2.19 Cumulative Impacts

2.19.1 Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of the proposed project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

The California Environmental Quality Act (CEQA) Guidelines Section 15130 describes when a cumulative impact analysis is necessary and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under CEQA can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under the National Environmental Policy Act (NEPA) can be found in 40 Code of Federal Regulations (CFR) Section 1508.7.

2.19.2 Methodology

The cumulative impact analysis methodology utilized was based on the eight-step process set forth in the California Department of Transportation (Caltrans) *Standard Environmental Reference (SER) Guidance for Preparers of Cumulative Impact Analysis* (2005). The eight-step process is as follows:

- Identify resources to be analyzed
- Define the Study Area for each resource (i.e., the Resource Study Area [RSA])
- Describe the current health and historical context for each resource
- Identify both direct and indirect impacts of the Build Alternative

- Identify other reasonably foreseeable actions that affect each resource
- Assess potential cumulative impacts
- Report results
- Assess the need for mitigation

Table 2.19.1 lists local planned projects, which are considered in this cumulative impact analysis, and the locations of these projects are illustrated in Figure 2.19-1, Cumulative Projects.

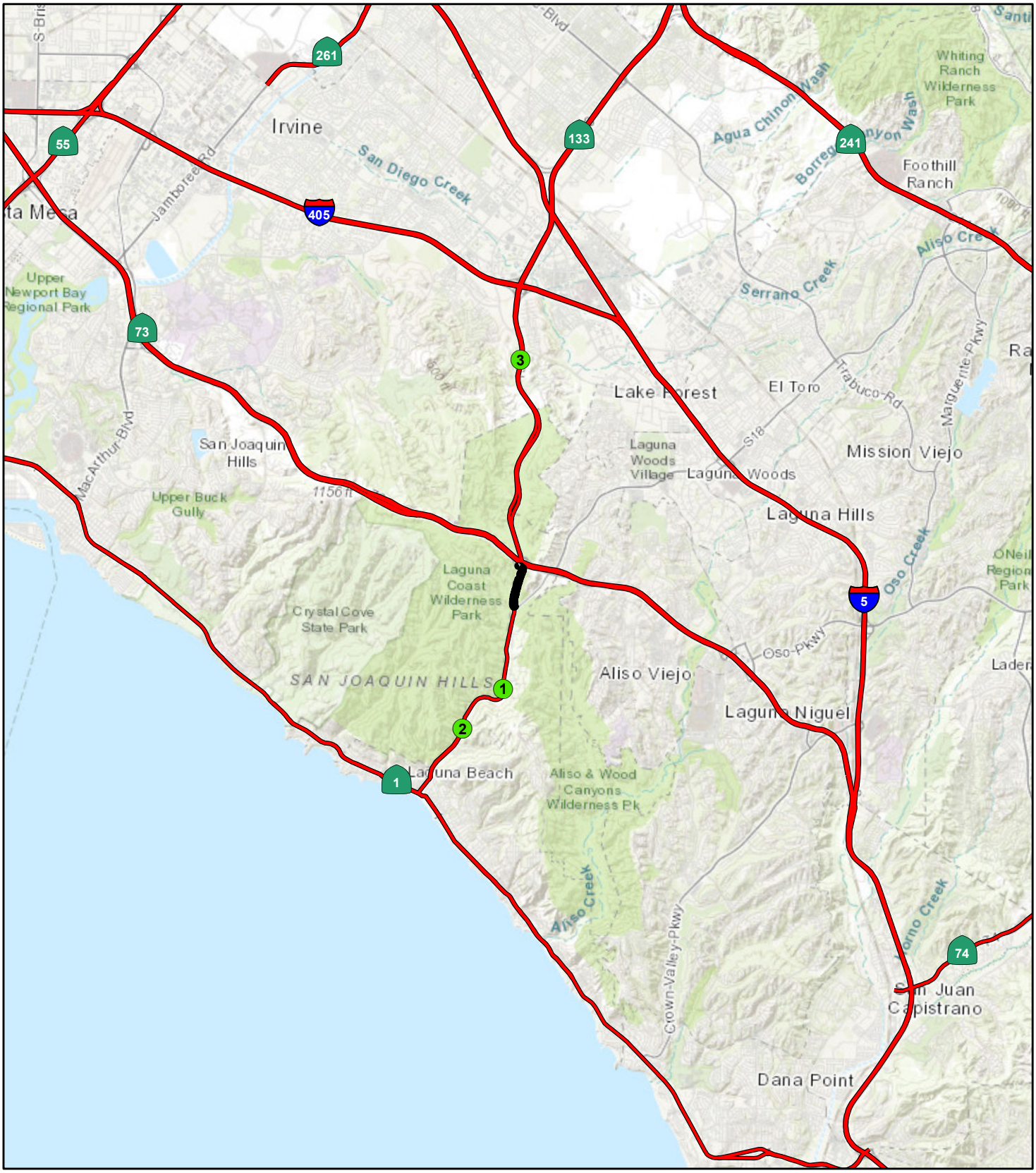
2.19.2.1 Resources Excluded from Cumulative Impacts Analysis

As specified in the Caltrans guidance, if the Build Alternative would not result in a direct or indirect impact to a resource, it would not contribute to a cumulative impact on that resource and need not be evaluated with respect to potential cumulative impacts.

Those resources for which cumulative effects are not anticipated or for which the impacts were already analyzed in a cumulative context (e.g., traffic, air quality, and noise) are briefly discussed below.

- **Coastal Zone:** The southern portion of the proposed project is located in the coastal zone in the City of Laguna Beach Local Coastal Program (LCP) Area. The Build Alternative would be required to obtain a Coastal Development Permit (CDP), prior to construction. According to the analysis provided in Section 2.1, Land Use, the Build Alternative is consistent with the LCP and the Coastal Act. While not all effects to resources within the Coastal Zone would be entirely avoided, implementation of the Project Features and compensatory mitigation identified in this document would ensure effects are avoided or minimized to the maximum extent feasible. Although the other cumulative projects along State Route 133 (SR-133) would occur within the Coastal Zone, they would also be required to obtain a coastal permit through the City of Laguna Beach and to address any effects to resources within the Coastal Zone. Therefore, the Build Alternative would not contribute to cumulative adverse effects related to the Coastal Zone.

- **Wild and Scenic Rivers**: No wild and scenic rivers are located within the project area. Therefore, the Build Alternative would not contribute to cumulative adverse effects to wild and scenic rivers.



LEGEND

Project Area

Planned Transportation Projects

1. Laguna Canyon Road Complete Streets (0Q670) PM 0.96 to 3.41
2. Caltrans Safety Project (0N870) PM 0.8 to 1.2
3. Caltrans Safety Project (0N660) PM 3.9 to 13.64

FIGURE 2.19-1

SR-133 Improvement Project

Cumulative Projects

12-ORA-133 PM 3.1/R4.1

EA 0P94U

0 1 2

MILES

SOURCE: ESRI (2015); Caltrans (5/2018)

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Table 2.19.1 Planned Projects List

ID Number	Name	Jurisdiction	Planned Uses	Status
1	Laguna Canyon Road Complete Streets (0Q670) Post Mile (PM) 0.96 to 3.41	City of Laguna Beach	This project includes improvements from Canyon Acres Drive to El Toro Road with the following elements: bike lanes, pedestrian pathways, improving access to transit facilities, standardizing lanes and shoulders, widening and operational improvements. Caltrans District 12 is providing oversight.	Project Initiation Document (PID) Phase.
2	SR-133 Canyon Acres Safety Project (0N870) PM 0.8 to 1.2	Caltrans District 12	This project proposes to extend the second through lane to relocate the beginning of lane reduction transition further downstream from the signalized intersection and provide the standard lane-reduction transition on NB SR 133 north of Canyon Acres Drive.	Environmental review complete, Categorical Exclusion / Categorical Exemption issued November 2016.
3	Caltrans Safety Project (0N660) PM 3.9 to 13.64	Caltrans District 12	This project proposes to replace outdated Metal Beam Guard Railings (MBGR) and end treatments with Midwest Guardrail System (MGS) and end terminal systems, upgrade non-standard asphalt concrete dikes and crash cushions, replace fixed-base electroliers with slip-base type, relocate controller cabinets and headwalls outside the clear recovery zone, install Thrie-Beam in the median, and replace temporary railing (type K) with permanent concrete barrier Type 60G on SR-133 from south of SR-73 to the SR-241.	Environmental review complete, Categorical Exclusion / Categorical Exemption issued December 2017.

- **Farmlands/Timberlands**: No farmlands are located within the project area. There are no parcels under a Williamson Act contract within the project limits. In addition, there is no existing zoning for agricultural use, forest land, or timberland in the project area. Therefore, the Build Alternative would not contribute to cumulative adverse effects to farmlands or timberlands.

- **Land Use:** The roadway improvements associated with the Build Alternative are included in the regional and federal transportation plans and are consistent with local and regional goals to improve roadway safety and create an integrated land use and transportation system that accommodates travel demand in the area. The Build Alternative would also improve the safety of an existing transportation facility a within Caltrans right-of-way, along the same general alignment of SR-133 consistent with local planning documents, including the County of Orange and City of Laguna Beach General Plans. Implementation of the Build Alternative would result in the permanent acquisition of property from Laguna Coast Wilderness Park. However, the acquisition of this land would be minimal compared to the overall size of Laguna Coast Wilderness Park and would not affect the remaining viability of the existing open space and recreational uses. None of the cumulative projects, identified in Table 2.19.1, would result in an acquisition of land within this recreational area. While the proposed project would overlap with the Caltrans Safety Project (0N660), the Safety Project would occur entirely within the existing right-of-way and replaces existing facilities along SR-133. Therefore, the Build Alternative would not contribute to adverse cumulative effects related to land use.

- **Parks and Recreation:** The Build Alternative would require a permanent easement and permanent acquisition of land within Laguna Coast Wilderness Park outside of existing Caltrans right-of-way. However, no trails, recreational facilities or vehicular, bicycle or pedestrian access within the Laguna Coast Wilderness Park would be affected by either construction or operation of the Build Alternative. In addition, once construction is complete, any land temporarily disturbed during construction would be restored to a condition as good as or better than prior to construction (Project Feature PF-LU-1). The land to be permanently acquired due to implementation of the Build Alternative would be adjacent to the existing Caltrans right-of-way, and would be minimal compared to the overall size of the park. This acquisition would not result in proximity effects that diminish the activities, features, and attributes that qualify the facilities/ properties for protection under the requirements of Section 4(f). Potential

proximity effects to recreational resources protected under Section 4(f) would be limited due to the Project Features identified to address temporary and permanent effects to these resources. A "*De Minimis*" finding has been made related to resources protected under Section 4(f). In accordance with the concurrence letter provided by OC Parks, the MND/FONSI has been revised to incorporate Minimization Measures PR-1 through PR-8 in Section 2.1 (Land Use) to further minimize impacts to parkland. Further, none of the cumulative projects identified in Table 2.19.1 are located within Laguna Coast Wilderness Park. While the proposed project would overlap with the Caltrans Safety Project (0N660), the Safety Project would occur entirely within the existing right-of-way and would not result in permanent effects to parks or recreational facilities. Therefore, the Build Alternative would not result in cumulative adverse effects related to parks and recreation.

- **Growth:** The Build Alternative would not result in operational changes to SR-133 or enhance capacity. The Build Alternative would not induce growth or remove obstacles to growth in the area and would not contribute to cumulative adverse effects related to growth.

- **Community Impacts:** Construction of the Build Alternative would result in temporary effects within Laguna Coast Wilderness Park and Unincorporated Orange County from construction access. However, all land temporarily disturbed during construction would be restored (see Project Feature PF-LU-1) and recreational users would still be able to access recreational facilities during construction, as described above under the Parks and Recreation discussion. Temporary closures of SR-133 would provide some degree of inconvenience due to construction-related delays, temporary closures, and construction equipment operation; however, effects would be minimized through preparation of a Transportation Management Plan (TMP), as stated in Project Feature PF-TR-1 which requires construction to be coordinated with emergency service providers and local communities, as well as with other nearby projects (including projects listed in Table 2.19.1). Implementation of the Build Alternative would permanently acquire public land along SR-133; however, because the acquired land is located adjacent to the existing alignment, the Build Alternative would not result in permanent effects to community cohesion by dividing or limiting access to or from neighborhoods or community facilities. There temporary construction effects would occur to both Environmental Justice and non-Environmental Justice populations and would not represent a disproportionate adverse effect. In addition,

these effects would be temporary, and with implementation of Project Feature PF-TR-1, temporary construction-related traffic effects to the community would be avoided and/or minimized. Therefore, the Build Alternative would not contribute to cumulative adverse effects to community character and cohesion.

- **Utilities and Emergency Services:** Construction of the Build Alternative may result in temporary service disruptions to some utilities in the area; however, all utility lines would be relocated or placed underground according to an approved utility relocation plan, near the current configuration and would be permanently maintained (Project Feature PF-UES-1). Intermittent one-lane closures would be required during construction. Therefore, a TMP would be provided to direct traffic (Project Feature PF-TR-1). Although fire, police, and emergency medical service providers could experience travel delays while traveling to/from emergency scenes along SR-133, all temporary closures and detours would be coordinated with emergency service providers to minimize temporary delays in response times. Because the construction schedule and all detours and closures would be coordinated with emergency service providers, as well as with other nearby projects and local jurisdictions, the Build Alternative would not contribute to cumulative adverse effects to utility facilities or to the provision of emergency services.

- **Traffic/Transportation:** Construction of the Build Alternative would result in temporary lane closures of SR-133. If construction of the projects located on Laguna Canyon Road (listed in Table 2.19.1) would occur simultaneously with the Build Alternative, the TMP would include coordination of closures with other projects on SR-133 to limit delays to motorists. The Build Alternative consists entirely of safety, drainage, shoulder widening, and utility improvements to SR-133 and would not increase capacity or result in any traffic operation effects. Because the construction schedule and all detours and closures would be coordinated with other nearby projects and local jurisdictions, the Build Alternative would not contribute to cumulative adverse effects to traffic/ transportation. Furthermore, bicyclist movement in the project area would be enhanced by providing the bike lanes as a part of the Build Alternative.

- **Visual/Aesthetics:** The Build Alternative would not substantially change the existing views of and from SR-133; effects to visual quality would be moderate to low. The visual character of the proposed project would be compatible with the existing visual character of SR-133 as the roadways and drainage improvements

would be located directly adjacent to the existing roadway and urban elements of Laguna Canyon. In addition, vegetation removed from temporarily used land would be replaced (Project Feature PF-LU-1). The undergrounding of utilities would remove an urban use from Laguna Canyon and would enhance the rural visual character of the area. Therefore, the Build Alternative would not contribute to cumulative adverse effects to visual resources.

- **Cultural Resources:** Two resources were identified in the ASR, a mortar site (CA-ORA-315) and Laguna Canyon Road itself (P-30-177470) were identified in the Historic Property Survey Report (HPSR) as well. No additional resources were identified in the Supplemental HPSR (SHPSR). However, the mortar site has not been observed since it was recorded in 1966 and there is a high probability it was misidentified. Laguna Canyon Road was determined to be ineligible for listing on either the National Register of Historic Places (National Register) or California Register of Historical Resources (California Register) and is not proposed as a California Landmark. Therefore, no known cultural resources would be impacted by the increased grading limits. While cultural resources outside of the project limits may be directly or indirectly affected by the cumulative projects identified in Table 2.19.1, the other projects would be required to implement measures to avoid, minimize, and/or mitigate potential effects to cultural resources. Because the Build Alternative would not result in effects to the two identified cultural resources in the Area of Potential Effects (APE) and because no other projects would affect these two cultural resources, the Build Alternative would not contribute to cumulative adverse effects related to cultural resources.

- **Hydrology and Floodplains:** The project would result in changes in surface water elevation; however, extent of the floodplain encroachment and disturbance of the floodplain would be minimized where possible. The hydraulic results demonstrate that the Build Alternative would result in a minimal change in water surface elevation south of El Toro Road; therefore, the project would not affect risk to life and properties from flooding. Project Features PF-WQ-1, PF-WQ-4, and PF-WQ-5 address pollutants of concern in stormwater runoff so that the beneficial uses of the floodplain are not degraded. Because the Build Alternative would result in an increase in water surface elevation exceeding allowable FEMA requirements, a Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR) must be processed through FEMA, as required by Measures HYD-2 and HYD-3. Additionally, as required by Measure HYD-1, the Build

Alternative would be designed to provide adequate conveyance capacity at stream crossings to ensure no net increase in velocity. As the increase in water surface elevation would either be minimal, or contained in within the existing channel, no potential for interruption or termination of the transportation facility would occur and the project would not result in a significant floodplain encroachment. In addition, any projects within Laguna Canyon Watershed would be required to comply with applicable Federal Emergency Management Agency (FEMA) requirements to avoid or minimize floodplain encroachments and permit requirements to reduce effects to water quality and beneficial uses during construction and operation. As a result, the Build Alternative would not contribute to cumulative adverse effects related to hydrology and floodplains.

- **Water Quality:** As described in Section 2.8, Water Quality and Storm Water Runoff, the Build Alternative would be required to comply with the Construction General Permit (CGP) and would prepare and implement a Storm Water Pollution Prevention Plan (SWPPP). Runoff from the project area discharges to Laguna Canyon Creek within the Laguna Canyon Creek Watershed, which could be impacted by construction of the Build Alternative. Any temporary construction-related effects to Laguna Canyon Creek would be addressed through the implementation of Project Features PF-WQ-1 through PF-WQ-5, which require compliance with the provisions of the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) Order No. 2009-0009-DWQ and any subsequent permits in effect at the time of construction. Permanent source control best management practices (BMPs) and Low Impact Development (LID) strategies have been incorporated in the roadway design to target pollutants of concern and reduce the volume and velocity of storm water prior to discharge for the increase in impervious surface that would occur with the roadway widening and drainage improvements. In addition, all projects within Laguna Canyon Creek Watershed would be required to comply with applicable permit requirements to reduce effects to water quality during construction and operation. As a result, the Build Alternative would have a beneficial long-term effect on water quality by providing operational BMPs and would not contribute to cumulative adverse effects related to water quality.

- **Geology/Soils/Seismic/Topography:** The Build Alternative would not have an adverse effect with regard to geology/soils/ seismic/topography. The projects listed in Table 2.19.1 would also include minor roadway, pedestrian, and safety

improvements and do not include substantial cut-and-fill slopes or soil disturbance. In addition, site specific geotechnical investigations (GEO-1) would be conducted to ensure the project is designed to withstand potential geological hazards within the project area. Because construction of the Build Alternative and the projects listed in Table 2.19.1 would not result in significant effects to geology, soils, seismic, or topography, the Build Alternative would not contribute to cumulative adverse effects related to geology/soils/seismic/topography.

- **Paleontological Resources:** While no paleontological localities were recorded in the project area, excavation during the construction of the Build Alternative would occur in areas that contain the Topanga Formation, which has a high paleontological sensitivity. Excavation in areas with high paleontological sensitivity could result in permanent effects to paleontological resources. However, preparation of a Paleontological Mitigation Plan (PMP), as specified in Measure PAL-1 would require the implementation of paleontological resource protocols, and procedures included in the PMP would reduce any potential effects to unknown, non-renewable paleontological resources. While paleontological resources outside of the project limits may be directly or indirectly impacted by other projects, the other projects would be required to implement avoidance, minimization, and/or mitigation measures, which may include following standard Caltrans guidelines, to avoid, minimize, and/or mitigate potential effects to paleontological resources. Therefore, the Build Alternative would not contribute to cumulative adverse effects to paleontological resources.

- **Hazardous Waste/Materials:** While the Build Alternative is not located on a listed hazardous material or waste site, potentially hazardous materials including aerially-deposited lead, lead chromate, asbestos-containing materials (ACMs), and other unknown contaminants may be present within the existing roadway and adjacent soils. The projects listed in Table 2.19.1 would have similar potential for effects related to these hazardous materials. However, the Build Alternative and other cumulative projects would be subject to compliance with all federal, State, and local regulations including the Caltrans Construction Manual, National Emission Standards for Hazardous Air Pollutants (NESHAPs), South Coast Air Quality Management District (SCAQMD) Rule 403, and California Department of Public Health (CDPH) guidelines. As stated in Project Features PF-HAZ-1 through PF-HAZ-4, the Build Alternative would comply with these regulations and would conduct a site-specific aerially deposited lead (ADL) investigation. Therefore, the Build Alternative would not result in any hazardous waste/

materials effects, and the Build Alternative would not contribute to cumulative adverse effects related to hazardous waste/ materials.

- **Air Quality:** With implementation of Project Features PF-AQ-1 through PF-AQ-5, identified in Section 2.11, Air Quality, construction-related emissions would not be substantial and are unlikely to contribute to cumulative air quality issues. In general, construction activities related to the Build Alternative would last approximately 26 months, so construction-related emissions do not need to be included in a regional and project-level conformity analysis. Construction-related emissions would be temporary and all projects would be required to implement standard measures/project features, such as Project Feature PF-AQ-1, to reduce any air quality impacts resulting from construction activities. In addition, two of the projects listed in Table 2.19.1 are Caltrans District 12 projects (0N870/0N660), and Caltrans has oversight on the other (0Q670). Caltrans would coordinate the projects' construction schedule and make adjustments as necessary to avoid substantial air quality effects. As the Build Alternative would not alter the operation of SR-133 and would not generate new regional vehicular trips, implementation of the Build Alternative would have a neutral impact on air quality in the project area, and emissions would be similar to the existing condition. As a result, the Build Alternative would not contribute to cumulative adverse effects related to air quality.

- **Noise:** The closest noise-sensitive receptor to the proposed project is the Anneliese School, which may experience a short-term noise increase generated by construction activities associated with the Build Alternative. However, construction of the Build Alternative and the projects listed in Table 2.19.1 above are not anticipated to occur simultaneously. In addition, construction would comply with Caltrans Standard Specifications Section 14-8.02 regarding Noise Control, as specified in Project Feature PF-N-1.Therefore, the Build Alternative would not result in temporary noise effects that would contribute to a cumulative effect to the Anneliese School. In addition, all Caltrans projects would be required to comply with Caltrans Standard Specifications Section 14-8.02 to reduce any temporary noise effects associated with construction. In addition, two of the projects listed in Table 2.19.1 are Caltrans District 12 projects (0N870/0N660), and Caltrans has oversight on the other (0Q670). Caltrans would coordinate the projects' construction schedule and make adjustments as necessary to avoid substantial noise effects. Therefore, the Build Alternative would not contribute to cumulative adverse effects related to noise.

- **Natural Communities:** The Biological Study Area (BSA) contains sensitive vegetation communities, including California sagebrush-California buckwheat scrub, southern black willow forest, southern sycamore riparian woodland, coast live oak woodland, coyote brush scrub, maritime chaparral sagebrush, mulefat scrub, rock outcrop, and freshwater seep. The Build Alternative would encroach into adjacent natural communities in the BSA. In addition, other projects along SR-133 could encroach into natural communities' habitat. All environmentally sensitive areas (ESAs) in the BSA for the Build Alternative would be delineated with fencing for protection (BIO-1), and all temporarily impacted areas from construction activities would be restored and revegetated (BIO-2). Cumulative effects to coastal sage scrub habitat, riparian habitat, and woodland habitat would be minor as the BSA and SR-133 alignment is surrounded by vast expanses of protected open space lands including Laguna Coast Wilderness Park and Aliso and Wood Canyons Wilderness Park, and Laguna Laurel Ecological Reserve containing abundant natural communities' habitat. As discussed in Section 2.13, Natural Communities, wildlife movement would be unobstructed during periods when construction is stopped. The Build Alternative would also incorporate best management practices (BIO-3), invasive species control (BIO-4), biological monitoring (BIO-5), and on-site training (BIO-6) for protection of sensitive natural communities.

  Permanent effects to riparian communities would be mitigated through funding and/or creation or restoration of riparian habitat as stipulated by the Wetland/ Riparian Mitigation Plan (BIO-11) and required permits. Cumulative effects to wetland and riparian habitats would also be required to provide compensatory mitigation through applicable regulatory permits (i.e., United States Army Corps of Engineers (Corps) Section 404 permits, Regional Water Quality Control Board (RWQCB) Section 401 certifications, and California Department of Fish and Wildlife (CDFW) Section 1600 streambed alteration agreements). In addition, all direct effects to oaks would be avoided and/or minimized through compliance with State Senate Concurrent Resolution No. 17, which requires replacement of oak trees at a 1:1 ratio and replacement of heritage oaks at a minimum 3:1 ratio, as feasible (BIO-10). Cumulative project effects to oaks from tree removal would also comply with this resolution. During operation, there would be no new effects to wildlife crossings or natural communities. As a result, the Build Alternative would not contribute to cumulative adverse effects related to natural communities.

- **Wetlands and Other Waters:** Temporary effects to jurisdictional areas would be minimal (approximately 0.33 acre of United States Army Corps of Engineers [USACE] jurisdiction and 0.681 acre of California Department of Fish and Wildlife [CDFW] jurisdiction), and effects would be mitigated through delineation of ESAs, restoration and revegetation, BMPs, invasive species control, construction monitoring, and personnel training. In addition, permanent effects to jurisdictional features would be approximately 0.275 acre of USACE jurisdiction and 2.16 acres of CDFW jurisdiction. Effects to jurisdictional features would be mitigated by compensatory mitigation described in Measure BIO-11 and in the following required permits: Section 404 Permit, Lake and Streambed Alteration (1601) Agreement, and 401 Water Quality Certification. Mitigation required from these permits may include payment of in-lieu fees and/or providing additional wetlands and riparian habitat through creation or restoration. Although other cumulative projects along SR-133 could result in effects to wetlands and other waters, all other projects would be required to obtain the applicable permits from CDFW, USACE, and RWQCB for all effects to wetlands and other waters. Therefore, the Build Alternative would not contribute to cumulative adverse effects related to wetlands and other waters.
- **Plant Species:** Three non-listed special-status species listed were observed within the BSA during the focused botanical surveys: paniculate tarplant, southwestern spiny rush, and southern California black walnut. No paniculate tarplant or southwestern spiny rush individuals were observed within the direct effect limits of the Build Alternative. The Build Alternative may directly impact 12 individual California black walnut trees associated with the trimming of trees for construction access or temporary construction work within the root zone of individual trees. Compensatory mitigation for riparian habitat is provided in Measure BIO-11. The Build Alternative is not anticipated to directly impact any other special-status plant species. However, if any large populations of special-status plant species are observed prior to or during construction, ESA fencing would be used to avoid effects to special-status plants (BIO-12). Implementation of Measures BIO-1 through BIO-6 and BIO-11, described above, would also avoid, minimize, and/or compensate for effects to special-status plant species during construction. The cumulative projects listed would largely occur within the State right-of-way and are not anticipated to result in substantial effects to special-status plant species. Therefore, effects to special-status plant species would be minimal, because the project would not facilitate increased development in the area and would not contribute to a cumulative loss of special-status plant species

in the region. As a result, the Build Alternative would have a minimal effect to special-status plant species and would not contribute to cumulative adverse impacts related to plant species.

- **Animal Species:** Four special-status riparian animal species, seven special-status grassland and open habitat animal species, eight special-status coastal sage scrub and chaparral animal species, and two special-status multi-habitat species were identified as potentially occurring within the BSA. Measures BIO-1 through BIO-6 and BIO-11 through BIO-13 would be incorporated into the project to avoid and/or minimize permanent effects to riparian animal species, grassland and open habitat animal species, coastal sage scrub and chaparral animal species. This includes potential permanent effects to western spadefoot toad and red-diamond rattlesnake, which are multi-habitat California Species of Special Concern. Direct temporary effects to special-status species, such as injury from collisions with construction equipment, as well as indirect temporary effects to active nests of special-status bird species, would be avoided and/or minimized with the implementation of Measures BIO-13 through BIO-15. Measures BIO-18, BIO-19, and BIO-20 would provide verification regarding the level of bat foraging and roosting activity prior to construction and would minimize potential effects to roosting and foraging bat species. Similarly, direct effects including mortality from ground disturbance associated with construction activities or habitat modifications, would be avoided and/or minimized with the implementation of Measures BIO-1 through BIO-6 and Measures BIO-13 through BIO-15. While construction of and/or operation of the cumulative projects may result in permanent effects to suitable habitat for these species as well, the surrounding areas include substantial habitat in preservation areas of these habitats and minimal effects from projects occurring mostly within the State right-of-way would have a negligible cumulative effect. As a result, the Build Alternative would not contribute to cumulative adverse effects related to animal species.
- **Threatened and Endangered Species:** As discussed in Section 2.17, Threatened and Endangered Species, suitable habitat for two listed plant species and two listed animal species is present within the BSA. No listed special-status plant species were observed in the BSA. Indirect temporary effects to potentially suitable habitat for listed special-status plant species through increased dust, erosion/runoff during construction, or the introduction of invasive species would be avoided and/or minimized with implementation of Measures BIO-1 through BIO-6. As no listed special-status plant species were identified in the disturbance

limits, no direct effects are anticipated. A "*No Effect"* determination has been made for all listed special-status plant species under the provisions of FESA Section 7(a)(2). Therefore, the Build Alternative would not contribute to cumulative effects related to listed special-status plant species.

A total of 16 marine/aquatic species are included on the NOAA Fisheries Service Species List obtained for the project. None of these species were observed, and none are expected to occur within the BSA or to be affected by the project. Therefore, a "*No Effect"* determination has been made for each of these species. In addition, no federal fisheries or essential fish habitat are located within the BSA. No anadromous fish are expected to occur in the BSA; therefore, no consultation related to federal fisheries or essential fish habitat is required.

Listed special-status animal species present within the BSA include the federally and State-listed as endangered least Bell's vireo and the federally listed as threatened coastal California gnatcatcher. Temporary and permanent effects during construction could result in indirect and direct impacts to listed special-status animal species and suitable habitat. However, implementation of Measures BIO-1 through BIO-6 and Measures BIO-13 and BIO-14 (pre-construction surveys) would avoid and/or minimize potential temporary effects to listed special-status animal species habitat and to avian nesting. Under the provisions of FESA Section 7(a)(2), the effect determination for least Bell's vireo (LBVI) is "*May Affect, Not Likely to Adversely Affect*" for both LBVI and California gnatcatcher. Cumulative projects may involve effects to suitable habitat for threatened and endangered species, although such impacts are anticipated to be limited and any direct effects to the species would be mitigated for in accordance with Federal Endangered Species Act (FESA) Section 7 and formal consultation with USFWS. On August 30, 2018, USFWS issued a Section 7 consultation letter that concurs that the project is not likely to adversely affect any federally listed species. The letter contains the Conservation Measures that have been incorporated as Measures BIO-21 through BIO-40, and will be implemented in addition to the measures referenced above to avoid and/or minimize impacts to threatened and endangered species.

While there is potential for impacts to suitable habitat during construction, adverse cumulative effects to these species are not anticipated. As a result, the Build Alternative would not contribute to cumulative adverse effects related to threatened and endangered species.

- **Invasive Species:** Non-native plant species occur along the road shoulder and other disturbed areas within the BSA, largely in areas that have been disturbed by human uses. Based on the California Invasive Plant Council (Cal-IPC) California Invasive Plant Inventory, 41 non-native plants have the potential to occur within the BSA. The Build Alternative would not substantially increase the potential for the spread of invasive species. However, potential effects from invasive species associated with construction are considered permanent when the introduction of invasive species into previously undisturbed areas would result from permanent effects to native habitats. Construction activities have the potential to spread invasive species through the entering and exiting of contaminated construction equipment and through improper removal and disposal of invasive species. In compliance with Executive Order (EO) 13112, a weed abatement program would be developed to minimize importation of non-native plant material during and after construction (BIO-4). Measure BIO-2 would also require the restoration of native vegetation, which would minimize potential effects related to the spread of invasive species. Development of Projects 1 and 2 identified in Table 2.19.1 would also be required to comply with EO 13112 for the prevention of spreading invasive species. Therefore, the Build Alternative would not contribute to cumulative adverse effects related to invasive species.

2.19.2.2 Resources Evaluated for Cumulative Impacts

No cumulative effects to any resources were identified as a result of construction or operation of the Build Alternative; therefore, no resources were evaluated for cumulative effects.

2.19.3 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures for cumulative effects are required. Although no cumulative impacts are identified, project features and avoidance and minimization measures s as a part of the project plans would minimize impacts.

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