

4.14 Transportation and Circulation

This section describes the current transportation conditions and examines the effects of the changes in projected land use and transportation projects included in the 2040 MTP/SCS on transportation conditions in 2040. This section evaluates the impacts related to transportation such as changes in travel times, accessibility to jobs, traffic congestion, vehicle miles traveled and transit utilization that may result from the implementation of the 2040 MTP/SCS.

4.14.1 Setting

The existing transportation system in the region consists of a complex network of state and federal highways, local streets and roads, transit services, a series of bicycle paths and pedestrian walkways, railroad lines and a number of aviation facilities.

a. Roadway Network

The roadway network within the region consists of several thousand miles of roadways, including highways, regional arterial roads and other collector and local streets. Within the region, the designated routes in the national highway system are all state or federal highways, including: Highway 101 for its entire length through the region, Highway 156 from Highway 101 to Highway 1, and Highway 1 from Highway 17 in Santa Cruz to Highway 68 in Monterey. Vehicle travel served by these highways includes all trip lengths and trip purposes, ranging from external trips to and from the region, external trips traveling through the region (e.g. from San Jose to Los Angeles on Highway 101), and internal travel between points within the region.

The three counties and 18 incorporated cities within the region are responsible for an extensive network of city and county roads. Major highway routes through the region include:

- Highway 101, a north-south route primarily serving Monterey County, and connecting through San Benito County and the San Jose/San Francisco Bay area;
- Highway 1, which closely follows the Pacific coastline and is the single longest highway in the region, attracting substantial recreational and tourist traffic;
- Highway 17, which connects Santa Cruz and the San Jose Area, carrying a high volume of both commuter and recreational traffic;
- Highway 68 and Highway 183 in Monterey County;
- Highway 25 and Highway 156 in San Benito County; and
- Highway 9 and Highway 129 in Santa Cruz County.

These highways and other expressways, arterials and collectors not only serve local traffic, but provide access and mobility for trips beginning and/or ending outside the region. Table 46 identifies the major roadways in the region and current roadway congestion issues. Current roadway conditions and congestion issues reflect baseline (2015) conditions, unless a more recent date is noted.

Table 46 Highway Descriptions and Congestion Issues

Highway	Length within AMBAG Region	Description
State Highway 1	139.8 miles	<p>Highway 1 is one of two routes that traverse the entire region, connecting the Monterey Bay Area to Northern and Southern California. This important highway provides the primary access to the region's coastal areas, as well as serving the needs of residents and visitors to much of the region's urbanized areas, and assisting with agricultural commodity movement.</p> <p>Highway 1 is designated a California State Scenic Highway from the intersection with State Highway 68 south to the San Luis Obispo County line, a distance of approximately 78 miles. At the Santa Cruz and San Mateo County border, Highway 1 is designated a California State Scenic Highway as it travels north towards San Francisco. Highway 1 changes in character as it moves down the Pacific Coast, from a rural, undivided two lane highway, to a four lane arterial, to a four lane divided highway, and finally to a six lane divided highway. Congestion issues include commuter traffic around and through the cities of Monterey and Santa Cruz and tourism traffic along its entire length, but especially in the Big Sur and Carmel-by-the-Sea areas.</p> <p>Portions of Highway 1 have been closed in Monterey County due to mudslides and a collapsed bridge at Pfeiffer Canyon. As of October 23, 2017, the newly constructed Pfeiffer Canyon Bridge has reopened; however, the highway remains closed at Mud Creek due to a substantial landslide and is anticipated to be closed through June 1, 2018 (Caltrans, 2017b). However, this temporary lull in operations of Highway 1 is not considered representative of baseline conditions.</p>
State Highway 9	25.7 miles	<p>Highway 9 is a two-lane rural highway as it enters the region from San Mateo County in the Santa Cruz Mountains. It is a 27-mile route between the cities of the Santa Clara Valley and Santa Cruz at its junction with Highway 1. It is considerably curvy and traverses forested areas, which limit travel speeds. Highway 9 serves communities in the San Lorenzo Valley, including Boulder Creek, Ben Lomond, and Felton, and is a heavily used commuter and recreational travel route.</p> <p>A section of Highway 9 has been temporarily reduced to one-way controlled traffic at Western Avenue in Santa Cruz County due to a mudslide removal. This temporary traffic control is expected remain in place until December 31, 2017 (Caltrans, 2017b). This temporary reduction in travel lanes on Highway 9 is not considered representative of baseline conditions.</p>
State Highway 17	12.5 miles	<p>Highway 17 is a four-lane freeway/expressway providing the shortest travel distance between the Santa Clara Valley and Santa Cruz County. Travelers to and from the San Francisco Bay area and Santa Cruz County use Highway 17. The route is heavily used for recreational travel on weekends and for commuter travel on weekdays and is therefore subject to delay.</p> <p>Starting at the Santa Clara/Santa Cruz County line near Summit Road, Highway 17 is a rolling to mountainous road, with slopes from four percent to six percent. Segments along this route are narrow, do not have shoulders, or have a narrow median with guard rail. Highway 17 reached its design capacity of 40,000 vehicles per day in 1968. Although this road does not have signalized intersections, there are several unsignalized intersections with acceleration/deceleration lanes as well as t-intersections with local roads. Just south of Scotts Valley, Highway 17 becomes a freeway with shoulders. The freeway portion terminates at the interchange with Highway 1 in the City of Santa Cruz. The program Safe on 17 has been an effective collaboration between Caltrans, the California Highway Patrol and local and elected officials to encourage motorists to travel at safe speeds and use caution on Highway 17.</p>

Highway	Length within AMBAG Region	Description
State Highway 25	72.1 miles	<p>Highway 25 enters the region in the north about two miles south of its interchange with U.S. Highway 101 in Santa Clara County. Although only a two-lane undivided highway, it provides the most direct connection between U.S. Highway 101 and the City of Hollister, as well as being the sole north-south highway for the rest of San Benito County.</p> <p>Highway 25 is primarily a two-lane undivided roadway from the Santa Clara/San Benito County line and the intersection with Highway 198 in southern Monterey County. In this section, Highway 25 provides direct access to the East Entrance to Pinnacles National Park.</p> <p>Due, in part, to both differences between housing market costs and a jobs/housing imbalance, increasing commute travel from residents from San Benito County to Santa Clara County has substantially affected the operation of Highway 25, especially from Hollister to the Santa Clara County line.</p>
State Highway 68	22 miles	<p>Highway 68 begins at Asilomar State Beach in the City of Pacific Grove and is the only highway access from Pacific Grove to Highway 1. At Highway 1, the roads merge for about three miles, then Highway 68 continues east past the Laguna Seca Recreation Area and Monterey County's Toro Regional Park and on into Salinas, where it connects to U.S. Highway 101.</p> <p>Highway 68 is the most direct highway link between the Monterey Peninsula and the City of Salinas and is heavily used by commuters and visitors.</p> <p>State Highway 68 is a designated California State Scenic Highway from its intersection with State Highway 1 in Monterey to the Salinas River. From Asilomar State Beach to State Highway 1, Highway 68 is a steep two-lane highway with narrow shoulders, many curves and signalized intersections. From Highway 1 eastbound, Highway 68 is a four-lane divided road for less than a mile before narrowing to a two-lane undivided rural highway (with signalized intersections) to Toro Park, where it becomes a four-lane freeway to the Spreckels interchange. From here to Blanco Road in the City of Salinas it is a four-lane expressway, and then it becomes a signalized arterial (South Main Street and John Street) through Salinas to U.S. Highway 101. Motorists experience substantial delay on Highway 68 due to its heavy use and signalized intersections.</p>
U.S. Highway 101	107.6 miles	<p>U.S. Highway 101 is the only federal highway in the region. Highway 101 enters the region at the northwest corner of San Benito County as a four-lane freeway/expressway.</p> <p>U.S. Highway 101 is the main north-south route for the region, used heavily by residents of the region, and for external trips to and through the region. It is an important truck route along its entire length. Near Prunedale travel demand significantly outpaces capacity. This section is characterized by at-grade intersections that serve increasing commuter, recreational and truck traffic.</p> <p>At the northern boundary of the City of Salinas, Highway 101 has been improved to a freeway through the urbanized area, and then it continues as an expressway southward toward the Monterey/San Luis Obispo County line, with alternating segments of four-lane divided expressway and freeway.</p>
State Highway 129	14.1 miles	<p>Highway 129 connects Highway 1 in Watsonville and U.S. Highway 101 in San Benito County, east of Watsonville. Highway 129 traverses hilly terrain with sharp curves and steep grades. It provides the shortest route between the agriculture center of Watsonville and U.S. Highway 101. It therefore carries a large volume of heavy trucks, especially since semitrailer trucks over 45 feet in length are not allowed on Highway 152, which is another connection between Watsonville and Highway 101.</p> <p>Highway 129 is a four-lane road from Highway 1 to the Watsonville City limits, where it narrows to a two-lane rural road with narrow or no shoulders. The</p>

Association of Monterey Bay Area Governments
 2040 Metropolitan Transportation Plan/ Sustainable Communities Strategy and Regional Transportation
 Plans for Monterey, San Benito and Santa Cruz Counties

Highway	Length within AMBAG Region	Description
		terrain it traverses, and the resulting roadway characteristics place severe limits on traffic speeds and volume.
State Highway 146	18.3 miles	Highway 146 is two separate rural two-lane roads, one from U.S. Highway 101 in Monterey County east, and the other from Highway 25 in San Benito County west. These roads do not connect for travel across the Gabilan Mountains, but do provide access to Pinnacles National Park via its western and eastern entrances, respectively.
State Highway 152	11.4 miles	Highway 152 connects the City of Watsonville to Gilroy, northeast of Watsonville in Santa Clara County. In Watsonville, Highway 152 begins at its intersection with Highway 1. It traverses Hecker Pass between Watsonville and Gilroy, before ultimately ending at its junction with U.S. Highway 101 in Gilroy. Highway 152 is primarily a two-lane undivided highway along most of its length, but the segment between Highway 1 and Elkhorn Road in Pajaro is a four-lane divided expressway. As the road crosses Mt. Madonna via Hecker Pass, it becomes hilly with many curves. Due to safety concerns, trucks over 45 feet in length are prohibited on travelling on Highway 152 over Hecker Pass. These trucks are diverted to Highway 129 and other routes.
State Highway 156	23.9 miles	Highway 156, like Highway 129 and Highway 152, is a major route connecting U.S. Highway 101 and Highway 1. Starting from its interchange with Highway 1 and Highway 183 in Castroville, the highway merges with U.S. Highway 101 in Prunedale and then becomes a separate route again near San Juan Bautista. At San Juan Bautista, the highway continues easterly north of Hollister to the Santa Clara County line just south of its terminus with Highway 152. Highway 156 is a California State Scenic Highway from one mile east of Castroville to its intersection with U.S. Highway 101 near Prunedale. At San Juan Bautista, Highway 156 begins as a four-lane divided expressway, but after three miles becomes a two-lane, undivided highway to approximately one mile east of Hollister. Highway 156 is a two-lane expressway as it bypasses Hollister and maintains that configuration to the Santa Clara County line. The reduction in travel lanes can be a traffic bottleneck between Highway 1 and U.S. Highway 101 during peak periods and weekends. Highway 156B is the business route of the highway running directly through Hollister, providing access to the Hollister Airport.
State Highway 183	10.1 miles	Highway 183 is a rural two-lane highway connecting Castroville and Salinas. In Castroville, Highway 183 is also known as Merritt Street and begins at an at-grade interchange with Highway 1. The highway is congested between Highway 1 to Davis Road in the City of Salinas, particularly during commute hours on weekdays. It also experiences high rates of agricultural truck traffic movement. In the City of Salinas, the highway becomes two four-lane divided arterials on Market and North Main Streets. Highway 183 terminates at the U.S. Highway 101 on-ramp south of Bernal/North Main Street.
State Highway 198	26.2 miles	Highway 198 is a two-lane conventional highway beginning at U.S. Highway 101 just west of San Lucas in southern Monterey County and continuing east to the Fresno County line. Traffic volumes are low and are primarily interregional.
State Highway 236	16.4 miles	Highway 236 is a two-lane rural road that provides access from Highway 9 at Boulder Creek west to Big Basin Redwoods State Park. Passing through the park, Highway 236 first heads north and then east to reconnect with Highway 9 approximately eight miles north of Boulder Creek. The highway generally is not congested, but does contain narrow to no shoulders, sharp curves and hilly terrain.

Operations

A variety of performance measures are used to assess transportation systems. Depending on the type of performance evaluation required, performance measures may be very specific and focus on intersections or roadway segments, or performance measures may be aggregated to evaluate the overall operation of a regional transportation system. A regional travel model typically only contains information on the number of lanes and link capacity on roadway segments and lacks information detailed enough to calculate accurate intersection information.

Because of the programmatic nature of the 2040 MTP/SCS, the performance measures discussed herein are aggregated by county and as a region to evaluate the overall performance of the transportation system. Transportation performance measures were used as planning metrics in creating the 2040 MTP/SCS. Transportation performance measures that address performance goals, as detailed in Chapter 5 of the 2040 MTP/SCS, include:

- Total daily hours of vehicle delay;
- Peak period⁸ and total congested vehicle miles traveled (CVMT);
- Percent of work trips that are 30 minutes or less by transit during peak period;
- Average work trip travel time during peak period; and
- Percent of jobs within 0.5 mile of a high-quality transit stop.

Daily hours of vehicle delay is calculated by determining the difference between the estimated travel time under actual (often congested) conditions and under uncongested conditions, for each highway and roadway segment and each hour period of the day. These hourly delays per vehicle are multiplied by the annual average hourly traffic for each period hour, and summed to get total daily vehicle hours of delay. Table 47 shows the existing vehicle hours of delay in 2015 for each county in the AMBAG region, and the region as a whole.

Table 47 Existing Vehicle Hours of Delay (2015)

County	Total Daily Vehicle Hours of Delay*
Monterey	15,028
Santa Cruz	15,950
San Benito	2,000
AMBAG Region	32,978

Source: Regional Travel Demand Model (AMBAG, 2014b)

The basic measure of the amount of vehicle travel generated is vehicle miles traveled (VMT). One vehicle traveling one mile constitutes one vehicle mile, regardless of the size of the vehicle or the number of passengers in the vehicle. Increases in VMT are associated with regional growth that would occur with or without the 2040 MTP/SCS. Thus, the VMT data may not reflect deficient traffic operations, although VMT does have a strong correlation with congestion. CVMT measures the number of vehicle miles traveled in the AMBAG region in congested conditions. For the purposes of this EIR analysis, congested conditions are roadways operating at level-of-service (LOS) E and LOS F during peak period. LOS is a qualitative measure describing the operational conditions within a

⁸ Peak period consists of morning peak period (6:00 A.M. to 9:00 A.M.) and evening peak period (4:00 P.M. to 7:00 P.M.).

traffic stream. LOS has letter designations ranging from A to F, representing progressively worsening traffic operations, with LOS F being the worst possible operations. According to the AMBAG's Regional Travel Demand Model (RTDM) (2014), in 2015, there were 499,064 CVMT during peak period in the AMBAG region. AMBAG's RTDM includes socioeconomic growth projections based on AMBAG's Draft 2018 Regional Growth Forecast.

Other metrics used to evaluate current and future operations include the percent of work trips that are 30 minutes or less by transit during peak period. This is a measurement of the general effectiveness of improvements focused on increasing transit use as the mode of choice for work trips. The average work trip travel time during the peak period is a general comparison of overall commute time reductions associated with transportation improvements. Linking transit access with employment centers is another measure of effectiveness. Specifically, the 2040 MTP/SCS focuses on increasing the percentage of jobs within 0.5 mile of a high quality transit stop. A high quality transit corridor is defined as a corridor that contains transit service with 15 minute frequencies during peak period or a corridor that contains a rail stop. In 2015, 21.4 percent of jobs in the AMBAG region were within 0.5 mile of a high quality transit stop. Improvements to transit service and access are intended, in part, to reduce the average work trip travel time during the peak period. According to the AMBAG's RTDM (2014), baseline conditions show the average work trip travel time is 15.6 minutes.

The development and assumptions associated with the RTDM are available in electronic format on AMBAG's RTDM resource materials webpage, at:

http://ambag.org/programs/met_transp_plann/documents/TMIP/Region_Overview.pdf

The RTDM was peer reviewed by Travel Model Improvement Program (TMIP) in 2011, which is sponsored by the Federal Highway Administration (FHWA). The peer review is available online at: http://ambag.org/programs/met_transp_plann/documents/TMIP/Peer_Review_Final_Report.pdf

Comprehensive documentation of the modeling methodology, assumptions, calibration and inputs used for the RTDM is provided in Appendix F of the 2040 MTP/SCS.

b. Public Transit Systems

Monterey-Salinas Transit (MST) provides fixed route transit service in Monterey County. The fixed route service includes 56 routes and consists of a fleet of 123 vehicles, mostly buses (MST, 2017a). MST bus stations are located in the cities of Carmel-by-the-Sea, Del Rey Oaks, Greenfield, Gonzales, King City, Marina, Monterey, Pacific Grove, Salinas, Seaside and Soledad, as well as the community of Chualar. MST also provides public transit service in areas of unincorporated Monterey County, including the communities of Castroville, Pajaro, Prunedale, Moss Landing, Toro Park, Carmel Valley, Carmel Highlands and Big Sur. To assist inter-regional connections, MST also provides service to the Watsonville Transit Center in Santa Cruz County and the Gilroy Caltrain station in Santa Clara County. MST had 4.41 million passenger trips on its fixed route system in Fiscal Year 2016 (MST, 2016).

The Santa Cruz Metropolitan Transit District (METRO) provides fixed route transit service in Santa Cruz County. METRO provides essential bus transit services for all local residents, including students, Highway 17 commuters, transit-dependent and choice riders. The county's network for local and express bus routes includes transit centers in Felton, Scotts Valley, Santa Cruz, Capitola and Watsonville. METRO buses serve 479 miles of road throughout the County and cover the majority of arterial and collector routes. Transit to Monterey County is provided at the Watsonville Transit Center via connections with MST. Greyhound provides service from Santa Cruz to surrounding

regions. Santa Cruz Metro had approximately 5.6 million passenger trips on its fixed route system in Fiscal Year 2016 (METRO, 2016).

San Benito County Express is the primary transit provider in the County of San Benito with service in Hollister and countywide via intercity connections. The County Express system currently provides three fixed routes in the City of Hollister, complementary Americans with Disabilities Act (ADA) Paratransit service and a general public Dial-A-Ride. San Benito County Express had 75,200 unlinked trips in Fiscal Year 2015, which included services to Gilroy and Gavilan Community College (Council of San Benito County Governments, 2016).

c. Air Transportation

The AMBAG region has six publicly-owned civil aviation airports, which include the following:

- Monterey Regional
- Salinas Municipal
- King City Municipal (Mesa Del Rey)
- Marina Municipal
- Watsonville Municipal
- Hollister Municipal

Of these airports, only the Monterey Regional Airport provides scheduled air carrier service. There are also several private airports in the region that are used primarily for agricultural or business purposes, but one of these, the Frazier Lake Airport, also allows public use.

Several civil aviation helipads are maintained for helicopter use in the region, including the Mee Hospital helipad in King City, a Texaco helipad in San Ardo, the Soledad Correctional Training Facility helipad, the Watsonville Community Hospital helipad, the Alta Vista helipad near Watsonville, the Dominican Hospital helipad, the Hollister Municipal Airport helipad, the Natividad Medical Center helipad in Salinas and the Hazel Hawkins Memorial Hospital helipad in Hollister.

Currently, there are two operational military airfields in the region: Camp Roberts Army Airfield and Heliport and the Hunter-Liggett Army Airfield.

d. Marine Transportation

Marine transportation activities along the coastal land areas are related to recreation and commercial fishing. There are no general cargo or passenger ship terminals in the AMBAG region. Public use marine facilities on the Monterey Bay include the Monterey Harbor and the Moss Landing Harbor in Monterey County and the Santa Cruz Harbor in Santa Cruz County.

e. Rail Transportation

The rail network within the region includes all rail lines or other facilities currently served by a railroad for passenger or freight movement, rail lines used for recreational service, rail lines not currently in use, and abandoned rail lines or facilities (either with or without track). With the exception of Watsonville Junction, all of the region's rail lines are single track. Some of the abandoned rail lines have been converted to bicycle/pedestrian trail use.

Passenger Rail

The only regular passenger rail transportation currently operating in the region is provided by Amtrak. Amtrak trains share the Union Pacific Railroad main line tracks. There is one passenger rail station located in the City of Salinas at 30 Railroad Avenue, in the downtown area. This stop services Amtrak's Coast Starlight train, which connects Los Angeles to Seattle.

Monterey County

Both passenger and freight rail service are available in Monterey County. Amtrak provides rail service for its Coast Starlight train twice daily via a station stop in Salinas. Four freight stations are located in Castroville, Gonzales, Salinas and Watsonville Junction (Pajaro Community Area).

Santa Cruz County

Freight rail service, once operated by Southern Pacific Railroad and then by Union Pacific and now Monterey Bay Railway has been a historically important form of transportation within Santa Cruz County. There are currently three rail lines in or adjacent to Santa Cruz County. The Santa Cruz Branch rail line extends from Watsonville junction in Pajaro north to Davenport and passes through much of the county's urban area. The Santa Cruz Branch line was purchased by the SCCRTC in 2012. The Felton Branch line is owned and operated by the private Santa Cruz Big Trees and Pacific Railway Company. It primarily provides summertime and holiday excursions between Felton and the Beach Boardwalk in Santa Cruz and is also occasionally used for freight. The Coast Rail Route is Union Pacific main coastal line extending from San Jose to San Diego.

San Benito County

There is currently no passenger rail service in San Benito County.

Rail Freight

The majority of rail freight service in the region is provided by the Union Pacific Railroad Company and by Iowa Pacific Holdings, which operates in the AMBAG region under the business name of Santa Cruz and Monterey Bay Railway (SCCRTC, n.d.). Agricultural produce and construction materials are the principal rail freight shipments in the region. Freight service is provided (although currently it is seldom used) along the Santa Cruz Branch line, the rail line between Watsonville Junction and the City of Santa Cruz, the Davenport branch line and the Hollister spur. SCCRTC purchased the Santa Cruz Branch line in 2012, between Davenport and Pajaro. Santa Cruz and Monterey Bay Railway continues to operate limited freight service on the rail line and maintain the rail track (SCCRTC, n.d.)

Rail freight service to Hollister and northern San Benito County is provided by the Union Pacific Hollister Branch line (Union Pacific, 2016). Union Pacific Railroad retains an exclusive easement to operate freight rail service on the line.

f. Bicycle and Pedestrian Facilities

The AMBAG region has approximately 1,446 miles of bikeways (AMBAG, 2014c). Bikeways are facilities that provide primarily for, and promote, bicycle travel. There are four types of bikeway classifications identified by the California Department of Transportation (Caltrans) (Caltrans, 2017a). These classes are as follows:

- **Class I.** Paths or trails, separated from roadways, for the exclusive use of bicycle and pedestrian modes of travel
- **Class II.** Designated lanes for bicycles on roadways
- **Class III.** Roads where bicycles and vehicles share the travel lanes of the roadway
- **Class IV.** Designated lanes for bicycles on roadways, but which are also separated from the roadway traffic by barricades, such as bollards.

There are several major bike routes through the region, including the Monterey Bay Sanctuary Scenic Trail (MBSST). Although not yet fully constructed, the MBSST is a pedestrian and bicycle pathway network that is envisioned to run from the Santa Cruz/San Mateo County line to Pacific Grove in Monterey County.

Monterey County

Monterey County has 887 miles of bikeways (AMBAG, 2014c). One of the major continuous bikeways in the county is the Monterey Bay Coastal Bike Trail, which is approximately 29 miles long stretching from Castroville to the Monterey Peninsula and parts of Pebble Beach. The Monterey Bay Coastal Bike Path runs adjacent to the Fort Ord Dunes State Park located between the cities of Seaside and Marina. The state park also has its own bike path that is accessible on both ends of the Fort Ord Dunes Park from the Monterey Coastal Bike Path. Sections of the MBSST have been completed in Monterey County between Pacific Grove and Monterey, between Sand City and Seaside and between Marina and Castroville. Most of these sections are Class I bikeways, but short sections are Class II and Class III (TAMC, 2008).

Santa Cruz County

Santa Cruz County has approximately 366 miles of bikeways (AMBAG, 2014c). It is likely that additional bikeways have been constructed since the 2014 adoption of the most recent MTP/SCS. Many of the county's major collector and arterial roadways have been established as Class II bikeways (bike lanes), providing an extensive network of resources linking cities throughout the county. For example, Class II bikeways are provided on Bay Drive and High Street in the City of Santa Cruz, providing a bicycle connection between the downtown area of the city and the University of California at Santa Cruz. There are few Class I bikeways (bike paths) in the County. The Wilder Ranch Bike Path, which is a Class I bikeway located just west of the City of Santa Cruz is part of the Monterey Bay Sanctuary Scenic Trail. Funding has either been partially or fully secured for an additional approximately 13 miles of the Monterey Bay Sanctuary Scenic Trail in Santa Cruz County (SCCRTC, 2017).

San Benito County

San Benito County has approximately 193 miles of bikeways (AMBAG, 2014c). Bicycle facilities in San Benito County are generally concentrated in and around Hollister. A Class I bikeway is located approximately parallel with State Highway 25 from near the southern limits of Hollister to near the center of the city, north of Rancho San Justo Park. Class II bikeways are provided on several streets in Hollister, including State Highway 25 Bypass, Westside Boulevard, Southside Road and Union Road. Within the City of San Juan Bautista, a short section of San Juan Highway is in the northern part of town has designated bike lanes. The Juan Bautista de Anza National Historic Trail traverses San Juan Bautista and the western part of the county.

g. Transportation Demand Management/Transportation System Management

Transportation Demand Management (TDM) refers to all programs and strategies which are intended to reduce the number of trips required over the transportation network or shift the distribution of trips between time periods across the network (FHWA, 2012). Transportation System Management (TSM) represents a variety of management techniques designed to improve the efficiency and effectiveness of the transportation system. These techniques improve operations and/or services of existing and future transportation networks (FHWA, 2012).

Traffic Congestion Management

The Department of Energy's Fuel Efficient Traffic Signal Management Program has assisted in increasing the number of synchronized traffic signals within the region to promote free flowing traffic conditions, less use of vehicle fuel and decreased pollution due to less congestion. In the past, some jurisdictions within the region have implemented minor design improvements to the existing transportation infrastructure in lieu of costly capital construction or reconstruction. In the future, signalization, channelization and the construction of acceleration and deceleration lanes with ramp metering at key interchanges are expected to achieve traffic flow improvements.

Intermodal Transportation

Traffic engineers and transportation planners in the AMBAG region have employed one or more of the following methods of enhancing intermodality to increase the use of the existing transportation capacity more efficiently:

- Coordinate transit routes and schedules with those of inter-city rail and bus service;
- Provide amenities and facilities for bicycle and pedestrian access to transit stops;
- Facilitate and encourage access to the regional air carrier airport by paratransit, transit, taxi, transportation network companies and bicycle; and
- Provide park and ride facilities with bicycle, pedestrian and transit access amenities.

Ridesharing

Rideshare programs help reduce congestion and improve traffic flow. AMBAG, with grant assistance from the Monterey Bay Air Resources District (MBARD), has successfully implemented a subsidized vanpool program, which reduced vehicles trips associated with agricultural activities and production in the region. Rideshare and carpool programs exist throughout Monterey Bay to facilitate ridesharing.

Preferential Transit/Carpool Treatment/Electric Vehicle Charging

Methods employed by local jurisdictions to encourage people to reduce their use of single-occupant vehicles include: preferential parking for carpools and vanpools; subsidized transit passes; use of agency vans for vanpooling; and provision of an on-site transportation coordinator. Regional transit agencies strive to ensure that the major developments within their service areas are transit accessible and that transit stops are located to promote transit use.

Parking Management

Parking management refers to programs that result in more efficient use of parking resources and can either provide an incentive or disincentive to single occupant vehicle use. Parking facilities that are shared between multiple users and destinations are found within the region. Park and ride lots are a form of off-site shared parking facilities and facilitate ridesharing. Park and ride lots within the region have been placed in locations where people can easily meet and form carpool trips. In an effort to encourage ridesharing, there are fifteen formal, informal and joint use park and ride lots in the Monterey Bay region. Of the six park and ride lots that serve Santa Cruz County commuters, four are publically owned and two are shared use by agreement with local churches (Caltrans, 2014). San Benito County has two formal park and ride lots (Caltrans, 2014). Monterey County commuters have five formal park and ride lots from which to choose (MST, 2017; Caltrans, 2014). Parking garages are frequently associated with shared parking in the AMBAG region and are located near destinations attracting a large number of visitors. Parking regulations which control when and how long vehicles may park and the cost of the parking in a location is another form of parking management in the region.

h. Regulatory Setting

Federal

Moving Ahead for Progress in the 21st Century Act

The Moving Ahead for Progress in the 21st Century Act (MAP-21), was enacted in 2012. Through the MTP development process, MAP-21 encourages MPOs, such as AMBAG, to:

Consult with officials responsible for other types of planning activities that are affected by transportation in the area (including State and local planned growth, economic development, environmental protection, airport operations and freight movements) or to coordinate its planning process, to the maximum extent practicable, with such planning activities (23 U.S.C. §134(g)(3)(A)).

Specifically, MAP-21 requires that the MTP planning process provide for consideration of projects and strategies that will:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency;
- Increase the safety of the transportation system for motorized and non-motorized users;
- Increase the security of the transportation system for motorized and non-motorized users;
- Increase the accessibility and mobility of people and for freight;
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operation; and
- Emphasize the preservation of the existing transportation system (23 U.S.C. §134(h)(1)).

Fixing America's Surface Transportation Act

Fixing America's Surface Transportation (FAST) Act builds on the changes made by MAP-21, and was signed into law in December 2015 (Public Law 114-94). The FAST Act authorizes \$305 billion through fiscal year 2020 for highways, highway and motor vehicle safety, public transportation, rail and research and technology programs and provides a dedicated source of federal funds for freight projects. The FAST Act expands the scope of consideration of the metropolitan planning process to include: consideration of intercity transportation, including intercity buses, intercity bus facilities and commuter vanpool providers; improving transportation system resiliency and reliability; reducing or mitigating the stormwater impacts of surface transportation; and enhancing travel and tourism. In addition, it requires strategies to reduce the vulnerability of existing transportation infrastructure to natural disasters.

Under the FAST Act, the U.S. Department of Transportation requires that MPOs, such as AMBAG, prepare long-range transportation plans and update them every four years if they are in areas designated as "nonattainment" or "maintenance" for federal air quality standards. Before enactment of the FAST Act and its predecessor, MAP-21, the primary federal requirements regarding long-range transportation plans were included in the metropolitan transportation planning rules (23 CFR Part 450 and 49 CFR Part 613). The FAST Act makes a number of changes to the statutes that underpin these regulations. Per federal requirements, long-range transportation plans must:

- Be developed through an open and inclusive process that ensures public input; seeks out and considers the needs of those traditionally under served by existing transportation systems; and consults with resource agencies to ensure potential problems are discovered early in the planning process;
- Be developed for a period of not less than 20 years into the future; long-range transportation plans must reflect the most recent assumptions for population, travel, land use, congestion, employment and economic activity;
- Have a financially constrained element, transportation revenue assumptions must be reasonable, and the long range financial estimate must take into account construction-related inflation costs;
- Include a description of the performance measures and performance targets used in assessing the performance of the transportation system;
- Include a system performance report evaluating the condition and performance of the system with respect to performance targets adopted by the state that detail progress over time;
- Include multiple scenarios for consideration and evaluation relative to the state performance targets as well as locally-developed measures.
- Conform to the applicable federal air quality plan, called the State Implementation Plan, for ozone and other pollutants for which an area is not in attainment; and
- Consider planning factors and strategies in the local context (California Transportation Commission, 2010)

State

California Transportation Plan

The California Transportation Plan is prepared by the California State Transportation Agency every five years to provide a long-range policy framework to meet the State's future mobility needs and

reduce greenhouse gas emissions to goals set by the California Global Warming Solutions Act of 2006 (AB 32, discussed in Section 4.8, Greenhouse Gas Emissions/Climate Change) and implementing legislation SB 375 (discussed below). The most recent California Transportation Plan was adopted in 2016. The California Transportation Plan defines goals, performance-based policies, and strategies to achieve the State's collective vision for California's future statewide, integrated, multimodal transportation system by envisioning a sustainable system that improves mobility and enhances quality of life. The California Transportation Plan is developed in collaboration with transportation stakeholders such as AMBAG. Through ongoing engagement, the California Transportation Plan is intended to provide goals and visions to support a fully integrated, multimodal, sustainable transportation system that supports the quality of life, prosperous economy, human and environmental health and social equity.

State Regional Transportation Plan Requirements

Government Code Sections 65080 et seq. state that MPOs must prepare and adopt a long-range transportation plan, such as a RTP or MTP, directed at achieving a coordinated and balanced regional transportation system, including, but not limited to, mass transportation, highway, railroad, maritime, bicycle, pedestrian, goods movement and aviation facilities and services. The plan must be action-oriented and pragmatic, considering both the short-term and long-term future, and shall present clear, concise policy guidance to local and state officials. The transportation plan must consider factors specified in the FAST Act metropolitan transportation planning rules (23 CFR Part 450 and 49 CFR Part 613), and each transportation planning agency must consider and incorporate, as appropriate, the transportation plans of cities, counties, districts, private organizations and state and federal agencies.

Pursuant to Government Code section 65080(d), MPOs, such as AMBAG, that are located in nonattainment and monitoring areas must update their long-range transportation plans at least every four years. If the current long-range transportation plan is determined to be adequate such that an update is not warranted, the MPO may re-adopt the current plan.

The California Transportation Commission has developed guidelines to assist MPOs with developing their RTPs so that they are consistent with federal and state transportation planning requirements. The guidelines are updated and adopted periodically, as needed. For the first time, two separate guidelines were adopted in January 2017 to guide RTP development in MPOs and RTPAs. Both documents incorporate new legislation and the associated goals, particularly related to reducing GHG emissions and improving air quality. Both the 2017 RTP Guidelines for MPOs (California Transportation Commission, 2017a) and the 2017 RTP Guidelines for RTPAs (California Transportation Commission, 2017b) specify that the requirements outlined in the documents apply to all RTP updates begun following adoption. Since the 2040 MTP/SCS and RTPs were started prior to the January 2017 adoption date of the 2017 RTP Guidelines, the earlier 2010 RTP Guidelines may be used. However, AMBAG has elected to use the 2017 RTP Guidelines for the 2040 MTP/SCS and the RTPAs have elected to use the 2017 RTP Guidelines for the RTPs.

The 2017 RTP Guidelines include guidelines for regional travel demand modeling. The regional travel demand model guidelines are "scaled" to different sizes of MPOs. The guidelines also describe the methods for projecting of future travel demand, as well as the key assumptions typical of transportation demand models. Additionally, the guidelines describe the consultation and coordination process, which are designed to foster involvement by all interested parties including air quality agencies, discuss the environmental considerations of an RTP, and list the general contents of an RTP document.

Senate Bill 375

SB 375 is a California law passed in 2008 that requires each MPO to demonstrate, through the development of a Sustainable Communities Strategy (SCS), how its region will integrate transportation, housing and land use planning to meet the greenhouse gas (GHG) reduction targets set by the State. The details of SB 375 are discussed in Section 2.0, *Project Description*.

Senate Bill 743

SB 743 changes the way that public agencies evaluate the transportation impacts of projects under CEQA, recognizing that roadway congestion, while an inconvenience to drivers, is not itself an environmental impact (see Pub. Resource Code, § 21099, subd. (b)(2)). SB 743 provides opportunities to streamline CEQA for qualifying urban infill development near major transit stops in metropolitan regions statewide. A transit-oriented infill project can be exempt from CEQA if consistent with a specific plan for which an EIR was prepared, and also consistent with the use, intensity, and policies of an SCS or Alternative Planning Strategy that is certified by the CARB as meeting its greenhouse gas reduction targets. A city or county may designate an “infill opportunity zone” by resolution if it is consistent with the general plan and any applicable specific plan, and is a transit priority area within the adopted SCS or Alternative Planning Strategy. This infill opportunity zone is then exempt from level of service standards in the congestion management plan. Furthermore, under the bill parking impacts are no longer considered significant impacts on the environment for select development projects within infill areas with nearby frequent transit service.

In August 2014, the Governor’s Office of Planning and Research circulated its draft changes to the State CEQA Guidelines implementing SB 743 for public comment. Revised draft guidelines were released on January 20, 2016. In addition to new exemptions for projects that are consistent with specific plans, the draft SB 743 guidelines replace congestion based metrics, such as auto delay and level of service, with Vehicle Miles Traveled as the basis for determining significant impacts, unless the guidelines provide specific exceptions. Following any revisions Governor’s Office of Planning and Research deems appropriate, it will submit the draft guidelines to the Natural Resources Agency for commencement of a formal rulemaking process.

Assembly Bill 1358

AB 1358, also known as the Complete Streets Act of 2008, amended the California Government Code Section 65302 to require that any substantive revisions to a city or county’s Circulation Element include provisions for accommodations of all roadway users, including bicyclists and pedestrians.

California Bicycle Transportation Act

The California Bicycle Transportation Act of 1994 requires all cities and counties to have an adopted bicycle master plan to apply for Bicycle Transportation Account funding source.

Regional and Local

Regional Transportation Planning Agency Transportation Plans

As described in Section 1.2, *Project Background*, there are three RTPAs that oversee some planning, programming and administration functions related to transportation projects and coordinating directly with local agencies in their part of the AMBAG region. These RTPAs include TAMC for Monterey County, SBtCOG for San Benito County and SCCRTC for Santa Cruz County. Each RTPA

prepares a county-level long-range RTP. Under federal regulations (23 CFR 450.322(c)) and State law (Government Code 65080(d)), the RTPAs must update their RTPs every four years. RTPs must be consistent with the California Transportation Plan.

Local Agency General Plans

State law requires cities and counties to adopt general plans, which must incorporate a transportation element, also often called a circulation element. A general plan's transportation element is an infrastructure plan and policy document used to determine the needed expansion or modification of the transportation network (including services) to accommodate planned population and employment growth. The elements generally address expectations for transportation network operations and safety based on goals and policies of the city or county. Transportation elements typically address the roadway network and its traffic operations, goods movement, public transit, bicycle facilities and pedestrian facilities. Below are some of the key transportation goals and policies of the Monterey County General Plan (Monterey County, 2010a), San Benito County 2035 General Plan (San Benito County, 2015a) and Santa Cruz County General Plan and Local Coastal Program (Santa Cruz County, 1994).

Monterey County

Goal C-1 Achieve an Acceptable Level of Service by 2030

Key policies to achieve this goal include: maintaining level of service D for county roads and intersections, unless certain conditions apply; developing and adopting a traffic impact fee; and coordinating with TAMC and other affected agencies to continue efforts to improve traffic congestion at critical locations.

Goal C-2 Optimize Use of the County's Transportation Facilities

Key policies to achieve this goal include: protecting public transportation facilities from the encroachment of incompatible land uses; encouraging a reduction in the number of vehicle miles traveled per person; encouraging land use patterns that reduce the need to travel by automobile; and locating and designing new development with convenient access and efficient transportation.

Goal C-4 Provide a Public Road and Highway Network for the Efficient and Safe Movements of People and Commodities

Key policies to achieve this goal include: monitoring county roadways, intersections, bikeways and pedestrian facilities in cooperation with TAMC and Caltrans to observe and identify capacity and safety concerns; and ensuring priority is given to the improvement and maintenance of highways and arterial roads that carry a significant amount of people and goods.

Goal C-6 Promote Viable Transportation Alternatives

Key policies to achieve this goal include: encouraging new development to be concentrated along major transportation corridors and near cities to make transit services to these areas more feasible; encouraging the use of public transit and alternative modes of transportation through land use designations and zoning which cluster employment centers with a mix of other land uses; and endorsing efforts to accommodate mobility-impaired persons on regularly scheduled public transit operations.

Goal C-8 Encourage a Rail System that Offers Efficient and Economical Transport of People and Commodities

Key policies to achieve this goal include: encouraging passenger rail, light rail, or bus rapid transit service to urban centers; and encouraging transit-oriented development around existing and future rail, light rail, or bus rapid transit stations.

Goal C-9 Promote a Safe, Convenient Bicycle Transportation System Integrated as part of the Public Roadway System

Key policies to achieve this goal include: coordinating with TAMC and all appropriate private and public interests and agencies to develop an integrated, comprehensive bicycle plan; considering improved bike routes in the construction or expansion of roadways within major transportation corridors; promoting the safe integration of bicycle systems with other public transportation modes; and encouraging bicycling as a viable transportation mode for visitor-serving areas.

San Benito County

Goal C-1 Provide an Adequate Road System that is Safe, Efficient, Reliable and within the County's Ability to Finance and Maintain

Key policies to achieve this goal include: ensuring that, whenever possible, roadway, highway, public transit systems and pedestrian and bicycle trails are interconnected with other modes of transportation; assessing fees on all new development to ensure new development pays its fair share of the costs for new and expanded transportation facilities; and maintaining level of service D for county roads and intersections, unless certain conditions apply.

Goal C-2 Provide a Safe, Continuous and Accessible System of Facilities for Bicycle and Pedestrian Travel in Appropriate Areas of the County

Key policies to achieve this goal include: encouraging complete, safe, and interconnected bicycle, pedestrian and equestrian systems that provide access to major destinations in the County; encouraging development project applicants to provide sidewalks or pedestrian paths, or other safe and convenient accommodations for pedestrians; and working with SBCOG to support the installation of roadway improvements that better accommodate pedestrians.

Goal C-3 Promote a Safe and Efficient Public Transit System that Provides a Viable Travel Alternative to Automobiles, Maximizes Mobility and Reduces Roadway Congestion and Greenhouse Gas Emissions

Key policies to achieve this goal include: encouraging transit lines, stops and facilities in locations where land uses and density would support transit use; encouraging major employment centers to work with the Local Transportation Authority to facilitate the provision of adequate public transit facilities; and requiring all new development proposals to be consistent with and implement the San Benito County Regional Transportation Plan transit policies.

Goal C-4 Encourage Alternative Transportation Modes to Reduce the Demand for Vehicular Trips, Especially During Congested Commute Times

Key policies to achieve this goal include: supporting SBCOG programs that promote the use of ridesharing, vanpooling and carpooling to decrease vehicle trips; and encouraging employers to provide transit subsidies, bicycle facilities, alternative work schedules, ridesharing, telecommuting, employee education and preferential parking for carpools/vanpools

Santa Cruz County

It is the goal of the County to reduce automobile trips and congestion by improving alternative transportation modes, developing effective travel demand management strategies and whenever possible improving the efficiency rather than increasing the size of the existing road system. Policies to achieve this goal include reducing vehicle miles travelled by encouraging concentrated commercial centers with mixed residential and commercial uses; and encouraging use of bicycles, public transit and other modes of transportation besides single-occupancy vehicles.

City and County Bicycle Master Plans and Other Modal Plans

City- and countywide bicycle and pedestrian master plans, active transportation plans and other mode-specific plans serve as policy documents to guide the development and maintenance of the transportation network, support facilities and non-infrastructure programs. These plans describe the acceptable operating standards, levels of service, facility classifications and mode-specific goals and policies of a given city or county. This EIR does not explicitly identify localized traffic issues that might be the focus of a city- or countywide modal plan; rather, it addresses issues of overall system performance from a regional perspective.

4.14.2 Impact Analysis

a. Methodology and Significance Thresholds

Thresholds of significance to determine whether implementation of the 2040 MTP/SCS would result in significant transportation and circulation impacts were chosen in part by determining which effects of the 2040 MTP/SCS can be measured by available modeling tools. The thresholds of significance outlined in this section are consistent with the policies and performance standards detailed in the 2040 MTP/SCS.

The criteria for determining whether the 2040 MTP/SCS would have significant environmental impacts related to transportation and traffic were based in part on the environmental checklist in Appendix G of the State CEQA Guidelines (14 CCR 15000 et seq.) and performance measures established by AMBAG. Significant impacts to transportation and traffic would occur if the plan would:

1. Conflict with the following measures of effectiveness for the performance of the circulation system:
 - a. Total daily hours of vehicle delay;
 - b. Total peak period CVMT;
 - c. Percent of work trips that are 30 minutes or less by mode during peak period; and/or
 - d. Percent of jobs within 0.5 mile of a high quality transit stop

Any increase in performance indicators a. and b. compared to existing baseline conditions would be considered a significant impact. Any decrease in performance measures c. and d. compared to existing baseline conditions would be considered a significant impact.

2. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;

3. Substantially disrupt:
 - a. Transit service; and/or
 - b. Bicycle and pedestrian facilities.
4. Result in any increase in total vehicle miles traveled on all freeways and roadways above existing conditions;
5. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
6. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); and/or
7. Result in inadequate emergency access.

It is important to emphasize that population growth, urbanization and volume of average daily traffic generated in the AMBAG region will increase by 2040, with or without implementation of the 2040 MTP/SCS. This increase is expected to occur as a result of a range of demographic and economic factors independent of policy and land use decisions by AMBAG and its member agencies. The analysis below describes the full effect of the proposed 2040 MTP/SCS in combination with future growth, as compared to existing baseline conditions.

Traffic Methodology

AMBAG utilized its regional travel demand model (RTDM) to compare the 2040 conditions under the 2040 MTP/SCS to the 2015 baseline conditions using a range of performance metrics (see Appendix C). The AMBAG RTDM is a trip-based platform that includes Monterey, San Benito and Santa Cruz counties. The RTDM allows AMBAG to obtain an understanding of the transportation network performance characteristics (e.g., vehicle speeds, volume to capacity relationships, travel time, VMT) and estimate how socioeconomic changes (e.g., population increases, land use development) will impact travel demand. The RTDM allows for comparisons of different scenarios, including consequences of future changes or absence of change to the transportation system (e.g., building new facilities, improving existing facilities, or doing nothing at all).

The most current version of the AMBAG RTDM was created in 2014, incorporating improvements from an earlier Model Improvement Plan developed by AMBAG. AMBAG developed the Model Improvement Plan to address recommended improvements provided by a peer review panel selected in 2011 under the FHWA-sponsored Travel Model Improvement Program. The peer review is available online at:

http://ambag.org/programs/met_transp_plann/documents/TMIP/Peer_Review_Final_Report.pdf.

The 2014 RTDM includes detailed transportation and transit networks, as well as a geographically based Traffic Analysis Zone layer containing socioeconomic data for the base year 2015 and forecast years 2020, 2035 and 2040. The forecasted socioeconomic data is based on the AMBAG Draft 2018 Regional Growth Forecast, which is described in detail in Appendix A to the 2040 MTP/SCS. The AMBAG RTDM is calibrated using data from the 2011-2012 California Household Travel Survey (CHTS).

The RTDM is comprised of four primary time periods: a morning peak period from 6:00 AM to 9:00 A.M.; an evening peak period from 4:00 PM to 7:00 P.M.; a mid-day period from 9:00 A.M. to 4:00 P.M.; and a night period from 7:00 P.M. to 6:00 A.M. The RTDM is calibrated to both Average Annual Daily Traffic (AADT) and to the peak period count data. Further details on RTDM calibration

can be found in the AMBAG RTDM Technical Documentation Report, available online at:
http://ambag.org/programs/met_transp_plann/documents/TMIP/Region_Overview.pdf.

The 2014 RTDM is a traditional four-step trip based approach, and as such includes models for Trip Generation, Trip Distribution, Mode Choice and Trip Assignment. Specific differences compared with traditional modeling approaches include a population synthesis to drive the trip generation socioeconomic variables; calculation of household, employment and intersection density and diversity variables using GIS techniques; the use of person-based trip rates; destination choice model for the trip distribution; and a mode choice component designed and estimated entirely from the 2011-2012 CHTS data. The RTDM allows the operator to model any number of future land development scenarios and projects, including the traffic modifications and improvements that would be implemented under the 2040 MTP/SCS. Comprehensive documentation of the modeling methodology, assumptions, calibration and inputs is provided in Appendix F of the 2040 MTP/SCS.

b. Project Impacts and Mitigation Measures

This section describes generalized impacts associated with the 2040 MTP/SCS. Due to the programmatic nature of the 2040 MTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2040 MTP/SCS would result in transportation and traffic impacts as described in the following sections.

It should be noted that although this is a program-level analysis, and not project specific, some of the 2040 MTP/SCS projects include expanding the capacity of highways in the region, such as adding additional travel lanes to Highway 101 near Salinas. Numerous studies and research suggest that an expansion of highway capacity may induce travel (Governor's Office of Planning and Research 2016; Handy 2015; Duranton & Turner 2011). According to the Governor's Office of Planning and Research (2016), the initial reduction in traffic congestion and travel times from increased capacity is attractive to travelers, resulting in more trips on the facility and increasing the total VMT. These types of projects may result in the following trip-making changes, which have implications for total VMT, according to Governor's Office of Planning and Research:

- **Longer Trips.** The ability to travel a long distance in a shorter time increases the attractiveness of destinations that are further away, increasing trip length and VMT.
- **Changes in Mode Choice.** When transportation investments are devoted to reducing automobile travel time, travelers tend to shift toward automobile use from other modes, which increases VMT.
- **Route Changes.** Faster travel times on a route attract more drivers to that route from other routes, which can increase or decrease VMT depending on whether it shortens or lengthens trips.
- **Newly Generated Trips.** Increasing travel speeds can induce additional trips, which increases VMT. For example, an individual who previously telecommuted or purchased goods on the internet might choose to accomplish those ends via automobile trips as a result of increased speeds.
- **Land Use Changes.** Faster travel times along a corridor lead to land development further along that corridor; that development generates and attracts longer trips, which increases VMT. Over several years, this component of induced VMT can be substantial, e.g. approximately half of the total effect on VMT."

The 2040 MTP/SCS coordinates land use and transportation projects through the 2040 horizon year. The SCS is intended to identify a land use strategy that supports the objectives of SB 375 to achieve, among other things: increased roadway optimization, increased modes of travel other than single-occupancy automobiles, increased access to jobs and amenities, minimized increases in VMT and reduced GHG emissions. Among the strategies to meet these goals is a mix of land uses balanced to minimize VMT and maximize the ability for residents and visitors of the region to conduct everyday activities without the need to travel by car. As a consequence, the RTDM and associated transportation system performance results discussed in this analysis capture the effects of land use changes on overall travel demand in the region. Although the AMBAG RTDM does not specifically evaluate induced travel from the perspective of longer trips, changes in mode choice, route changes or newly generated induced trips, at the regional level these effects may be negligible compared to the overall amount of travel. As discussed in the Federal Highway Administration’s “HERS-ST Highway Economic Requirements System - State Version: Technical Report - Appendix B: Induced Traffic and Induced Demand” (August 2005), “If the demand is for a single facility, then induced traffic will appear large relative to previous volumes, because most of the change in trips will be from diverted trips. At the regional level, induced traffic would be a smaller share of total traffic growth, because only trips diverted from other regions, plus substitutions between transportation and other goods, make up the induced share.” Therefore, any additional VMT resulting specifically from induced travel demand would not substantially change the following impact analysis or conclusions.

Threshold 1: Conflict with the following measures of effectiveness for the performance of the circulation system:

- a. Total daily hours of vehicle delay
- b. Total peak period congested vehicle miles traveled (CVMT)
- c. Percent of work trips that are 30 minutes or less by mode during peak period

Impact T-1 DAILY HOURS OF VEHICLE DELAY AND TOTAL PEAK PERIOD CVMT IN THE AMBAG REGION WOULD INCREASE BETWEEN BASELINE 2015 CONDITIONS AND 2040 CONDITIONS WITH IMPLEMENTATION OF THE 2040 MTP/SCS. THE PERCENT OF COMMUTER TRIPS THAT ARE 30 MINUTES OR LESS WOULD DECREASE IN SINGLE- AND HIGH-OCCUPANCY VEHICLES, BUT WOULD INCREASE FOR TRANSIT TRIPS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Table 48 compares daily vehicle hours or delay for existing conditions in 2015 and 2040 conditions with implementation of the 2040 MTP/SCS for each county and the AMBAG region as a whole. The conditions in 2040 without implementation of the 2040 MTP/SCS are also shown for informational purposes.

Table 48 Daily Hours of Vehicle Delay

County/Region	Existing Conditions (2015)	2040 Conditions with 2040 MTP/SCS	2040 Conditions without 2040 MTP/SCS
Monterey	15,028	24,987	30,922
San Benito	2,000	10,632	12,309
Santa Cruz	15,950	24,380	28,101
AMBAG Region	32,978	59,999	71,332

Source: RTDM (AMBAG, 2014b)

As shown in Table 48, the 2040 daily vehicle hours of delay would substantially increase above existing conditions in all three counties, as well as the AMBAG region as a whole. As the table shows, at the regional level, the daily hours of vehicle delay would increase by 27,021 hours, which would be an approximately 45 percent increase of existing conditions. This increase is largely a result of projected growth throughout the region by 2040. The AMBAG Draft 2018 Regional Growth Forecast projects the population of the AMBAG region to increase by approximately 16 percent between 2015 and 2040. Thus, some increase in vehicle hours of delay would be unavoidable, regardless of the 2040 MTP/SCS, because more people would live and work in the region in the future. The 2040 MTP/SCS includes projects that would improve overall traffic flow, increase public transit use and encourage more infill development. These types of projects reduce the amount of time motorists are delayed at intersections, reduce the number of vehicles on the road during peak periods and locate people closer to employment centers. Nonetheless, the daily hours of vehicle delays would increase between existing 2015 conditions and 2040 conditions.

Population growth and increased employment in the AMBAG region would also inevitably increase total peak period CVMT. As Table 49 shows, the daily peak period CVMT in the region in 2040 would increase with or without the implementation of the 2040 MTP/SCS. There would be 1,118,524 daily peak period CVMT in 2040 with implementation of the 2040 MTP/SCS. This would be an approximately 149 percent increase compared to existing 2015 conditions. On a per capita basis, as the table also shows, daily peak period CVMT in the region would increase by approximately 0.68 CVMT per person in 2040 compared to 2015, an approximately 115 percent increase over existing conditions (0.59 CVMT per person under existing conditions).

Table 49 Total Daily Peak Period CVMT

Measurement	Existing Conditions (2015)	2040 Conditions with 2040 MTP/SCS	2040 Conditions without 2040 MTP/SCS
Total CVMT on Congested Facilities	499,064	1,118,524	1,259,191
Per Capita CVMT on Congested Facilities	0.59	1.27	1.43

Source: RTDM (AMBAG, 2014b)

Table 50 compares the percentage of commuter trips that exceed 30 minutes in duration during the morning peak period (6:00 A.M. to 9:00 A.M.) and evening peak period (4:00 P.M. to 7:00 P.M.). The table provides the existing conditions in 2015, and the 2040 conditions with implementation of the 2040 MTP/SCS for each type of motorized transportation mode in the region. The table also shows the percent of commuter trips within 30 minutes or less in 2040 without implementation for the 2040 MTP/SCS for informational purposes.

Table 50 Percent of Commuter Trips by Mode Within 30 Minutes - Peak Period

Mode	Existing Conditions (2015)	2040 Conditions with 2040 MTP/SCS	2040 Conditions without 2040 MTP/SCS
Drive Alone	84.3%	84.0%	83.9%
Carpool	84.3%	84.0%	83.9%
Transit	13.0%	14.8%	13.0%

Source: RTDM (AMBAG, 2014b)

As shown in Table 50, the percent of commuter trips that are 30 minutes or less during peak period would decrease by approximately 0.3 percent from 2015 to 2040 across passenger vehicle modes. As previously described, population and employment growth between 2015 and 2040 in the AMBAG region is expected to increase by approximately 16 percent and 17 percent, respectively. Thus, the rate of population and employment growth in the region would far exceed the percent loss of commuter trips that are 30 minutes or less in passenger vehicles. This suggests that the 2040 MTP/SCS projects would be effective at reducing commute distances and delays in the AMBAG region as population and commuters continue to grow in comparison to conditions without the 2040 MTP/SCS. Additionally, as shown in Table 50, implementation of the 2040 MTP/SCS would increase the percentage of commuter trips on transit that can be made within 30 minutes, which would be an improvement compared to existing 2015 conditions.

Nonetheless, because daily vehicle hours of delay, total peak period CVMT, and commuter trips exceeding 30 minutes in the AMBAG region would increase between 2015 conditions and 2040 conditions, the impacts of the 2040 MTP/SCS would be significant.

Mitigation Measures

The 2040 MTP/SCS already includes policies, alternative transportation projects and transportation demand management projects, which would encourage the use of transportation modes other than passenger vehicles. Nonetheless, the daily hours of vehicle delay, total peak period CVMT and the percentage of commuter work trips exceeding 30 minutes in passenger vehicles would still increase in 2040 compared to the existing 2015 conditions. No feasible additional mitigation measures have been identified that would further reduce these metrics. Refer to Section 7, Alternatives, for a discussion of 2040 MTP/SCS alternatives that examine land use and transportation scenarios that incorporate different assumptions regarding the combinations of future land uses and transportation system improvements.

Significance After Mitigation

This impact would remain significant and unavoidable.

Threshold 1: Conflict with the following measures of effectiveness:
 d. Percent of jobs within 0.5 mile of a high quality transit stop;

Impact T-2 THE 2040 MTP/SCS WOULD INCREASE THE PERCENT OF JOBS WITHIN 0.5 MILE OF A HIGH QUALITY TRANSIT STOP COMPARED TO EXISTING 2015 CONDITIONS. THIS WOULD BE A BENEFICIAL IMPACT.

Table 51 compares percent of jobs that are within of 0.5 mile of a high-quality transit stop under 2015 and 2040 conditions with implementation of the 2040 MTP/SCS. Conditions in 2040 without implementation of the 2040 MTP/SCS are also provided for informational purposes.

Table 51 Percent of Jobs Within 0.5 Mile of a High Quality Transit Stop

County	Existing Conditions (2015)	2040 Conditions with 2040 MTP/SCS	2040 Conditions without 2040 MTP/SCS
AMBAG Region	21.4%	29.6%	20.6%

Source: RTDM (AMBAG, 2014b) and Geographic Information System analysis (see Appendix G of the MTP/SCS)

As shown in Table 51, the 2040 MTP/SCS would increase the percentage of jobs that are within 0.5 mile of a high-quality transit stop compared to existing 2015 conditions. Thus, the 2040 MTP/SCS would have a beneficial impact by increasing the percentage of jobs within 0.5 mile of a high-quality transit stop. Therefore, impacts would be less than significant under this threshold.

Mitigation Measures

Mitigation measures are not required.

Threshold 3: Substantially disrupt:
a. Transit service

Impact T-3 THE 2040 MTP/SCS INCLUDES TRANSIT PROJECTS THAT WOULD IMPROVE AND EXPAND TRANSIT SERVICES IN THE REGION. THE 2040 MTP/SCS WOULD INCREASE THE PERCENTAGE OF JOBS WITHIN PROXIMITY TO TRANSIT STOPS AND THE PERCENT OF TRANSIT TRIPS LESS THAN 30 MINUTES DURING PEAK PERIOD. THUS, THE 2040 MTP/SCS WOULD NOT SUBSTANTIALLY DISRUPT TRANSIT SERVICE AND IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The 2040 MTP/SCS transit projects include increasing bus capacity on congested facilities, such as Highway 1 in Monterey and increasing the frequency of some bus line services. The 2040 MTP/SCS projects also include bus maintenance and preventative maintenance, which would help ensure reliability of the bus fleets of the MST, Santa Cruz METRO and San Benito County Express, and minimize the potential for transit disruptions due to equipment failure. These types of projects and improvements would improve conditions for bus operations in the region. As indicated in Table 52, the percent of peak hour transit trips that are 30 minutes or less in duration would increase between 2015 and 2040 with implementation of the 2040 MTP/SCS. This suggests that bus line service would move more efficiently within the roadway network of the AMBAG region. However, as discussed above, daily hours of vehicle delay in 2040 would substantially increase above existing conditions, which would also affect bus line services. Thus, the increase in the percentage of transit trips that are less than 30 minutes during peak period can be attributed to infill development included in the 2040 MTP/SCS land use scenario. Infill development would position the workforce and places of employment closer together, essentially creating shorter commute distances and bus trips, regardless of whether or not the road network is congested. This concept is reflected in the increase in the percent of jobs within 0.5 mile of a high quality transit stop that would occur in the future under the 2040 MTP/SCS, as shown in Table 52. An increase in the percentage of transit trips that are less than 30 minutes during peak period in 2040 with implementation of the 2040 MTP/SCS would be an improvement compared to existing conditions.

Table 52 General Transit Use Indicators

Indicator	Existing Conditions (2015)	2040 Conditions with 2040 MTP/SCS	2040 Conditions without 2040 MTP/SCS
Transit Trips*	374,215	451,991	430,781
Percent of Peak Hour Work Trips by Transit that are 30 Minutes or Less	13.0%	14.8%	13.0%
Percent of Jobs within 0.5 Mile of a High Quality Transit Stop	21.4%	29.6%	20.6%

Source: RTDM (AMBAG, 2014b) and Geographic Information System analysis (see Appendix G of the MTP/SCS)

* The transit trips shown in this table include bicycle and pedestrian trips, as well as transit trips.

The transit use indicator values for the 2040 MTP/SCS shown in Table 52 are likely low given the lack of sensitivity to transit within the RTDM. It is common practice to calibrate models to observe conditions within the region. Currently the region has relatively low transit ridership; however, it also has very few passenger rail services. Further, the region does not have a wide-spread practice of TOD. Thus, the RTDM is not sensitive to premium transit service⁹ or land use changes near those services and underestimates the total ridership gains that would be realized with the introduction of new types of infrastructure. Improvements would result from both the SCS land use scenario emphasis on infill and TOD and implementation of additional transit services and facilities. These improvements would be beneficial for MST, Santa Cruz METRO and San Benito County Express transit services. Impacts would be less than significant because transit service would not be substantially disrupted.

Mitigation Measures

Mitigation measures are not required.

Threshold 3: Substantially disrupt:
b. Bicycle and pedestrian facilities

Impact T-4 THE 2040 MTP/SCS WOULD IMPROVE CONDITIONS FOR BICYCLE AND PEDESTRIAN TRAVEL IN THE AMBAG REGION AND BICYCLE AND PEDESTRIAN FACILITIES WOULD NOT BE SUBSTANTIALLY DISRUPTED. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The 2040 MTP/SCS is intended to improve the system for all modes of transit so vehicles and non-motorized transit can use the streets simultaneously and safely in comparison to existing conditions. The 2040 MTP/SCS includes goals and policies to support bicycle and pedestrian facilities. Projects within the 2040 MTP/SCS would add new pedestrian and bicycle facilities, including sidewalks, trails and bike lanes, as well as safety measures, such as intersection crosswalks and safety programs at local schools. Bicycle and pedestrian improvement projects identified in the 2040 MTP/SCS are aimed primarily at improving bicycle and pedestrian safety and expanding facilities such as bike lanes. For example, the 2040 MTP/SCS includes projects that would result in the addition of more than 377 miles of Class I and Class II bike lanes to the AMBAG region by 2040. Pedestrian and bicycle facilities would be designed and constructed in compliance with applicable safety regulations, such as the California Manual of Uniform Traffic Control Devices. As shown in Table 52 above, the 2040 MTP/SCS projects would increase transit trips, which includes pedestrian and bicycle trips, in the AMBAG region in 2040 compared to 2015. The 2040 MTP/SCS would result in additional and improved facilities to accommodate pedestrian and bicycle travel modes, and would not substantially disrupt bicycle and pedestrian facilities. Impacts would be less than significant.

Mitigation Measures

Mitigation measures are not required.

⁹ Premium transit service typically means a high quality transit, either bus or rail, that reduces transit travel times, enhances regional connectivity, and provides improved vehicle and transit amenities to attract new customers.

Threshold 4: Result in any increase in vehicle miles traveled on all freeways and roadways above existing conditions.

Impact T-5 DAILY VMT WOULD INCREASE BETWEEN THE BASELINE 2015 CONDITIONS AND 2040 CONDITIONS. THUS, IMPACTS FROM IMPLEMENTATION OF THE 2040 MTP/SCS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Table 53 compares the daily VMT for existing conditions in 2015 and 2040 conditions with implementation of the 2040 MTP/SCS on freeways and roadways for each county and the AMBAG region as a whole. The daily VMT in 2040 without implementation of the 2040 MTP/SCS is provided in the table for informational purposes.

Table 53 Daily Vehicle Miles Travelled

County/Region	Existing Conditions (2015)	2040 Conditions with 2040 MTP/SCS	2040 Conditions without 2040 MTP/SCS
Monterey	9,764,441	12,091,679	12,216,546
San Benito	1,382,599	2,119,312	2,111,029
Santa Cruz	4,688,870	5,476,518	5,414,346
AMBAG Region	15,835,910	19,687,508	19,741,921
Per Capita AMBAG Region	20.8	22.3	22.4

Source: RTDM (AMBAG, 2014b)

As shown in Table 53, the daily VMT in each county, and the AMBAG region as a whole would increase in 2040 compared to existing 2015 conditions (see Appendix C). The increase, on a regional basis, would be 3,851,598 VMT daily, an approximately 19.6 percent increase of existing daily VMT conditions in 2015. As previously discussed, population growth in the region would inevitably increase daily VMT, regardless of the potential implementation of the 2040 MTP/SCS. However, some of the 2040 MTP/SCS projects that would directly create VMT, separate from unrelated population growth, would include projects that expand public transit fleets. While these types of projects would add daily VMT to the region by introducing new vehicles to the region, they would essentially move more people per VMT than an equivalent number of passenger cars required to move the same number of people. Nonetheless, compared to existing conditions, the daily VMT in the region and each of the three counties would increase in 2040 under implementation of the 2040 MTP/SCS. Impacts would be significant.

Mitigation Measures

For land use projects under their jurisdiction, the cities and counties in the AMBAG region can and should implement the following mitigation measure. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

T-5 Project-Level VMT Analysis and Reduction

Implementing agencies shall evaluate VMT as part of project-specific CEQA review and discretionary approval decisions for land use projects. Where project-level significant impacts are identified, implementing agencies shall identify and implement measures that reduce VMT. Examples of measures that reduce VMT include infill development, mixed use and transit oriented development,

complete street programs, reduced parking requirements, and providing alternative transportation facilities, such as bike lanes and transit stops.

Implementing Agencies

Implementing agencies for land use projects include cities and counties.

Significance After Mitigation

If implementing agencies adopt and require this mitigation, impacts would be reduced because less VMT would be added to the counties, and thus the AMBAG region. However, the implementation of project-level VMT-reducing measures – such as mixed uses and TOD – may not be feasible and cannot be guaranteed on a project-by-project basis. Additionally, it is unlikely that an increase in daily VMT above existing conditions could be fully avoided in 2040, due to factors unrelated to discretionary approvals, such as population growth in the region. Therefore, this impact would remain significant and unavoidable. No additional mitigation measures to reduce this impact to less-than-significant levels are feasible.

c. Specific 2040 MTP/SCS Project That May Result in Impacts

The analysis within this section discusses the potential transportation and circulation related impacts associated with the transportation improvement projects and the land use scenario envisioned by the 2040 MTP/SCS. The projects within the 2040 MTP/SCS are evaluated herein in their entirety and all are intended to improve traffic circulation rather than cause adverse impacts. However, as described above, the 2040 MTP/SCS would increase existing 2015 VMT by approximately 19.6 percent in 2040, as well as increase the daily hours of vehicle delays and the daily CVMT in the region. These effects were found to be significant and unavoidable impacts, as described above. The RTDM data does not have the capability to distinguish which project or projects would specifically result in increased daily VMT, daily hours of vehicle delay, or daily CVMT. However, any number of the 2040 MTP/SCS projects that expand roadway capacity or improve traffic flow and circulation could presumably increase VMT, and any increase in VMT could potentially increase vehicle delays and CVMT. Thus, there are no specific projects that can be listed in this section related to the adverse impacts of increased daily VMT, daily hours of vehicle delays, and daily CVMT in the AMBAG region.

As described above, the 2040 MTP/SCS would also slightly increase the percent of commuter trips made in passenger vehicles that exceed 30 minutes in length. The percent of commuter trips that exceed 30 minutes when the commuter is in passenger vehicles, whether driving alone or in a carpool, is correlated with daily VMT, daily CVMT and daily hours of vehicle delay on roadways in the AMBAG region. Thus, there are no specific projects that can be listed in this section related directly to these impacts.

d. Cumulative Analysis

The 2040 MTP/SCS is a cumulative plan by design that integrates transportation investments with land use strategies for an entire region of the state that shares, or is connected by, common economic, social and environmental characteristics. As such, the analysis of transportation and traffic impacts presented above is a cumulative analysis compliant with the requirements of CEQA. However, the following cumulative impact analysis discussion has been prepared to evaluate whether the 2040 MTP/SCS would contribute additional traffic delays, congestion, or other such transportation impacts to areas beyond the AMBAG region. Movement within, through, and beyond the AMBAG region is necessary for commuters, personal travel and goods movement. Thus, this

cumulative analysis focuses on the potential impacts on the transportation network within the adjoining counties to the AMBAG region. The cumulative analysis impact area for transportation and traffic consists of the AMBAG region and the seven counties adjoining the AMBAG region: Fresno, Kern, Kings, Merced, San Luis Obispo, Santa Clara and San Mateo.

Within the cumulative analysis impact area, implementation of the 2040 MTP/SCS combined with cumulative development outside the region has the potential to result in congestion and delay occurring outside the AMBAG region, which would be considered a significant cumulative impact. The 2040 MTP/SCS is designed to maintain and foster the balance between jobs and housing within the AMBAG region and provides a strategy to allocate growth in such a way as to achieve a more balanced jobs/housing ratio and to optimize transportation investments that support those land uses.

As discussed above, implementation of the 2040 MTP/SCS would have significant and unavoidable impacts related to increases in daily hours of vehicle delay, daily CVMT and the percentage of commuter trips in passenger vehicles that exceed 30 minutes in the AMBAG region. Daily hours of vehicle delay and daily CVMT are outputs of the RTDM and include the effects of trips made from outside of the AMBAG region. Thus, the effects of travel from outside the AMBAG region are accounted for and captured in the program-level analysis of impacts, above.

As discussed above, the 2040 MTP/SCS would also have significant and unavoidable impacts related to an increase in daily VMT in the AMBAG region in 2040. As described above, daily VMT in the AMBAG region is partially due to commuters travelling to and from employment in the adjoining counties, particularly Santa Clara County and San Mateo County in the San Francisco Bay Area. The 2040 MTP/SCS is designed to promote economic growth and employment in the AMBAG region, while also providing the proper balance between jobs and housing within the region. With more employment in the AMBAG region, fewer residents of the region may commute to adjoining counties for employment. Thus, the increased daily VMT in 2040 resulting from the 2040 MTP/SCS may not necessarily be from commuter trips to and from employment destinations outside of the AMBAG region, and the 2040 MTP/SCS may not increase daily VMT on roadways in adjoining counties. Nonetheless, as shown in Table 53, the 2040 MTP/SCS would increase the baseline 2015 conditions for daily VMT by 3,851,598 VMT, which is an approximately 19.6 percent increase over existing conditions. While the majority of the VMT would be expected to remain within the AMBAG region, some portion of the VMT would inevitably extend to areas within adjoining counties to the region. The most reasonable assumption is that VMT to adjoining counties would be concentrated to the most heavily travelled roadways in the counties with the highest relative employment, such as Highway 101 and 17 into Santa Clara County and Highway 1 into San Mateo County. The increased VMT in adjoining areas would contribute to traffic delays and congestion given that increases would be on major commuter routes and heavily travelled roadways in the adjoining counties, and that these counties are also expected to experience increased population growth into the future. Thus, cumulative impacts on traffic operations would be significant and the 2040 MTP/SCS contribution to congestion and traffic in adjoining areas would be cumulatively considerable. Mitigation Measure T-5 would reduce the 2040 MTP/SCS contribution, but it would remain cumulatively considerable.

This page intentionally left blank.