021.

Table 2-14. Summary of Southbound PM Existing Traffic Operational Performance within Corridor Limits

Performance Measure	Operational Performance
Peak Hour Volume (Vehicles/hour)	3,470
Peak Period Volume (Vehicles/hour)	3,391
Peak Hour Vehicle Miles Traveled	32,962
Peak Period Vehicle Miles Traveled	193,281
Peak Hour Vehicle Hours Traveled	1419
Peak Period Vehicle Hours Traveled	6,045
Peak Hour vehicle hours of delay	877
Peak Period vehicle hours of delay	2872
Peak Hour Density	66.7
Peak Period Density	48.6
Peak Hour Level of service	F
Peak Period Level of service	F
Peak Hour Average Speed	23
Peak Period Average Speed	32
Peak Hour Delay (minutes/vehicle)	15.2
Peak Period Delay (minutes/vehicle)	8.5

Source: CDM Smith 2021.

Table 2-15. Existing Level of Service in the State Route 1 Northbound Direction by Mainline Segment and Time Period

Mainline Segment	AM Peak Period Level of service	PM Peak Period Level of service
South of Larkin Valley Road off	C	B
Larkin Valley Road off – on	D	B
Larkin Valley Road on - Freedom Boulevard off	F	C
Freedom Boulevard off – on	F	B
Freedom Boulevard on - Rio Del Mar Boulevard off	F	C
Rio Del Mar Boulevard off – on	F	B
Rio Del Mar Boulevard on - State Park Drive off	F	C
State Park Drive off - northbound State Park Drive on	F	B
Northbound State Park Drive on - southbound State Park Drive on	F	C
Southbound State Park Drive on - Park Avenue off	F	C
Corridor Limits: State Route 1 northbound direction from Larkin Valley Road/San Andreas Road to Park Avenue, and in State Route 1 southbound direction from State Route 17 to Larkin Valley Road/San Andreas Road	E	C

Source: CDM Smith 2021.

Table 2-16. Existing Level of Service in the State Route 1 Southbound Direction by Mainline Segment and Time Period

Mainline Segment	AM Peak Period Level of service	AM Peak Period Level of service
North of Ocean Street on	B	C
Ocean Street on - State Route 17 on	C	D
State Route 17 on - Fairmount Avenue off	C	D
Fairmount Avenue off ramp to on ramp -	B	E
Fairmount Avenue on ramp - Morrissey Boulevard on ramp	B	F
Morrissey Boulevard on ramp - Soquel Drive off ramp	C	F
Soquel Drive off ramp – on ramp	C	F
Soquel Drive on ramp - 41st Avenue off ramp	D	F
41st Avenue off ramp - southbound 41st Avenue on ramp	C	F
southbound 41st Avenue on ramp - northbound 41st Avenue on ramp	C	F
northbound 41st Avenue on ramp - Bay Avenue/Porter Street off ramp	C	F
Bay Avenue/Porter Street off ramp – on ramp	D	F
Bay Avenue/Porter Street on ramp - Park Avenue off ramp (merge area)	D	F
Bay Avenue/Porter Street onramp - Park Avenue off ramp (diverge area)	D	F
Park Avenue off ramp – on ramp	C	F
Park Avenue on ramp- State Park Drive off ramp	C	E
State Park Drive off ramp - southbound State Park Drive on ramp	C	F
southbound State Park Drive on ramp - northbound State Park Drive on ramp	C	E
northbound State Park Drive on ramp - Rio Del Mar Boulevard off ramp	C	D
Rio Del Mar Boulevard off ramp – on ramp	C	D
Rio Del Mar Boulevard on ramp - Freedom Boulevard off ramp	C	D
Freedom Boulevard off ramp – on ramp	C	C
Freedom Boulevard on ramp - Larkin Valley Road off ramp	C	C
Corridor Limits: State Route 1 northbound direction from Larkin Valley Road/San Andreas Road to Park Avenue, and in State Route 1 southbound direction from State Route 17 to Larkin Valley Road/San Andreas Road	C	F

Source: CDM Smith 2021, Table 5-8.

Table 2-17. Existing Estimated Daily Vehicle Miles Traveled, Vehicle Hours Traveled and vehicle hours of delay in the State Route 1 Northbound Direction

Performance Measure / Unit	Existing
Daily Vehicle Miles Traveled	247,330
Daily Vehicle Hours Traveled	5,170
Daily Vehicle Hours of Delay	1,190

Source: CDM Smith 2021.Table 5-9.

Table 2-18. Existing Estimated Daily Vehicle Miles Traveled, Vehicle Hours Traveled and vehicle hours of delay in the State Route 1 Southbound Direction

Performance Measure / Unit	Existing
Daily Vehicle Miles Traveled	475,750
Daily Vehicle Hours Traveled	10,730
Daily Vehicle Hours of Delay	2,930

Source: CDM Smith 2021.

Environmental Consequences

Build Alternative

Temporary Construction Impacts

Construction activities are anticipated to require temporary closures at on- and off-ramps of the State Park Drive, Rio Del Mar Boulevard, and Freedom Boulevard interchanges; however, ramp closures would be staged so that successive off- or on-ramps are not closed at the same time and detours would be provided to minimize temporary impacts on motorists, bus service, bicyclist and pedestrians, and adjacent neighborhoods.

The Build Alternative would include the replacement of the two Santa Cruz Branch Rail Line bridges over State Route 1 and widening the State Route 1 bridge over Aptos Creek and Spreckels Drive to accommodate the proposed auxiliary lanes. Widening the State Route 1 bridge over Aptos Creek and Spreckels Drive would require demolition of the existing bridge and construction of a new bridge. Construction of the new State Route 1 bridge over Aptos Creek would precede demolition of the existing bridge, and traffic would be routed to the new bridge before demolition of the existing bridge. Temporary lane closures may be needed on affected road segments adjacent to ramp and bridge construction, with temporary flagging during construction hours. Temporary overnight closures of either direction of State Route 1 for falsework erection/removal of the existing railroad overcrossings may also occur.

Improvements to Coastal Rail Trail Segment 12 would temporarily restrict vehicle travel along Soquel Drive in Aptos Village, although access to surrounding residences and businesses would be maintained during construction activities. Temporary closures and detours could result in increased congestion on nearby local streets during construction. The improvements would also temporarily restrict vehicle and bus travel along Soquel Drive in Aptos Village, including the bus stop at Trout Gulch Road. 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.

Temporary impacts related to access, circulation, parking, public transportation, and bicycle and pedestrian facilities would be avoided and minimized through the development and implementation of a Transportation Management Plan (AMM TR-1). The purpose of the Transportation Management Plan would be to identify suitable detours and traffic rerouting measures to reduce temporary traffic impacts during construction. The Transportation Management Plan would be developed during the design phase with participation from local agencies. Early and well-publicized announcements and other public information measures would be made to communicate road closures, impacts on pedestrian and bicycle facilities, detours, parking restrictions, the construction schedule, and other pertinent travel information.

Permanent Impacts

Access, Circulation, and Parking

The Build Alternative would reduce delay within the project limits on the State Route 1 mainline segments with the addition of auxiliary lanes from a range of 3,950–4,400 vehicles per hour to a range of 5,600–6,100 vehicles per hour (CDM Smith 2021). This would improve both highway operations and safety in the areas between interchanges. However, the mainline capacity (traffic flow throughput) of the freeway at the interchanges is unchanged by the project (CDM Smith 2023).

The project auxiliary lanes are less than one mile long and act independently of each other (i.e., auxiliary lane operations between one pair of interchanges do not affect auxiliary lane operations between another pair of interchanges). Based on the Caltrans' Transportation Analysis under CEQA and Transportation Analysis Framework guidelines, this project type is not likely to lead to a substantial increase in vehicle travel. So, qualitatively speaking, the project auxiliary lanes would not result in a substantial change in countywide trips. A portion of existing trips on local streets may divert to freeway facility due to the auxiliary lanes (CDM Smith 2023).

Based on the vehicle miles traveled analysis in the Traffic Operations Analysis Report, State Route 1 daily vehicle miles traveled would increase under 2025 Build to be 0.6 percent higher than 2025 No-Build Alternative and State Route 1 daily vehicle miles traveled under 2045 Build to be 2.7 percent higher than 2045 No-Build Alternative, both directions of travel combined (CDM Smith 2021).

A vehicle miles traveled reduction on local streets would happen simultaneously to the vehicle miles traveled increase on State Route 1. The vehicle miles traveled reduction on local streets (particularly, the parallel arterial of Soquel Drive, which is slightly more circuitous than State Route 1 between the interchanges within the project limits) is expected to be of the same or slightly higher magnitude than the vehicle miles traveled increase on State Route 1. All diversions due to the auxiliary lanes are also expected to happen in the vicinity of the project and within the Santa Cruz County limits. Therefore, the net change in the countywide vehicle miles traveled due to the auxiliary lanes is expected to be zero or a small negative value (CDM Smith 2023).

Based on a comparison of the Build and No-Build Alternatives in the Traffic Operations Analysis Report, the Build Alternative would result in an increase in average speed in the southbound PM peak direction in 2025 and for all directions/time periods in 2045 except the northbound AM peak direction. For the northbound AM peak direction, the potential speed improvement within the study area is largely offset by a downstream bottleneck north of the Soquel Avenue interchange. Compared to the No-Build Alternative, the level of service for the Build Alternative improves for the southbound PM peak direction in the year 2025 but no improvements were seen in the year 2045 (CDM Smith 2021) (see Tables 2-19 through 2-22).

The Traffic Operations Analysis Report assumed that the existing 91X transit route would change to a 91X express service by using Hwy 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. Buses would operate on the new auxiliary lanes between freeway on- and off-ramps and on Bus-on-Shoulder facilities through the interchange areas. The increase in bus services would improve operations on the freeway mainline segments by shifting traffic from a low-occupancy vehicle mode to a high-occupancy bus mode, thereby reducing traffic. Due to the bus-on-shoulder and auxiliary lane operations and the routing change, the 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) (CDM Smith 2021).

Coastal Rail Trail Segment 12 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 the Opening Year (2025) Build conditions (CDM Smith 2023).

Based on the Traffic Operations Analysis Report, the construction of auxiliary lanes and education/enforcement activities relating to bus-on-shoulder operations would result in a reduction in total collisions comparing the Build Alternative to the No-Build Alternative in 2019, 2025, and 2045 ranges between 17% and 20% (CDM Smith 2021). The project trail has the potential to eliminate 80 percent of the vehicle/pedestrian and vehicle/bike conflicts seen under the No-Build Alternative. This is a reduction of nearly 18.6 active-transportation involved collisions per year on average under 2025 Build conditions (CDM Smith 2023).

The project is also expected to result in a reduction of 0.076 mortalities per year due to increased use of active transportation modes and associated health benefits (CDM Smith 2023).

Finally, improved travel conditions on State Route 1 would shift vehicles from local roads back to State Route 1, reducing neighborhood cut-through traffic (CDM Smith 2021).

Table 2-19. Summary of Operational Performance During Northbound AM Peak Period, Opening Year No-Build Versus Opening Year Build

Performance Measure	Opening Year (2025) No-Build	Opening Year (2025) Build	Horizon Year (2045) No Build	Horizon Year (2045) Build
Volume (Vehicles Per Hour)	3,251	3,255	3,052	3,071
Vehicles Hours Traveled	3,332	3,893	6,017	7,121
Level Of Service	F	F	F	F
Average Speed (Miles Per Hour)	30	26	16	13
Delay (Minutes Per Vehicle)	0	0	0.1	0

Table 2-20. Summary Of Operational Performance During Northbound PM Peak Period, Opening Year No-Build Versus Opening Year Build

Performance Measure	Opening Year (2025) No-Build	Opening Year (2025) Build	Horizon Year (2045) No Build	Horizon Year (2045) Build
Volume (Vehicles Per Hour)	2,537	2,555	2,905	2,902
Vehicles Hours Traveled	1,270	1,273	1,487	1,449
Level Of Service	C	B	C	C
Average Speed (Miles Per Hour)	62	62	60	62
Delay (Minutes Per Vehicle)	0	0	0.1	0

Table 2-21. Summary Of Operational Performance During Southbound AM Peak Period, Opening Year No-Build Versus Opening Year Build

Performance Measure	Opening Year (2025) No-Build	Opening Year (2025) Build	Horizon Year (2045) No Build	Horizon Year (2045) Build
Volume (Vehicles Per Hour)	3,024	3,027	3,458	3,464
Vehicles Hours Traveled	2,839	2,835	3,378	3,304
Level Of Service	C	C	C	C
Average Speed (Miles Per Hour)	61	61	58	60
Delay (Minutes Per Vehicle)	0	0	0	0

Table 2-22. Summary Of Operational Performance During Southbound PM Peak Period, Opening Year No-Build Versus Opening Year Build

Performance Measure	Opening Year (2025) No-Build	Opening Year (2025) Build	Horizon Year (2045) No Build	Horizon Year (2045) Build
Volume (Vehicles Per Hour)	3,533	3,581	3,635	3,968
Vehicles Hours Traveled	6,953	3,506	10,789	7,796
Level Of Service	F	C	F	F
Average Speed (Miles Per Hour)	29	58	19	29
Delay (Minutes Per Vehicle)	10.3	0.4	20.3	10.3

Table 2-23. Opening Year (2025) Level of Service in the State Route 1 Northbound Direction by Mainline Segment and Time Period for the No-Build Condition

Mainline Segment	AM Peak Period Level of Service	PM Peak Period Level of Service
S/O Larkin Valley Road off	C	B
Larkin Valley Road off – on	D	B
Larkin Valley Road on - Freedom Boulevard off	E	C
Freedom Boulevard off – on	F	B
Freedom Boulevard on - Rio Del Mar Boulevard off	E	C
Rio Del Mar Boulevard off – on	F	C
Rio Del Mar Boulevard on - State Park Drive off	F	C
State Park Drive off - northbound State Park Drive on	F	C
Northbound State Park Drive on - southbound State Park Drive on	F	C
southbound State Park Drive on - Park Avenue off	F	B
Corridor Limits: Project Limits + Adj. & U/S Links	F	C

Source: CDM Smith 2021

Table 2-24. Opening Year (2025) Level of Service in the State Route 1 Northbound Direction by Mainline Segment and Time Period for the Build Condition

Mainline Segment	AM Peak Period Level of Service	PM Peak Period LOS
S/O Larkin Valley Road off	C	B
Larkin Valley Road off – on	C	B
Larkin Valley Road on - Freedom Boulevard off	C	C
Freedom Boulevard off – on	C	C
Freedom Boulevard on - Rio Del Mar Boulevard off	D	B
Rio Del Mar Boulevard off – on	F	C
Rio Del Mar Boulevard on - State Park Drive off	F	B
State Park Drive off - northbound State Park Drive on	F	C
Northbound State Park Drive on - southbound State Park Drive on	F	C
southbound State Park Drive on - Park Avenue off	F	B
Corridor Limits: Project Limits + Adjacent Segments	F	B

Source: CDM Smith 2021

Table 2-25. Opening Year (2025) Level of Service in the State Route 1 Southbound Direction by Mainline Segment and Time Period for the No-Build Condition

Mainline Segment	AM Peak Period LOS	PM Peak Period Level of Service
N/O Ocean Street on	B	C
Ocean Street on - State Route 17 on	C	D
State Route 17 on - Fairmount Avenue off	C	C
Fairmount Avenue off - on	B	C
Fairmount Avenue on - Morrissey Boulevard on	C	C
Morrissey Boulevard on - Soquel Drive off	C	C
Soquel Drive off – on	C	D
Soquel Drive on - 41st Avenue off	C	F
41st Avenue off - southbound 41st Avenue on	C	F
southbound 41st Avenue on - northbound 41st Avenue on	C	F
northbound 41st Avenue on - Bay Avenue/Porter Street off	C	F
Bay Avenue/Porter Street off – on	C	F
Bay Avenue/Porter Street on - Park Avenue off (merge area)	C	F
Bay Avenue/Porter Street on - Park Avenue off (diverge area)	C	F
Park Avenue off – on	C	F

Mainline Segment	AM Peak Period LOS	PM Peak Period Level of Service
Park Avenue on - State Park Drive off	B	F
State Park Drive off - southbound State Park Drive on	C	F
southbound State Park Drive on - northbound State Park Drive on	C	F
northbound State Park Drive on - Rio Del Mar Boulevard off	C	E
Rio Del Mar Boulevard off – on	C	D
Rio Del Mar Boulevard on - Freedom Boulevard off	C	D
Freedom Boulevard off – on	C	C
Freedom Boulevard on - Larkin Valley Road off	C	D
Corridor Limits: Project Limits + Adjacent Segments	C	F

Source: CDM Smith 2021

Table 2-26. Opening Year (2025) Level of Service in the State Route 1 Southbound Direction by Mainline Segment and Time Period for the Build Condition

Mainline Segment	AM Peak Period LOS	PM Peak Period LOS
N/O Ocean Street on	B	C
Ocean Street on - State Route 17 on	C	D
State Route 17 on - Fairmount Avenue off	C	C
Fairmount Avenue off - on	B	C
Fairmount Avenue on - Morrissey Boulevard on	C	C
Morrissey Boulevard on - Soquel Drive off	C	C
Soquel Drive off – on	C	C
Soquel Drive on - 41st Avenue off	C	C
41st Avenue off - southbound 41st Avenue on	C	C
southbound 41st Avenue on - northbound 41st Avenue on	C	C
northbound 41st Avenue on - Bay Avenue/Porter Street off	C	C
Bay Avenue/Porter Street off – on	C	D
Bay Avenue/Porter Street on - Park Avenue off (merge area)	C	C
Bay Avenue/Porter Street on - Park Avenue off (diverge area)	C	C
Park Avenue off – on	C	D
Park Avenue on - State Park Drive off	B	C
State Park Drive off - southbound State Park Drive on	C	D
southbound State Park Drive on - northbound State Park Drive on	B	C
northbound State Park Drive on - Rio Del Mar Boulevard off	B	D
Rio Del Mar Boulevard off – on	C	D
Rio Del Mar Boulevard on - Freedom Boulevard off	B	C
Freedom Boulevard off – on	C	C

Mainline Segment	AM Peak Period LOS	PM Peak Period LOS
Freedom Boulevard on - Larkin Valley Road off	C	D
Corridor Limits: Project Limits + Adjacent Segments	C	C

Source: CDM Smith 2021

Table 2-27. Horizon Year (2045) Level of Service in the State Route 1 Northbound Direction by Mainline Segment and Time Period for the No-Build Condition

Mainline Segment	AM Peak Period LOS	PM Peak Period LOS
S/O Larkin Valley Road off	F	C
Larkin Valley Road off – on	F	C
Larkin Valley Road on - Freedom Boulevard off	F	C
Freedom Boulevard off – on	F	C
Freedom Boulevard on - Rio Del Mar Boulevard off	F	D
Rio Del Mar Boulevard off – on	F	C
Rio Del Mar Boulevard on - State Park Drive off	F	D
State Park Drive off - northbound State Park Drive on	F	C
Northbound State Park Drive on - southbound State Park Drive on	F	C
southbound State Park Drive on - Park Avenue off	F	B
Corridor Limits: Project Limits + Adj. & U/S Links	F	C

Source: CDM Smith 2021

Table 2-28. Horizon Year (2045) Level of Service in the State Route 1 Northbound Direction by Mainline Segment and Time Period for the Build Condition

Mainline Segment	AM Peak Period LOS	PM Peak Period LOS
S/O Larkin Valley Road off	F	C
Larkin Valley Road off – on	F	C
Larkin Valley Road on - Freedom Boulevard off	F	C
Freedom Boulevard off – on	F	C
Freedom Boulevard on - Rio Del Mar Boulevard off	F	B
Rio Del Mar Boulevard off – on	F	C
Rio Del Mar Boulevard on - State Park Drive off	F	B
State Park Drive off - northbound State Park Drive on	F	C
Northbound State Park Drive on - southbound State Park Drive on	F	C
southbound State Park Drive on - Park Avenue off	F	B
Corridor Limits: Project Limits + Adjacent Segments	F	C

Source: CDM Smith 2021

Table 2-29. Horizon Year (2045) Level of Service in the State Route 1 Southbound Direction by Mainline Segment and Time Period for the No-Build Condition

Mainline Segment	AM Peak Period LOS	PM Peak Period LOS
N/O Ocean Street on	B	F
Ocean Street on - State Route 17 on	C	F
State Route 17 on - Fairmount Avenue off	C	F
Fairmount Avenue off - on	C	F
Fairmount Avenue on - Morrissey Boulevard on	C	F
Morrissey Boulevard on - Soquel Drive off	C	F
Soquel Drive off – on	D	F
Soquel Drive on - 41st Avenue off	C	F
41st Avenue off - southbound 41st Avenue on	D	F
southbound 41st Avenue on - northbound 41st Avenue on	D	F
northbound 41st Avenue on - Bay Avenue/Porter Street off	C	F
Bay Avenue/Porter Street off – on	D	F
Bay Avenue/Porter Street on - Park Avenue off (merge area)	C	F
Bay Avenue/Porter Street on - Park Avenue off (diverge area)	C	F
Park Avenue off – on	D	F
Park Avenue on - State Park Drive off	C	F
State Park Drive off - southbound State Park Drive on	D	F
southbound State Park Drive on - northbound State Park Drive on	D	F
northbound State Park Drive on - Rio Del Mar Boulevard off	D	E
Rio Del Mar Boulevard off – on	D	D
Rio Del Mar Boulevard on - Freedom Boulevard off	D	D
Freedom Boulevard off – on	C	C
Freedom Boulevard on - Larkin Valley Road off	C	D
Corridor Limits: Project Limits + Adjacent Segments	C	F

Source: CDM Smith 2021

Table 2-30. Horizon Year (2045) Level of Service in the State Route 1 Southbound Direction by Mainline Segment and Time Period for the Build Condition

Mainline Segment	AM Peak Period LOS	PM Peak Period LOS
N/O Ocean Street on	C	D
Ocean Street on - State Route 17 on	C	D
State Route 17 on - Fairmount Avenue off	C	D

Mainline Segment	AM Peak Period LOS	PM Peak Period LOS
Fairmount Avenue off - on	C	C
Fairmount Avenue on - Morrissey Boulevard on	C	C
Morrissey Boulevard on - Soquel Drive off	C	C
Soquel Drive off – on	D	D
Soquel Drive on - 41st Avenue off	C	F
41st Avenue off - southbound 41st Avenue on	D	F
southbound 41st Avenue on - northbound 41st Avenue on	D	F
northbound 41st Avenue on - Bay Avenue/Porter Street off	C	F
Bay Avenue/Porter Street off – on	D	F
Bay Avenue/Porter Street on - Park Avenue off (merge area)	C	F
Bay Avenue/Porter Street on - Park Avenue off (diverge area)	C	F
Park Avenue off – on	D	E
Park Avenue on - State Park Drive off	C	F
State Park Drive off - southbound State Park Drive on	C	F
southbound State Park Drive on - northbound State Park Drive on	B	F
northbound State Park Drive on - Rio Del Mar Boulevard off	C	F
Rio Del Mar Boulevard off – on	C	E
Rio Del Mar Boulevard on - Freedom Boulevard off	C	C
Freedom Boulevard off – on	C	D
Freedom Boulevard on - Larkin Valley Road off	D	D
Corridor Limits: Project Limits + Adjacent Segments	C	F

Source: CDM Smith 2021

The Build Alternative would result in the loss of 15 on-street parking spaces that serve residential and commercial uses along Aptos Street near Aptos Village in order to accommodate Coastal Rail Trail Segment 12, and up to three parking spaces could be removed on the east side of Aptos Creek Road. These spaces would not be replaced; however, given the availability of existing parking spaces in Aptos Village, the parking loss is anticipated to be minor.

A corridor-level operational performance summary (including the freeway mainline segments within the project limits) in terms of volumes (Vehicle Hours Traveled), and vehicle hours of delay is provided in Tables 2-30 and 2-31. As shown in the tables, under both opening (2025) and horizon (2045) conditions, implementation of the Build Alternative is expected to increase daily Vehicle Hours Traveled and vehicle hours of delay in northbound direction and decrease daily Vehicle Hours Traveled and vehicle hours of delay in the southbound direction, compared to the No Build Alternative. Both directions combined, there is a net decrease in daily Vehicle Hours Traveled and daily vehicle hours of delay.

Table 2-31. Opening Year (2025) and Horizon Year (2045) Estimated Daily Vehicle Hours Traveled and vehicle hours of delay in the State Route 1 by Direction of Flow

Performance Measure / Unit	Direction	Opening Year (2025) No Build	Opening Year (2025) Build	Change
Daily Vehicle Hours Traveled (vehicle-hours)	State Route 1 northbound	5,880	6,450	570
Daily Vehicle Hours Traveled (vehicle-hours)	State Route 1 southbound	11,830	8,400	-3,430
Daily vehicle hours of delay (vehicle-hours)	State Route 1 northbound	1,720	2,270	550
Daily vehicle hours of delay(vehicle-hours)	State Route 1 southbound	3,660	160	-3,500

Source: CDM Smith 2021.

Table 2-32. Opening Year (2025) and Horizon Year (2045) Estimated Daily Vehicle Hours Traveled and vehicle hours of delay in the State Route 1 by Direction of Flow

Performance Measure / Unit	Direction	Horizon Year (2045) No Build	Horizon Year (2045) Build	Change
Daily Vehicle Hours Traveled (vehicle-hours)	State Route 1 northbound	8,820	9,890	1,070
Daily Vehicle Hours Traveled (vehicle-hours)	State Route 1 southbound	16,370	13,410	-2,960
Daily vehicle hours of delay (vehicle-hours)	State Route 1 northbound	4,530	5,590	1,060
Daily vehicle hours of delay (vehicle-hours)	State Route 1 southbound	7,540	4,150	-3,390

Source: CDM Smith 2021.

Table 2-33 summarizes the countywide changes in vehicle miles traveled that would result from the Build Alternative. As mentioned before, the net change in the countywide vehicle miles traveled due to the project auxiliary lanes is expected to be zero or a small negative value. Project bus-on-shoulder and trail would result in a mode shift from auto to transit, bike and pedestrian modes of transportation, which in turn would result in a countywide net decline of 6,952 vehicle miles traveled per day and 8,094 vehicle miles traveled per day under 2025 and 2045 Build Alternative compared to the No-Build Alternative, respectively (CDM Smith 2023). Note that the reduction in vehicle miles traveled for the bus-on-shoulder and Coastal Rail Trail Segment 12 components show the reduction in vehicle miles traveled for autos.

Table 2-33. Countywide Vehicle Miles Traveled Impacts (per day)

Mode	2019	2025 No-Build	2025 Build	2025 Change	2045 No-Build	2045 Build	2045 Change
Auto	5,060,458	5,235,996	5,228,107	-7,889	5,595,699	5,586,668	-9,031
Bus-on-Shoulder	Not Applicable	Not Applicable	Not Applicable	-6,958	Not Applicable	Not Applicable	-6,958
Coastal Rail Trail Segment 12	Not Applicable	Not Applicable	Not Applicable	-931	Not Applicable	Not Applicable	-2,073
Truck	406,787	330,847	330,847	0	297,227	297,227	0
Transit	10,625	8,023	8,960	937	8,579	9,516	937
Total	**5,477,870**	**5,574,866**	**5,567,914**	**-6,952**	**5,901,505**	**5,893,411**	**-8,094**

Source: CDM Smith 2023

Public Transportation

Overall, the Build Alternative would not reduce transit service or permanently affect transit stops. Rather, this alternative would improve public transit by adding auxiliary lanes to accommodate Bus-on-Shoulder operations between the Freedom Boulevard and State Park Drive interchanges, which would reduce travel times on the State Route 1 corridor. Furthermore, the trail would provide increased connectivity and safe access to public transit along Soquel Drive and other local streets.

Bicycle and Pedestrian Facilities

The Build Alternative would result in long-term beneficial effects on bicycle and pedestrian facilities by enhancing existing facilities, improving connectivity, creating new bicycle and pedestrian facilities, and reducing delay on State Route 1 throughout the project area. The 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. Accordingly, the Build Alternative would improve pedestrian and bicycle facilities and connectivity within the study area.

This improved connectivity also results in a reduction in the distance that pedestrians and bicyclists would have to travel when their trip involves traveling from one side of the freeway to the other, as well as for some trips that parallel the State Route 1 corridor. It is expected that this trip length reduction will attract pedestrians and bicyclists to the trail, and that auto drivers will shift their travel mode to take advantage of this shorter trip length.

Overall, the Build Alternative would benefit access and circulation, public transportation, and bicycle and pedestrian facilities. Therefore, no avoidance, minimization, and/or mitigation measures would be required for operation.

No-Build Alternative

Access, Circulation, and Parking

Based on the results of the Traffic Operations Analysis Report, average weekday daily mainline traffic in the State Route 1 northbound and southbound directions under the No-Build Alternative within the project limits is expected to grow between the existing year (2019) and the opening year (2025) by 4.2% in the northbound direction and 5.7% in the southbound direction, and between the existing year (2019) and the horizon year (2045) by 17.4% in the northbound direction and 20.9% in the southbound direction. Additionally, average weekday daily on-ramp traffic in the State Route 1 northbound and southbound directions under the No-Build Alternative is expected to grow between the existing year (2019) and the opening year

(2025) by approximately 3.4% and 3.9%, respectively. Off-ramp traffic would grow by 3.9% in the northbound direction and 3.3% in the southbound direction. Between the existing year (2019) and the horizon year (2045), on-ramp traffic in the State Route 1 northbound and southbound directions under the No-Build Alternative is expected to grow by 10.7% and 11%, respectively, while off-ramp traffic would grow by 15.0% in the northbound direction and 11.1% in the southbound direction.

Existing circulation and access deficiencies would persist or worsen under this alternative. Under the No-Build Alternative, by 2045, access to various facilities within the study intersections would be adversely affected during both the morning and evening peak periods. No private or public parking spaces would be removed under the No-Build Alternative.

The County of Santa Cruz General Plan and Local Coastal Program contains circulation goals focused on providing a convenient, safe, and economical transportation system, providing the public with multiple transportation modes, and providing for more efficiency. The Build Alternative is consistent with these goals as it would increase efficiency in the State Route 1 corridor by reducing delay and bottlenecks and diverting traffic off local streets. Furthermore, the Build Alternative would increase bicycle access and connectivity, which is in line with the goal to improve the county's bikeway system (County of Santa Cruz 2020).

Public Transportation

The No-Build Alternative would not result in any direct impacts on transit facilities or result in any short-term impacts on bus service; however, the No-Build Alternative would continue to make transit service inefficient and would not induce a mode shift from automobiles to buses. As traffic volumes and delay would continue to increase, the existing roadway would not be able to accommodate Bus-on-Shoulder services because no auxiliary lanes would be constructed, and travel times between destinations would increase.

Bicycle and Pedestrian Facilities

The No-Build Alternative would not result in any direct impacts on existing bicycle or pedestrian facilities; however, it also would not enhance existing limited bicycle and pedestrian facilities within the project area, and no bicycle or pedestrian facilities would be added as part of Coastal Rail Trail Segment 12.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation is necessary. Avoidance and minimization measures would reduce impacts on traffic circulation due to temporary lane and street closures during construction.

- **AMM TR-1**: The Transportation Management Plan will include traffic rerouting measures, a detour plan, and public information procedures, which will be developed during the design phase with participation from local agencies, transit and shuttle services, local school administrations, local communities, business associations, and affected drivers. Early and well-publicized announcements and other public information measures prior to and during construction will minimize confusion, inconvenience, and traffic congestion. As part of the Transportation Management Plan, construction planning will minimize nighttime construction in residential areas and minimize daytime construction impacts on commercial areas. Staging areas would be located within the existing Caltrans right-of-way and, as feasible, within the Santa Cruz Branch Rail Line right-of-way along Coastal Rail Trail Segment 12. The Transportation Management Plan will identify staging areas on parcels for which temporary construction easements will be obtained, including an area of Aptos Village County Park adjacent to the railroad right-of-way. Additionally, the following measures will be incorporated and implemented, if applicable, based on final construction design plans:
  - During the construction phase of the proposed project, some parking restrictions may be required on a temporary basis. A public outreach program throughout the construction period will keep the public informed of the construction schedule and scheduled parking and roadway closures, including detour routes and, if available, alternative parking.
  - In the event of temporary obstruction of any pedestrian walkways or bicycle paths, the Transportation Management Plan will identify nearby alternate routes, including pedestrian routes that meet ADA requirements, as appropriate.
  - The Transportation Management Plan will include measures to minimize, avoid, or mitigate impacts on alternate routes, such as agreements with the County of Santa Cruz to provide enhanced infrastructure (e.g., necessary signage, flagging, cones) on arterial roads or intersections to deal with detoured traffic.
  - Coordination with transit and private shuttle services will occur to plan for any rerouting, and any necessary avoidance, minimization, or mitigation measures will be incorporated in the Transportation Management Plan.
  - To minimize disruption to the traveling public during construction of the proposed project, a comprehensive strategy will be developed to minimize disruption and assure the safe movement of vehicles through and around the construction site.

References

California Department of Transportation. 2015. Community Impact Assessment, Santa Cruz Route 1 High Occupancy Vehicle Tier I Corridor Analysis of High Occupancy Vehicle Lanes and Transportation System Management (TSM) Alternatives and Tier II Build Project Analysis 41st Avenue to Soquel Avenue/Drive Auxiliary Lanes and Chanticleer Avenue Pedestrian Overcrossing.

California Department of Transportation. 2019. Traffic Volumes: Annual Average Daily Traffic. Available at: https://dot.ca.gov/programs/traffic-operations/census. Accessed May 9, 2022.

California Department of Transportation. 2022. State Route Highway 1 Auxiliary Lanes and Bus-on-Shoulder Improvements—Freedom Blvd. to State Park Dr.—and Coastal Rail Trail Segment 12 Project Community Impact Assessment. September.

CDM Smith. 2021. *Highway 1 Auxiliary Lanes and Bus-on-Shoulder Improvements – Freedom Boulevard to State Park Drive – and Coastal Rail Trail Segment 12 Project. DRAFT Traffic Operations Analysis Report (TOAR). Santa Cruz*, CA. Submitted to Santa Cruz County Regional Transportation Commission (RTC) and Caltrans District 5.

CDM Smith. 2022. Senate Bill 1 Trade Corridor Enhancement Program Grant Application Support, Santa Cruz Highway 1 Multimodal Corridor Project, Countywide VMT & Emissions Reduction Benefits. March 2022.

CDM Smith. 2023. State Route 1 State Park Drive to Freedom Boulevard Auxiliary Lanes and Bus-on-Shoulder Improvements plus Coastal Rail Trail Segment 12 Project-Additional Traffic Analysis Memorandum. Prepared for Caltrans District 5, Santa Cruz Regional Transportation Commission, and ICF. March 2023.

County of Santa Cruz. 2009. Initial Study for the Aptos Village Plan. Available at: https://www.sccoplanning.com/PlanningHome/Environmental/AptosVillageProjectDocuments/Mixed-useCommercialResid/MitigatedNegativeDeclaration.aspx. Accessed May 9, 2022.

County of Santa Cruz. 2010. Aptos Village Plan. Available: https://www.sccoplanning.com/Portals/2/County/Planning/env/Aptos_Village_Plan.pdf?ver=2vKizb28KFSq2riycAn-4A%3d%3d. Accessed: June 15, 2022. Adopted February 23.

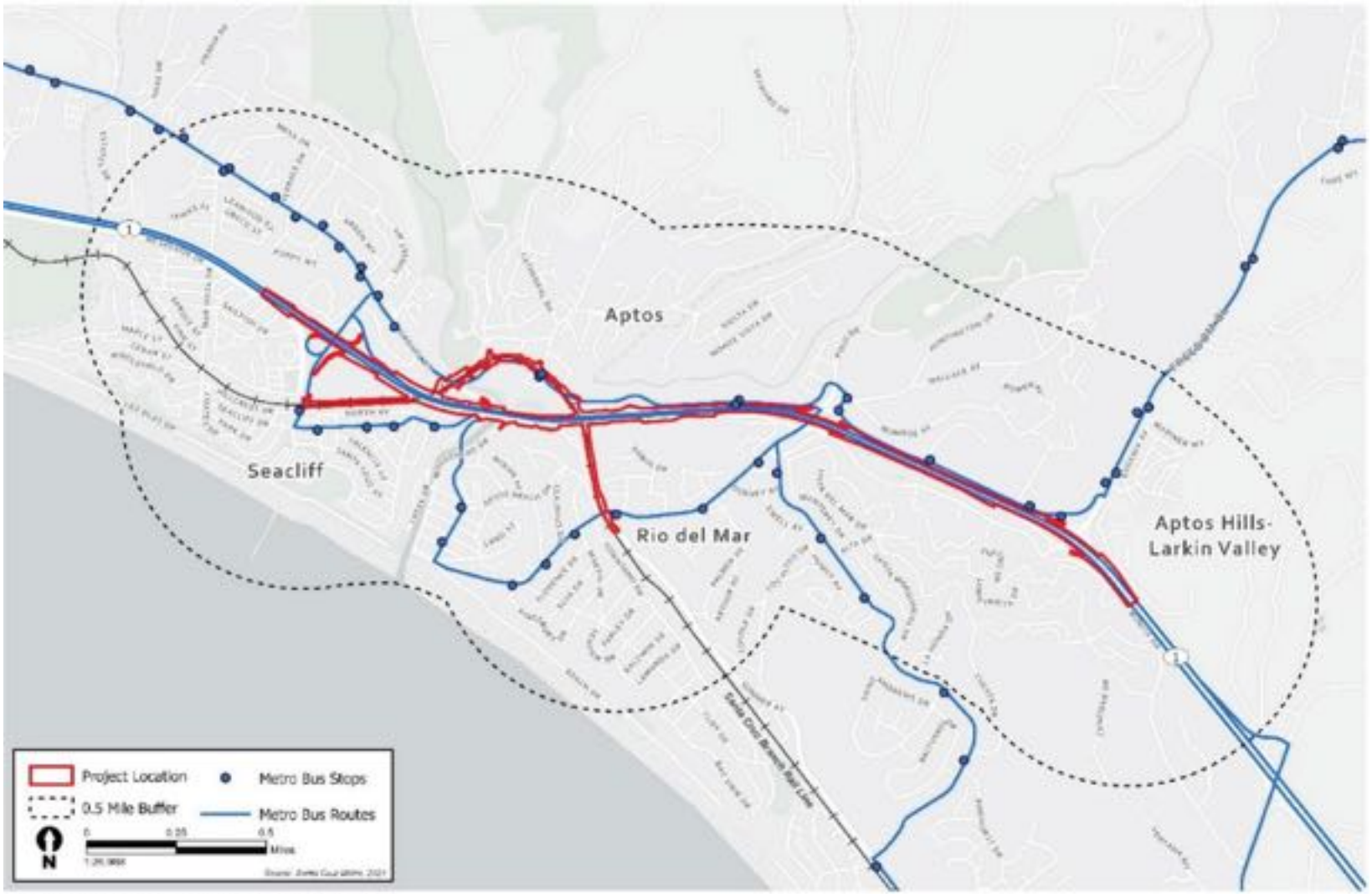
County of Santa Cruz. 2020. Santa Cruz County General Plan and Local Coastal Program, Circulation Element. Available: https://

www.sccoplanning.com/Portals/2/County/userfiles/106/GP_Chapter%203_Circulation.pdf. Accessed February 20, 2023.

Santa Cruz County Regional Transportation Commission/Caltrans, *Nationally Significant Multimodal Freight & Highway Projects (INFRA) Grant Application for Highway 1 Auxiliary Lanes and Bus on Shoulder Improvements and Coast Rail Trail Segment 12 Project*, May 2022.

Source: California Department of Transportation 2022

Figure 2-3. Roadway Network



Source: California Department of Transportation 2022

Figure 2-4. Transit Network

Source: California Department of Transportation 2022

Figure 2-5. Bicycle and Pedestrian Facilities

2.1.8 Visual/Aesthetics

Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969, as amended, establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* and culturally pleasing surroundings (42 United States Code [U.S. Code] Section 4331(b)(2)). To further emphasize this point, the Federal Highway Administration , in its implementation of NEPA (23 U.S. Code Section 109(h)), directs that final decisions on projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

The California Environmental Quality Act establishes that it is the policy of the state to take all action necessary to provide the people of the state "with…enjoyment of *aesthetic*, natural, scenic and historic environmental qualities" (California Public Resources Code Section 21001(b)).

California Streets and Highways Code Section 92.3 directs Caltrans to use drought-resistant landscaping and recycled water when feasible and incorporate native wildflowers and native and climate-appropriate vegetation into the planting design when appropriate.

Affected Environment

Information in this section is from the Visual Impact Assessment prepared for the project (ICF 2022) and the Tier I Visual Impact Assessment prepared by Caltrans for the *Tier II 41st Avenue to Soquel Avenue/Drive Auxiliary Lanes Project* (2013).

Visual Assessment Units and Key Views

The project corridor was divided into a series of "outdoor rooms" or visual assessment units, which were previously referred to as landscape units. Each visual assessment unit has its own visual character and visual quality. It is typically defined by the limits of a particular viewshed. The Tier I Visual Impact Assessment from July 2013, which analyzed the entire corridor from Morrissey Boulevard and San Andreas-Larkin Valley Roads interchanges, identified two distinct and separate landscape units along State Route 1 between Freedom Boulevard and State Park Drive, the Aptos and Upland Landscape Units shown in Figure 2-6 (Caltrans 2013). However, in-depth site investigation and field visits conducted in 2021 revealed that a discernable difference in visual character and quality is not visible along State Route 1 between Freedom Boulevard and State Park Drive. It is not until a viewer approaches the San Andreas Road interchange, to the south and outside of the project limits, that a change in visual character and quality is readily visible. In this area, the transition from mature dense trees and riparian corridors changes to a more open native scrub plant and grass mix with more

scattered trees and noticeable difference in topography. This assessment unit will be referred to as the State Route 1 visual assessment unit and is shown in Figure 2-7. Figure 2-7 also shows the locations of typical views that are representative of the project corridor and key views that have been simulated. In addition, this project analyzes Coastal Rail Trail Segment 12, which is consistent in visual character and quality throughout its length and is referred to as the Rail Trail visual assessment unit. This visual assessment unit and the locations of its associated typical views that are representative of the project corridor and key views that have been simulated are shown in Figure 2-8.

Figure 2-6. Aerial View of Landscape Units from Tier I Visual Impact Assessment (July 2013)

State Route 1 Visual Assessment Unit

Figure 2-8 includes the typical views associated with the State Route 1 visual assessment unit that are mapped on Figure 2-7. As noted in the Tier I Visual Impact Assessment, the “predominant visual element of this unit is the tree vegetation associated with the creeks that cross the corridor, including Aptos-Valencia Creeks, Ord Gulch, Borregas Creek, Pot Belly Creek, and Nobel Creek (Caltrans 2013).” In addition to the riparian vegetation lining the creeks, large trees such as pine, cedar, redwood, and eucalyptus dominate views throughout the segment, while smaller understory trees and vegetation screen the majority of views to adjacent developments. The height and density of the existing vegetation creates a feeling of enclosure for highway users that creates a tunnel-like feeling. Adjacent developments within the segment are predominantly a mix of residential and light commercial, all suburban in nature. In some areas, views to adjacent uses are nonexistent

due to the dense vegetation, while in others, brief glimpses through vegetation are visible. Development is noticeable to the highway user along the north side of State Route 1 between Rio Del Mar Boulevard and Freedom Boulevard. These developments are primarily commercial and visible as patches of existing vegetation, which open up and frame views.

The elevation change between Freedom Boulevard to the south and State Park Drive to the north is minimal—less than 30 feet of vertical change—resulting in gentle undulations along the corridor. Hillsides and ridgelines are nonexistent, with the exception of a hillside bordering Aptos Creek. This hillside adjacent to the south side of State Route 1 and along the creek contains Moosehead Drive and sparse residential properties.

The Santa Cruz Mountain foothills are located to the north. However, these distant ridgelines and mountains are largely unnoticeable because of the height and proximity of the mature trees to the highway user and, therefore, have little effect on the visual character associated with this visual assessment unit.

Visible highway elements include the highway itself; on- and off-ramps and overcrossings at State Park Drive, Rio Del Mar Boulevard, and Freedom Boulevard; two railroad overcrossings between State Park Drive and Rio Del Mar Boulevard; and miscellaneous highway and regulatory signage.

The areas surrounding and approaching Aptos Creek, from both east and west, have the highest visual quality due to the mature trees that have grown within the area directly surrounding the creek and its slopes.

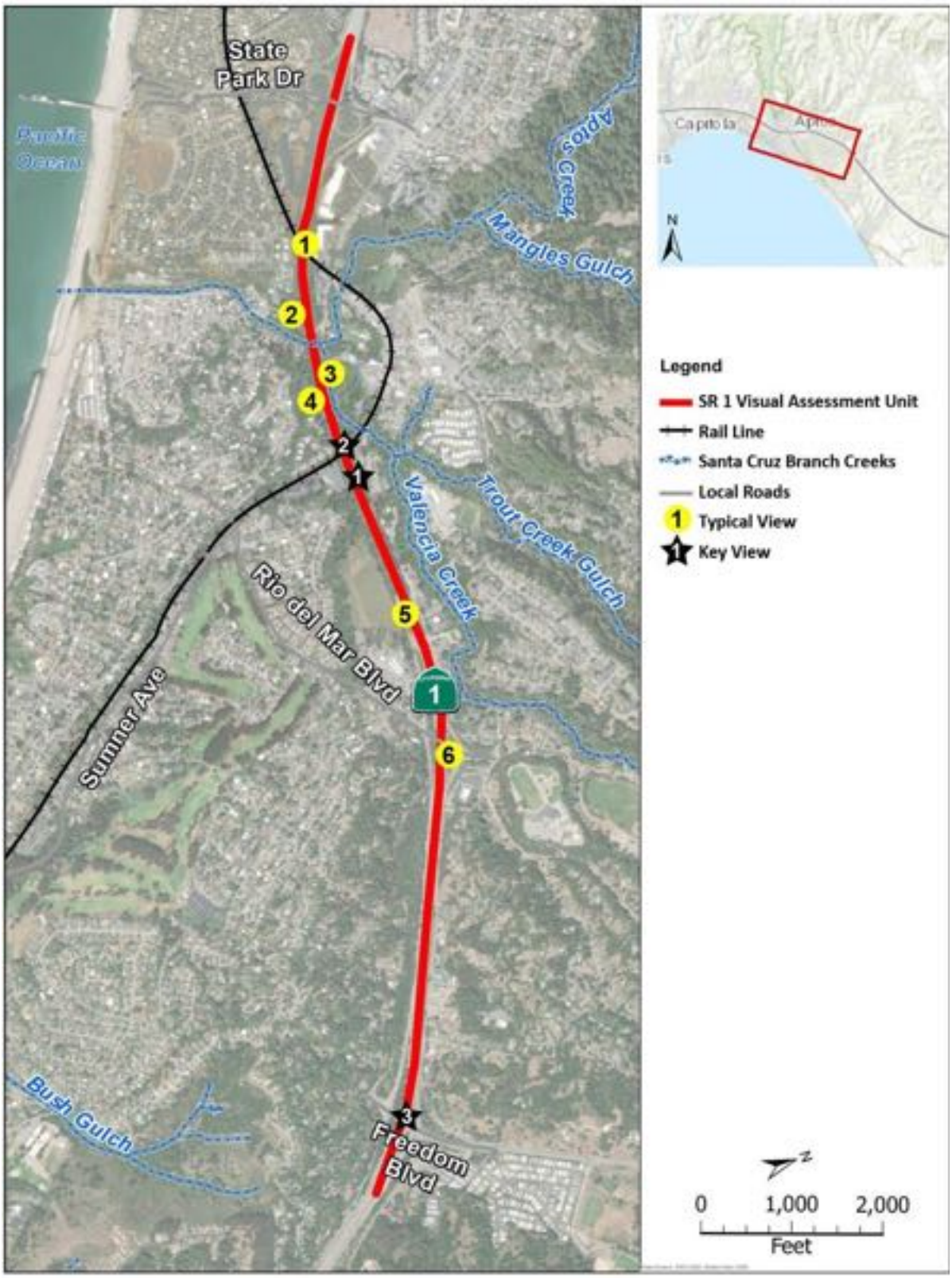


Figure 2-7. State Route 1 Visual Assessment Unit and Associated View Locations

Figure 2-8. State Route 1 Visual Assessment Unit Typical Views

This visual assessment unit is moderately well lit. Much of the State Route 1 mainline is not lit except for vehicles traveling at night. However, the interchanges and ramps are well lit. In addition, the corridor receives minimal lighting from local roadways, parking areas, and development adjacent to the visual assessment unit. Daytime and nighttime glare are also moderate because trees along the highway provide shading to minimize glare coming from the highway pavement and structures, and it screens glare from adjacent development.

Rail Trail Visual Assessment Unit

Figure 2-9 maps the Rail Trail visual assessment unit and Figure 2-10 includes the typical views associated with the Rail Trail visual assessment unit. The topography and vegetation that border the Rail Trail visual assessment unit closely mimics that described above for State Route 1. The grade of the Rail Trail alignment is flat to gently sloping. Trees along the trail corridor are comprised of similar species, mature, and provide substantial screening given the density of understory vegetation in most areas.

The major visual difference between the character of the State Route 1 visual assessment unit and the Rail Trail visual assessment unit is the proximity of adjacent development to the project corridor. Where adjacent development is set back from the highway and, in most cases, screened quite well from State Route 1, development along the Rail Trail visual assessment unit is often very close and, in some cases, very visible from the Rail Trail alignment. The existing Rail Trail alignment is highly visible as it traverses across Aptos Creek and passes through the Village of Aptos because it is directly adjacent to commercial development and the village's major thoroughfare, Soquel Drive. North of Aptos Village, the Rail Trail alignment is roughly at the same grade as the surrounding development. South of Aptos Village, the Rail Trail alignment is at a slightly higher grade than adjacent development near State Route 1. However, as it approaches its terminus near Rio Del Mar Boulevard, the Rail Trail alignment is 15 to 20 feet below the grade of adjacent development and steep embankments separate the existing rail line from adjacent residential development so that it is largely obscured from view, even to viewers directly adjacent to the Rail Trail alignment.

The Santa Cruz Mountain foothills are located to the north. However, these distant ridgelines and mountains are largely unnoticeable because of the height and proximity of the mature trees to the trail user and, therefore, have little effect on the visual character associated with this visual assessment unit.

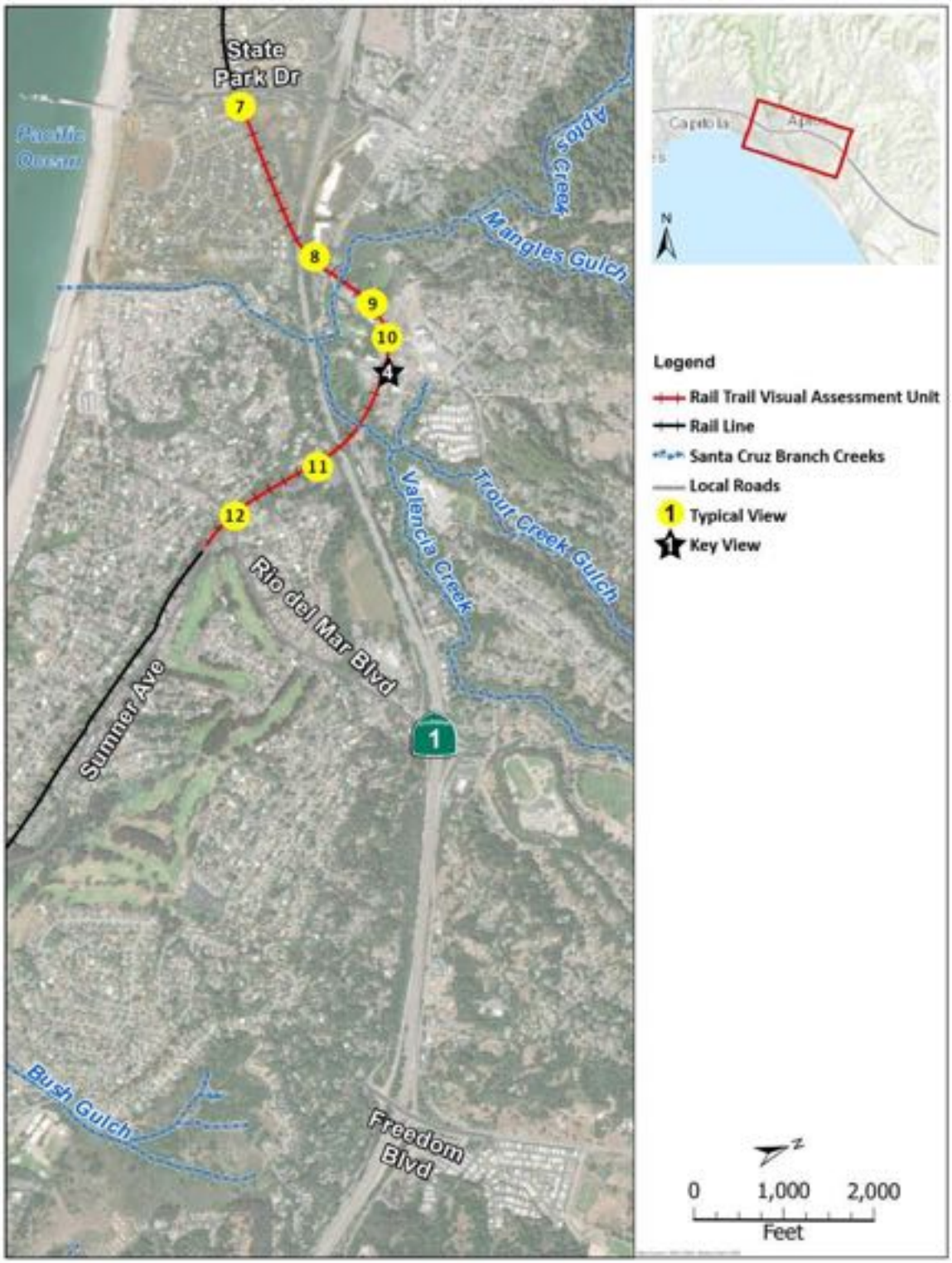


Figure 2-9. Rail Trail Visual Assessment Unit and Associated View Locations

Figure 2-10. Rail Trail Visual Assessment Unit Typical Views

Visible elements associated with the Rail Trail visual assessment unit consist of existing tracks; two existing bridge structures for the rail alignment to cross over State Route 1 between the State Park Drive and Rio Del Mar Boulevard interchanges; two existing bridge structures for the rail alignment to cross over Soquel Drive, near its intersection with Spreckels Drive and east of Bernal Street; and a bridge undercrossing for the rail line to travel under Rio Del Mar Boulevard near Sumner Avenue.

With the exception of the commercial development associated with the Village of Aptos, the areas adjacent to this visual assessment unit are primarily residential or park-like in appearance and nature. These same residential developments are also the areas of the alignment with the highest visual character because the height and density of the existing mature trees separate the developments from the Rail Trail alignment, creating a tunnel-like enclosure that feels quiet, separated, and somewhat distant from the adjacent developments, similar to the visual character associated with State Route 1.

This visual assessment unit is not well lit. The existing rail corridor is not lit, and the only light it receives is minimal lighting from local roadways, parking areas, and development adjacent to the visual assessment unit. Daytime and nighttime glare are also fairly low because trees along the rail corridor provide shading to minimize glare coming from adjacent development, except within Aptos Village where daytime and nighttime glare is moderate because there are few trees or structures immediately next to the rail corridor to provide shading.

Viewers and Viewer Response

The population affected by the project is composed of viewers. Viewers are people whose views of the landscape may be altered by the proposed project, either because the landscape itself has changed or their perception of the landscape has changed. There are two major types of viewer groups for highway projects: highway neighbors and highway users. Each viewer group has its own level of viewer exposure and viewer sensitivity, resulting in distinct and predictable visual concerns for each group that help to predict their responses to visual changes.

Viewers

Highway Neighbors (Views to the Road)

Highway neighbors are people who have views *to* the road. They can be subdivided into different viewer groups by land use. For example, residential, commercial, industrial, retail, institutional, civic, educational, recreational, and agricultural land uses may generate highway neighbors or viewer groups with distinct reasons for being in the corridor and therefore having distinct

responses to changes in visual resources. For this project the following highway neighbors were considered:

- **Residential Viewers:** There are many residents who live directly adjacent to State Route 1. However, most of these viewers have completely obstructed views of the highway due to the dense vegetation. In one case along the Soquel Drive frontage, near the Freedom Boulevard northbound on-ramp, multifamily residential users have only partially obscured views to State Route 1.
- **Recreational Viewers:** The Tennis Club of Rio Del Mar is located along the south side of State Route 1 adjacent to the club's five tennis courts. These viewers have heavily screened views of State Route 1, similar to the residential viewers. A small neighborhood park, Seacliff Village Neighborhood County Park, at the intersection of McGregor Drive and Canterbury Drive has unobstructed views of the southbound off-ramp and mostly screened views of the State Park Drive interchange.
- **Religious Viewers:** There is a large church, The Coastlands, on the southeast corner of the State Park Drive interchange and the Episcopal Church of St John, on McGregor Drive, which both have visibility from parking lots, driveways, and entrances to the highway, though mostly screened by vegetation.
- **Commercial Viewers (employees and customers):** At a few locations along the corridor, commercial viewers have views of State Route 1. These are primarily small office and commercial developments and restaurants along the Soquel Drive frontage road north of Rio Del Mar Boulevard and adjacent to the Freedom Boulevard northbound on-ramp.
- **Local Street Viewers:** These viewers are those that drive, bike, or walk on the roadways that cross above State Route 1 or are adjacent to State Route 1. Three overhead crossings of State Route 1 are within the corridor—Freedom Boulevard, Rio Del Mar Boulevard, and State Park Drive. Spreckels Drive crosses under State Route 1, Soquel Drive runs adjacent to State Route 1 and serves as a frontage road, and Moosehead Drive and Bonita Drive wind alongside State Route 1, coming in close proximity to the highway at some locations. The Freedom Boulevard, Rio Del Mar Boulevard, and State Park Drive overcrossings all include vehicular traffic and bicycle travel lanes with protected sidewalks for separated pedestrian traffic on one side. The viewers from above have a panoramic view of State Route 1, while those below can view the on- and off-ramps along with the overcrossing structures. The undercrossing at Spreckels Drive only provides views of State Route 1 from below.

Highway Users (Views from the Road)

Highway users are people who have views *from* the road. They can be subdivided into different viewer groups in two different ways—by mode of travel or by reason for travel. For example, subdividing highway users by

mode of travel may yield pedestrians, bicyclists, transit riders, car drivers and passengers, and truck drivers. Dividing highway users or viewer groups by reason for travel creates categories like tourists, commuters, and haulers. It is also possible to use both mode and reason for travel simultaneously, creating a category like bicycling tourists, for example. For this project the following highway users were considered:

- **Daily Commuter Viewers:** Daily commuters include those in private vehicles, along with regular travelers such as delivery drivers and truck drivers. These viewers have greater awareness of the visual environment because of their familiarity with the corridor due to repeated trips. Congestion on the roadway can give them even more time to observe their surroundings. At posted speeds, however, drivers tend to focus on long- to mid-range views straight ahead, while passengers have more time and a wider range of views.
- **Tourist Viewers:** State Route 1 carries a high amount of tourist traffic, driving between the Central Coast cities and visiting parks and beaches. These viewers tend to have a high interest in the visual environment, especially because although State Route 1 is not a designated scenic route, it is nationally recognized as a highway with scenic views, but less awareness than the regular travelers described above. Similar to the daily commuters, when there is congestion they can focus even more on their surroundings, but at higher speeds passengers have a better chance for wider views.
- **Transit Viewers:** Currently, State Route 1 in the corridor is used for regional bus travel by Santa Cruz Metro bus lines 55, 69A, 69W, and 91X. Generally, transit viewers are similar to both daily commuter and tourist passengers, because they have time and a wide range of views (though usually only on one side of the road). For regular travelers of this route, they may also have familiarity with the corridor.

Rail Trail Neighbors (Views to the Trail)

Rail Trail neighbors are people who have views to the trail. They can be subdivided into different viewer groups by land use. For example, residential, commercial, industrial, retail, institutional, civic, educational, recreational, and agricultural land uses may generate trail neighbors or viewer groups with distinct reasons for being in the corridor and therefore having distinct responses to changes in visual resources. For this project the following Rail Trail neighbors were considered:

- **Residential Viewers:** There are many residents who live directly adjacent to the Rail Trail. However, most of these viewers have completely obstructed views of the trail due to the dense vegetation and/or noticeable difference in grade. In one area along Carrera Circle, just south of State Route 1, the trail is situated at a higher elevation than adjacent

residences. In all other cases, the trail is at or below the grade of adjacent residential viewers.

- **Recreational Viewers:** The trail passes by Aptos Village Park. The Rail Trail is at a higher elevation than the park so that terrain and vegetation prevent views from the park interior. However, views of the trail are available from near the park entrance and along a portion of the entry drive. The Tennis Club of Rio Del Mar is located along Sandalwood Drive and directly adjacent to the trail. Although the Rail Trail is at an elevation above the club, the view of the trail from the club is mostly obscured by vegetation. As the trail traverses south from the club it begins its transition to being noticeably below the grade of adjacent recreational viewers on local streets. The southern terminus of the Rail Trail is adjacent to the Seascape Golf Course. Views to the trail from the course are completely obstructed by residential properties, vegetation, and difference in grade.
- **Religious Viewers:** Although the trail sits at the same grade or just slightly higher, the view from The Coastlands church is heavily screened by vegetation and a fence/wall along the southern edge of the church property.
- **Commercial Viewers (employees and customers):** At multiple locations, commercial viewers have substantial views of the Rail Trail. These viewers are located primarily within the Village of Aptos where the trail runs directly between Soquel Drive and the parking lots of the Aptos Station commercial development. Additional commercial viewers are located at the gas station near the corner of Sea Ridge Road and State Park Drive. In all cases, the commercial viewers have relatively unobstructed views of the Rail Trail.
- **Local Street Viewers:** These viewers are those that drive, bike, or walk on the roadways that cross the Rail Trail or are adjacent to it. The Rail Trail is most readily seen from at-grade intersections such as at State Park Drive, Aptos Road, and Trout Gulch Road that provide direct views down the rail corridor. Rail Trail Segment 12 crosses over State Route 1 twice, and it also crosses over Soquel Drive twice, near the intersections of Spreckels Drive and Aptos Street. Viewers on State Route 1 and Soquel Drive are only able to see views of the bridge structures that pass above and small segments of trail that are visible on either side of the bridges. The Rail Trail crosses under Rio Del Mar Boulevard near its intersection with Sumner Avenue. The viewers from above have uninterrupted views to the trail below from protected pedestrian walkways on both sides of the bridge.

Rail Trail Users (Views from the Trail)

Rail Trail users are people who have views from the trail. They can be subdivided into different viewer groups in two different ways—by mode of travel or by reason for travel. For example, subdividing trail users by mode of travel may yield pedestrians or bicyclists. Dividing trail users or viewer groups

by reason for travel creates categories like tourists, commuters, and haulers. It is also possible to use both mode and reason for travel simultaneously, creating a category like bicycling tourists, for example. For this project the following trail users were considered:

- **Commuter Viewers:** Commuters are those who live locally and utilize the trail to commute to their place of employment. Currently, there is no existing paved trail, the existing Rail Trail corridor has a rough gravel finish, and the rough nature of the trail corridor is difficult for bicyclists or other users to navigate. Therefore, it is unlikely that it is used by anyone other than pedestrians. These viewers have a great awareness of the visual environment because of their familiarity with the trail due to repeated trips.
- **Recreational Viewers:** Recreational viewers along the trail would also be pedestrians, for the reasons described above for commuters. These viewers are, likely local and have a great awareness of the visual environment because of their familiarity with the trail due to repeated trips. Additionally, recreational viewers tend to have a higher interest in the visual environment than commuters because they are there to enjoy their surroundings.

Viewer Response

Viewer response is a measure or prediction of the viewer's reaction to changes in the visual environment and has two dimensions—viewer exposure and viewer sensitivity.

Viewer Exposure

Viewer exposure is a measure of the viewer's ability to see a particular object. Viewer exposure has three attributes: location, quantity, and duration. *Location* relates to the position of the viewer in relationship to the object being viewed. The closer the viewer is to the object, the more exposure. *Quantity* refers to how many people see the object. The more people who can see an object or the greater frequency an object is seen, the more exposure the object has to viewers. *Duration* refers to how long a viewer is able to keep an object in view. The longer an object can be kept in view, the more exposure. High viewer exposure helps predict that viewers will have a response to a visual change.

Residential Viewers

State Route 1

Residential viewer exposure to State Route 1 is generally within the foreground and middle ground. These viewers, primarily along the south side of the highway, have substantial vegetation in the immediate foreground, with the State Route 1 in the distant foreground and middle ground. No residences appear to have clear, unobstructed views of State Route 1 due to the density

and maturity of existing vegetation. There are approximately nine residences along Moosehead Drive that are in the closest proximity to State Route 1, whose views could be considered nearly indefinite, if not for heavy vegetation, depending on how long the viewers spend in their yards or at their windows. In addition, there are several residences along Soquel Drive north of State Route 1 and between Jaunell Road and Monroe Avenue, and along Carrera Circle south of State Route 1 that are also in close proximity to State Route 1. These views could also be considered nearly indefinite, depending on how long the viewers spend in their yards or at their windows.

Rail Trail

Residential viewer exposure to the Rail Trail is primarily in the foreground. Views are mostly screened by vegetation, walls, and/or topography. Similar to the residences along State Route 1, viewers in the five townhomes along Carrera Circle have view durations from backyards that could be considered indefinite.

Recreational Viewers

State Route 1

Recreational viewer exposure to State Route 1 from the Rio Del Mar Tennis Club is predominantly within the foreground due to the proximity of the highway to the adjacent tennis courts. Viewers from the club and any of its five courts have dense, hedge-like vegetation in the immediate foreground that blocks all views to State Route 1 and eliminates any view duration. The number of viewers from the tennis club could vary, given event size, but likely fluctuates between 10 and 30 viewers at any given time. The Seacliff Village Neighborhood County Park at the corner of McGregor Drive and Canterbury Drive has unobstructed middle ground views to the southbound off-ramp at State Park Drive. It is used by the local residential community and may have up to 20 viewers at a time. Depending on the length of their stay, view durations from the park would be considered short-term and lasting no longer than a day. However, viewers at the tennis club and park are likely to have return visitors from local residents that frequent these recreational areas.

Rail Trail

The recreational viewer exposure to the Rail Trail is primarily within the foreground. Viewers at the Rio Del Mar Tennis Club and its five courts have large, mature trees with sparse understory vegetation in the immediate foreground of views to the trail. Given the distance between the club and the trail, up to 10 viewers can have view durations of a few moments. The Seacliff Village Neighborhood County Park at the corner of McGregor Drive and Canterbury Drive has distant background views to the trail segment terminus at State Park Drive to the southeast. The views from the park are distant and minimal to nonexistent given the dense, heavily screened vegetation.

Religious Viewers

State Route 1

As noted in the State Park Drive to Bay Avenue/Porter Visual Impact Assessment from July 2020, the "Religious viewer exposure to State Route 1 is in the middle ground to background, primarily of the southbound offramp in the middle ground, across McGregor Drive, and other ramps and State Route 1 itself in the background. There are many large trees screening these views, except for the southbound off-ramp. During church events there may be 100 viewers or more in the church entrance, parking lots, and driveways. However, their views are relatively short, only the time it takes to walk to and from their cars and drive to or from the church property (Caltrans 2020a)."

Rail Trail

Similar to the views of State Route 1, religious viewer exposure to the trail is within the middle ground to background. The Coastlands Church sits directly adjacent to the trail alignment and its outdoor event space may accommodate up to 100 guests. These viewers have little to no view of the trail given the existing fence and dense vegetation along the southern edge.

Commercial Viewers

State Route 1

Commercial viewer exposure to State Route 1 is generally from the north side and within the foreground to middle ground. The majority of commercial views are across Soquel Drive, which acts as a frontage road for most of the corridor. In most cases there are tall, mature trees, with sparse understory vegetation that creates windows or views to State Route 1. The view duration of customers is substantially shorter, as they enter and exit businesses, than that of employees who are at work for several hours. The number of viewers for commercial properties is difficult to estimate, but most are light commercial office use with likely fewer than 12 customers at a time.

Rail Trail

Commercial viewer exposure to the trail is primarily from either side of Soquel Drive in Aptos Village. These views are generally within the foreground. Given the lack of vegetation in these areas, view durations are longer for employees and last only for a few minutes for customers entering and exiting businesses. The number of viewers for these commercial properties is difficult to estimate but is likely fewer than 25 at any one given time.

Local Street Viewers

State Route 1

As noted in the State Park Drive to Bay Avenue/Porter Street Visual Impact Assessment, "local street viewer exposure to State Route 1 varies. For

viewers on overcrossings and undercrossings, the views are in the foreground or middle ground. For parallel streets (frontage roads), the views are in the foreground. For frontage roads, there is usually some vegetation screening part of their views. The number of viewers varies with each roadway (Caltrans 2020a)." Along Soquel Drive, State Park Drive, Rio Del Mar Boulevard, and Freedom Boulevard, traffic can be heavy, with multiple viewers at any given time. McGregor Drive carries low volumes of traffic and a smaller number of viewers. Moosehead Drive, Bonita Drive, and Spreckels Drive have even less traffic and therefore substantially fewer viewers. At overcrossings and undercrossings, views are brief except for viewers on Soquel Drive that have views that are moderately long.

Rail Trail

Local street viewer exposure to the trail is similar to that of State Route 1 but primarily within the foreground. For viewers on overcrossings and undercrossings, the views are within the foreground or middle ground. For parallel streets, the views are within the foreground. For most roads, there is usually substantial vegetation or topography that partly or fully screens their views and view durations are minimal. The exception is along Soquel Drive in the Village of Aptos. Given the developed urban nature of the area, little to no vegetation exists between the roadway and the trail. Therefore, views are unobstructed, and durations last for a few minutes as travelers pass by the trail on the road.

All Highway Viewers

State Route 1

As noted in the State Park Drive to Bay Avenue/Porter Street Visual Impact Assessment, "highway viewers have similar exposure to views of State Route 1 and the surrounding environment. Generally, their exposure from State Route 1 to the surrounding land is limited to foreground and middle ground views, due to the density of the vegetation." On the eastern edge of the corridor, on the north side of State Route 1 and near the Freedom Boulevard interchange, the views open up for limited middle ground views toward light commercial and office development. Given the speed of the highway, view durations of the adjacent developments are only momentarily visible. As further noted in the State Park Drive to Bay Avenue/Porter Street Visual Impact Assessment, "State Route 1 carries heavy traffic each day, with some vehicles carrying multiple viewers. Views at any one location are brief, though longer during congested traffic (Caltrans 2020a)."

Rail Trail

Highway viewer exposure to the trail is limited to the two overcrossings between Rio Del Mar Boulevard and State Park Drive. Views at these overcrossings are within the foreground or middle ground with brief durations, except in times of heavy traffic.

Viewer Sensitivity

Viewer sensitivity is a measure of the viewer's recognition of a particular object. It has three attributes: activity, awareness, and local values. *Activity* relates to the preoccupation of viewers—are they preoccupied, thinking of something else, or are they truly engaged in observing their surroundings. The more they are actually observing their surroundings, the more sensitivity viewers have of changes to visual resources. *Awareness* relates to the focus of view—the focus is wide and the view general or the focus is narrow and the view specific. The more specific the awareness, the more sensitive a viewer is to change*. Local values* and attitudes also affect viewer sensitivity. If the viewer group values aesthetics in general or if a specific visual resource has been protected by local, state, or national designation, it is likely that viewers are more sensitive to visible changes. High viewer sensitivity helps predict that viewers will have a high concern for any visual change.

Given its proximity and relevancy, the viewer sensitivities discussed in the State Park Drive to Bay Avenue/Porter Street Visual Impact Assessment (Caltrans 2020a) and *Visual Impact Assessment: Tier I – Corridor Analysis of High Occupancy Vehicle Lanes and Transportation System Management Alternatives and Tier II – Build Project Analysis of 41st Avenue to Soquel Avenue/Drive Auxiliary Lanes and Chanticleer Avenue Pedestrian Overcrossing* (Caltrans 2013) have been reviewed and adapted as necessary below.

Residential Viewers (State Route 1 and Rail Trail)

Residential viewers tend to have a high sensitivity to the visual environment around their residences. Although they are sometimes preoccupied with indoor or outdoor activities, they also may spend time observing their surroundings. The focus of their view is general, rather than directed toward anything specific, and their awareness is strong. State Route 1 is a state eligible scenic highway (Caltrans 2019) and is a Santa Cruz County–designated scenic road (County of Santa Cruz 1994). Santa Cruz County also has a tree removal policy, restricting the removal of healthy trees unless they pose a traffic hazard or for the purpose of road widening, and replacement of trees nearby is required. Residential viewer sensitivity and awareness towards the Rail Trail is currently minimal given its inactive status. If reactivated as a rail line, viewer awareness would become strong. These designations and policies suggest high local values.

Recreational Viewers (State Route 1 and Rail Trail)

Recreational viewers tend to have a high sensitivity to the visual environment when they are participating in outdoor recreation. Although tennis players have a very specific focus, viewers at the county park and bicyclists on the local streets have a wider focus. The designations and policies discussed above suggest high local values, especially because most of the recreational viewers are locals.

Religious Viewers (State Route 1 and Rail Trail)

Religious viewers at the churches with views of State Route 1 and the Rail Trail have moderate sensitivity to the surrounding visual environment. Their activity, arriving and leaving the church, generally preoccupies them. Their focus is on the church, rather than the highway or trail. However, the designations and policies discussed above suggest moderately high local values, as most of the people using the church are likely locals.

Commercial Viewers (State Route 1 and Rail Trail)

Commercial viewers in the corridor tend to have low to moderate sensitivity to the surrounding visual environment. Their activity, arriving and leaving the place of commerce, generally preoccupies them. Their focus is on the business, rather than the highway. However, these are primarily local businesses, so the designations and policies discussed above suggest moderately high local values in Santa Cruz County.

Local Street Viewers (State Route 1 and Rail Trail)

The local street viewers on the streets with views of State Route 1 and the Rail Trail generally have moderate sensitivity. Drivers and passengers on these roadways are usually focused on the road itself. Some bicyclists and pedestrians may be less focused on the roadways, but most of these streets have moderate traffic and/or narrow bikeways and sidewalks, requiring viewers to concentrate on the local street for safety. The county designations and policies suggest high local values.

Highway Users—Daily Commuter Viewers (State Route 1 and Rail Trail)

Daily commuter viewers have moderate to high viewer sensitivity, depending on their activity. Drivers are usually preoccupied with their driving, though congestion can result in more time to observe the surrounding visual environment. Passengers have time to observe. Drivers tend to focus more specifically on the road, while passengers tend to have a more expansive focus. These commuters are from the local or regional area. State and county designations and policies suggest moderate local values.

Highway Users—Tourist Viewers (State Route 1 and Rail Trail)

Tourist viewers have high viewer sensitivity. Although they have low familiarity with the views from State Route 1, the purpose of their drive is, in part, to observe their surrounding visual environment. Drivers are more preoccupied with their driving, though congestion can result in more time to observe their surroundings. Similar to daily commuters, passengers have time to observe, and drivers tend to focus more on the road, while passengers tend to have a more expansive focus. These tourist viewers are often from outside the region and do not have the same expectations as local users, but they would likely have high expectations due to the highway's reputation for scenic quality.

Highway Users—Transit Viewers (State Route 1 and Rail Trail)

Transit viewers have moderate to high viewer sensitivity. For viewers using transit for regular trips, their sensitivity is similar to that of the daily commuter passengers. If the transit viewers are only taking the trip occasionally or as tourists, their sensitivity would be similar to the tourist viewer passengers.

Group Viewer Response

The narrative descriptions of viewer exposure and viewer sensitivity for each viewer group were merged to establish the overall viewer response of each group.

Neighbors (Views to State Route 1 and Rail Trail)

- **Residential Viewers (State Route 1)—Moderate-High Viewer Response.** There are few residential viewers who can see State Route 1 in the middle ground views from their properties. The duration of their views varies from briefly to several hours. They may be preoccupied with other activities or observant of their surroundings. Residential viewers typically have strong awareness of the visual environment and high local aesthetic values.
- **Residential Viewers (Rail Trail)—High Viewer Response.** There are many residential viewers who can see the Rail Trail from their properties. These views are primarily in the middle ground and foreground. The duration of their views varies depending on proximity, vegetation and topography, but can last for several hours, depending on type of outdoor activity. Residential viewers typically have strong awareness of the visual environment and high local aesthetic values.
- **Recreational Viewers (State Route 1 and Rail Trail)—High Viewer Response.** State Route 1 and the Rail Trail vary between the foreground, middle ground, and background of the recreational viewer's view throughout the highway and Rail Trail segments. The number of viewers ranges from a few to approximately 30 at a time. The duration of their views varies with their activity from brief to multiple hours. They can be preoccupied or observant, depending on their activity. Recreational viewers typically have strong visual awareness and high local aesthetic values.
- **Religious Viewers (State Route 1 and Rail Trail)—Moderate Viewer Response.** There are two churches with views of State Route 1 and the Rail Trail, the Coastlands Church located on the southeast corner of the State Park Drive interchange, and the Episcopal Church of St Jon, located on McGregor Drive. Views from each are in the middle ground to background. It is possible for each church to have 100 or more viewers at a time during times of worship. The duration of their views is typically brief as they walk from the parking lot to the church entry. The Coastlands Church, however, has an outdoor event space where views would be

substantially longer if not for a wall that screens views to the State Route 1 and Rail Trail. Religious viewers are generally preoccupied with their activity and have moderate awareness of their surroundings. They typically have moderate local aesthetic values.

- **Commercial Viewers (State Route 1 and Rail Trail)—Moderate Viewer Response.** State Route 1 is in the middle ground of the views from commercial and office viewers, who typically number less than 12 at a time, per property. Their views of State Route 1 are usually brief to a few minutes. They are typically preoccupied with their activities, with their focus on the business rather than the highway. The views of the Rail Trail are in the foreground for commercial retailers along Soquel Drive in Aptos Village. These viewers have extended views of the Rail Trail that could last several hours. Commercial viewers typically have moderate local aesthetic values.
- **Local Street Viewers (State Route 1 and Rail Trail)—Moderate Viewer Response.** State Route 1 and the Rail Trail are in both the foreground and middle ground views for multiple local street viewers in any one day. Their view of the highway and Rail Trail is typically very brief, up to a few minutes. Local street viewers are typically preoccupied with their activity and focused on navigating the local street, though passengers, bicyclists, and pedestrians pay greater attention to their surroundings. Local street viewers typically have a moderately high local aesthetic value.

Users (Views from State Route 1 and Rail Trail)

- **Daily Commuter Viewers (State Route 1 and Rail Trail)—Moderate Viewer Response.** For daily commuters the view from State Route 1 and the Rail Trail is primarily in the foreground and middle ground. The density of vegetation screens most background views out. State Route 1 has thousands of daily commuters a day. The Rail Trail is likely used by no more than 50 people a day as a way to commute to their place of work. Views from State Route 1 are brief at any one location but encompass several minutes over the entirety of the segment. Drivers are usually preoccupied with driving and specific in their focus on the road, while passengers are generally observant of the surroundings with a more general focus. Given the difference in commuter speed, the duration of views from the Rail Trail are substantially longer, but typically no longer than 10–15 minutes. Most daily commuters are local, so they typically have moderate to high local aesthetic values.
- **Tourist Viewers (State Route 1)—High Viewer Response.** For tourist viewers, the view of State Route 1 is the same as for daily commuters. The views from State Route 1 are brief at any one location but may be several minutes over the entirety of the segment. Like the commuter viewers, drivers are usually preoccupied with driving and specific in their focus on the road, while passengers are generally observant of the

surroundings with a more general focus. Most of these viewers are not local, but they have high expectations for their view.

- **Tourist Viewers (Rail Trail)—High Viewer Response.** For tourist viewers, the view of the Rail Trail is more similar to that of a recreational user. Hikers and cyclists tend to have a high sensitivity to their environment when participating in outdoor recreation. The area surrounding State Route 1 is a destination due to its reputation for ocean views and unique natural environment. Depending on mode of transport (walking versus biking) the duration of views from the Rail Trail may be up to 5 to 10 minutes at any given time. While tourist viewers are not typically locals, they have a similarly high expectation for views.
- **Transit Viewers (State Route 1 and Rail Trail)—Moderate Viewer Response.** For transit viewers, the view of State Route 1 is similar to that of daily commuters. State Route 1 currently has only a few regional bus routes using the highway. While the rail line is active, 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. The expansion proposed by this project would open up alternatives for more transit viewers in the future but, as of 2019, transit viewers were approximately 85 or less per day on average (Hurrell pers comm.). The views from both State Route 1 and the Rail Trail are brief at any one location but may encompass several minutes over the entirety of the segment. Similar to passengers in the daily commuter and tourist viewer groups, users are generally observant of the surroundings with a more general focus and a moderate expectation for views.

Environmental Consequences

Build Alternative

Visual impacts are determined by assessing changes to the visual resources and predicting viewer response to those changes. These impacts can be beneficial or detrimental. The ratings used to evaluate visual quality, visual character, viewer exposure, and viewer response use a numeric rating system from high (5) to low (1). The ratings were determined using the following ranges: high (5.00 to 4.50), moderate-high (4.49 to 3.50), moderate (3.49 to 2.50), moderate-low (2.49 to 1.50), and low (1.49 to 1.00). Cumulative impacts and temporary impacts due to the contractor's operations are also considered. A generalized Federal Highway Administration visual impact assessment process is illustrated in Figure 2-11.

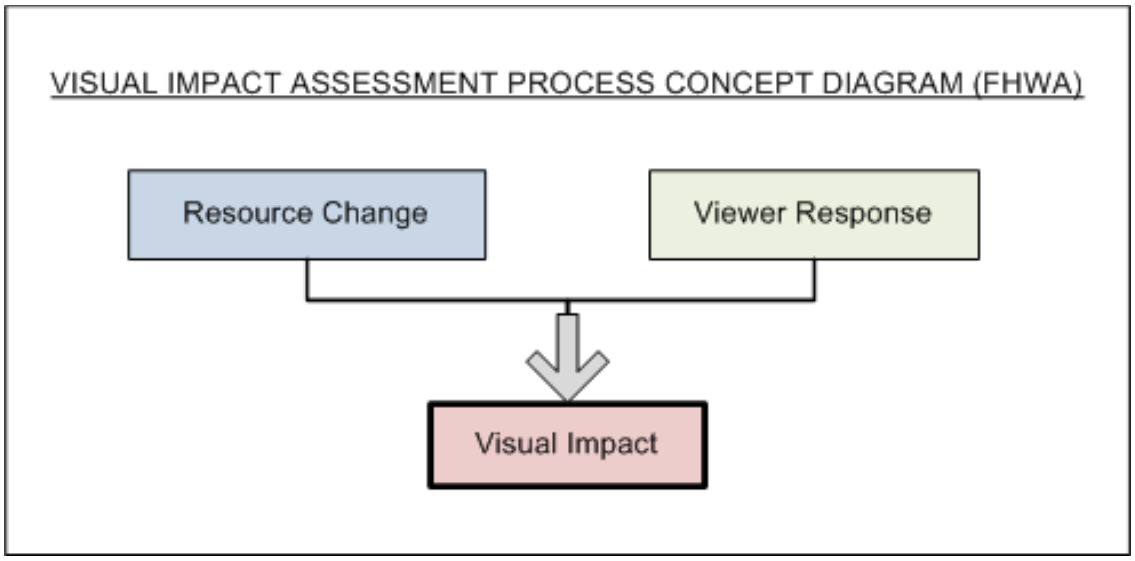


Figure 2-11. Visual Impact Assessment Process Concept Diagram

Table 2-34 provides a reference for determining levels of visual impact by combining resource change and viewer response.

Table 2-34. Visual Impact Ratings Using Viewer Response and Resource Change

Visual Change Category	Low Viewer Response	Moderate-Low Viewer Response	Moderate Viewer Response	Moderate-High Viewer Response	High Viewer Response
Low Resource Change	Low	Moderate-Low	Moderate-Low	Moderate	Moderate
Moderate-Low Resource Change	Moderate-Low	Moderate-Low	Moderate	Moderate	Moderate-High
Moderate Resource Change	Moderate-Low	Moderate	Moderate	Moderate-High	Moderate-High
Moderate-High Resource Change	Moderate	Moderate	Moderate-High	Moderate-High	High
High Resource Change	Moderate	Moderate-High	Moderate-High	High	High

Visual Impacts by Visual Assessment Unit

Because it is not feasible to analyze all the views in which the proposed project would be seen, it is necessary to select a number of key views associated with visual assessment units that would most clearly demonstrate the change in the project's visual resources. Key views also represent the viewer groups that have the highest potential to be affected by the project considering exposure and sensitivity. In addition, these key views will be analyzed for each proposed alternative.

The project would be located entirely within an urbanized area, and no rural areas would be affected. There are no scenic vistas or officially designated scenic routes associated with the proposed project. As such, scenic vistas and scenic routes would not be affected by the project, and these resources are not discussed further. Therefore, the analysis focuses on whether the project would conflict with applicable zoning and other regulations governing scenic quality or result in changes in light and glare.

The minimization measures depicted in the visual simulations include details such as wall textures and new landscaping of disturbed areas. The aesthetic treatments of structures and specific plant types depicted are representative only. The actual types of treatments, colors, and landscape would be designed in collaboration with Caltrans' District 5 Landscape Architect.

The following sections describe and illustrate visual impacts by visual assessment unit, compare existing conditions to the proposed alternatives, and include the predicted viewer response. Visual simulations reflect future conditions, approximately fifteen years from construction of the project.

State Route 1 Visual Assessment Unit

The State Route 1 visual assessment unit extends from just west of the State Park Drive/State Route 1 interchange to just east of the Freedom Boulevard/State Route 1 interchange. Most of the vegetation along State Route 1 is concentrated along the corridor between the northern and southern Aptos rail bridges that is comprised of a mixed canopy dominated by redwoods, oaks, and sycamores. The vegetation is especially dense where Aptos Creek crosses the corridor. At several locations, adjacent residential properties can be seen within this visual assessment unit, mostly along the Soquel Drive frontage road, near the Freedom Boulevard northbound on-ramp.

There are three key views for the State Route 1 visual assessment unit—Key Views 1–3 that are shown in Figures 2-12 through 2-14, respectively. Viewers at Key View 1, looking toward the southern Aptos rail bridge, are primarily users of the highway. Viewers at Key View 2, from the southern Aptos rail bridge, include recreational and commuter bicycle and pedestrian users along the proposed Coastal Rail Trail Segment 12. Viewers at Key View 3 include daily commuters, tourists, pedestrians, and transit viewers from the overcrossing at Rio Del Mar.

The proposed project falls within Classified Landscape Freeway segments along State Route 1 that extend between post miles 7.83 and 9.68, and 10.22 and 11.18 (Caltrans 2020b). Caltrans defines a classified landscaped freeway as "a section of freeway with ornamental vegetation planting that meets the criteria established by the California Code of Regulations, Outdoor Advertising Regulations, Title 4, Division 6. As identified in California Code of Regulations, Title 4 Sections 2507 and 2508, a Classified Landscape

Freeway must have planting areas that are at least 1,000 feet in length and may have gaps no greater than 200 feet. The proposed project would remove vegetation along the Classified Landscaped Freeway segments to accommodate widening, creating gaps in vegetation larger than 200 feet. However, the project would include replacement landscaping along the affected areas of State Route 1, which would include the replacement of trees that would become skyline trees after several years. Therefore, it is anticipated that the designation of these Classified Landscaped Freeway segments would not be affected.

Changes to nighttime lighting within this visual assessment unit would be minimal. It is anticipated that any lights removed during construction would be reinstalled at a similar location, and no additional lighting is proposed. Therefore, there would be no notable changes in nighttime lighting. Changes in daytime and nighttime glare are discussed below.

Key View 1

Description

Key View 1 (Figure 2-12) was taken from northbound State Route 1 at the eastern overcrossing (existing rail bridge) looking west *(as shown and described in the Tier I Visual Impact Assessment from July 2013 and adapted as applicable for this report)*. The view is from the perspective of the highway traveler in the right lane.

Existing Visual Character/Quality

The existing view includes the existing concrete barrier along the highway corridor, with a clear view of State Route 1 heading in the northbound direction, and clearly captures the existing condition of the southern Aptos rail overcrossing and concrete abutments. This view also captures some of the southbound traffic. The visual character of this portion of the highway is well vegetated in a manner that isolates the highway within the landscape, and the corridor dominated by the relatively straight lines represented by the highway lanes and vegetative border. Mature groupings of redwoods, oak, and eucalyptus flank both sides of the roadway and are the dominant characteristic of this view. Dense underbrush and nonnative vines obstruct views into neighboring properties. Mature redwoods and oaks can also be seen in the background that help to unify this view. The view is contrasted by the overcrossing height warning sign and overhead powerlines that cross with the southern Aptos rail easement. The dominant colors are contrasting dark gray (pavement) and green (vegetation). The smooth texture of the roadway surface contrasts with the coarse texture of the vegetation. During sunny days, shadow patterns from the trees can create irregular shades of gray.

Vividness is moderate-high as this portion of the corridor provides high-quality views of mature trees that contrast against the blue sky and the southern Aptos rail bridge screens views further down the highway; however, the

bridge, which has fallen into disrepair, is a focal point that slightly degrades the quality of the view. Intactness is moderate because the vegetative border creates a coherent view, but the bridge and center guardrail dominate this viewpoint as a contrasting presence to the natural surrounding elements. Unity is moderate-high because the roadway fits well into the landscape, but the bridge creates a visual barrier to views beyond. Overall, the existing visual quality of Key View 1 is considered moderate-high due to the existing vegetation that overhangs the highway, frames the existing railroad bridge, and creates an intimate appearance to the highway corridor combined with the existing bridge that is aged, in disrepair, and detracts from the visual quality.

Proposed Project Features

As shown in the simulation in Figure 2-12, a prefabricated pedestrian and bicycle bridge would be constructed in place of the existing southern Aptos rail bridge shown in the existing view. A new rail bridge would be constructed immediately behind the pedestrian and bicycle bridge, and the abutments of both bridges would be set back to allow the future Bus-on-Shoulder lane configuration. The highway would be wider than existing, with an additional 12-foot-wide auxiliary lane in each direction and shoulders to meet current standards. The wider roadway would equate to a longer bridge. The median barrier would be rebuilt to current safety standards and a retaining wall would be placed along the southbound traveled way to minimize tree removals. Large trees would be planted to replace trees removed for construction on all sides of the bridges and native shrubs and seasonal flowering plantings would be planted to replace screen planting that previously obstructed views into neighboring properties.

Viewer Response

Viewer exposure is moderate-high because viewers have middle ground views of project features, the number of vehicles is estimated at approximately 47,000 or more per day on mainline State Route 1, and the duration of their views varying from a few seconds to a few minutes (CDM Smith 2021). Viewer sensitivity is also moderate-high with viewers focused on the corridor itself, the fact that the vast majority are locals, and high local values as indicated by the number of policies and regulations related to aesthetics and visual resources. The overall level of viewer response would be moderate-high.

Resource Change

In the foreground, visibility of vehicles traveling in the southbound lanes would be more obscured due to the height of the median barrier. In the middle ground, the existing, enclosed feeling of this viewpoint would be replaced by a more open and lighter aesthetic quality due to tree removal for construction and open steel truss pedestrian bridge design. Due to the width of the rail trail

corridor, some skyline trees would be removed and cannot be replaced due to safety or geometric requirements. In the background, the addition of retaining walls along the southbound lanes and safety barrier along the northbound lanes may increase reflected light through this zone. The dominant colors would be earth tones to subtly contrast with the existing and proposed vegetation. The horizontal scale of the pedestrian and rail bridges would dominate the view. Daytime and nighttime glare would remain moderate because trees remaining along the highway and replacement plantings would provide shading to minimize glare coming from the highway pavement and structures, and it would screen glare from adjacent development. The resulting visual character would remain moderate-high.

The existing visual quality is moderate-high with moderate-high vividness and intactness and moderate unity. Although the proposed project would remove some of the predominant skyline canopy trees and screening plant material, the design and coloring of the proposed bridge enhances the aesthetic quality at this location and would be an improvement over the appearance of the existing bridge. As a result, the vividness would remain moderate-high, intactness would be improved to moderate-high, and unity would remain moderate-high. The resulting visual quality would remain moderate-high, and the overall resource change would be low.

Source: Mark Thomas, April 2022.

Figure 2-12. Key View 1, Existing View and Simulated Conditions—from State Route 1 looking North toward the Rail Trail Visual Assessment Unit

Key View 2

Description

Key View 2 (Figure 2-13) was taken from the existing southern Aptos rail bridge looking towards the west (northbound). The view is from the perspective of a future trail user and generally that of highway travelers, as they approach the Aptos Creek bridge from the east.

Existing Visual Character/Quality

The existing view includes the existing concrete barrier along the highway corridor, with a clear view of State Route 1 heading in both directions. The visual character of this portion of the highway is very well vegetated in a manner that isolates the highway within the landscape, and the corridor is dominated by the relatively straight lines of the highway lanes and vegetative border. Mature groupings of redwoods, oak, and eucalyptus flank both sides of the roadway and are the dominant characteristic of this view. The denseness, maturity, and proximity of the existing vegetation to the highway creates an intimate experience to the highway and Rail Trail users, which acts to reduce the overall scale of the trail and highway corridors in the environment. Dense underbrush and nonnative vines also obstruct views into neighboring properties. Mature trees can also be seen in the background that help to unify this view. The dominant colors are contrasting dark gray (pavement) and green (vegetation). The smooth texture of the roadway surface contrasts with the coarse texture of the vegetation. During sunny days, shadow patterns from the trees can create irregular shades of gray.

Vividness is moderate-high because this portion of the corridor provides high-quality views of mature trees that contrast against the blue sky. Intactness and unity are moderate-high because the vegetative border creates a coherent view and, even though the wide roadway corridor is a contrasting presence to the natural surrounding elements, the roadway fits well into the landscape. Overall, the existing visual quality of Key View 2 is considered moderate-high due to the existing vegetation that frames the highway and creates an intimate appearance to the highway corridor.

Proposed Project Features

As shown in the simulation in Figure 2-13, the highway under the Build Alternative would be wider than the existing, due to the addition of one new 12-foot-wide auxiliary lane in each direction and expanded shoulders that would meet current standards. The median barrier would be rebuilt to current safety standards and a retaining wall would be placed along the southbound traveled way to minimize tree removals and retain the Moosehead Drive configuration. A sound wall would also be placed along the southbound shoulder, adjacent to the southern Aptos rail bridge, to minimize traffic noise for residents along Carrera Circle and the eastern end of Moosehead Drive. The retaining wall and sound wall would introduce new vertical surfaces along

this segment of highway, but aesthetic treatments would ensure that they blend with the natural landscape and do not detract from views. In addition, large skyline trees would be planted to replace trees removed for construction near the new Moosehead Drive retaining wall and along the north side of the highway, and native shrubs and plantings would replace screen plantings that previously obstructed views into neighboring properties.

Viewer Response

Viewer exposure is moderate-high because viewers have middle ground views of project features, the number of vehicles is estimated at approximately 47,000 or more per day on mainline State Route 1, there would be new viewers accessing the Rail Trail, and the duration of their views varying from a few seconds to a few minutes (CDM Smith 2021). Viewer sensitivity is also moderate-high, given the importance of vegetation and large trees, as well as the general character of the area and with viewers focused on the corridor itself, and the fact that the vast majority of viewers are locals with high local values as indicated by the number of policies and regulations related to aesthetics and visual resources. The overall level of viewer response would be moderate-high.

Resource Change

In the foreground, visibility of vehicles traveling in both directions would be slightly expanded due to the removal of vegetation along the edge of the highway and the widened corridor. In the middle ground, the existing, enclosed feeling of this viewpoint would be replaced by one that is slightly more open and brighter due to tree removal for construction. Daytime and nighttime glare would remain moderate because trees remaining along the highway and replacement plantings would provide shading to minimize glare coming from the highway pavement and structures, and it would screen glare from adjacent development. The addition of a retaining wall and sound wall along the southbound lanes may slightly increase reflected glare through this zone. However, the use of vines and other vegetation could, over time, reduce the visual impact of the walls and glare coming from the sound and retaining walls. The dominant colors would be earth tones to subtly contrast with the existing and proposed vegetation. The visual character would be reduced from moderate-high to moderate.

Source: Mark Thomas, April 2022.

Figure 2-13. Key View 2, Existing View and Simulated Conditions—from the Existing South Aptos Rail Bridge looking West toward the State Route 1 Visual Assessment Unit

The existing visual quality is moderate-high with moderate-high vividness, intactness, and unity. Although the proposed project would remove some of the predominant skyline canopy trees and screening plant material to construct the wider highway, retaining wall, and sound wall, the design and coloring of the proposed retaining wall and sound wall would ensure these features recede in the view. In addition, vegetation planted along the highway would mature over time to replace some of the vegetative screening that would be removed. As a result, the vividness would be slightly reduced but would remain moderate-high and intactness and unity would be lowered to moderate. The resulting visual quality would be reduced to moderate, and the overall resource change would be moderate-low.

Key View 3

Description

Key View 3 (Figure 2-14) was taken from the Freedom Boulevard overcrossing looking towards the west (northbound). The view is from the perspective of a local street user and intended to represent the general view of highway travelers as well for purposes of this study.

Existing Visual Character/Quality

The existing view from the Freedom Boulevard overcrossing overlooking State Route 1 includes southbound and northbound lanes in the foreground, middle ground, and background, with a thick border of mature vegetation on the southbound side and relatively open views to the Soquel Drive frontage road along the northbound side. Mature pines flank the left side of the roadway in the foreground and middle ground. Redwood trees and mixed deciduous trees are predominant in the foreground on the right side, with the view of businesses along Soquel Drive predominant in the middle ground view. There is little underbrush and screening between businesses and the highway, which allows relatively clear views both into and out of the highway corridor. Brief glimpses (seconds) of structures and topography are visible beneath the mature canopies. Longer views (minutes) of the commercial uses are possible in times of reduced speed due to heavy traffic. The dominant colors are contrasting gray (pavement) and green (vegetation). The smooth texture of the highway contrasts with the coarse texture of the vegetation. During sunny days, shadow patterns from the trees can create irregular shades of gray.

The overall visual quality is moderate. Vividness is moderate because this portion of the corridor is not as distinct as other segments, there is no focal point, and a mix of visual elements comprises a somewhat typical suburban view. In addition, the center median is not planted and is dirt, with the lack of grass or vegetation, slightly degrades the view. Intactness is moderate because the visual quality of the existing roadway and businesses dominates this viewpoint as a contrasting presence to the natural surrounding elements.

Unity is moderate due to the fairly unified corridor that is disrupted by the dirt median and sparse vegetation along the commercial area, along a segment of highway that otherwise is bordered by mature trees.

Proposed Project Features

As shown in the simulation in Figure 2-14, the median would be narrowed, paved, and a concrete barrier added to accommodate an additional lane in each direction. The shoulders would be widened to meet current standards and painted red for buses directly adjacent to the interchange. The drainage ditch in the median would be relocated along the northbound travel lanes. The northbound on-ramp would be realigned slightly, and a contrasting surface treatment added to the gore of the ramp. The median barrier would be rebuilt to current safety standards and shoulders on the left side of this view (southbound lanes) would remain relatively untouched. Replacement plantings would be installed along disturbed areas.

Viewer Response

Viewer exposure is moderate-high because, while the highway serves thousands of travelers per day, the photograph is from the perspective of a local street user on the overcrossing and the number of viewers from this location would range from approximately 5,000 to 7,000 per day (Hurrell pers. comm.). The widened highway and Bus-on-Shoulder lanes would be noticeable to those on the highway, as well as those on the overcrossing. Duration of views for those local street users on the overcrossing would likely be less than a minute. Highway users would have a substantially longer view duration given that most of the improvements would stretch the length of the segment. Viewer sensitivity is also moderate-high, given the importance of vegetation and large trees, the general character of the area, and the viewers focused on the corridor itself, as well as the fact that the vast majority are locals with high local values as indicated by the number of policies and regulations related to aesthetics and visual resources. The overall level of viewer response would be moderate-high.

Resource Change

The highway would appear wider to travelers on State Route 1 and from the overcrossing at Freedom Boulevard. In the foreground, visibility of vehicles traveling in both directions would be slightly expanded due to the widened corridor. The width of paving would increase but would be in lieu of the existing bare ground in the median. This would create a more unified highway corridor. In the foreground and middle ground of the right side of this view some existing, low-quality shrubs would be removed to accommodate new highway features. However, new highway plantings would provide greater visual interest and minimize visual changes. In addition, the existing vegetation along the southbound lane of the highway would remain in place, retaining the aesthetic qualities that those trees provide. In the middle ground,

the existing, enclosed feeling of this viewpoint would be replaced by one that is slightly more open and brighter due to tree removal for construction. The dominant colors would be grays in contrast with the existing and proposed vegetation. This change in appearance would not be outside of the anticipated views associated with the highway. Daytime and nighttime glare would remain moderate because trees remaining along the highway and replacement plantings would provide shading to minimize glare coming from the highway pavement and structures, and it would screen glare from adjacent development. The resulting visual character would remain moderate.

The existing visual quality is moderate with moderate vividness, intactness, and unity. Although the proposed project would widen to the inside and remove some vegetation along the ramp, paving the median would create a more unified corridor and replacement plantings along the highway would mature over time to provide aesthetic relief of equal or greater quality compared to existing conditions. As a result, the vividness, intactness, and unity would be slightly improved but would remain moderate. The resulting visual quality would remain moderate, and the overall resource change would be low.

Figure 2-14. Key View 3, Existing View and Simulated Conditions—from Freedom Boulevard overcrossing looking west (northbound)

Coast Rail Trail Visual Assessment Unit

Key View 4

Description

Key View 4 (Figure 2-15) was taken in Aptos Village at the intersection of Trout Gulch Road and Soquel Drive looking west. The view is from the perspective of local street and trail users.

Existing Visual Character/Quality

The existing view includes Trout Gulch Road and the rail crossing in the foreground with Soquel Drive and the railroad tracks in the middle ground and background. Commercial and retail development dominates the middle ground and background of the view. Vegetation is minimal and therefore views to adjacent commercial properties are exposed for durations of up to several minutes. The overall visual character is dominated by both horizontal lines (streets and rail tracks) and vertical lines (structures). The dominant colors are contrasting gray (pavement) and light tan (structures). The smooth texture of the roadways contrast with the rigid texture of nearby structures. The scale of the roadways and Rail Trail dominate those of the vegetation and surrounding commercial buildings. Visually, the railroad tracks, Trout Gulch Road, Soquel Drive, and off-street parking dominate the foreground and middle ground for viewers.

The overall visual quality is moderate-low. Vividness is moderate-low because there is no focal point and a mix of signage, parked cars, and other visual elements. Intactness is moderate-low because the existing roadway and signage dominates this viewpoint. Unity is moderate-low because the rail tracks and off-street parking, combined with signage, striping, and other visual distractions, visually segment views between commercial uses on either side of the tracks.

Proposed Project Features

As shown in the simulation of the ultimate trail configuration in Figure 2-15, the railroad tracks would remain in their current location (the trail would be in place of the rail in the interim condition). The parking spaces north of the rail alignment would be removed and replaced with a paved Class 1 bike and pedestrian trail. Gravel would be placed between the fence and rail ballast to discourage weed growth. A small post and wire fence would be added between the tracks and the proposed trail for pedestrian safety and to help visually define the trail. Additionally, a raised curb would separate the trail from the off-street parking lot to separate uses. New rail crossing arms and pavement markings for the Trout Gulch Road trail crossing would replace the existing infrastructure and markings.

Figure 2-15. Key View 4, Existing View and Simulated Conditions—from the Intersection of Trout Gulch Road and Soquel Drive Looking West

Viewer Response

Viewer exposure is moderate because the photograph is from the perspective of a local street user and recreationist on the roadway and the number of views from this location would be limited to several hundred per day. In addition, the Rail Trail would be noticeable to viewers for up to a few minutes at a time, while adjacent commercial users would likely have substantially longer viewing durations. Viewer sensitivity is also moderate-high, with viewers focused on the corridor itself, most viewers being tourists or locals, and high local values as indicated by the number of policies and regulations related to aesthetics and visual resources. The overall level of viewer response would be moderate-high.

Resource Change

No major impacts on the existing roadways or vegetation are anticipated. The foreground of this viewpoint would consist mainly of the rail line and trail, with the overall character being dominated by the rail line and gravel treatment. The addition of a trail, gravel shoulders, post and wire fence, and curbing would replace some asphalt parking lots and the currently unmaintained rail right-of-way, which is overgrown with weeds in many locations. Restriping of Trout Gulch Road and the replacement of rail crossing arms would be more consistent with the surrounding central business district aesthetic context. Therefore, the appearance of the Rail Trail would not degrade the anticipated views associated with Soquel Drive and the adjacent commercial properties, and changes to the visual quality and character are anticipated to be improved slightly by the unifying feature associated with the proposed trail. The resulting visual character would be slightly improved but would remain moderate.

The existing visual quality is moderate-low with moderate-low vividness, intactness, and unity. Although the proposed project would remove off-street parking, removing the signage and cars and replacing the parking lot with gravel and the paved trail would reduce visual clutter and open up views to create a more unified corridor. This would improve visual quality compared to existing conditions. As a result, the vividness, intactness, and unity would be improved to moderate. The resulting visual quality would be improved to moderate, and the overall resource change would be moderate-low.

Project Visual Impact Summary

Table 2-35 provides the findings from each key view's analysis, summarizing the anticipated change to the visual resource, the anticipated viewer response to that change, and the overall anticipated visual impact. A summary of project visual impacts by key view follows Table 2-35. The proposed project would have two substantial visual effects through much of the corridor: (1) loss of mature vegetation that would be required for the construction of sound walls, retaining walls, and the widening of the State Route 1 and the Aptos Creek bridge, and (2) blocking of existing residential views by sound walls

and retaining walls, most notably those properties which are directly adjacent to Aptos Creek and the Rail Trail.

Changes in daytime and nighttime light and glare would be minimal. In addition, the proposed project falls within two Classified Landscape Freeway segments along State Route 1 that that extend between PMs 7.83-9.68 and 10.22-11.18. The proposed project would remove vegetation along the Classified Landscaped Freeway segments to accommodate widening, creating gaps in vegetation larger than 200 feet, but would include replacement landscaping along the affected areas of State Route 1. This would include the replacement of skyline trees. Therefore, it is anticipated that the designation of these Classified Landscaped Freeway segments would not be affected.

Table 2-35. Summary of Key View Narrative Ratings

Visual Assessment Unit	Key View	Viewer Response	Resource Change	Visual Impact
State Route 1	1	Moderate High	Low	Moderate
State Route 1	2	Moderate High	Moderate Low	Moderate
State Route 1	3	Moderate High	Low	Moderate
Rail Trail Segment 12	4	Moderate High	Moderate Low	Moderate

Summary of Project Visual Impacts by Key View

Key View 1 (Near South Aptos Underpass)

From Key View 1, views of a prefabricated pedestrian and bicycle bridge would be seen in place of the existing southern Aptos rail bridge, and a new rail bridge would be constructed immediately behind the pedestrian and bicycle bridge. The highway would be wider than the existing highway, with one additional 12-foot-wide auxiliary lane in each direction and shoulders to meet current standards. These changes would result in the removal of mature vegetation and the placement of sound walls and retaining walls. These changes would affect the views of adjacent residential, recreational, and local street viewers, as well as the highway user's views of the natural vegetated environment of the State Route 1 corridor.

The resulting visual impact from changes to the existing view are anticipated to be moderate. It is expected that the removal of mature vegetation would lessen the natural edge aesthetic of the highway and sound walls would permanently block views out from the corridor. However, the height of the remaining vegetation behind the new sound walls would allow some "borrowed landscape" effect, and the use of vines and shrub plantings along the walls and revegetating disturbed areas could soften the appearance of the walls and areas affected by vegetation removal. The overall visual quality and character, with minimization measures, are anticipated to remain moderate-high, with moderate-high vividness, intactness, and moderate unity.

Key View 2 (South Aptos Bridge looking West)

Primary changes from Key View 2 include a wider highway, and the addition of a retaining wall, a sound wall, and removal of mature vegetation. The retaining wall and sound wall would introduce new vertical surfaces along this segment of highway.

The resulting visual impact from changes to the existing view are anticipated to be moderate. The removal of mature vegetation would lessen the natural edge aesthetic of the highway and the retaining wall and sound wall would permanently block views. However, the height of the remaining vegetation behind the new sound walls would allow some “borrowed landscape” effect, and the use of aesthetic treatments on the walls, vines and shrub plantings along the walls, and revegetating disturbed areas could soften the appearance of the walls and areas affected by vegetation removal. The overall visual quality and character, with minimization measures, is anticipated to be reduced to moderate, with moderate-high vividness and moderate intactness and unity.

Key View 3 (Freedom Boulevard Overcrossing looking West)

From Key View 3, primary changes to views along State Route 1 would include a narrowed, fully paved median and a concrete barrier, and widened shoulders. Additionally, the northbound on-ramp would be realigned slightly, and a contrasting surface treatment added to the gore of the ramp.

The resulting visual impact from changes to the existing view are anticipated to be moderate. Overall visual quality of the view would be improved due to the removal of the existing dirt median and the existing character would remain consistent. The degree of change to the visual character and visual quality is anticipated to be relatively minor. The overall visual quality and character, with minimization measures, is anticipated to remain moderate, with moderate vividness, intactness, and unity.

Key View 4 (Intersection of Trout Gulch Road and Soquel Drive looking West)

Primary changes from Key View 4 include replacement of parking lots with the addition of the trail, gravel shoulders, post and wire fence, and curbing. While these changes would occur adjacent to the rail for the ultimate trail configuration as shown in Key View 4, under the interim condition, the trail would replace the rail.

The resulting visual impact from changes to the existing view are anticipated to be moderate. The proposed improvements from this perspective improve the overall visual quality of the view. This is mostly due to the existing rail corridor, off-street parking, and signage detracting from the existing view due to visual clutter. The change to the visual character and visual quality is anticipated to reduce visual clutter and provide greater visual continuity between commercial uses on either side of the rail line and trail. In addition,

the proposed improvements remain consistent with what is expected for a local street for affected viewers. The overall visual quality and character, with minimization measures, is anticipated to improve from moderate-low to moderate, with moderate vividness, intactness, and unity.

No-Build Alternative

Under the No-Build Alternative, the existing lane configuration and width of State Route 1 would remain. No widening of State Route 1 would occur, and auxiliary lanes, Bus-on-Shoulder improvements, and the Coastal Rail Trail would not be built and there would be no visual impacts on the existing visual character, visual quality, or affected viewer groups from the proposed project.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance, minimization, and mitigation measures would be incorporated into the project to avoid and minimize visual impacts.

- **AMM-VA-1:** Work with the community during preliminary design to develop aesthetic guidelines for the project improvements through a formalized structure that allows community input. Caltrans District 5 Landscape Architecture shall be consulted in this process.
- **AMM-VA-2:** During design and construction, save and protect as much existing vegetation in the corridor as feasible, especially eucalyptus and other skyline trees.
- **AMM-VA-3:** Survey exact locations for trees (by arborist) and include in the plan set.
- **AMM-VA-4:** Protect the drip zone of isolated trees and provide temporary fencing.
- **AMM-VA-5:** Protect large areas of existing plantings and preserve with temporary fencing.
- **Mitigation Measure-VA-6:** During design and construction, develop construction plans that apply aesthetic treatments to the sound walls. Aesthetic treatment of the sound walls shall be approved by Caltrans District 5 Landscape Architecture.
- **Mitigation Measure-VA-7:** Include vine plantings on one or both sides of sound walls where feasible (given Caltrans setback and maintenance requirements). If vines are only planted on one side of the wall, include vine portals in the design of the wall to accommodate vine access to both sides of the wall. Planting plans shall be approved by Caltrans District 5 Landscape Architecture.
- **Mitigation Measure-VA-8:** During design and construction, develop construction plans that apply aesthetic treatments to the retaining walls. Aesthetic treatment of the retaining walls shall be approved by Caltrans District 5 Landscape Architecture.

- **Mitigation Measure-VA-9:** During design and construction, develop construction plans that apply aesthetic treatments to the proposed bridges in the corridor. Aesthetic treatment of the proposed bridges shall be approved by Caltrans District 5 Landscape Architecture.
- **Mitigation Measure-VA-10:** If bridge rail is used at the creek crossing retaining walls, use Type 80 rail with aesthetic treatment. Aesthetic treatment and bridge rail type selection shall be approved by Caltrans District 5 Landscape Architecture.
- **AMM-VA-11:** Include aesthetic treatments on concrete median barriers consistent with the visual character of the corridor and the adjacent community. Aesthetic treatment of the concrete median barriers shall be approved by Caltrans District 5 Landscape Architecture.
- **Mitigation Measure-VA-12:** Replace existing chain link fencing between State Route 1 and adjacent frontage roads with ornamental fencing (applies where there is no sound wall). Ornamental fencing type selection shall be approved by Caltrans District 5 Landscape Architecture.
- **AMM-VA-13:** During design and construction, landscape and revegetate disturbed areas to the greatest extent feasible (given Caltrans setback and maintenance requirements). Planting plans shall be approved by Caltrans District 5 Landscape Architecture.
- **AMM-VA-14:** Include trees that will mature into skyline trees in the planting pallet to reduce the scale of the new highway elements. Planting palette shall be approved by Caltrans District 5 Landscape Architecture.
- **AMM-VA-15:** Include infill shrub planting between State Route 1 and adjacent frontage roads to the maximum extent possible. Planting plans shall be approved by Caltrans District 5 Landscape Architecture.
- **AMM-VA-16:** Include vines on a minimum of 20% of the fencing between State Route 1 and adjacent frontage roads. Planting plans shall be approved by Caltrans District 5 Landscape Architecture.
- **Mitigation Measure-VA-17:** Where horticulturally appropriate, provide a permanent irrigation system for all plantings. Irrigation plans shall be approved by Caltrans District 5 Landscape Architecture.
- **Mitigation Measure-VA-18:** Include an extended 3-year maintenance/establishment period as part of the construction period to provide a single source of maintenance during the construction and through the establishment of vegetation.

References

California Department of Transportation (Caltrans). 2013. *Visual Impact Assessment: Tier I – Corridor Analysis of High Occupancy Vehicle Lanes and Transportation System Management Alternatives and Tier II – Build Project Analysis of 41st Avenue to Soquel Avenue/Drive Auxiliary Lanes and Chanticleer Avenue Pedestrian Overcrossing*. July 8. Santa Cruz County, CA.

———. 2019. *List of Eligible and Officially Designated State Scenic Highways.* Available: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Last updated: July 2019. Accessed: March 9, 2022.

———. 2020a. *Visual Impact Assessment for the State Route Highway 1 Auxiliary Lanes—State Park Drive to Bay Avenue/Porter Street*. July 8. Santa Cruz County, CA.

———. 2020b. *Classified "Landscaped Freeways."* Available: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-b-classified-landscaped-freeways. Last updated: November 16, 2020. Accessed: March 18, 2022.

CDM Smith. 2021. *Traffic Operations Analysis Report (TOAR): Highway 1 Auxiliary Lanes and Bus-on-Shoulder Improvements – Freedom Boulevard to State Park Drive and Coastal Rail Trail Segment 12 Project*. March. San Francisco, CA.

County of Santa Cruz. 1994. *Santa Cruz County General Plan and Local Coastal Program*. Effective: December 19, 1994. Santa Cruz, CA.

ICF. 2022. *Visual Impact Assessment, State Route Highway 1 Auxiliary Lanes and Bus-on-Shoulder Improvements – Freedom Boulevard to State Park Drive and Coastal Rail Trail Segment 12*. Santa Cruz, CA. Prepared for California Department of Transportation. June.

Personal Communications

Hurrell, Bill, PE. Vice President. CDM Smith, San Francisco, CA. June 6, 2020–email.

2.1.9 Cultural Resources

Regulatory Setting

The term “cultural resources,” as used in this document, refers to the “built environment” (e.g., structures, bridges, railroads, water conveyance systems), places of traditional or cultural importance, and archaeological sites (both prehistoric and historic), regardless of significance. Under federal and state laws, cultural resources that meet certain criteria of significance are referred to by various terms including “historic properties,” “historic sites,” “historical resources,” and “tribal cultural resources.” Laws and regulations dealing with cultural resources include the following.

The National Historic Preservation Act of 1966, as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the National Register of Historic Places. Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their undertakings on historic properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 Code of Federal Regulations 800). On January 1, 2014, the First Amended Section 106 Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation (Caltrans) went into effect for Caltrans projects, both state and local, with Federal Highway Administration involvement. The Programmatic Agreement implements the Advisory Council on Historic Preservation’s regulations, 36 Code of Federal Regulations 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The Federal Highway Administration’s responsibilities under the Programmatic Agreement have been assigned to Caltrans as part of the Surface Transportation Project Delivery Program (23 United States Code 327).

CEQA requires the consideration of cultural resources that are historical resources and tribal cultural resources, as well as “unique” archaeological resources. California Public Resources Code Section 5024.1 established the California Register of Historical Resources and outlined the necessary criteria for a cultural resource to be considered eligible for listing in the California Register of Historical Resources and, therefore, a historical resource. Historical resources are defined in Public Resources Code Section 5020.1(j). In 2014, Assembly Bill 52 (AB 52) added the term “tribal cultural resources” to CEQA, and AB 52 is commonly referenced instead of CEQA when discussing the process to identify tribal cultural resources (as well as identifying measures to avoid, preserve, or mitigate effects to them). Defined in Public Resources Code Section 21074(a), a tribal cultural resource is a California Register of Historical Resources or local register eligible site, feature, place, cultural landscape, or object which has a cultural value to a California Native

American tribe. Tribal cultural resources must also meet the definition of a historical resource. Unique archaeological resources are referenced in Public Resources Code Section 21083.2.

Public Resources Code Section 5024 requires state agencies to identify and protect state-owned historical resources that meet the NRHP listing criteria. It further requires the Department to inventory state-owned structures in its rights-of-way. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the NRHP or are registered or eligible for registration as California Historical Landmarks. Procedures for compliance with Public Resources Code Section 5024 are outlined in a Memorandum of Understanding (MOU) between the Department and State Historic Preservation Officer, effective January 1, 2015. For most Federal-aid projects on the State Highway System, compliance with the Section 106 Programmatic Agreement will satisfy the requirements of Public Resources Code Section 5024.

Affected Environment

This section was prepared using information from the *Historic Property Survey Report* (Caltrans 2022), which includes the *Archaeological Survey Report* (Far Western Anthropological Research Group, Inc. 2022) and *Historical Resources Evaluation Report* (Brunzell Historical 2022). These reports include the study methodologies, analysis, Native American consultation, and findings for identifying historic resources and historic properties and assessing impacts.

Area of Potential Effects

The Area of Potential Effects for the project was established by Caltrans in accordance with Section 106 Programmatic Agreement. The Area of Potential Effects for archaeological resources and the Area of Potential Effects for architectural/built resources are not the same for the project and are described below.

Archaeological Area of Potential Effects

The current project footprint encompasses a total of 62.8 acres and includes the Caltrans right-of-way, private property, and all possible areas of horizontal and vertical direct impacts that have been included in the design plans to date. The Area of Potential Effects was established as both the horizontal and vertical depth maximum potential extent of direct impacts resulting from the project and the area of direct impact.

Architectural/Built Environment Area of Potential Effects

The architectural/built environment Area of Potential Effects consists of the project footprint and the assessor's parcels that intersect the footprint; it is the maximum potential extent of direct and indirect effects resulting from the project. The Area of Potential Effects for potential direct impacts was established as the project footprint plus a 50-foot buffer. The direct project footprint includes all construction easements, access routes, and staging and construction areas. The Area of Potential Effects for potential indirect impacts was generally established as the legal parcels adjacent to where potential direct impacts would occur outside of existing Caltrans or railroad right-of-way.

The term "Area of Potential Effects" is used generally in this section to refer to both the archaeological and architectural Area of Potential Effects, when not specified otherwise.

Research Methodology

Investigations for cultural resources include the Archaeological Survey Report (confidential) prepared for the Tier I/Tier II Environmental Impact Report/Environmental Assessment . The Program used a tiered approach for reviewing and implementing corridor improvement projects of which this project is a part. Far Western Anthropological Research Group, Inc. (Far Western), supported the Tier I environmental study, which included the survey of the Tier I footprint and testing of two archaeological resources within the Coastal rail Trail alignment.

Investigations include records searches, background research, Native American and historical society consultation, and archaeological and architectural field surveys.

Records Search

Archaeological Resources Records Search

On July 22, 2020, a records search was conducted by staff at the Northwest Information Center of the California Historical Resources Information System at Sonoma State University in Rohnert Park, California. The records search consulted the California Historical Resources Information System base maps of previously recorded cultural resources and previously conducted cultural resources studies for the Area of Potential Effects and all areas within 0.25 mile thereof. Additional sources of information, including historic maps (U.S. Geological Survey and General Land Office), historic aerial photographs, and the California State Lands Commission's Shipwreck Database, were reviewed to determine areas with a high potential for the presence of historic-period and prehistoric sites.

The records search identified nine cultural resources within the rail trail corridor. One resource is a precontact archaeological site with a minor

historic-era component, seven are built environment resources, and one multicomponent precontact and historic-era complex is directly adjacent to the Area of Potential Effects.

Architectural Resources Records Search

The California Historical Resources Information System conducted a records search on July 22, 2020, and a supplemental records search request on January 21, 2021. The records search included the Area of Potential Effects and an additional 0.25-mile radius around the project area, and included a review of the following inventories:

- California Inventory of Historic Resources (Office of Historic Preservation 1976)
- Survey of Surveys: A Summary of California's Historical and Architectural Resource Surveys (Office of Historic Preservation 1989)
- California Points of Historical Interest (Office of Historic Preservation 1992)
- California Historical Landmarks (Office of Historic Preservation 1996)
- Built Environment Resources Directory will (Office of Historic Preservation 2020)

The records search identified three historic properties or previously recorded historical resources within the Area of Potential Effects or the 0.25-mile radius around the Area of Potential Effects:

- Bay View Hotel, 8041 Soquel Drive (Map Reference #10)
- Aptos Village Historic District (multiple addresses)
- Aptos Creek Trestle Footings

Nine historic-period properties within the Area of Potential Effects or the 0.25-mile radius have been determined ineligible or recommended ineligible through survey evaluation: three bridges, one religious property, three single-family residences, one apartment building, and one commercial property. The records search indicated that 31 previous cultural resource studies have been undertaken within 0.25 mile of the Area of Potential Effects.

Consultation with Interested Parties

See Chapter 4, Comments and Coordination for the cultural resources consultation and outreach process for the project.

Field Methods

Pedestrian Survey

Most of the current proposed project footprint was previously surveyed as part of the Tier 1 study for high occupancy vehicle lane widening along State

Route 1 for Caltrans in 2003–2004. The Area of Potential Effects for that project extended from just east of Highway 17 near Branciforte Drive to Larkin Valley Road southeast of Aptos, covering the current project extent with the exception of the proposed rail trail corridor. The survey covered all accessible land within that project Area of Potential Effects, including existing roadway pavement, sloped cuts, introduced fill, and areas of visible ground surface within the Caltrans right-of-way, public lands outside the right-of-way, and private parcels. Transect intervals ranged between 5 and 10 meters, though dense grasses, shrubs, and poison oak, especially in the various creek crossings, made access difficult and limited ground visibility.

Far Western surveyed the 1.25-mile-long corridor of the proposed rail trail on August 28, 2020. The rail trail alignment follows a portion of the Southern Pacific Railroad (P-44-000377) from the east side of State Park Drive south of State Route 1, crosses State Route 1 via a railroad bridge at post mile 10.30, arcs through downtown Aptos, crosses another railroad bridge at post mile 9.85 along State Route 1, and terminates just south of Rio Del Mar Boulevard near the west end of Seascape Golf Club. The line is elevated by concrete footings over Aptos and Trout creeks.

Far Western archaeologists revisited one multi-component site, and seven historic-era sites. Surface artifacts were identified in the rail trail corridor, and two new isolated finds were noted but not recorded. No new archaeological sites were encountered.

A survey of the recorded built environment cultural resources in the architectural Area of Potential Effects was conducted on February 9, 2021. The survey was conducted according to guidelines established through consultation with Caltrans' reviewers. Each parcel was observed from the public right-of-way and all visible façades were photographed. Subsequently, photographs were carefully inspected to make recommendations regarding potential architectural significance and historic integrity.

Test Excavations

Because project construction would require ground disturbance within previously recorded site boundaries and areas of elevated buried site sensitivity, an Extended Phase 1 and Phase 2 testing proposal was prepared and approved by Caltrans. This proposal called for a series of hand excavations in previously untested areas of sites CA-SCR-2/H and CA-SCR-222/H where project ground disturbance is planned. Portions of both CA-SCR-2/H and CA-SCR-222/H have been previously evaluated and found to be non-significant.

Test excavations were carried out in February and March 2021. At site CA-SCR-2/H, five shovel test units and two control units were excavated for a total of 4.0 cubic meters. Similarly, six shovel test units and two control units were excavated at site CA-SCR-222/H for a total of 3.9 cubic meters. At both

sites intact soils containing a very sparse precontact assemblage of flaked and ground stone tools were sampled; however, dietary remains were virtually absent, and no features or human remains were identified. Reliable temporal indicators were also lacking at both sites. In addition, historic-era remains consisted of a sparse assemblage with a relatively restricted range of artifact types.

Hand-augering was also conducted in two areas of high sensitivity for buried sites: the rail trail corridor within Aptos and a small portion of the State Route 1 corridor east of Aptos. Nineteen hand augers were excavated at roughly 25-meter intervals across these areas to depths ranging from 1.5 to 3.0 meters below surface. No archaeological materials were identified despite screening select soils, and no buried soils were identified indicating a low potential for deeply buried sites within the depths sampled. Based on these findings no further archaeological identification or evaluation was recommended for the project as currently defined.

Cultural Resources Identified in the Study Area

Archaeological Resources

CA-SCR-2/H

This resource was originally recorded as a historic-era occupation containing animal bone, ceramics, and bottle glass but in subsequent recordings it is described as primarily a precontact habitation site containing shell midden and flaked and ground stone tools along both sides of State Route 1. Test excavations performed in 2009 recommended that neither the precontact nor historic-era components of the site were eligible for listing on the National Register of Historic Places based on minimal findings. Test excavations conducted for this project confirmed the previous determination and therefore this site was recommended as not eligible for listing on the National Register of Historic Places. The current study also determined that the tested portion of the site within the Area of Potential Effects does not contribute to its eligibility for listing in the National Register of Historic Places or California Register of Historical Resources. However, the entirety of the site was not tested. Therefore, CA-SCR-2/H is considered eligible for listing in the National Register of Historic Places and California Register of Historical Resources for the purposes of this project. An Environmentally Sensitive Area will be established to ensure that resource CA-SCR-2/H is not affected during project implementation.

CA-SCR-222/H

This resource is recorded as a precontact habitation site containing midden with stone, bone, and shell visible on the surface. The site has been historically affected by development in the area. At the time of its original recording, the site was bisected by two dirt roads and railroad tracks, and a concrete foundation was present in the northeast portion of the site.

According to the site record, the site may be the location of the ethnographic village of Aptos, reportedly the last occupied precontact village in Santa Cruz. Test excavations conducted for this project indicated very sparse precontact assemblage of flaked and ground stone tools with a limited range of artifact types. Regardless, the entirety of the site was not tested. Therefore, CA-SCR-222/H is considered eligible for listing in the National Register of Historic Places and California Register of Historical Resources for the purposes of this project. An Environmentally Sensitive Area will be established to ensure that resource CA-SCR-222/H is not affected during project implementation.

CA-SCR-353/H

This resource was originally recorded as a sparse scatter of shell, chert debitage, and historic-era debris along the north side of State Route 1 east of Aptos. Two projectile points and a handstone were also recorded. Historic-era material consisted of bottle and window glass and ceramic serveware. Test excavations performed in 2009 for a Caltrans guardrail project resulted in no precontact artifacts subsurface, and subsurface historic-era artifacts were determined to have been redeposited. This site was evaluated in 2010 as part of the Santa Cruz Guardrail project (Caltrans 2010). Given the level of disturbance and lack of subsurface deposit, the site was recommended not eligible for listing on the National Register of Historic Places and California Register of Historical Resources. In a letter dated July 27, 2010, the SHPO concurred with the eligibility determination that CA-SCR-353/H is not eligible for inclusion in the National Register due to its lack of integrity.

Architectural Resources

Seventeen built environment resources have been determined to be within the Area of Potential Effect for this project. Of the seventeen resources in the Area of Potential Effect, seven have been previously evaluated for eligibility in the National Register of Historic Places and/or the California Register of Historical Resources. Of those seven previously evaluated resources, one, The Bay View Hotel, has been previously determined eligible for listing on both registers. The six other resources have been previously determined ineligible for listing in one or both registers. In addition to the seven previously evaluated resources, there are ten unevaluated resources which were evaluated in support of the current project. Of the ten resources evaluated for this project, one resource, the Southern Pacific Rail Road (Santa Cruz Branch Line) has been determined eligible for listing both registers. The other nine unevaluated properties were determined as not eligible for the National Register of Historic Places and/or the California Register of Historical Resources. Therefore, two historic built environment resources are within the Area of Potential Effect for this project including the Bay View Hotel, which is listed in the National Register at the local level of significance under Criterion A and Criterion C, and the Southern Pacific Railroad (Santa Cruz Branch Line), which has been recommended as eligible for the National Register of

Historic Places. See tables below for a reference of all seventeen resources within the area of potential effects.

Determinations of Eligibility

The following tables detail the eligibility determinations for properties in the Area of Potential Effects.

Table 2-36. Property Listed in the National Register of Historic Places

Name	Location
Bay View Hotel	8041 Soquel Drive, Aptos

The following property is a stretch of a historic-era railroad that is partially located within the Area of Potential Effects. The full extent of the resource has been surveyed for this project, and it is recommended as eligible for the National Register of Historic Places and is considered a historical resource for the purposes of CEQA.

Table 2-37. Property Recommended Eligible

Name	Location
Southern Pacific Railroad Segment	Southern Pacific Railroad through Aptos

The following properties are considered eligible for listing in the National Register of Historic Places and California Register of Historical Resources for the purposes of this project.

Table 2-38. Properties Recommended Eligible for Purposes of This Project

Name	Location
CA-SCR-2/H	Confidential
CA-SCR-222/H	Confidential

The following properties have been previously determined ineligible for the National Register of Historic Places.

Table 2-39. Properties Previously Determined Not Eligible

Name	Location
Aptos Wharf Rd./ Judge Rice House	7992 Soquel Drive, Aptos
Jose Arano House	7996 Soquel Drive, Aptos
Southern Pacific Railroad Bridge 36-0012	Southern Pacific Railroad over Aptos Creek, Aptos

Southern Pacific Railroad Bridge 36-0011	State Route 1 over Aptos Creek, Aptos
Southern Pacific Railroad Bridge 36-0003	Southern Pacific Railroad over State Route 1, Aptos
Aptos Village Historic District	Aptos

The following newly evaluated properties listed below have been determined as not eligible for the National Register of Historic Places or California Register of Historical Resources as a result of the study.

Table 2-40. Newly Evaluated Properties Determined Not Eligible

Name	Location
7945 Soquel Drive	7945 Soquel Drive, Aptos
7957 Soquel Drive	7957 Soquel Drive, Aptos
7963-7969 Soquel Drive	7963-7969 Soquel Drive, Aptos
7979 Soquel Drive	7979 Soquel Drive, Aptos
Aptos Village Park	100 Aptos Creek Road
Toney Building	403 Trout Gulch Road, Aptos
9006 Soquel Drive	9006 Soquel Drive
9016 Soquel Drive	9016 Soquel Drive
9030 Soquel Drive	9030 Soquel Drive

Environmental Consequences

Build Alternative

Identified Cultural Resources

Bay View Hotel

The Bay View Hotel at 8041 Soquel Drive, is listed on the National Register of Historic Places at the local level of significance under Criterion A and Criterion C. The property is significant under Criterion A for its association with the establishment of the railroad and Aptos Village in the 1870s and subsequent commercial and residential expansion as well as development of the local tourism industry. It is significant under Criterion C as an excellent example of Second Empire architecture. Second Empire is an architectural style that originally flourished during the period of the "Second Empire" in France (1852-1870) - buildings are usually in a simple box form, square or rectangular and highly symmetrical. Its period of significance is 1878–1919. The hotel is also a historical resource for the purposes of CEQA.

Its boundaries are the assessor’s parcel boundaries. Contributing elements include massing of the building; mansard roof with dormers; cornice with dentil molding, paneled frieze, and scrolled brackets with ornamental pendants; and orderly fenestration pattern with tall openings fitted with two-over-two wood sash and featuring decorative surrounds with pedimented

hoods and scrolled brackets. Wooden shiplap siding with decorative quoins; wraparound porch with chamfered posts, ornamental brackets, and decorative scrollwork balustrades at the first and second floor; original paneled partially glazed wood door with transom; and mature magnolia tree in front of main façade are additional contributing elements of the historical resource. Noncontributing elements include glazing/enclosure on the porch (added outside the period of significance), metal railing at the mansard level, exterior stairways at the rear of the building, a single-story rear addition, and utility sheds and other non-historic-era structures on the parcel. Setback and siding on the parcel are not contributing elements; the building was moved from its original location in 1946 (outside the period of significance).

The project would require a permanent right-of-way take approximately 85 feet from the building that would eliminate several parking spaces, but it would not directly or indirectly effect any character defining features of the historic property.

Southern Pacific Railroad (Santa Cruz Branch Line)

The Southern Pacific Railroad (Santa Cruz Branch Line), has been determined eligible for the National Register of Historic Places. The segment within the Area of Potential Effects appears to retain integrity to the period of significance (1876–1938) for the railroad. It was the first line to connect Santa Cruz with the important agricultural center Watsonville, and when completed in 1876 allowed Santa Cruz its first connection to the nationwide railroad network.

Its boundaries are the extent of the railroad right-of-way along its entire alignment. In addition to the railroad alignment and bridges within the right-of-way, three buildings contribute to the historic property as well. The depots at 411 Walker Street in Watsonville and 250 Monterey Avenue in Capitola as well as the Freight Depot at Depot Park in Santa Cruz are contributing elements of the historic property, although they are not within the current right-of-way.

Its alignment within the Area of Potential Effects is its most important contributing element; this portion of the alignment was chosen to pass near properties owned by the founder of the Santa Cruz Branch Line and the unusual layout of Aptos was determined by the shape of the railroad alignment. Elements including ballast, steel rails, earthen embankments, and wood railroad ties can also be considered contributing elements because they allow it to continue conveying its historic identity as a railroad, however those features have been determined to be less than significant than other contributing elements such as the alignment, and contributing structures such as bridges and stations.

The effects on the Southern Pacific Railroad (Santa Cruz Branch Line) are currently being studied and Caltrans will work with the State Historic Preservation Officer to analyze effects and make findings.

Ultimate Trail Configuration

The ultimate trail configuration includes construction of a paved bicycle and pedestrian shared use trail alongside the existing railroad track alignment. Fencing would be installed to separate trail users and the railroad. The project would affect the Southern Pacific Railroad (Santa Cruz Branch Line), but the alignment and all of other most significant contributing elements would remain intact.

Optional First Phase

All or a portion of the trail would be constructed in approximately the same location as 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 (Figure 1-5 in Chapter 1, *Proposed Project*).

As described above, the railroad alignment is its most important contributing element; this portion of the alignment was chosen to pass near properties owned by the founder of the Santa Cruz Branch Line and the unusual layout of Aptos was determined by the shape of the railroad alignment. The project would remove of some of the contributing elements (i.e., rails and ties) but the alignment and all of the other most significant contributing elements would remain intact.

Removal of Optional First Phase

If all or a portion of the optional first phase of the trail is implemented, the trail along the existing railroad track alignment would need to be removed, a trail would be constructed adjacent to the tracks as described by the proposed ultimate trail project, and the railroad tracks re-installed in their approximate existing location.

As described above, the railroad alignment is its most important contributing element. The project would not affect the railroad alignment. Replacing the railroad tracks in kind would help to convey the overall appearance of the railroad, to the extent that the original railroad tracks would convey.

Section 4(f) of the Department of Transportation Act of 1966 provides protection for historic properties. However, per 12 CFR 774.13 (a), there are exceptions to the requirement for Section 4(f) approval. For existing transportation facilities such as the Santa Cruz Branch Line, Section 4(f) approval is required only when a historic bridge, highway, railroad, or other transportation facility is adversely affected by the proposed project; e.g. the historic integrity (for which the facility was determined eligible for the National

Register of Historic places) is adversely affected by the proposed project (*See* 23 CFR 774.13(a)). Based on the analysis presented in this environmental document, the Santa Cruz Branch Line would continue to remain eligible for the National Register of Historic Places (pending SHPO concurrence). Therefore, Section 4(f) approval is not required.

Archaeological Resources: CA-SCR-2/H and CA-SCR-222/H

The project area is sensitive for buried archaeological deposits. Although test excavations at P-44-000010 (CA-SCR-2/H) and P-44-000224 (CA-SCR-222/H) uncovered sparse assemblages, the buried site sensitivity assessment determined the project ranges from lowest to highest sensitivity for encountering buried precontact deposits. The highest potential exists near the Aptos Village segment of the rail trail alignment, adjacent to CA-SCR-222/H and pockets of the State Route 1 corridor near Valencia Creek. Areas that may be subject to deep and extensive subsurface impacts within these areas have potential to affect buried resources. Although test excavations of CA-SCR-2/H and CA-SCR-222/H within the project Area of Potential Effects have been determined to not contain data bearing deposits, the entirety of both sites were not tested. Therefore, CA-SCR-2/H and CA-SCR-222/H are considered eligible for listing in the National Register of Historic Places and California Register of Historical Resources for the purposes of this project. The APE has been extended to include both sites and an Environmentally Sensitive Area will be established to ensure that these resources are not affected during project implementation.

Previously Unknown Archaeological Resources

The records search and extended phase I and 2 testing results indicate the project area is sensitive for buried archaeological deposits. As a result, it is possible that previously unknown archaeological resources could be uncovered during ground-disturbing construction activities for the proposed project. Implementation of Avoidance and Minimization Measures CUL-1, CUL-2, CUL-3, and CUL-4 would reduce the potential for adverse effects on previously unknown archaeological resources.

No-Build Alternative

The No-Build Alternative would not result in project-related effects on either known or as-yet-unidentified archaeological resources because there would be no project-related excavation within archaeologically sensitive areas. Similarly, the No-Build Alternative would not affect architectural/built-environment cultural resources.

Avoidance, Minimization, and/or Mitigation Measures

Standard Measure CR-1 and the following avoidance and minimization measures would be incorporated into the project to avoid and minimize impacts to cultural resources.

AMM CUL-1: Conduct Mandatory Cultural Resources Awareness Training for Construction Personnel

Before any ground-disturbing work occurs in the project area, a qualified archaeologist will be retained to conduct mandatory contractor/worker cultural resources awareness training for construction personnel. The awareness training will be provided to all construction personnel (contractors and subcontractors), to brief them on the need to avoid effects on cultural resources adjacent to and within construction areas and the penalties for not complying with applicable state and federal laws and permit requirements.

AMM CUL-2: Implement Avoidance and Notification Procedures for Cultural Resources Discovered during Construction

The project proponents will inform its contractor(s) of the possibility of subsurface archaeological deposits within the project area by including the following directive in contract documents:

> "If prehistoric or historical archaeological deposits are discovered during project activities, all work within 100 feet of the discovery shall be redirected and a qualified archaeologist contacted to assess the situation, consult with agencies as appropriate, and make recommendations regarding the treatment of the discovery. Project personnel shall not collect or move any archaeological materials or human remains and associated materials. Archaeological resources can include flaked-stone tools (e.g., projectile points, knives, choppers) or obsidian, chert, basalt, or quartzite toolmaking debris; bone tools; culturally darkened soil (i.e., midden soil often containing heat-affected rock, ash and charcoal, shellfish remains, faunal bones, and cultural materials); and stone-milling equipment (e.g., mortars, pestles, handstones). Prehistoric archaeological sites often contain human remains. Historical materials can include wood, stone, concrete, or adobe footings, walls, and other structural remains; debris-filled wells or privies; and deposits of wood, glass, ceramics, metal, and other refuse."

If archaeological deposits are identified during project subsurface construction, all ground-disturbing activities within 100 feet will be redirected and a qualified archaeologist contacted to assess the situation and consult with agencies as appropriate. The archaeologist will first determine whether such deposits are historical resources as defined in 14 California Code of Regulations 15064.5(a) and as required of the lead agency at 14 California Code of Regulations 15064.5(c)(1). If these deposits do not qualify as historical resources, a determination will be made whether they qualify as unique archaeological resources, pursuant to 14 California Code of Regulations 15064.5(c)(3). If the deposit qualifies as a historical resource or a unique archaeological resource, it will need to be avoided by adverse effects, or such effects must be mitigated. Mitigation may consist of, but is not necessarily limited to, systematic recovery and analysis of archaeological deposits, recording the resource, preparation of a report of findings, and accessioning recovered archaeological materials at an appropriate curation

facility. Public educational outreach also may be appropriate. Upon completion of the assessment, the archaeologist will prepare a report documenting the methods and results and provide recommendations for the treatment of the archaeological materials discovered. The report will be submitted to the project proponents and the California Historical Resources Information System.

AMM CUL-3: Stop Work if Human Remains Are Encountered during Ground-Disturbing Activities

If human remains are encountered, the remains will be treated in accordance with California Health and Safety Code 7050.5. The project proponents will inform their contractor(s) of the cultural sensitivity of the project area for human remains by including the following directive in contract documents:

> "If human remains are encountered during project activities, work within 100 feet of the discovery shall be redirected and the County Coroner notified immediately. At the same time, an archaeologist shall be contacted to assess the situation and consult with agencies as appropriate. Project personnel shall not collect or move any human remains and associated materials. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods."

Upon completion of the assessment, the archaeologist will prepare a report documenting the methods and results, and provide recommendations for the treatment of the human remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the Most Likely Descendant. The report will be submitted to the project proponents and the California Historical Resources Information System.

AMM CUL-4: Establish an Environmental Sensitive Area for Resources CA-SCR-2/H and CA-SCR-222/H

An Environmentally Sensitive Area will be established to ensure that archaeological resources CA-SCR-2/H and CA-SCR-222/H are not affected during project implementation. Prior to construction, the construction contractor will install high-visibility orange construction fencing and/or flagging, as appropriate, along the perimeter of the area of direct impact located within the Area of Potential Effects to restrict access to the portions of CA-SCR-2/H and CA-SCR-222/H outside the project limits. Prior to installation of the Environmentally Sensitive Area fencing, an Environmentally Sensitive Area Action Plan will be prepared.

References

California Department of Transportation. 2023. Historic Property Survey Report. District 5, Santa Cruz County, Route 1, Post Mile 8.1-10.7, EA

05-0C734, E-FIS Project Number 0520000083. Historic Property Survey Report form rev 06/01/22.

Brunzel Historical. 2023. *Historical Resources Evaluation report for the SR 1 Auxiliary Lanes and Bus-on-Shoulder Improvements—Freedom Boulevard to State Park Drive—and Coastal Rail Trail Segment 12 Project*. January.

Far Western Anthropological Research Group, Inc. 2022. *Archaeological Survey, Extended Phase 1 and Phase 2 Testing Report for the Santa Cruz County Regional Transportation Commission Highway 1 Auxiliary Lanes and Bus-on-Shoulder Improvements—Freedom Boulevard to State Park Drive—and Coastal Rail Trail Segment 12 Project*. February