4.10 Hydrology and Water Quality

This section describes water quality, groundwater supply, drainage, runoff, flooding and dam inundation impacts of development facilitated by the 2040 MTP/SCS.

4.10.1 Setting

The AMBAG region contains two primary watersheds: the Salinas River Valley, which is the third-longest river in California and traverses the length of Monterey County and the Pajaro River Valley, the primary tributary of which begins in San Benito County and runs through southeastern Santa Cruz County (Regional Water Management Group [RWMG] 2013). In addition, several smaller watersheds are located between the western face of the Coast Range mountains and the Pacific Ocean in both Monterey and Santa Cruz counties and in the southwest and northeast portions of San Benito County.

The Salinas River originates at the Santa Margarita Reservoir in San Luis Obispo County, just to the south of AMBAG’s planning area, and extends approximately 155 miles northward to the Monterey Bay (RWMG 2013). The headwaters of the Salinas River are generally undeveloped, while the remainder of the valley is predominantly agricultural with several urban areas, the largest being the City of Salinas.

The California Integrated Regional Water Management (IRWM) Planning is a process that promotes prioritizing water related efforts in a region identifying and implementing water management solutions throughout that region. Based on information provided in the IRWMs plans in the Monterey Bay area, the following discussion of hydrology and water resources is divided into the following four geographic areas: (1) greater Monterey County, (2) the Monterey Peninsula area, (3) the Pajaro River Watershed and (4) northern Santa Cruz County. Greater Monterey County generally includes the entire Salinas River Watershed north of the San Luis Obispo County line, all of the Gabilan and Bolsa Nueva Watersheds in the northern part of the County, and all of the coastal watersheds of the Big Sur coastal region within Monterey County (Monterey County 2013; Pajaro Valley Water Management Agency [PVWMA] et al. 2014). The Monterey Peninsula area lies between the Salinas River and the Big Sur coast, from Point Lobos on the south to Sand City on the north. The Pajaro River Watershed is bound by the Santa Cruz Mountains to the north and Gabilan Range to the south, while its water drains into Monterey Bay (PVWMA et al. 2014). The northern Santa Cruz County region encompasses all of Santa Cruz County except for the Pajaro River Watershed (County of Santa Cruz 2014).

a. Water Quality

Water quality is a concern because of its potential effect on human health, aquatic organisms and ecosystem conditions. Quality is determined by factors such as native condition of groundwater and surface water, sources of contamination (natural and human induced) and extent of seawater intrusion.

Surface Water

In the AMBAG region, polluted stormwater and urban runoff discharges have degraded the water quality of creeks, rivers, sloughs, reservoirs and the Pacific Ocean. Runoff pollutants can include pesticides, fertilizers, green waste, animal waste, human waste, petroleum hydrocarbons such as gasoline and motor oil, trash and other constituents. Due to the prevalence of agriculture in the
Salinas River Valley and the lower Pajaro Valley, pesticide-laden runoff is one of the primary sources of surface water contamination, as shown below in Table 36. In addition, stormwater flowing over roadways and other transportation facilities carries urban pollutants through natural drainage systems or man-made storm drain facilities to a body of surface water. Such discharges from farmland and transportation facilities are referred to as “non-point” sources because the pollutants are generated from multiple locations rather than a single source and location. Many of these discharges result in untreated pollutants entering waterways. Pollutants contained within urban runoff primarily include suspended solids, oil, grease, pesticides, pathogens and air pollutants.

The State Water Resources Control Board (SWRCB), in compliance with the Clean Water Act (CWA), Section 303(d), has prepared a list of impaired water bodies in the State of California. Table 36 shows the major water bodies in greater Monterey Bay area that are listed as impaired by SWRCB.

The impairments listed in Table 36 indicate that the Pajaro River and lower Salinas River experience the broadest array of water quality issues, primarily due to pesticides and other substances in agricultural runoff. Polluted runoff has also impaired the ocean as well as inland waterways. The Northern Santa Cruz County IRWMP states that urban runoff has degraded water quality at moderate levels in coastal lagoons and at ocean beaches. Sewer leaks and overflows contribute to this problem (County of Santa Cruz 2014). All urban lagoons in the planning region are posted as unsafe for swimming year-round due to high bacteria levels. Furthermore, local beaches are frequently posted as unsafe for human contact in response to elevated bacteria. Santa Cruz County has had 50-100 beach-days of posting every year since AB 411 reporting began in 1999 (County of Santa Cruz 2014).

To address surface water quality impairments, the Central Coast Regional Water Quality Control Board (RWQCB) has prescribed total maximum daily loads (TMDLs) in the AMBAG region for nitrates, sediment, pathogens and mercury (PVWMA et al. 2014). The nitrate and sediment TMDLS, completed in 2012, identified irrigated agriculture as a substantial anthropogenic source of both nitrate and sediment loading.
### Table 36 Major Water Bodies Listed as Impaired

<table>
<thead>
<tr>
<th>Water Body</th>
<th>Impairment Constituent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Monterey County</strong></td>
<td></td>
</tr>
<tr>
<td>Alisal Creek</td>
<td>Chlorophyll-a, Fecal Coliform, Nitrate, Sodium</td>
</tr>
<tr>
<td>Elkhorn Slough</td>
<td>Low Dissolved Oxygen, Pesticides, Sediment/Sedimentation, Total Coliform, pH</td>
</tr>
<tr>
<td>Espinosa Lake</td>
<td>Chlorpyrifos, Diazinon</td>
</tr>
<tr>
<td>Monterey Harbor</td>
<td>Metals, Sediment Toxicity</td>
</tr>
<tr>
<td>Moro Cojo Slough</td>
<td>Ammonia (Unionized), <em>E. coli</em>, Low Dissolved Oxygen, Pesticides, Sediment/Sedimentation, Total Coliform, pH</td>
</tr>
<tr>
<td>Moss Landing Harbor</td>
<td>Chlorpyrifos, Diazinon, Low Dissolved Oxygen, Nickel, Pathogens, Pesticides, Sediment Toxicity, pH</td>
</tr>
<tr>
<td>Salina River (middle, near Gonzales Road crossing to confluence with Nacimiento River)</td>
<td><em>E. coli</em>, Fecal Coliform, Pesticides, Temperature, Turbidity, Unknown Toxicity, pH</td>
</tr>
<tr>
<td>Salina River (middle, near Gonzales Road crossing to confluence with Nacimiento River)</td>
<td><em>E. coli</em>, Fecal Coliform, Pesticides, Temperature, Turbidity, Unknown Toxicity, pH</td>
</tr>
<tr>
<td>Salinas River Lagoon (North)</td>
<td>Nutrients, Pesticides</td>
</tr>
<tr>
<td>Salinas River Lagoon (South)</td>
<td>Turbidity, pH</td>
</tr>
<tr>
<td>San Antonio River (below San Antonio Reservoir)</td>
<td><em>E. coli</em>, Fecal Coliform</td>
</tr>
<tr>
<td><strong>San Benito County</strong></td>
<td></td>
</tr>
<tr>
<td>San Benito River</td>
<td>Boron, Electrical Conductivity, <em>E. coli</em>, Fecal Coliform, Sedimentation/Siltation, Unknown Toxicity, pH</td>
</tr>
<tr>
<td><strong>Santa Cruz County</strong></td>
<td></td>
</tr>
<tr>
<td>Harkins Slough</td>
<td>Chlorophyll-a, Low Dissolved Oxygen, Pathogens</td>
</tr>
<tr>
<td>Pacific Ocean (Point Año Nuevo to Soquel Point)</td>
<td>Dieldrin</td>
</tr>
<tr>
<td>Pajaro River</td>
<td>Boron, Chlorodane, Chloride, Chlorpyrifos, DDD (Dichlorodiphenyldichloroethane), Dieldrin, <em>E. coli</em>, Fecal Coliform, Low Dissolved Oxygen, Nitrate, Nutrients, PCBs (Polychlorinated biphenyls), Sediment/Siltation, Sodium, Turbidity, pH</td>
</tr>
<tr>
<td>San Lorenzo River</td>
<td>Chlorodane, Chlorpyrifos, Nutrients, PCBs, Pathogens, Sedimentation/Siltation,</td>
</tr>
<tr>
<td>San Lorenzo Lagoon</td>
<td>Pathogens</td>
</tr>
<tr>
<td>Watsonville Slough</td>
<td>Low Dissolved Oxygen, Pathogens, Pesticides, Turbidity</td>
</tr>
<tr>
<td>Watsonville Slough</td>
<td>Low Dissolved Oxygen, Pathogens, Pesticides, Turbidity</td>
</tr>
</tbody>
</table>


### c. Water Supply

**Greater Monterey County**

Local groundwater and surface water provide the water supply for the greater Monterey County region. The primary source of water for most users in the area is groundwater, which is largely extracted from the Salinas Valley Groundwater Basin (RWMG 2013). In 2010, an estimated total of 460,443 acre-feet (AF) was pumped from this groundwater basin, including 416,421 AF for agriculture and 44,022 AF for urban areas. In general, groundwater supplies are limited in terms of
the annual amount of water that can be withdrawn without causing a long-term drop in water levels (“Safe Yield”) and in the total storage of a basin that can be removed without substantial environmental effects (“Available Yield”). Despite groundwater recharge from infiltration in river beds and from deep percolation of rainfall, the Greater Monterey County Integrated Regional Water Management Plan (RWMG 2013) found an overdraft of groundwater by 17,000 acre-feet per year (AFY) in 1995 and projected an overdraft of 14,700 AFY in 2030.

**Monterey Peninsula Area**

The total usable storage of water in the Monterey Peninsula area is estimated at 37,500 AF (MPWMD 2014). Groundwater from the Carmel River and Seaside Basins comprise the majority of this water supply, while the Los Padres Dam and Reservoir on the Carmel River account for less than two percent of total storage. In the Carmel River Basin, which provides about 70 percent of the area’s domestic water supply, pumping of wells causes substantial declines in groundwater levels during the dry season and leads to decreased surface flows in the Lower Carmel River along as much as nine river miles. Complete recharge of this aquifer generally occurs quite rapidly after winter rains commence and the Carmel River begins flowing into the dry reaches.

To meet municipal demand above the level that can be supplied from the Carmel River Basin, water is pumped from a well field in the Seaside Groundwater Basin (MPWMD 2014). The Seaside Groundwater Basin underlies a hilly coastal plain that slopes northward toward the Salinas Valley and westward toward Monterey Bay. Groundwater extraction near the coast increased markedly beginning in 1995, resulting in declining water levels and depletion of groundwater storage. Although sustainable yield from the Seaside Basin is estimated at 2,880 AFY, basin-wide groundwater withdrawals in recent years have been on the order of 5,600 AFY. In 2006, a Final Decision was rendered that adjudicated the basin and set a three-year goal aimed at reducing annual extractions to 3,000 AFY, which is termed the “natural safe yield” (MPWMD 2014).

Beyond the groundwater supply, desalination could be combined with aquifer storage and recovery in the Seaside Groundwater Basin to meet the Monterey Peninsula’s potable water supply needs. The Monterey Peninsula Water Supply project includes construction of a desalination plant in Marina that would produce 6,250 AFY and serve 112,000 people in cities throughout Monterey County (MPWSP 2017). The project has three components: desalination, aquifer storage and recovery and Pure Water Monterey (groundwater replenishment). Additionally, Monterey County is examining alternatives for Los Padres Dam to utilize the water supply and there is a project in the Carmel Area Water District to produce and distribute recycled water. The pipelines currently being installed to transport water from Pure Water Monterey and the desalination facility in Marina are anticipated to be completed by the end of 2017. Although some infrastructure is currently being installed, for the purposes of this analysis, the desalination plant itself is considered speculative.

**Pajaro River Watershed**

Water supply in the Pajaro River Watershed primarily consists of groundwater, with an estimated sustainable yield of 24,000 AFY (PVWMA n.d.). In the coastal portion of the watershed, groundwater has routinely been pumped above the safe yield level. Users in the lower Pajaro Valley pump nearly twice the sustainable yield of the Valley’s groundwater basin annually (Pacific Institute 2013). In addition to groundwater, imported water from the Central Valley Project (CVP) is delivered to the watershed from the San Luis Reservoir. On average, CVP delivers total 31,000 AFY for agriculture and 95,800 AFY for municipal and industrial services (PVWMA et al. 2014). After accounting for these water resources, the Pajaro River Watershed Integrated Regional Water Management Plan
Environmental Impact Analysis
Hydrology and Water Quality

Draft Environmental Impact Report

(PVWMA et al. 2014) projects a supply gap of 10,000 AFY to meet projected demand in 2035. This is down from the projected supply gap of about 70,000 AFY in the 2007 Integrated Regional Water Management Plan (PVWMA et al. 2014). In response to water shortage, the use of recycled water in the watershed is increasing. A recycled water facility in Watsonville is fully operational and produces approximately 4,000 AFY of recycled water for agricultural customers along the Pajaro Valley coast (PVWMA et al. 2014).

Santa Cruz County

Local groundwater and surface water contribute to the water supply of northern Santa Cruz County. Four primary groundwater basins are located in this area: the Santa Margarita-Lompico Basin west of Scotts Valley, the Purisima Basin under Capitola and to the north, the Aromas Basin to the southeast and the Pajaro Valley Alluvium Basin in the Watsonville area (County of Santa Cruz 2014). Current water needs exceed available supplies in large parts of each of the four basins of the region. The two primary aquifers that comprise the Santa Margarita-Lompico Basin are both in overdraft. Aquifers underlying the Soquel–Aptos area are also in overdraft. Additional water is not available from these sources to support current levels of demand or even modest future growth. For the City of Santa Cruz, approximately 95 percent of its water supply comes from surface sources, such as the San Lorenzo River, augmented by three wells which pump from the Purisima aquifer (Cross 2013). This aquifer also serves the Soquel Creek Water District, the Central Water District, several smaller water systems and hundreds of private wells (City of Santa Cruz 2013). Water demand for the region is projected to exceed the projected supply by 591 AFY in a normal year and 5,930 AFY in multiple dry years (County of Santa Cruz 2014).

Groundwater

Greater Monterey County

Nitrogen in the lower Salinas Valley Watershed, in the form of nitrate, is the primary contaminant of the Salinas Valley Groundwater Basin (RWMG 2013). Nitrate contamination in the Salinas Valley results primarily from the use of nitrogen-based synthetic fertilizers for irrigated agriculture and commonly occurs in the unconfined and semi-confined aquifers that underlie areas of intense agricultural activity. However, nitrate contamination can also be caused from septic system failures, from wastewater treatment ponds located in floodplains that convey sewage during flood events, and from livestock waste. All of the Salinas Valley cities have had to replace domestic water wells because nitrate levels have exceeded drinking water standards (RWMG 2013).

The intrusion of seawater poses another threat to groundwater quality in the Salinas Valley Groundwater Basin (RWMG 2013). As both irrigated agriculture and urban development have increased during the past several decades, groundwater demand has exceeded available recharge. Seawater intrusion was first observed in a few wells in the Castroville area in 1932. It is estimated that the Salinas Valley Groundwater Basin has an average annual non-drought overdraft of approximately 50,000 AF, although during a recent drought the annual overdraft was estimated at 150,000–300,000 AFY (RWMG 2013). As a result of this consistent overdraft, groundwater levels in the Salinas Valley Groundwater Basin have dropped below sea level, allowing seawater to intrude from Monterey Bay into aquifers located 180 and 400 feet below ground surface. Since the mid-1990s, recycled water distributed by the Castroville Seawater Intrusion Project within the “front area” of seawater intrusion has reduced groundwater pumping there, slowing the advance of seawater. In addition, a recent study (Monterey County Weekly, 2017; MCWD 2017) found that shallow aquifers around Marina contain a considerable amount of freshwater, suggesting that
seawater intrusion may not be as severe as previously thought. However, sea level rise would increase the pressure of saltwater on the coastal Salinas Valley Groundwater Basin aquifers, causing increased seawater intrusion (RWMG 2013).

**Monterey Peninsula Area**

Recent monitoring of groundwater in the Carmel River Basin has focused on temperature and seawater intrusion, while the Seaside Coastal Subarea has focused monitoring on the potential for seawater intrusion and other contaminants (MPWMD 2014). This monitoring effort has not indicated substantial changes in water quality or revealed any evidence of seawater intrusion in either groundwater basin (MPWMD 2014).

**Santa Cruz County**

Seawater intrusion occurs in the mid-County as well as Watsonville Slough watersheds, jeopardizing groundwater supply. In addition, much of the county’s groundwater has naturally high concentrations of arsenic and chromium VI. In unincorporated areas, potential sources of nitrate pollution include septic systems, livestock and agricultural operations. On a more localized level, leakage and spills from gas stations, dry cleaners and other hazardous materials sites has caused groundwater contamination. Groundwater underlying the Watsonville Sloughs Watershed also has substantial nitrate contamination (County of Santa Cruz 2014). In the coastal Purisima Formation, seawater threatens wells in the City of Santa Cruz and Soquel Creek Water District (Cross 2013). Due to intrusion at the Soquel Point Well, the City of Santa Cruz and the Soquel Creek Water District drilled a new well near 41st avenue to allow shifting of pumping away from the coast (County of Santa Cruz 2016).

**Pajaro River Watershed**

Groundwater in the Pajaro River Watershed is affected by several contaminants: seawater intrusion along the coast, perchlorate plumes in San Martin and Hollister and salinity in the upper watershed (PVWMA et al. 2014). Seawater intrusion contributes to salt contamination of groundwater up to three miles inland, which renders groundwater unusable for growing many high-value crops in this agricultural area (Pacific Institute 2013). The north Elkhorn Slough has reported gradual encroachment of seawater intrusion (100 mg/L chloride) and south Elkhorn Slough has reported seawater intrusion in the 180-foot aquifer (500 mg/L chloride). Other water quality concerns include nitrates, manganese and methyl tertiary butyl ether (MTBE) from leaking underground storage tanks with gasoline (PVWMA et al 2014).

**d. Flooding and Dam Inundation**

Flooding can occur during periods of excessive rainfall or as a result of wave run-up along the coast (Monterey County 2014). Flooding in steep, mountainous areas is usually confined to the stream channel and adjacent floodplain. Larger rivers typically have longer, more predictable flooding sequences and broad floodplains.

Inundation may be caused by dam failure or overtopping resulting from heavy precipitation. Dams may also fail as a result of structural damage caused by seismic events, erosion, structural design flaws, rapidly rising floodwater or landslides flowing into a reservoir. Populated areas below dams may be exposed to flood hazards resulting from dam failure. Dam failure could also pose a risk to roads, highways, public facilities, agricultural crops or other land uses within the inundation zone (Monterey County 2014).
**Monterey County**

In Monterey County, substantial wave run-up can take place during storms in the Pacific Ocean between November and February, in conjunction with high tides and strong winds. Portions of Monterey County most susceptible to flooding are the Salinas Valley, the City of Seaside, the City of Monterey and the Elkhorn Slough area (Figure 28) (Monterey County 2014). Three major dams and reservoirs, as well as several small dams, are located in and within the vicinity of Monterey County (Monterey County 2014). According to the Monterey County Multi-Jurisdictional Hazard Mitigation Plan, the three largest dams (Nacimiento, San Antonio and Los Padres dams) have never failed or been subject to substantial damage. San Clemente Dam was removed in 2015.

Dam inundation maps show that the greatest risk from dam failure is in Carmel Valley, where failure of the Los Padres Dam would cause inundation of urbanized areas (Monterey County 2014). Dam failure in Salinas Valley would also cause substantial inundation, whether caused by the failure of San Antonio or Nacimiento Reservoir. Studies reveal that either failure would overflow the 100-year floodplain in Salinas Valley. However, the risk would predominately be to agricultural land.

**San Benito County**

The San Juan and Hollister Valleys in northern San Benito County are most susceptible to 100-year floods. In addition, flooding may occur from landslide blockage of canyons and, as discussed below, from dam failure (Figure 29).

San Benito County may be subject to dam inundation from three surface reservoirs within the County - Hernandez, Paicines and San Justo - and from the Leroy Anderson Dam in neighboring Santa Clara County to the north (San Benito County 2015d). The San Justo and Leroy Anderson Dams are located near urban areas. In the event of complete dam failure, water could inundate the San Juan Valley; however, the probability of such an occurrence is low (San Benito County 2015d).

**Santa Cruz County**

The Pajaro and San Lorenzo River Valleys are subject to flooding (Santa Cruz County 2015a). The Pajaro River and adjacent floodplain runs through agricultural lands within the Pajaro Valley and, downstream, through downtown Watsonville. The San Lorenzo River runs through the populated San Lorenzo Valley and into downtown Santa Cruz (Figure 30). A levee was constructed along the San Lorenzo River in Santa Cruz in 2002 which has substantially reduced the flood risk for downtown residents, merchants and landowners (Santa Cruz County 2015a).

Given their location, a major dam failure at either the Bay Street Reservoir or Newell Creek Dam could result in extensive property damage or loss of life in the San Lorenzo Valley and the City of Santa Cruz (Santa Cruz County 2015a). A dam failure at either the Mill Creek, Oak Site, or Sempervirens Dams could affect people and property in northern Santa Cruz County, to the east of the community of Boulder Creek. Soda Lake is a storage facility for fine-grained material or “fines” from the Wilson Quarry in San Benito County. Failure of the Soda Lake levees could potentially release this material and impact one or more nearby residences and encroach upon Highway 129. Although located in neighboring counties, a failure of the Elmer J Chesbro, Uvas, or San Justo dams could potentially impact people and properties along the Pajaro River in Santa Cruz County. Given the monitoring protocol at the Newell Creek and Bay Street reservoirs, the probability of dam failure is very low (Santa Cruz County 2015a).
Figure 28 Monterey County Food Map
Figure 29 San Benito County Flood Map

Source: San Benito County, 2017a
Figure 30 Santa Cruz County Flood Map

FEMA Flood Hazard Areas
County of Santa Cruz

Features in FEMA Flood Zones
6,462 Parcels
8,434 Structures
4 Schools
6 Fire Stations
Value of improvements based on Assessment Roll 10/13/2009
$ 841,289,346

Legend

Source: Santa Cruz County GIS, 2012.
e. Tsunami and Seiche

Tsunamis are high sea waves that are caused by earthquake, submarine landslide, or other disturbances. A seiche is a temporary disturbance or oscillation in water level of a lake or partially enclosed body of water, usually caused by changes in atmospheric pressure.

Monterey County

With approximately 100 miles of Pacific Ocean coastline, Monterey County is subject to the hazard of tsunamis. In the last 200 years, eight observed tsunamis have affected Monterey County (Monterey County 2014). Almost all of these tsunamis were produced by earthquakes and resulted in wave run-ups of one meter or less. Coastal low-lying areas and riverine valleys in northern Monterey County are highly susceptible to tsunamis. For example, areas as far inland as Castroville are susceptible to a moderate tsunami run-up (less than 21 feet), and areas as far inland as downtown Salinas and Castroville are susceptible to extreme tsunami run-ups (21 feet to 50 feet). The Monterey County Multi-Jurisdictional Hazard Mitigation Plan does not identify hazards from seiches (Monterey County 2014).

San Benito County

San Benito County is an inland county separated from the Pacific Ocean by the Coast Range and does not contain any large bodies of water. Therefore, according to the San Benito County General Plan EIR (2015b), the County is not vulnerable to tsunamis or seiches.

Santa Cruz County

Some damage associated with tsunamis has occurred along the Santa Cruz County coastline, specifically from the magnitude 9.0 earthquake in Japan in 2011 (Santa Cruz County 2015a). Like Monterey County, the Santa Cruz County coastline could be impacted during a tsunami event. Areas most susceptible as referenced in the Santa Cruz County Local Hazard Mitigation Plan are located in proximity to the Pajaro River mouth and low-lying coastal areas between the cities of Santa Cruz and Capitola. Seiches are not identified as a geologic hazard in Santa Cruz County (Santa Cruz County 2015a).

f. Regulatory Setting

Federal

Clean Water Act

Congress enacted the Clean Water Act (CWA), 33 U.S.C. § 1251 et seq., formerly the Federal Water Pollution Control Act of 1972, with the intent of restoring and maintaining the chemical, physical and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain and restore water quality through the regulation of point source and non-point source discharges to surface water. Point source discharges are regulated by the NPDES permit process (CWA Section 402). NPDES permitting authority is administered by the SWRCB and nine RWQCBs. The AMBAG region is within a region administered by the NCRWQCB.

Individual projects that disturb more than one acre would be required to obtain NPDES coverage under the California General Permit for Storm Water Discharges Associated with Construction and
Land Disturbance Activities (Construction General Permit). The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) describing Best Management Practices (BMP) the discharger would use to prevent and retain storm water runoff. The SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a waterbody listed on the 303(d) list for sediment.

Section 401 of the CWA requires that any activity that would result in a discharge into waters of the U.S. be certified by the RWQCB. This certification ensures that the proposed activity does not violate State water quality standards. Section 404 of the CWA authorizes the U.S. Army Corps of Engineers to regulate the discharge of dredged or fill material to the waters of the U.S. and adjacent wetlands. Discharges to waters of the U.S. must be avoided where possible, and minimized and mitigated where avoidance is not possible. Section 303(d) of the CWA requires states to establish TMDL programs for streams, lakes and coastal waters that do not meet certain water quality standards.

Executive Order 11988

Executive Order (EO) 11988 Floodplain Management directs federal agencies to avoid short- and long-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development whenever there is a practicable alternative. Additionally, EO 11988 requires the prevention of uneconomic, hazardous, or incompatible use of floodplains; protection and preservation of the natural and beneficial floodplain values; and consistency with the standards and criteria on the National Flood Insurance Program.

National Flood Insurance Act/Flood Disaster Protection Act

The National Flood Insurance Act of 1968 (42 U.S.C. § 4001 et seq.) made national flood insurance available for the first time. The Flood Disaster Protection Act of 1973 (42 U.S.C. § 4001 et seq.) made the purchase of flood insurance mandatory for the protection of property located in Special Flood Hazard Areas. These laws are relevant because they led to mapping of floodplains and to local management of floodplain areas according to guidelines that include prohibiting or restricting development in flood hazard zones.

Porter Cologne Water Quality Control Act

The Porter Cologne Water Quality Control Act of 1967 Water Code § 13000 et seq.) requires the SWRCB and the nine RWQCBs to adopt water quality criteria to protect State waters. These criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. The Water Quality Control Plan, or Basin Plan, protects designated beneficial uses of State waters through the issuance of Waste Discharge Requirements (WDRs) and through the development of TMDLs. Anyone proposing to discharge waste that could affect the quality of the waters of the State must make a report of the waste discharge to the RWQCB or SWRCB as appropriate, in compliance with Porter-Cologne.

Sustainable Groundwater Management Act

In September 2014, the state passed legislation requiring that California’s critical groundwater resources be sustainably managed by local agencies. The Sustainable Groundwater Management Act (SGMA, Water Code § 10720 et seq.) gives local agencies the power to sustainably manage
groundwater and requires Groundwater Sustainability Plans (GSPs) to be developed for medium- and high-priority groundwater basins. The AMBAG region is part of a collaborative effort to implement SGMA and form groundwater sustainability agencies (GSA). GSAs for medium- and high-priority groundwater basins in the AMBAG region include: Pajaro Valley Water Management Agency, Salinas Valley Basin Groundwater Sustainability Agency, Arroyo Seco Groundwater Sustainability Agency, Marina Coast Water District, Monterey Peninsula Water Management District, County of Santa Cruz – West Santa Cruz Terrace, Santa Margarita Groundwater Agency, and the San Benito County Water District Groundwater Sustainability Agency (DWR 2017). These agencies will prepare the required GSPs for their respective groundwater basins. The Santa Margarita Groundwater Agency is anticipating having their GSP completed by March 2018. For all other GSAs, they have until January 31, 2020 to be managed under a GSP and the GSP should be updated every five years. The DWR is required to draft and adopt emergency regulations for the evaluation of GSPs, the implementation of GSPs and Alternatives, and coordination agreements. On February 18, 2016 DWR released for public review the Draft GSP Emergency Regulations for public review and comment and the regulations were approved on May 18, 2016.

Antidegradation Policy
California’s antidegradation policy, formally known as the Statement of Policy with Respect to Maintaining High Quality Waters in California, restricts degradation of surface and ground waters. It protects waters where existing water quality is higher than necessary for the protection of beneficial uses. Any actions with the potential to adversely affect water quality must be consistent with the maximum benefit to the people of the State; not unreasonably affect present and anticipated beneficial use of the water; and not result in water quality less than prescribed in water quality plans and policies.

Cobey-Alquist Floodplain Management Act
The Cobey-Alquist Floodplain Management Act (Water Code § 8400 et seq.) gives support to the National Flood Insurance Program by encouraging local governments to plan, adopt and enforce land use regulations for floodplain management, to protect people and property from flooding hazards. The Act also identifies requirements that jurisdictions must meet to receive State financial assistance for flood control.

Caltrans Statewide NPDES Permit
The California Department of Transportation (Caltrans) was issued the nation’s first statewide stormwater NPDES permit (Order 99-06-DWQ) in 1999 by the SWRCB. The Caltrans Permit requires Caltrans to regulate nonpoint source discharge from its properties, facilities and activities. The Caltrans Permit requires development of a program for communication with local agencies and coordination with other MS4 programs where those programs overlap geographically with Caltrans facilities. As part of the permit, Caltrans is required to create and annually update a Stormwater Management Plan (SWMP) that is used to outline the regulation of pollutant discharge caused by current and future construction and maintenance activities. SWMP requirements apply to discharges from Caltrans stormwater conveyances, including catch basins and drain inlets, curbs, gutters, ditches, channels and storm drains. The SWMP must be approved by the SWRCB and, as specified in the permit, it is an enforceable document. Compliance with the permit is measured by implementation of the SWMP. Caltrans’ policies, manuals and other guidance related to stormwater are intended to facilitate implementation of the SWMP. Caltrans also requires all contractors to
prepare and implement a program to control water pollution effectively during the construction of all projects.

California Green Building Standards Code
The California Green Building Standards Code (CalGreen, Cal. Code Regs. Title 24, Part 11) includes mandatory measures for residential and nonresidential development. For example, Section 4.106.2 requires residential projects that disturb less than one acre and are not part of a larger common plan of development to manage storm water drainage during construction through on-site retention basins, filtration systems and/or compliance with a stormwater management ordinance. Section 5.106.1 requires newly constructed nonresidential projects and additions of less than one acre to prevent the pollution of storm water runoff because of construction through compliance with a local ordinance or implementing BMPs that address soil loss and good housekeeping to manage equipment, materials and wastes. Section 5.303 sets measures for indoor water use for nonresidential development requiring metering devices to conserve water.

Industrial General Permit
The Industrial General Permit (Order 2014-0057-DWQ) regulates industrial stormwater discharges and authorized non-stormwater discharges from industrial facilities in California. The Industrial General Permit is called a general permit because many industrial facilities are covered by the same permit, but comply with its requirements at their individual industrial facilities. The SWRCB and RWQCBs implement and enforce the Industrial General Permit, which may impact any industrial development under the 2040 MTP/SCS land use scenario.

Urban Water Management Planning Act
In 1983, the California Legislature enacted the Urban Water Management Planning Act (Water Code, Section 10610 et seq.), which requires urban water suppliers to develop water management plans to actively pursue the efficient use of available supplies. Every five years, water suppliers are required to develop Urban Water Management Plans (UWMPs) to identify short-term and long-term water demand management measures to meet growing water demands.

SRWCB Water Rights Program
The SWRCB is responsible for administering water rights in California. It has several water rights programs including a Compliance Monitoring Program, Drought Year Information Resources, Water Availability Analysis, Water Use Reports Program and Water Quality Certification. The Water Availability Analysis Program, applicable to the 2040 MTP/SCS, is required by the California Water Code which requires sufficient information for applications submitted to the SWRCB to demonstrate a reasonable likelihood that appropriated water is available for appropriation. The Water Use Reports Program is responsible for water use reports for water right holders and sets measurement methods for the reports.

Senate Bill 610 and 221
Senate Bill (SB) 610 and SB 221 of 2001 improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 and 221 promote more collaborative planning between local water suppliers and cities and counties. Under SB 610, water supply assessments (WSAs) must be furnished to local governments for inclusion in any environmental documentation for certain projects subject to CEQA. Under SB 221, approval by a city
of county of certain residential subdivisions requires an affirmative written verification of sufficient water supply. SB 221 is intended as a “fail safe” mechanism to ensure that collaboration on finding the need for water supplies to serve new large subdivision occurs where it should before construction begins.

State Water Conservation Requirements

Executive Order B-37-16 established a new water use efficiency framework for California. The order bolstered the state’s drought resilience and preparedness by establishing longer-term water conservation measures that include permanent monthly water use reporting, new urban water use targets, reducing system leaks and eliminating clearly wasteful practices, strengthening urban drought contingency plans and improving agricultural water management and drought plans. Based on monthly water use reporting, the majority of urban water suppliers reported sufficient supplies to meet demand in three additional dry years and are not subject to state conservation mandates. On February 8, 2017, SWRCB adopted an emergency water conservation regulation to amend and extend the May 2016 regulation. The amended regulation allows certain suppliers the opportunity to submit or resubmit their water supply reliability assessments.

California Coastal Act

The California Coastal Act (Public Resources Code § 30000 et seq.) is the primary law that governs decisions of the Coastal Commission. Chapter 3 of the California Coastal Act contains Coastal Resources Planning and Management Policies. Policies include protection of certain water oriented recreational activities (Section 30220); minimizing the adverse effects of waste water discharge, controlling runoff and preventing depletion of ground water supplies (Section 30231); and water supply and flood control through channelization, dams, or other substantial alternations (Section 30236).

Local

Monterey County

The Monterey County Code Chapter 16.14, Urban Stormwater Quality Management and Discharge, was adopted to enhance watercourses within the unincorporated Urbanized Areas by controlling the entry of urban pollutants into stormwater runoff that may enter the County storm drain system. Other goals of this chapter include, but are not limited to: benefit the people and the environment of the County by protecting water quality in the waters within its jurisdiction, reduce the presence of pollutants in stormwater to the maximum extent practicable, and effectively prohibit non-stormwater discharges into the County storm drain system. In addition, Monterey County has adopted an Agricultural Water Conservation Plan (Ordinance 3851) requiring growers in agricultural zoned property to file plans with the Monterey County Water Resources Agency showing water conservation measures implemented during the previous year. Similarly, an ordinance requiring the filing of Urban Water Conservation Plans (Ordinance 3886) was adopted in 1996. Monterey County Code Section 16.16.050 contains provisions for flood hazard reduction. Provisions include anchoring, construction materials and methods, elevation and floodproofing and flood openings.

The Monterey County General Plan (Monterey County, 2010) Conservation and Open Space Element contains goals and policies related to hydrology and water quality. Specifically, Goal OS-3 is to “prevent soil erosion to conserve soils and enhance water quality.” Related policies under Goal OS-3 are to implement BMPs (Policy OS-3.1), establish criteria to evaluate and address drainage, water
quality and stream stability problems from increased stormwater runoff (Policy OS-3.3), and regulation of activity on slopes to reduce water quality impacts (Policy OS-3.5).

Monterey County, along with the Monterey Peninsula cities of Carmel-by-the-Sea, Del Rey Oaks, Monterey, Pacific Grove, Sand City and Seaside, is a participating member of the Monterey Regional Storm Water Management Program (MRSWMP). Participating members collaborate on projects and other Permit-related activities to satisfy a number of their individual MS4 General Permit requirements.

The 2010 Urban Water Management Plan for the California-American Water Company’s Central Division – Monterey County District covers most of the Monterey Peninsula including the incorporated cities of Carmel-by-the-Sea, Del Rey Oaks, Monterey, Pacific Grove, Sand City and Seaside as well as the unincorporated communities of Pebble Beach, Carmel Valley East and West, Carmel Highlands and the Presidio of Monterey (California American Water Company 2012). Total water use in the plan region is anticipated to by 13,936 AFY in 2030 while projected water supply in 2030 is 16,276 AFY. Therefore, there is sufficient supply to meet the projected demand in the service area (California American Water Company 2012). The 2010 UWMP includes conservation measures and BMPs to that are currently being implemented or are in the process of being implemented to reduce water demand in the area as well as water supply reliability and water shortage contingency planning.

San Benito County

The San Benito County Code of Ordinances Chapter 19.17, Grading, Drainage and Erosion Control, sets forth rules and regulations to control excavation, grading, drainage and erosion, establishes the administrative procedure for issuance of permits, and provides for approval of plans and inspection of grading construction, drainage measures and erosion control methods. Pursuant to Section 19.17.011(c), in granting a grading permit, the County may attach such conditions as necessary to prevent creation of a public nuisance or hazard to public or private property. The conditions may include, but are not limited to:

- The use of check dams, cribbing, rip rap or other devices to prevent erosion;
- Application of mulching, fertilizing, watering or other methods to establish new vegetation, and stockpiling and reaplication of top soil;
- Restricting the locations of where earth or organic material may be deposited;
- Requiring the preparation of erosion control plans indicating proposed methods for the control of runoff, erosion and sediment control;
- Requiring the preparation of revegetation plans detailing the revegetation of all exposed surfaces during development; and
- Requiring the preparation of drainage plans that include on-site retention of water to pre-development levels

Increases in peak stormwater flows are addressed in the San Benito County Code of Ordinances, Title 23 (Subdivision Ordinance), Chapter 23.31 (Improvement Designs), Article III (Storm Drainage Design Standards). These standards focus on the 100-year design storm standard for the sizing of detention basins used to provide peak flow attenuation. Chapter 15.05 of the San Benito County Code governs the utilization of water resources in the County. It provides for a permitting system for the extraction of groundwater as well as measures intended to protect these resources. Section 19.15 of the San Benito County Code of Ordinances contains provisions for flood hazard reduction
for construction, utilities, subdivisions, recreational vehicles and manufactured homes. Specific 
construction standards include anchoring, elevation and floodproofing and construction materials 
and methods.

The San Benito County 2035 General Plan (San Benito County, 2015a) Public Facilities and Services 
Element and Natural and Cultural Resources Element contain goals and policies specific to hydrology 
and water quality. Specifically, Public Facilities and Services Element Goal PFS-3 is to “ensure reliable 
supplies of water for unincorporated areas to meet the needs of existing and future agriculture and 
development, while promoting water conservation and the use of sustainable water supply 
sources.” Related policies under Goal PFS-3 include water district support (PFS-3.1), water rights 
protection (PFS-3.3), drought response (PFS-3.5), groundwater management (PFS-3.7) and 
integrated management (PFS-3.8). Additionally, Public Facilities and Services Element Goal PFS-6 is 
“to manage stormwater from existing and future development using methods that reduce potential 
flooding, maintain natural water quality, enhance percolation for groundwater recharge, and 
provide opportunities for reuse.” This goal is supported by policies PFS-6.1 for adequate stormwater 
facilities, PFS-6.2 use of best management practices, PFS-6.3 natural drainage design, PFS-6.7 runoff 
water quality, and PFS-6.8 Reduce Erosion and Sedimentation. The Natural and Cultural Resources 
Element contains Policy NCR-4 related to water resources, which is “to protect water quantity and 
quality in natural water bodies and groundwater basins and avoid overdraft of groundwater 
resources.” The goal is supported by Policy NCR-4.2 water quality tests, Policy NCR-4.5 groundwater 
recharge, and Policy NCR-4.7 best management practices.

San Benito County is a member of the Pajaro River Watershed Flood Prevention Authority, 
established in 2000, with the mission to identify, fund and implement flood prevention and control 
strategies in the Pajaro River Watershed.

The City of Hollister updated their UWMP, the 2015 Hollister Urban Area Water Management Plan, 
in July 2016 (City of Hollister 2015). The Hollister UWMP is a collaborative effort between the San 
Benito County Water District, Sunnyslope County Water District, and the City of Hollister and builds 
on and updates the 2010 UWMP. The Hollister UWMP covers 20 square miles of the City of Hollister 
and some unincorporated county lands surrounding the City. Future water demand and water 
supply have been calculated in the Hollister UWMP. Projected potable 2035 water demand and 
water supply is 10,170 AFY (City of Hollister 2015).

Santa Cruz County

The Santa Cruz County Code of Ordinances Chapter 7.79 sets forth rules and regulations to control 
runoff and pollution by protecting the surface and groundwater quality, groundwater recharge, 
beneficial uses, and watershed health of receiving waters of the County from discharge of 
pollutants. Sections 7.79.040 through 7.79.060 prohibit discharges, illicit connections and waste 
disposal into receiving waters. Section 7.79.100 requires BMPs for construction activities to be 
planned prior to issuance of a County grading permit. Chapter 16.22 of the Santa Cruz County Code 
of Ordinances establishes rules and regulations to eliminate and prevent the conditions of 
accelerated erosion. Per Section 16.22.060, prior to issuance of a building permit or development 
permit, an erosion control plan indicating proposed methods for the control of runoff, erosion, an 
sediment movement must be submitted to and approved by the County. Santa Cruz County Code of 
Ordinances Section 12.10.220 adopts the California Residential Building Code, which includes base 
flood elevation and design flood evaluation for flood resistant construction.

The Santa Cruz General Plan and Local Coastal Program (Santa Cruz County, 1994) Conservation and 
Open Space Chapter contains objectives and policies specific to water supply, wastewater
treatment, disposal and drainage. Specifically, Objective 5.5a is “to protect and manage the watersheds of existing and future surface water supplies to preserve the quality and quantity of water produced and stored in these areas to meet the needs of County residents, local industry, agriculture and the natural environment.” The objective is implemented through Policy 5.5.3, which designates areas located within one mile of upstream intakes as water quality constraint areas; Policy 5.5.6, land division and density requirements in water supply watersheds, which requires new parcel sizes to be at least 10 acres to reduce water supply; and Policy 5.5.10, retaining undeveloped lands in watersheds to maintain water quality by minimizing development. Additionally, Objective 5.7 is “to protect and enhance surface water quality in the County’s streams, coastal lagoons and marshes by establishing best management practices on adjacent lands.” This objective is implemented through Policy 5.7.1 prohibits new development adjacent to streams and bodies of water if development would cause adverse impacts on water quality, Policy 5.7.3 erosion control and lagoon protection requires installation and maintenance of sediment basins and/or other strict erosion control measures; Policy 5.7.4 control of surface runoff requires new development to minimize the discharge of pollutants, and Policy 5.7.7 contains stormwater discharge permit requirements to maintain water quality.

Santa Cruz County and the City of Capitola have a Stormwater Management Program (2010) that builds on efforts to preserve and enhance Santa Cruz County watersheds and is the County and City’s response to the new statewide NPDES permit requirements for agencies designated by the SWCB. Activities in the Stormwater Management Program are based on the USEPA stormwater regulations, the SWRCB General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer System (Small MS4) and the Model Urban Runoff Program (MURP).

The City of Santa Cruz Urban Water Management Plan was prepared by the City of Santa Cruz Water Department in August 2016 (City of Santa Cruz 2016). The UWMP covers approximately 20 square miles including the City of Santa Cruz, a small part of the City of Capitola, adjoining unincorporated areas in Santa Cruz County, and coastal agricultural lands north of the city. Projected demand for potable water in 2035 is 3,220 million gallons per year (MGY) and the projected supply is 3,180 MGY. Therefore, there is not enough supply to meet the projected demand (City of Santa Cruz 2016). The UWMP contains a water shortage contingency planning section to present information about how the City of Santa Cruz manages the water system during a water shortage emergency and actions that would occur in response to an interruption of water supplies. Similarly, the Scotts Valley Water District has prepared a 2015 Urban Water Management Plan (Scotts Valley Water District 2016). The Scotts Valley Water District is approximately 5.5 square miles and includes most of the City of Scotts Valley as well as some unincorporated areas north of the City. Water demand in 2040 is projected to be 1,661 AFY and water supply is estimated at 1,661 AFY including planned sources of water, such as recycled water (Scotts Valley Water District 2016).

Many cities within the AMBAG region have similar hydrology and water quality goals and policies in their respective general plans.

4.10.2 Impact Analysis

a. Methodology and Significance Thresholds

Appendix G of the State CEQA Guideline identifies the following criteria for determining whether a project’s impacts would have a significant impact related to hydrology and water quality:

1. Violate any water quality standards or waste discharge requirements;
2. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level;
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;
4. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
5. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
6. Otherwise substantially degrade water quality;
7. Place housing within a 100-year flood hazard area;
8. Place within a 100-year flood hazard area structures which would impede or redirect flood flows;
9. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam;
10. Be subject to inundation by seiche, tsunami, or mudflow;
11. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.
12. Require or result in construction of new water facilities or expansion of such facilities, the construction of which could cause significant environmental effects; and/or
13. Require or result in construction of new stormwater drainage facilities or expansion of such facilities, the construction of which could cause significant environmental effects.

b. Project Impacts and Mitigation Measures

This section describes water quality, groundwater supply, drainage, runoff, flooding, inundation and water supply impacts associated with the 2040 MTP/SCS. Table 37 summarizes the specific transportation projects that could result in the flooding impacts discussed in this section. 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 could result in the hydrology and water quality conditions as described in the following sections.
Threshold 1: Violate any water quality standards or waste discharge requirements

Threshold 3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site

Threshold 6: Otherwise substantially degrade water quality

**Impact W-1**

**Implementation of Proposed Transportation Improvements and Future Projects Included in the Land Use Scenario Envisioned in the 2040 MTP/SCS Could Result in Substantial Eroded Sediments and Contaminants in Runoff, as Well as Changes in Drainage Patterns Which Could Degrade Surface and Ground Water Quality. However, Compliance with Federal, State and Local Regulations Would Reduce Impacts to Water Quality. Impacts Would Be Less Than Significant.**

Implementation of proposed transportation improvements and future projects included in the land use scenario envisioned in the 2040 MTP/SCS would result in both short-term and long-term impacts to water quality.

Certain transportation improvements would increase overall impervious surface area throughout the AMBAG region. For example, new roadways or road widening projects would introduce pavement in areas that are currently undeveloped. Infill development projects envisioned under the land use scenario could also introduce impervious surfaces, if the infill site is currently unpaved. These and other projects that would increase impervious surfaces may generate significant adverse impacts to surface water quality. Pollutants and chemicals associated with urban activities would run off new roadways and other new impervious surfaces flowing into nearby bodies of water during storm events. These pollutants would include, but are not limited to: heavy metals from auto emissions, oil, grease, debris and air pollution residues. Similarly, any 2040 MTP/SCS projects with landscaping may require fertilizer/pesticide application, which could enter nearby bodies of water and cause adverse effects to water quality. Such contaminated urban runoff may remain largely untreated, thus resulting in the incremental long-term degradation of water quality. Short-term adverse impacts to surface water quality may also occur during the construction periods of individual improvement projects because areas of disturbed soils would be highly susceptible to water erosion and downstream sedimentation. This impact is of particular concern where projects are located on previously contaminated sites. Without effective erosion and storm water control, contaminated soils exposed during construction activities may result in surface water contamination. In addition, grading and vegetation removal in proximity to creeks for construction, widening and bridge repair could increase erosion and sedimentation of creek banks. This could affect both water quality and the stability of slopes along the creeks.

As discussed in the Regulatory Setting, the federal CWA requires that an NPDES storm water permit be obtained for construction projects that would disturb greater than one acre. Acquisition of the General Construction permit is dependent on the preparation of a SWPPP that contains specific BMPs to control the discharge of pollutants, including sediment, into the local surface water drainages. Specific BMPs may include, but are not limited to: silt fencing, fiber rolls, trenching and slop stabilization techniques. In addition, all state projects for which Caltrans is the sponsor agency would comply with the Caltrans Statewide NPDES permit that regulates all stormwater discharges from Caltrans owned conveyances, maintained facilities and construction activities. Many 2040 MTP/SCS projects, especially new and extended roadways, would disturb more than one acre and would be subject to these regulations. Construction of transportation and development projects...
under the 2040 MTP/SCS could also result in the change of existing drainage patterns on individual project sites or within a project area, which could impact water quality. Project grading and construction of impervious surfaces, for transportation projects may alter existing drainage patterns by altering slopes and reducing infiltration. Additionally, infill development projects included in the SCS land use scenario could also increase impervious surfaces and develop structures that may alter existing drainages. However, compliance with regulations would reduce impacts from project construction by requiring measures to prevent runoff and pollutants from leaving a project site.

For operational water quality control, the CWA NPDES MS4 Phase I and Phase II requirements, as discussed in the Regulatory Setting, require agencies and developments to implement SWMPs, which in turn require the implementation of source and treatment control measures. NPDES MS4 permittees are also required to develop and enforce ordinances and regulations to reduce the discharge of sediments and other pollutants in runoff, and must verify compliance. New development that would introduce 10,000 or more square feet of new impervious surfaces would be required under Provision C.3 of the NPDES program to incorporate LID strategies such as stormwater reuse, onsite infiltration and evapotranspiration. Some typical BMPs to meet regulatory standards for project operation include erosion control and revegetation programs, LID, alternative discharge options and integrated pest management techniques in landscaped areas. During operations and maintenance of transportation projects, operational BMPs would result in compliance with applicable stormwater runoff discharge permits. In addition, consistent with the Post-Construction Stormwater Management Requirements for development projects in the central coast region (February 2013), post project stormwater flows from a project site are required to be the same or less than pre-project stormwater flows. Based on compliance with these requirements, land use development patterns included in the 2040 MTP/SCS would not result in impacts to the local stormwater system.

Depending on the location and design specific to transportation projects included in the 2040 MTP/SCS, stormwater runoff may be captured in existing storm drain systems and conveyed to local or regional wastewater treatment facilities. Likewise, the land use pattern included in the 2040 MTP/SCS would generate new sources of sanitary sewage, which would also be conveyed to wastewater treatment facilities in the region for secondary or tertiary treatment. Discharges of treated wastewater, also called effluent, from the treatment plants are regulated by the RWQCB and must meet water quality effluent limitations established in the NPDES permit issued by the RWQCB for the treatment plant. Thus, although implementation of the 2040 MTP/SCS would increase the volume of point-source wastewater discharges in the AMBAG region, required compliance and monitoring of effluent prior to discharge from treatment facilities would ensure impacts would be less than significant.

Development under the 2040 MTP/SCS would not substantially degrade water quality or violate water quality standards because compliance with state regulation such as NPDES and MS4 permits would require implementation of BMPs and development to reduce discharge of runoff and maintain water quality. In addition, local ordinances require measures such as erosion control reduce the discharge of pollutants into storm drain systems. Although individual projects included in the 2040 MTP/SCS have the potential to adversely affect water quality at a project-specific level, projects would adhere to existing regulations related to water quality. Therefore, water quality impacts would be less than significant.
Mitigation Measures

None required.

<table>
<thead>
<tr>
<th>Threshold 2:</th>
<th>Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level</th>
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<tbody>
<tr>
<td>Threshold 11:</td>
<td>Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed</td>
</tr>
<tr>
<td>Threshold 12:</td>
<td>Require or result in construction of new water facilities or expansion of such facilities, the construction of which could cause significant environmental effects</td>
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Impact W-2

Implementation of proposed transportation improvements and future projects included in the land use scenario envisioned in the 2040 MTP/SCS would increase water demand in the AMBAG region. This demand may potentially require new or expanded water supplies, entitlements, or facilities. Impacts would be significant and unavoidable.

Implementation of proposed transportation improvements and future projects included in the land use scenario envisioned in the 2040 MTP/SCS would result in both short-term and long-term impacts to water supply throughout the AMBAG region.

During grading and general construction activities, water would be needed to suppress fugitive dust generated by construction equipment. Given the current state of overdraft of many groundwater basins in the study area, and the likelihood that more than one project would be constructed simultaneously in areas with overdrafted basins, the short-term water impact of the proposed 2040 MTP/SCS is significant.

Projects that require long-term commitments of water, whether from irrigation for landscaping or from development included in the proposed land use scenario, also could generate impacts on water supplies in the AMBAG region. Most transportation improvements involve modification of existing facilities and would not result in a substantial increase in landscaped areas that require irrigation. However, streetscaping projects proposed in the 2040 MTP/SCS, such as the San Carlos Streetscaping (MON-CAR007-CM) in Monterey County and the West Gateway Improvement Project (SB-COH-A13) in San Benito County, could require water for landscaping. Furthermore, new and extended roadways could include tree and shrub plantings. In addition, future transit projects with restrooms envisioned by the 2040 MTP/SCS would require potable water. It is likely that many projects involving landscaping and infill development near transit would be located in urban areas served by overdrafted groundwater basins, including the City of Watsonville and the City of Santa Cruz. Development associated with the land use scenario envisioned in the 2040 MTP/SCS may also impact water supplies requiring additional water for mixed use development and infill development. The increased density envisioned by the 2040 land use scenario would increase the demand on the region’s water supply as a result of AMBAG’s regional growth forecast. Therefore, new or expanded water supplies, entitlements, or facilities may be required, and this impact is significant.

Major 2040 MTP/SCS projects, particularly new and extended roadways and parking facilities, such as the Rio Road Parking Facility (MON-CAR005-CM) in Monterey County, could also affect groundwater supplies by incrementally reducing groundwater recharge potential. This reduction in groundwater recharge could occur because the impermeable surfaces associated with the proposed improvements would increase surface water runoff within existing rights-of-way at the expense of natural infiltration.
As discussed in the Regulatory Setting, UWMPs for the AMBAG area estimate and pursue the efficient use of available water supplies identifying short-term and long-term water demand management measures. In addition, SB 610 and 221 improve the link between information on water supply availability and certain land use decisions made by cities and counties by promoting more collaborate planning. Further, GSPs prepared under SGMA would be implemented to protect and regulate groundwater in the AMBAG area. A list of GSAs in the AMBAG region that would prepare GSPs is included in the Regulatory Setting. These regulatory and planning programs encourage planning for anticipated water usage and thus conservation in the AMBAG area and would include consideration for the water demand anticipated by the 2040 MTP/SCS.

Although compliance with existing regulations would require consideration of water demand, the magnitude of impacts associated with individual 2040 MTP/SCS projects cannot be accurately determined at this programmatic stage of analysis. In addition, although existing regulations would reduce groundwater impacts, some jurisdictions may not have local regulations or the regulations may not apply to all projects. Therefore, impacts related to groundwater recharge, water supply entitlements, and new water supply facilities are significant.

**Mitigation Measures**

For transportation projects under their jurisdiction, TAMC, SBtcOG and SCCRTC shall implement, and transportation project sponsor agencies can and should implement, the following mitigation measures developed for the 2040 MTP/SCS program where applicable for transportation projects that have water supply impacts. Cities and counties in the AMBAG region can and should implement these measures, where relevant to land use projects implementing the 2040 MTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

**W-2(a) Construction Dust Suppression Water Supply**

The RTPAs shall and sponsor agencies can and should ensure that all 2040 MTP/SCS projects, where feasible, reclaimed and/or desalinated water is used for dust suppression during construction activities. This measure shall be noted on construction plans and shall be spot checked by the local jurisdiction.

**Implementing Agencies**

Implementing agencies for transportation projects include RTPAs and transportation project sponsor agencies.

**W-2(b) Landscape Watering**

In jurisdictions that do not already have an appropriate local regulatory program related to landscape watering, 2040 MTP/SCS projects that would include landscaping shall be designed with drought tolerant plants and drip irrigation. When feasible, native plant species shall be used. In addition, landscaping associated with proposed improvements shall be maintained using reclaimed and/or desalinated water when feasible.

**Implementing Agencies**

Implementing agencies for transportation projects include RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects include cities and counties.
W-2(c) Porous Pavement

In jurisdictions that do not already have an appropriate local regulatory program related to porous pavement, the sponsor of a 2040 MTP/SCS project that involves streetscaping, parking, transit and land use improvements shall ensure that porous pavement materials are utilized, where feasible, to allow for groundwater percolation.

Implementing Agencies
Implementing agencies for transportation projects include RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects include cities and counties.

W-2(d) Water Infrastructure Improvements

The sponsor of 2040 MTP/SCS projects that would require potable water service shall coordinate with water supply system operators to ensure that the existing water supply systems have the capacity to handle the increase. If the current infrastructure servicing the project site is found to be inadequate, infrastructure improvements for the appropriate public service or utility should be provided by the implementing agency.

Implementing Agencies
Implementing agencies include cities and counties for land use projects.

W-2(e) Bioswale Installation

The sponsor of a 2040 MTP/SCS project, such as new roads or roadway extensions, that would substantially increase impervious surfaces shall ensure that bioswales are installed, where feasible, to facilitate groundwater recharge using stormwater runoff from the project site while improving water quality if not already required by the appropriate jurisdictions local regulatory programs.

Implementing Agencies
Implementing agencies for AMBAG transportation projects include RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects include cities and counties.

Significance After Mitigation

Implementation of the above measures would reduce impacts from water supply in the AMBAG region. However, due to the programmatic nature of the 2040 MTP/SCS a precise, project-level analysis of specific water demand and supply impacts associated with individual transportation and land use projects is not possible at this time. The land use scenario envisioned by the 2040 MTP/SCS along with 2040 MTP/SCS projects are water intensive and may result in the need for additional water supply, even with the implementation of mitigation measures listed above. Given the overdraft conditions of area groundwater basins and other regional water supply concerns, impacts would remain significant and unavoidable. No additional feasible mitigation measures to reduce this impact to less-than-significant levels are available.
Threshold 4: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

Threshold 5: Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

Threshold 13: Require or result in construction of new stormwater drainage facilities or expansion of such facilities, the construction of which could cause significant environmental effects.

**Impact W-3**

Implementation of proposed transportation improvements and future projects included in the land use scenario envisioned in the 2040 MTP/SCS would incrementally increase stormwater flows in the AMBAG region. Impacts would be less than significant.

Implementation of proposed transportation improvements and future projects included in the land use scenario envisioned in the 2040 MTP/SCS may increase stormwater flows, resulting in increased volume and/or velocity of stormwater runoff. Potential increases in stormwater volume and/or velocity could result in on- or off-site flooding. However, planned transportation and land use projects would be designed to comply with existing State and local jurisdiction requirements, including applicable municipal code sections related to stormwater runoff and drainages, such as curb and gutter design, and would build drainage infrastructure to control and accommodate the increase in stormwater flows. As discussed in the Regulatory Setting, these ordinances include the Monterey County Code Chapter 16.14 to control the entry of urban pollutants into stormwater runoff; San Benito County Code of Ordinances Chapter 19.17 to regulate the control of excavation, grading, drainage and erosion; and Santa Cruz County Code of Ordinances Chapter 7.79 to control runoff and pollution by protecting the surface and groundwater quality and groundwater recharge of receiving waters of the County from discharge of pollutants. Compliance with local ordinances would control runoff via drainage basins, silt fencing, vegetation erosion control and other measures to reduce runoff into stormwater drainage systems.

Land use projects under the 2040 MTP/SCS would require drainage control post-construction measures required under the NPDES MS4 permit and would include implementation of LID drainage control features. These measures could include incorporation of permeable paving, vegetated swales, infiltration retention basins and other features that would minimize stormwater runoff.

The effects of transportation projects and land use development would have the potential to increase stormwater runoff. However, existing regulations provide adequate analysis of potential impacts and preventative measures to limit or avoid substantial runoff during project construction and operation. Based on compliance with these existing regulations, impacts would be less than significant.

**Mitigation Measures**

None required.
Threshold 7: Place housing within a 100-year flood hazard area
Threshold 8: Place within a 100-year flood hazard area structures which would impede or redirect flood flows
Threshold 9: Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam
Threshold 10: Be subject to inundation by seiche, tsunami, or mudflow

Impact W-4 IMPLEMENTATION OF PROPOSED TRANSPORTATION IMPROVEMENTS AND FUTURE PROJECTS INCLUDED IN THE LAND USE SCENARIO ENVISIONED IN THE 2040 MTP/SCS COULD BE SUBJECT TO FLOOD HAZARDS, DAM FAILURE, OR TSUNAMI. HOWEVER, PURSUANT TO COMPLIANCE WITH EXISTING REGULATIONS, THE 2040 MTP/SCS WOULD NOT EXPOSE PEOPLE OR STRUCTURES TO A SIGNIFICANT RISK OF LOSS, INJURY, OR DEATH ASSOCIATED WITH THESE HAZARDS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2040 MTP/SCS could be subject to flooding hazards due to storm events, sea-level rise due to climate change and/or dam failure. The transportation projects with potentially significant impacts are listed in Table 37.

Flooding

Future transportation and land use development in low-lying areas and in proximity to waterways and/or dam inundation zones may be subject to flood hazards. The effects of flooding could include temporary inundation of a facility that impedes its use, or causes long-term damage to the facility. Flooding may also cause immediate damage to roadways, bikeways and bridges, particularly during high-velocity flood events that wash away or erode facilities. Such damage would typically occur adjacent to rising rivers or streams. Erosion caused by flooding can damage paved facilities and bridge supports can be undermined or washed away. Flood hazards can also endanger occupants of habitable structures.

In the AMBAG region, projects in the following areas would be most susceptible to these hazards: the Salinas Valley, the City of Seaside, and the Elkhorn Slough area in Monterey County; the San Juan and Hollister Valleys in San Benito County; and the Pajaro and San Lorenzo River Valleys in Santa Cruz County. Representative projects that could be subject to flooding are listed in Table 37.

There are several federal, state and local programs to reduce flooding in the region as discussed in the Regulatory Setting. The National Flood Insurance Act makes the purchase of flood insurance mandatory for properties in Special Flood Hazard Areas to prevent the loss of property from flooding. The Cobey-Alquist Floodplain Management Act encourages local governments to plan, adopt and enforce land use regulations for floodplain management to protect people and property from flood hazards. The California Division of Dam Safety inspects dams across the State, including in the AMBAG region, on a yearly schedule to ensure that they are performing and being maintained in a safe manner.

Locally, each county in the AMBAG region manages flood control. One management technique used by the Monterey County Water Resources Agency is a flood warning system to prepare and warn residents in the event of a major flood. All three dams and reservoirs in Monterey County are inspected annually to ensure they are in good operating order to prevent flooding. San Benito County flood management is primarily a local government function. San Benito oversees floodplain land use decisions for planning and emergency preparedness and response measures. Additionally,
San Benito is a member of the Pajaro River Watershed Flood Prevention Authority to identify, fund and implement flood prevention and control strategies in the Pajaro River Watershed. Flood control management in Santa Cruz County is provided by the County Flood Control District and Floodplain Administration, which identifies, regulates, remediates and educates the County’s population to reduce the damage from flooding in the County. In addition to local management agencies, all three counties have flood prevention ordinances requiring building standards in flood zones, as discussed further in the Regulatory Setting. Building standards for flood prevention include elevated structures, anchored foundation systems and erosion control measures along waterways.

Federal, state and local programs and ordinances would ensure that transportation improvements and development under the 2040 MTP/SCS would not be at significant risk from flooding. Therefore, impacts from floods would be less than significant.

**Tsunami**

Low-lying coastal areas in northern Monterey County and southern Santa Cruz County are susceptible to impacts from tsunamis. As shown in Table 37, specific transportation projects programmed in the 2040 MTP/SCS for these areas include the Upper Struve Slough Trail and the Monterey Bay Sanctuary Scenic Trail Network. In addition, development projects be located at low elevations near the coast would be susceptible to tsunamis. According to the Monterey County Multi-Jurisdictional Hazard Mitigation Plan (2014), over the last 200 years there have been eight observed tsunamis in the region. Almost all of these tsunamis were produced by earthquakes and resulted in wave run-ups of one meter or less. Therefore, the likelihood that the region will experience a tsunami has been estimated to be high, averaging one- to 11-foot wave run-ups for coastal and low-lying areas (Monterey County 2014). In 2011, the 9.0 earthquake in Japan caused a tsunami in the AMBAG region resulting in damage in both Monterey and Santa Cruz counties (Santa Cruz County 2015). Given the high likelihood for tsunami hazards in the region and the potential for land use development included in the 2040 MTP/SCS to be located near the coast, development under the 2040 MTP/SCS would occur in areas subject to tsunami hazards.

Compliance with enforced design standards and regulations in the AMBAG region would address and minimize impacts from tsunamis. The Monterey County Office of Emergency Services has a tsunami warning system to alert people of a coming tsunami and encourages residents to prepare ahead for possible evacuation. The Monterey County Operational Area Tsunami Incident Response Plan (Monterey County Office of Emergency Services 2007) includes information regarding tsunami watch or warnings as well as a local plan for responding to a tsunami. The Plan contains information on response agencies, evacuation zones, evacuation routes and safe areas for different regions of Monterey (Monterey County Office of Emergency Services 2007). Santa Cruz County’s current tsunami mitigation strategy is based on notification and evacuation. The strategy includes continuation of an up to date Emergency Management Plan, effective public information program and continuing collaborative efforts with other cities and agencies in the region to provide up to date mapping, preparation, information, warning dissemination and education. Tsunami mitigation actions in Santa Cruz include management of an early warning system including a defined public information process and establishing a reverse 911 system that would notify all homes and businesses of a tsunami in an inundation area (Santa Cruz County 2015).

The Monterey County General Plan (Monterey County, 2010) Safety Element contains goals and policies to reduce the risk of hazards resulting from seismic activity, including tsunamis. Specifically, Policy S-1.6 requires new development to be prohibited in areas of known geologic or seismic hazards unless measures recommended by a California certified engineering geologist or
geotechnical engineer are implemented to reduce the hazard. Policy S-5-15 identifies tsunami evacuation routes as any routes in an incorporated or unincorporated area leading inland away from the coastline to elevations 20 feet or higher. The Santa Cruz General Plan and Local Coastal Program (Santa Cruz County, 1994) Public Safety and Noise Chapter serves to reduce the risk of hazards resulting from seismic, flood and fire hazards. Specifically, Policy 6.1.5 requires the location and/or clustering of development away from potentially hazardous areas when feasible and condition development permits based on the recommendations of the site’s Hazard Assessment or other technical reports. Policy 6.4.3 allows development in areas immediately adjacent to coastal bluffs and beaches only if a geologist determines that wave action, storm swell and tsunami inundation are not a hazard to the proposed development or that the hazard can be adequately mitigated.

Although there is a risk of tsunamis in the AMBAG region, incorporating required regulations and design standards into development would minimize the risk of tsunamis. Safety policies from local general plans would reduce the risk of injury, loss of life and property damage associate with a tsunami. Additionally, emergency evacuation plans would address safe travel routes in the event of a tsunami. Therefore, impacts from tsunamis would be less than significant.

Seiche

As described in the Setting, seiches are not identified as a hazard in the AMBAG region. Therefore, no impacts related to seiches would result.

Mitigation Measures

None required.

c. Specific MTP/SCS Projects that May Result in Impacts

All 2040 MTP/SCS projects that require new construction or landscaping may result in impacts as discussed in impacts W-1 through W-3; and therefore, are not specifically identified in table format below. The 2040 MTP/SCS projects are listed in Appendix B. Additional site-specific analysis will need to be conducted as the individual projects are implemented in order to determine the project-specific magnitude of the impact. Mitigation measures discussed above would apply to these specific projects.

Table 37 identifies projects that may result in flooding impacts as discussed in Impact W-4. Given the large number of projects proposed across the tri-county area in the 2040 MTP/SCS, Table 37 shows a representative rather than comprehensive list of projects that would result in flooding-related impacts.
### Table 37  2040 MTP/SCS Projects that May Result in a Flooding Impact

<table>
<thead>
<tr>
<th>AMBAG Project No.</th>
<th>Projects</th>
<th>Location</th>
<th>Impact</th>
<th>Description of Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>MON-GRN016-GR</td>
<td>Elm Avenue Bike Lanes</td>
<td>Greenfield</td>
<td>W-4</td>
<td>Potential impacts from flooding</td>
</tr>
<tr>
<td>MON-KCY039-CK</td>
<td>1st Street Bike Lanes</td>
<td>King City</td>
<td>W-4</td>
<td>Potential impacts from flooding</td>
</tr>
<tr>
<td>MON-CT022-CT</td>
<td>SR 156 – Corridor Widening Project</td>
<td>Monterey County</td>
<td>W-4</td>
<td>Potential impacts from flooding</td>
</tr>
<tr>
<td>MON-SNS029-SL</td>
<td>John Street – U.S. 101</td>
<td>Salinas</td>
<td>W-4</td>
<td>Potential impacts from flooding</td>
</tr>
<tr>
<td>Mon-SNS037-SL</td>
<td>Main Street (North) Widening</td>
<td>Salinas</td>
<td>W-4</td>
<td>Potential impacts from flooding</td>
</tr>
<tr>
<td>Mon-SNS094-SL</td>
<td>Hemingway Drive Extension</td>
<td>Salinas</td>
<td>W-4</td>
<td>Potential impacts from flooding</td>
</tr>
<tr>
<td>MON-KCU043-CK</td>
<td>Roundabout at U.S. 101/Broadway Street/San Antonio Drive</td>
<td>King City</td>
<td>W-4</td>
<td>Potential impacts from flooding</td>
</tr>
<tr>
<td>SB-CT-A01</td>
<td>SR 156 Widening – San Juan Bautista to Union Road</td>
<td>San Juan Bautista</td>
<td>W-4</td>
<td>Potential impacts from flooding</td>
</tr>
<tr>
<td>SB-SBC-A50</td>
<td>Hospital Road Bridge</td>
<td>Hollister</td>
<td>W-4</td>
<td>Potential impacts from flooding</td>
</tr>
<tr>
<td>SB-SBC-A51</td>
<td>Y Road Bridge</td>
<td>San Benito</td>
<td>W-4</td>
<td>Potential impacts from flooding</td>
</tr>
<tr>
<td>SB-SBC-A52</td>
<td>Union Road Bridge</td>
<td>Hollister</td>
<td>W-4</td>
<td>Potential impacts from flooding</td>
</tr>
<tr>
<td>SC-WAT-P43-WAT</td>
<td>Upper Watsonville Slough Trail</td>
<td>Watsonville</td>
<td>W-4</td>
<td>Potential impacts from flooding and tsunami</td>
</tr>
<tr>
<td>SC-WAT-P46-WAT</td>
<td>Lower Watsonville Slough Trail</td>
<td>Watsonville</td>
<td>W-4</td>
<td>Potential impacts from flooding</td>
</tr>
<tr>
<td>SC-25SC</td>
<td>Highway 1 and Highway 9 Intersection Modifications</td>
<td>Santa Cruz</td>
<td>W-4</td>
<td>Potential impacts from flooding</td>
</tr>
<tr>
<td>SC-RTC 27a-RTC</td>
<td>Monterey Bay Sanctuary Scenic Trail Network</td>
<td>Santa Cruz</td>
<td>W-4</td>
<td>Potential impacts from flooding and tsunami</td>
</tr>
</tbody>
</table>

### d. Cumulative Analysis

Impact to hydrology and water quality may be related to: violation of water quality standards, interference with groundwater recharge, increased erosion, increased non-point source pollution, increased runoff, affects to flood zones and exposure of people to a significant risk of loss, injury, or death involving flooding (including flooding as a result of the failure of a levee or dam), seiche, tsunami, or mudflow.

Cumulative development would increase erosion and sedimentation resulting from grading and construction, as well as changes in drainage patterns which could degrade surface and ground water quality. In addition, new development would increase the generation of urban pollutants that may adversely affect water quality in the long term. As with the 2040 MTP/SCS, individual construction projects within the cumulative impact area would be required to comply with applicable water quality regulations, as discussed in the Regulatory Setting and Impact W-1 above. Compliance with these existing requirements would reduce project-level impacts throughout the cumulative impact area; as such, cumulative impacts related to water quality would be less than significant, and the 2040 MTP/SCS’s contribution to this impact would not be cumulatively considerable.

Water supply in the cumulative impact development area is derived from a variety of sources that vary depending on the location. As in the AMBAG region, both groundwater and surface water supplies in portions of the cumulative impact development area may be limited. Cumulative development would create additional water demand, which may exceed supply in some localized...
areas. Compliance with SB 610 and SB 221, as well as preparation of GSPs where applicable, pursuant to the Sustainable Groundwater Management Act, would partially limit these cumulative effects. However, given that these regulations would not apply to all projects or all groundwater basins, this cumulative impact would be significant. As discussed in Impact W-2, the 2040 MTP/SCS may impact groundwater supply in the AMBAG region because of the water required for land use projects and some transportation projects. Even with the implementation of mitigation measures, these impacts would be significant and unavoidable. Therefore, the 2040 MTP/SCS’s contribution to cumulative water supply impacts would be cumulatively considerable. There are no feasible mitigation measures to ensure that there is sufficient water supply to support anticipated growth in the region. Given the overdraft conditions of area groundwater basins and other regional water supply concerns, impacts would remain cumulatively considerable post-mitigation, and thus be significant and unavoidable.