

CHAPTER 5

CUMULATIVE IMPACTS

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5.0 CUMULATIVE IMPACTS

5.1 INTRODUCTION

CEQA Guidelines §15130(a) requires an EIR to discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable, as defined in §15065(a)(3). A program EIR essentially evaluates the cumulative impacts associated with a variety of regulatory activities. As such, the 2007 AQMP Program EIR evaluates the environmental impacts associated with implementation of the 2007 AQMP stationary and mobile source control measures. The South Coast Air Basin covers a large area, that consists of 6,745 square-miles and includes all of Orange County, and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties.

The cumulative impacts for the 2007 AQMP EIR will include the regulatory activities associated with other air quality control measures that could also generate impacts within the South Coast Air Basin. These control measures are associated with the Traffic Control Measures (TCMs) developed by SCAG. It should be noted that SCAG is the metropolitan planning organization for all counties within the SCAQMD's jurisdiction, as well as for Ventura and Imperial counties. Consequently, total cumulative impacts from implementing the 2004 RTP will be less when considering cumulative impacts only within the SCAQMD's jurisdiction.

The long-term transportation planning requirements for emission reductions from on-road mobile sources within the district are met by SCAG's Regional Transportation Plan (RTP). The short-term implementation requirements of the Transportation Conformity Rule are met by SCAG's biennial Regional Transportation Improvement Program (RTIP), the first two years of which are fiscally constrained and demonstrate timely implementation of a special category of transportation projects called (TCMs).

In general, TCMs are those control measures that provide emission reductions from on-road mobile sources, based on changes in the patterns and modes by which the regional transportation system is used. The various strategies considered as part of the 2004 RTP and 2006 RTIP are defined, collectively, as a single TCM, with specific strategies grouped into the following three components:

- **High Occupancy Vehicle (HOV) Strategy:** This strategy attempts to reduce the proportion of commute trips made by single occupancy vehicles - the clearly preferred mode of travel within the southern California region, constituting over 75 percent of all home-to-work trips, according to the 2000 U.S. Census - by increasing the share of HOV ridership within the region. HOV lanes are one example of such projects where particular segments of heavily used freeways are designated for exclusive use by HOV vehicles, particularly during rush-hour traffic. The purpose of such measures is to make car-pooling and ride-sharing practices more attractive to individuals who may otherwise prefer the convenience of a single occupancy vehicle commute trip.

- **Transit and Systems Management:** This strategy relies primarily on providing facilities and infrastructure that incentivize an increase in the proportion of regional trips that make use of transit as a transportation mode. This strategy also promotes the use of alternative modes of transportation (e.g., bicycle and pedestrian modes) and would incentivize increases in the average vehicle occupancy (AVO) or ridership (AVR) by facilitating van-pools, smart shuttles and other such strategies.
- **Information-based Transportation:** This strategy relies primarily on providing information in a manner that successfully influences the ways in which individuals use the regional transportation system. Typically, such strategies induce changes in trip behavior that beneficially influence travel to reduce congestion and air pollution impacts. One strategy attempts to increase the proportion of ride-sharing and car-pooling trips by providing information that makes it easier to match up people traveling to and from particular sets of origin and destination points. Another strategy attempts to shift the time-profile of demand - thus, transportation demand management (TDM) - by redistributing traffic flows from peak to off-peak hours. This strategy relies on providing single occupancy vehicle operators with realistic and near-real time estimates of congestion using internet-based information networks in an effort to influence their decision to defer traveling to a less congested time of day.

SCAG's Regional Council approved the transportation control measures and strategies included in the 2004 RTP and, subsequently, the investment commitments contained in the 2006 RTIP. These measures and recommendations have accordingly been moved forward for inclusion in the region's air quality plans and are included as part of the 2007 AQMP. The impacts of implementation of these TCMs were evaluated in a separate CEQA document, the 2004 Final Regional Transportation Plan Program Environmental Impact Report (2004 Final RTP PEIR) (SCH No. 2003061075) (SCAG, 2004). The cumulative analysis in this section of the Final ~~Draft~~ PEIR for the 2007 AQMP relies primarily on the environmental analyses in the SCAG 2004 Final PEIR for the RTP for the evaluation of the environmental impacts of implementing the TCMs.

5.2 AESTHETICS

5.2.1 CUMULATIVE AESTHETIC IMPACTS

As concluded in the Notice of Preparation/Initial Study (NOP/IS) prepared for the 2007 AQMP, implementing 2007 AQMP control measures is not expected to result in significant adverse aesthetic impacts largely because most AQMP control measures would typically require air pollution control modifications or activities at industrial, institutional, or commercial facilities located in appropriately zoned areas. Other control measures would establish exhaust emission standards for both stationary and mobile sources, encourage replacement of older engines, and replacement of older vehicles/trucks. Further, implementation of the 2007 AQMP is expected to improve visibility and therefore improve aesthetic in all areas of the district. Consequently, implementing 2007 AQMP control measures is not expected to impact aesthetic

resources to create significant adverse aesthetic impacts. No comment letters were received by the SCAQMD disputing the conclusion that implementing the 2007 AQMP would improve air quality and associated aesthetic benefits.

According to the 2004 Final RTP PEIR, implementation of the 2004 RTP would adversely affect aesthetics and views. Expected significant impacts would be the obstruction of scenic views and resources, altering areas along state designated scenic highways and vista points, creating significant contrasts with the scale, form, line, color and overall visual character of the existing landscape, and adding visual urban elements to rural areas. For example, construction of highways, flyovers, interchanges, goods movement roadway facilities, Maglev (high speed magnetic electric train), and sound walls for these projects potentially would block or impede views of mountains, oceans, or rivers. Implementation of the 2004 RTP would result in a potentially significant adverse impact to designated or eligible scenic highways or vista points.

Development of previously undeveloped sites potentially would result in impacts to visual resources. For example, construction of highways in an undeveloped area potentially would result in the loss of vegetation and changes in topography. The introduction of a new transportation facility in a forested area potentially would be highly visible from scenic vistas if constructed aboveground and may not blend with the surrounding land uses. Similarly the construction of a new transportation system through a developed area potentially would result in land use changes that also result in impacts to visual resources. For example, the extension of a highway through an urban area would require acquisition of residential, commercial and/or industrial property, thereby changing the land use, and consequently, visual quality of the given area.

As the goods movement roadway facilities extend east and north into the Inland Empire they potentially would add visual elements of urban character to these areas. The Maglev system potentially would have the same effect as it extends north to the Palmdale area in North Los Angeles County and east toward San Bernardino and Riverside counties. The routes of the goods movement roadway facilities and Maglev system are not yet determined. However, they most likely would follow existing freeway routes, thus, adding elements of urban character along currently existing transportation routes.

In addition to transportation investments, the 2004 RTP includes land use policies that would affect the regional distribution of population, households, employment, and facilities and potentially would impact aesthetics and views. One land use strategy in the 2004 RTP is infill development. Infill may result in taller buildings that obstruct views. At the same time, the infill strategy will help preserve the open space in the region, protecting scenic resources.

The region will add approximately six million people, two million households, and three million jobs by 2030. Some of these people will live in households and work at jobs on land that is currently vacant/undeveloped. This conversion of vacant/undeveloped land to residential or other uses would have a significant impact on aesthetics and views. SCAG

predicts growth estimated to create an urban footprint that will consume approximately 500,000 to 700,000 acres of currently vacant land.

Population growth in the region potentially would create contrasts with the overall visual character of the existing landscape because some urban land will have its intensity of use increased and because currently vacant/undeveloped land would be developed into urban uses.

5.2.2 MITIGATION MEASURES

Since significant aesthetic impacts were identified for the 2004 RTP, mitigation measures were imposed in the 2004 Final RTP PEIR and are summarized below.

RTPMM A1: Project implementation agencies shall implement design guidelines, local policies, and programs aimed at protecting views of scenic corridors and avoiding visual intrusions.

RTPMM A2: Project implementation agencies shall, to the extent feasible, construct noise barriers of materials whose color and texture complements the surrounding landscape and development. Noise barriers shall be graffiti resistant and landscaped with plants that screen the barrier, preferably with either native vegetation or landscaping that complements the dominant landscaping of surrounding areas.

RTPMM A3: Project implementation agencies shall, where practicable and feasible, avoid construction of transportation facilities in state and locally designated scenic highways and/or vista points.

RTPMM A4: Project implementation agencies shall, complete design studies for projects in designated or eligible scenic highway corridors and develop site-specific mitigation measures to minimize impacts on the quality of the views or visual experience that originally qualified the highway for scenic designation.

RTPMM A5: If transportation facilities are constructed in state and locally designated scenic highways and/or vista points, design, construction, and operation of the transportation facility shall be consistent with applicable guidelines and regulations for the preservation of scenic resources along the designated scenic highway.

RTPMM A6: Project implementation agencies shall develop design guidelines for each type of transportation facility that make elements of proposed facilities visually compatible with surrounding areas. Visual design guidelines shall, at a minimum, include setback buffers, landscaping, color, texture, signage, and lighting criteria. The following methods shall be employed whenever possible:

- Transportation systems shall be developed to be compatible with the surrounding environment (i.e., colors and materials of construction material).

- If exotic vegetation is used, it shall be used as screening and landscaping that blends in and complements the natural landscape.
- Trees bordering highways shall remain or be replaced so that clear-cutting is not evident.
- Grading shall blend with the adjacent landforms and topography.

RTPMM A7: Project implementation agencies shall design projects to minimize contrasts in scale and massing between the project and surrounding natural forms and development. Project implementation agencies shall design projects to minimize their intrusion into important view sheds and use contour grading to better match surrounding terrain.

RTPMM A8: Project implementation agencies shall use natural landscaping to minimize contrasts between the project and surrounding areas. Wherever possible, develop interchanges and transit lines at the grade of the surrounding land to limit view blockage. Contour the edges of major cut and fill slopes to provide a more natural looking finished profile.

RTPMM A9: In visually sensitive site areas, local land use agencies. This assumes the mitigation measure said shall apply development standards and guidelines to maintain compatibility with surrounding natural areas, including site coverage, building height and massing, building materials and color, landscaping, site grading, etc.

5.2.3 LEVEL OF IMPACT AFTER MITIGATION MEASURES

Because the 2007 AQMP includes TCMs that are comprised of the 2004 RTPs, cumulative aesthetic impacts are expected to remain significant because it is likely that there will be situations where visual impacts cannot be mitigated to a less than significant level. Cumulative impacts would remain significant because the population growth projected by 2030 in combination with the projects in the 2004 RTP would consume currently vacant land that would create significant contrasts with the overall visual character of the existing landscape setting.

5.3 AGRICULTURAL RESOURCES IMPACTS

5.3.1 CUMULATIVE AGRICULTURAL RESOURCES IMPACTS

As concluded in the NOP/IS prepared for the 2007 AQMP, implementing 2007 AQMP control measures will have no impacts on agricultural resources, 2007 AQMP control measures typically affect existing commercial or industrial facilities or establish specifications for fuels or mobile source exhaust emissions so they are not expected to generate any new construction of buildings or other structures that would require conversion of farmland to non-agricultural use or conflict with zoning for agricultural uses. No comment letters were received that disputed this conclusion.

According to the 2004 Final RTP PEIR, implementing the proposed 2004 RTP transportation projects however would result in substantial disturbance and/or loss of prime farmlands or grazing lands throughout southern California.

Development of highway, arterial, and transit projects proposed under the 2004 RTP would result in the disturbance and/or loss of a substantial portion of these designated agricultural areas. A 150 foot radius buffer was drawn around the freeway, rail, and transit projects in the 2004 RTP to compute the number of agricultural acres potentially affected by the projects in the 2004 RTP. The results of this analysis showed that construction and operation of freeway, rail, and transit projects in the 2004 RTP would potentially affect up to 6,500 acres of prime farmland and up to 7,700 acres of grazing lands.

In addition, the 2004 RTP includes arterial improvements, goods movement capacity enhancements, and the Maglev system, which were not included in the GIS analysis summarized above. The alignments of these improvements have not been developed to the point that they can be reliably overlaid onto agricultural lands using GIS. However, these projects would potentially cause additional adverse effects on agricultural lands.

In total, the 2004 RTP includes approximately 3,300 new arterial lane miles, some of which would potentially disturb or consume agricultural lands in the region. The loss and disturbance of agricultural land was concluded to be a significant impact of the 2004 RTP.

5.3.2 MITIGATION MEASURES

The following mitigation measures were imposed in the 2004 Final RTP PEIR due to potentially significant adverse agricultural resources impacts identified as a result of implementing the 2004 RTP.

RTPMM AR1: Individual projects must be consistent with Federal, State, and local policies that preserve agricultural lands and support the economic viability of agricultural activities, as well as policies that provide compensation for property owners if preservation is not feasible.

RTPMM AR2: For projects impacting agricultural land, project implementation agencies shall contact the California Department of Conservation and each county's Agricultural Commissioner's office to identify the location of prime farmlands and lands that support crops considered valuable to the local or regional economy. Impacts to such lands shall be evaluated in project-specific environmental documents. The analysis shall use the land evaluation and site assessment (LESA) analysis method (CEQA Guidelines §21095), as appropriate. Mitigation measures may include conservation easements or the payment of in-lieu fees.

RTPMM AR3: Project implementation agencies shall consider corridor realignment, buffer zones and setbacks, and berms and fencing where feasible, to avoid agricultural lands and to reduce conflicts between transportation uses and agricultural lands.

RTPMM AR4: Prior to final approval of each project and when feasible and prudent, the implementation agency shall establish conservation easement programs to mitigate impacts to prime farmland.

RTPMM AR5: Prior to final approval of each project, the implementation agency shall to the extent practical and feasible, avoid impacts to prime farmlands or farmlands that support crops considered valuable to the local or regional economy.

RTPMM AR6: Prior to final approval of each project, the implementation agency shall encourage enrollments of agricultural lands for counties that have Williamson Act programs (i.e., additional land to be included in the Williamson Act), where applicable.

5.3.3 LEVEL OF IMPACT AFTER MITIGATION MEASURES

Because the 2007 AQMP includes TCMs that are comprised of the 2004 RTP, cumulative agricultural resource impacts are concluded to be significant following mitigation as the 2004 RTP is expected to contribute to significant loss and disturbance of agricultural lands.

5.4 AIR QUALITY

5.4.1 CUMULATIVE AIR QUALITY IMPACTS

Construction Impacts: The potential air quality impacts of construction activities associated with both the 2007 AQMP and the 2004 RTP were considered potentially significant. The 2007 AQMP projected potentially significant adverse air quality impacts associated with: (1) additional infrastructure to support electric and alternative fuel vehicles; (2) additional infrastructure for stationary source controls; and (3) additional infrastructure to support electrification of new sources.

The 2004 RTP would involve substantial construction to implement the proposed projects. The construction activities would create short-term temporary TCM emissions from the following activities: (1) demolition; (2) site preparation operations (grading/excavation); (3) fuel combustion from the operation of construction equipment; (4) delivery and hauling of construction materials and supplies to and from the site; (5) the use of asphalt or other oil based substances during the final construction phases; and (6) travel by construction workers to and from the site.

Therefore, cumulative air quality impacts associated with construction activities under the 2007 AQMP and 2004 RTP are considered to be significant.

Operational Impacts: The cumulative air quality impacts associated with implementing the control measures in the 2007 AQMP as well as the TCMs in the 2004 RTP are

shown in Figures 4.1-6 through 4.1-7. As shown in Figures 4.1-6 through 4.1-7, the cumulative air quality impacts associated with implementing all applicable control measures is expected to result in an emission reduction in NO_x, VOC, SO_x, and PM emissions, providing an air quality benefit.

Toxic Air Contaminants: In general, it is expected that the AQMP control measures will reduce emissions of TACs. The basis for this conclusion is that many TACs are also classified as criteria pollutants (e.g., PM and VOCs). To the extent that control measures reduce VOC emissions, associated TAC emission reductions could occur as well. As shown in Figures 4.1-6 through 4.1-7, the overall impact of the 2007 AQMP is expected to be a reduction in VOC emissions. The overall impacts associated with implementation of the 2007 AQMP is an overall reduction in non-criteria pollutants. Therefore, no significant impacts on non-criteria pollutants have been identified.

Further, since PM and VOC emissions from mobile sources generally capture the majority of the TAC contribution from the transportation network, PM and VOC emissions are a good indicator of the mobile source TACs. PM and VOC emissions are expected to decrease under the 2004 RTP and, therefore, the impact of the 2004 RTP on TAC emissions would be considered beneficial.

The particulate portion of diesel exhaust was identified as a TAC by the California EPA. Since PM₁₀ emissions from heavy-duty vehicles (diesel-fueled) generally capture the DPM contribution from the transportation network, these PM₁₀ emissions are a reasonable indicator of the DPM portion of the mobile source TACs. Heavy-duty truck PM₁₀ exhaust emissions include most of the diesel-related TAC emissions. PM₁₀ emissions from heavy-duty trucks would be expected to decrease due to control measures associated with both the 2007 AQMP and 2004 RTP, as a number of control measures would reduce PM₁₀ emissions from heavy-duty vehicle exhaust. As a result of the anticipated decline in TAC emissions, the cumulative TAC emission impacts are expected to have a beneficial impact with respect to regional TAC emissions.

Greenhouse Gases: In general, the 2007 AQMP and 2004 RTP are expected to promote a net decrease in greenhouse gases. The proposed control measures and the recommended state and federal control measures that promote fuel and energy efficiency and pollution prevention will also reduce greenhouse gas emissions. Measures that stimulate the development and use of new technologies such as fuel cells will also be beneficial. In general, strategies that conserve energy, promote clean technologies, and result in a reduction in vehicle miles traveled also reduce greenhouse gas emissions. Therefore, the cumulative impacts on greenhouse gases are expected to be beneficial and result in an overall reduction in greenhouse gases.

5.4.2 MITIGATION MEASURES

Mitigation measures were imposed due to potentially significant adverse air quality construction impacts associated with implementation of the 2007 AQMP (see Subsection 4.1.5.1).

Additional mitigation measures imposed as part of the 2004 RTP include the following.

RTPMM AQ-1: Additional mitigation measures are hereby incorporated by reference from the following air quality management plans:

- 2003 South Coast State Implementation Plan (SIP)
- Ventura County Air Quality Management Plan (2004 AQMP – Limited SIP Update, Adopted April 13, 2004)
- Mojave Desert Air Quality Management Plan (1996)
- Antelope Valley Air Quality Management Plan (1994/97)
- Imperial County Air Quality Management Plan (1991 and 1993)

RTPMM AQ-2: All construction roads that have high traffic volumes, shall be surfaced with base material or decomposed granite, or shall be paved or otherwise be stabilized.

RTPMM AQ-3: Water or non-toxic soil stabilizers shall be applied as needed to reduce off-site transport of fugitive dust from all unpaved staging areas and other unpaved surfaces.

RTPMM AQ-4: Traffic speeds on all unpaved surfaces shall not exceed 25 mph.

RTPMM AQ-5: Deliveries related to construction activities that affect traffic flow shall be scheduled during off-peak hours (e.g. 10:00 A.M. and 3:00 P.M.) and coordinated to achieve consolidated truck trips. When the movement of construction materials and/or equipment impacts traffic flow, temporary traffic control shall be provided to improve traffic flow (e.g., flag person).

RTPMM AQ-6: Revegetate exposed earth surfaces following construction.

5.4.3 LEVEL OF SIGNIFICANCE AFTER MITIGATION MEASURES

Cumulative air quality impacts from both the 2007 AQMP and the 2004 RTP associated with construction activities are concluded to be significant in spite of implementing mitigation measures. Cumulative air quality criteria pollutant impacts during operational phases are expected to be less than significant. Cumulative air quality toxic air contaminant and greenhouse gases impacts during operation phases are expected to be less than significant.

5.5 BIOLOGICAL RESOURCES

5.5.1 CUMULATIVE BIOLOGICAL RESOURCES IMPACTS

As concluded in the NOP/IS prepared for the 2007 AQMP, no direct or indirect impacts from implementing the 2007 AQMP control measures were identified that could

adversely affect plant and/or animal species in the district. No comment letters were received that disputed this conclusion. The effects of implementing the 2007 AQMP control measures are typically related to reducing mobile source exhaust emissions, modifying fuel specifications, or modifications at existing commercial or industrial facilities to control or further control emissions. Such existing commercial or industrial facilities are generally located in appropriately zoned commercial or industrial areas, which typically do not support candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

According to the 2004 Final RTP PEIR, implementation of the 2004 RTP would adversely affect biological resources. Expected significant adverse impacts include disturbance and removal of natural vegetation that may be utilized by sensitive species, habitat fragmentation and the associated decrease in habitat quality, litter, trampling, light pollution and road noise in previously undisturbed natural areas, displacement of riparian and wetland habitat, and siltation of streams and other water bodies during construction. Transportation projects included in the 2004 RTP on previously undisturbed land would potentially displace natural vegetation and, thus, habitat, some of which is utilized by sensitive species in the region. Additional vegetated areas could be adversely affected by Maglev, goods movement capacity enhancements, and arterial projects. The Maglev projects would eventually involve the construction of 275 route miles of elevated track, along with associated stations and other maintenance structures that could also potentially disrupt biological resources. Cumulatively, the increased urban development anticipated by the 2004 RTP would result in similar cumulative biological impacts which are considered to be significant.

The 2004 RTP projects would potentially create noise, smoke, lights and/or other disturbances to biological resources during construction phases for these projects. Construction activities have the potential to negatively affect animal behavior that may result in harm to an individual or population (e.g., causing a nesting failure of a sensitive bird species). If the animal is a special status species, and the effect is likely, the potential for a significant impact is increased. Project-level potential impacts and appropriate mitigation measures would need to be identified on a project-by-project basis. At the regional programmatic level, this is considered a significant adverse impact.

The 2004 RTP's influence on growth potentially contributes to the following regional cumulatively considerable impacts:

- displacement of natural vegetation,
- damage to sensitive species habitat,
- habitat fragmentation,
- impacts to riparian and wetland habitats,

- construction and operational disturbances, and
- siltation of streams and other waterways.

The amount of new urbanized acreage (consuming previously vacant land) would be on the order of hundreds of thousands of acres. Despite the inability to predict the acreage of each habitat type that may be affected, it is reasonable to expect that this future urban development would contribute to the same types of impacts detailed previously above. These indirect impacts on biological resources are associated with population, employment, and household growth forecast by SCAG, and they are considered a significant adverse cumulative impact.

5.5.2 MITIGATION MEASURES

Mitigation measures were imposed in the 2004 Final RTP PEIR due to potentially significant adverse biological impacts associated with implementation of the 2004 RTP.

RTPMM BR-1: Project implementation agencies for each transportation project shall assess displacement of habitat due to removal of native vegetation during route planning. Routes shall be planned in order to avoid and/or minimize removal of native vegetation.

RTPMM BR-2: When avoidance of native vegetation removal is not possible, project implementation agencies for each transportation project shall replant disturbed areas with commensurate native vegetation of high habitat value adjacent to the project (i.e. as opposed to ornamental vegetation with relatively less habitat value).

RTPMM BR-3: Project implementation agencies for individual transportation projects shall include offsite habitat enhancement or restoration to compensate for unavoidable habitat losses from the project site.

RTPMM BR-4: Project implementation agencies for individual transportation projects included in the 2004 RTP shall conduct site-specific analyses of opportunities to preserve or improve habitat linkages with areas on and off-site. Mitigation banking (opportunities to purchase, maintain, and/or restore offsite habitat) is one opportunity that project proponents and jurisdictions may pursue.

RTPMM BR-5: Project implementation agencies for each transportation project shall provide wildlife crossings/access at locations useful and appropriate for the species of concern.

RTPMM BR-6: Project implementation agencies for individual transportation projects shall include analysis of wildlife corridors during project planning. Impacts to these corridors shall be avoided and/or minimized.

RTPMM BR-7: Project implementation agencies for each transportation project included in the RTP shall use wildlife fencing where appropriate to minimize the

probability of wildlife injury due to direct interaction between wildlife and roads. Inclusion of this mitigation measure shall be considered on a case-by-case basis, as use of wildlife fencing could further increase the effects of habitat fragmentation and isolation for many species.

RTPMM BR-8: Project implementation agencies for individual transportation projects shall minimize vehicular accessibility to areas beyond the actual transportation surface. This can be accomplished through fencing and signage.

RTPMM BR-9: Project implementation agencies for each project shall establish litter control programs in appropriate areas, such as trash receptacles at road turnouts and viewpoints.

RTPMM BR-10: Project implementation agencies for each project shall use road noise minimization methods, such as brush and tree planting, at heavy noise-producing transportation areas that might affect wildlife. Native vegetation should be used.

RTPMM BR-11: Project implementation agencies for each project shall be preceded by pre-construction monitoring to ensure no sensitive species' habitat would be unnecessarily destroyed. All discovered sensitive species habitat shall be avoided where feasible, or disturbance shall be minimized.

RTPMM BR-12: Project implementation agencies for each project shall schedule work to avoid critical life stages (e.g. nesting) of species of concern.

RTPMM BR-13: Project implementation agencies for each project shall fence and/or mark sensitive habitat to prevent unnecessary machinery or foot traffic during construction activities.

RTPMM BR-14: When removal and/or damage to sensitive species habitat is unavoidable during construction, project implementation agencies for each project shall replant any disturbed natural areas with appropriate native vegetation following the completion of construction activities.

RTPMM BR-15: Project implementation agencies for individual projects shall avoid and/or minimize construction activities that have the potential to expose species to noise, smoke, or other disturbances. Pre-construction surveys shall be conducted as appropriate to determine the presence of any species that would need to be protected from such an impact.

RTPMM BR-16: Project implementation agencies for individual projects shall be scheduled to avoid construction during critical life stages or sensitive seasons (e.g. the nesting season).

RTPMM BR-17: Construction through or adjacent to wetlands or riparian areas shall be avoided where feasible through route planning.

RTPMM BR-18: Project implementation agencies for each transportation project shall avoid removal of wetland or riparian vegetation. Specific vegetation that is not to be removed shall be so marked during construction. Riparian vegetation removal shall be minimized.

RTPMM BR-19: Project implementation agencies for each transportation project shall replace any disturbed wetland, riparian or aquatic habitat, either on-site or at a suitable off-site location at ratios to ensure no net loss.

RTPMM BR-20: When individual projects include unavoidable losses of riparian or aquatic habitat, adjacent or nearby riparian or aquatic habitat shall be enhanced (e.g. through removal of nonnative invasive wetland species and replacement with more ecologically valuable native species).

RTPMM BR-21: Project implementation agencies for individual projects near water resources shall implement best management practices (BMPs) at construction sites to minimize erosion and sediment transport from the area. BMPs include encouraging growth of vegetation in disturbed areas, using straw bales or other silt-catching devices, and using settling basins to minimize soil transport.

RTPMM BR-22: Project implementation agencies for individual projects shall schedule construction activities to avoid sensitive times for biological resources (e.g., steelhead spawning periods during the winter and spring) and to avoid the rainy season when erosion and sediment transport is increased.

RTPMM BR-23: Future impacts to biological resources shall be minimized through cooperation, information sharing, and program development during the update of the Open Space and Conservation chapter of SCAG's Regional Comprehensive Plan and Guide and through SCAG's Energy and Environment Committee. SCAG shall consult with the resource agencies, such as U.S. Fish and Wildlife Service and California Department of Fish and Game during this update process.

5.5.3 LEVEL OF IMPACT AFTER MITIGATION MEASURES

Although many measures can be employed to minimize the potentially adverse biological resource impacts, cumulative impacts on biological resources from implementing the 2004 RTP are concluded to be significant in spite of implementing the above mitigation measures.

5.6 CULTURAL RESOURCES

5.6.1 CUMULATIVE CULTURAL RESOURCES IMPACTS

Because potentially affected facilities are existing facilities and controlling stationary source emissions does not typically require extensive cut-and-fill activities or excavation

at undeveloped sites, the NOP/IS prepared for the 2007 AQMP concluded that implementing control measures in the proposed 2007 AQMP will not: adversely affect historical or archaeological resources as defined in CEQA Guidelines §15064.5, destroy unique paleontological resources or unique geologic features, or disturb human remains interred outside formal cemeteries.

In a small number of cases, implementing control measures in the proposed 2007 AQMP may require minor site preparation and grading at an affected facility. Under this circumstance, it is possible that archaeological or paleontological resources could be uncovered. Even if this circumstance were to occur, significant adverse cultural resources impacts are not anticipated because there are existing laws in place that are designed to protect and mitigate potential adverse impacts to cultural resources. As with any construction activity, should archaeological resources be found during construction that results from implementing the proposed AQMP control measures, the activity would cease until a thorough archaeological assessment is conducted and as necessary, the Native American Heritage Commission (NAHC) would be contacted.

On a cumulative basis, as of February 2003, over 32,000 archaeological and historic locations have been identified in the Southern California region. Each of these sites is documented at the Archaeological Information Center, which holds location information on archaeological sites for each region in California. Paleontological sites are also numerous in southern California. The development of new transportation facilities as part of the 2004 RTP may affect archaeological and paleontological resources, primarily through the disturbance of buried resources. Frequently, these resources are previously unidentified. Therefore, any excavation in previously undisturbed soil has the potential to adversely affect archaeological and paleontological resources. New highway segments through historic districts would constitute a significant impact. Also, reducing buffer zones between transportation corridors and reduction of historic resources through lane widening could cause significant impacts.

Urbanization in Southern California will increase substantially by 2030. The 2004 RTP, by increasing mobility and by including land-use-transportation measures, influences the pattern of this urbanization. The 2004 RTP's influence on growth contributes to regional cumulatively considerable impacts to existing historic resources and previously undisturbed and undiscovered cultural resources, as described in the previous environmental topic areas.

5.6.2 MITIGATION MEASURES

Mitigation measures were imposed in the 2004 Final RTP PEIR due to potentially significant adverse cultural resources impacts associated with implementation of the 2004 RTP.

RTPMM CR-1: As part of the appropriate environmental review of individual projects, the project implementation agencies shall identify potential impacts to historic resources. A record search at the appropriate information center shall be conducted to determine

whether the project area has been previously surveyed and whether resources were identified.

RTPMM CR-2: As necessary, prior to construction activities, the project implementation agencies shall obtain a qualified architectural historian to conduct historic architectural surveys as recommended by the Archaeological Information Center. In the event the records indicate that no previous survey has been conducted, the Information Center will make a recommendation on whether a survey is warranted based on the sensitivity of the project area for cultural resources within 1,000 feet of the improvement.

RTPMM CR-3: The project implementation agencies shall comply with Section 106 of the National Historic Preservation Act (NHPA) if federal funding or approval is required. This law requires federal agencies to evaluate the impact of their actions on resources included in or eligible for listing in the National Register. Federal agencies must coordinate with the State Historic Preservation Officer in evaluating impacts and developing mitigation. This mitigation measure may include, but is not limited to the following:

- The project implementation agencies shall carry out the maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation or reconstruction of any impacted historic resource, which shall be conducted in a manner consistent with the Secretary of the Interior's Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (Weeks and Grimmer, 1995).

In some instances, the following mitigation measures may be appropriate in lieu of the previous mitigation measure:

RTPMM CR-4: The project implementation agencies shall secure a qualified environmental agency and/or architectural historian, or other such qualified person to document any significant historical resource(s), by way of historic narrative, photographs, or architectural drawings as mitigation for the effects of demolition of a resource; however, these actions will not mitigate the effects to a point where clearly no significant effect on the environment would occur.

RTPMM CR-5: As part of the appropriate environmental review of individual projects, the project implementation agencies shall consult with the NAHC to determine whether known sacred sites are in the project area, and identify the Native American(s) to contact to obtain information about the project site.

RTPMM CR-6: Prior to construction activities, the project implementation agencies shall obtain a qualified archaeologist to conduct a record search at the appropriate Information Center of the California Archaeological Inventory to determine whether the project area has been previously surveyed and whether resources were identified.

RTPMM CR-7: As necessary prior to construction activities, the project implementation agencies shall obtain a qualified archaeologist or architectural historian (depending on applicability) to conduct archaeological and/or historic architectural surveys as recommended by the Information Center. In the event the records indicate that no previous survey has been conducted, the Information Center will make a recommendation on whether a survey is warranted based on the sensitivity of the project area for cultural resources.

RTPMM CR-8: If the record search indicates that the project is located in an area rich with cultural materials, the project proponent shall retain a qualified archaeologist to monitor any subsurface operations, including but not limited to grading, excavation, trenching, or removal of existing features of the subject property.

RTPMM CR-9: Construction activities and excavation should be conducted to avoid cultural resources (if found). If avoidance is not feasible, further work may need to be done to determine the importance of a resource. The project implementation agencies shall obtain a qualified archaeologist familiar with the local archaeology, and/or an architectural historian should make recommendations regarding the work necessary to determine importance. If the cultural resource is determined to be important under state or federal guidelines, impacts on the cultural resource will need to be mitigated.

RTPMM CR-10: Project implementation agencies shall stop construction activities and excavation in the area where cultural resources are found until a qualified archaeologist can determine the importance of these resources.

RTPMM CR-11: As part of the appropriate environmental review of individual projects, the project implementation agencies shall obtain a qualified paleontologist to identify and evaluate paleontological resources where potential impacts are considered high; the paleontologist shall also conduct a field survey in these areas.

RTPMM CR-12: Construction activities shall avoid known paleontological resources, if feasible, especially if the resources in a particular lithic unit formation have been determined through detailed investigation to be unique. If avoidance is not feasible, paleontological resources should be excavated by the qualified paleontologist and given to a local agency or other applicable institution where they could be displayed.

RTPMM CR-13: As part of the appropriate environmental review of individual projects, the project implementation agencies, in the event of discovery or recognition of any human remains, during construction or excavation activities associated with the project, in any location other than a dedicated cemetery, shall cease further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the coroner of the county in which the remains are discovered has been informed and has determined that no investigation of the cause of death is required.

RTPMM CR-14: If the remains are of Native American origin:

- The coroner will contact the NAHC in order to ascertain the proper descendants from the deceased individual. The coroner shall make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods. This may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.

or,

- If the NAHC was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the commission, in which case the landowner or his authorized representative shall obtain a Native American monitor and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance where the following conditions occur:
 - The NAHC is unable to identify a descendent;
 - The descendant identified fails to make a recommendation; or
 - The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the NAHC Commission fails to provide measures acceptable to the landowner.

RTPMM CR-15: Future impacts to cultural resources shall be minimized through cooperation, information sharing, and program development of SCAG's RCPG and through SCAG's Energy and Environment Committee. The resource agencies, such as the Office of Historic Preservation, shall be consulted during this update process.

5.6.3 LEVEL OF IMPACT AFTER MITIGATION MEASURES

Due to the size and potentially large number of historic properties, archaeological resources, and paleontological resources in Southern California that could be disturbed as a result implementing the 2004 RTP, cumulative cultural resource impacts are concluded to be significant in spite of implementing the above mitigation measures.

5.7 ENERGY

5.7.1 CUMULATIVE ENERGY IMPACTS

As indicated in subchapter 4.2, energy impacts associated with implementing the 2007 AQMP were concluded to be less than significant for electric demand, natural gas demand, use of petroleum fuels, and use of hydrogen. No other energy impacts were identified

The implementation of the 2004 RTP is likely to use electricity, natural gas, gasoline, diesel, or other non-renewable energy types in the construction and expansion of the regional transportation system. This energy use was concluded to be a less-than-significant impact.

In addition to potential construction energy impacts, the 2004 Final RTP PEIR identified two other main areas of impact: energy demands for operation of the regional transportation system as of 2030; and the cumulative impacts of growing energy demand associated with implementation of the 2004 RTP. The implementation of the 2004 RTP is likely to incrementally increase the consumption of electricity, natural gas, gasoline, diesel, or other non-renewable energy types in the operation of the transportation system between the current conditions and 2030. Therefore, the cumulative impact of the new 2004 RTP control measures on energy supplies is considered a significant impact.

5.7.2 MITIGATION MEASURES

In addition to the mitigation measures specified below, mitigation measures for the impacts from the 2004 RTP on transportation system usage would serve to mitigate the impacts of growing transportation energy demand as presented in the cumulative Transportation/Traffic section of this chapter.

RTPMM EG-1: Project implementation agencies shall review energy impacts as part of project specific environmental review as required by CEQA. For any identified impacts, appropriate mitigation measures should be identified. The project implementation agency or local jurisdiction shall be responsible for ensuring adherence to the mitigation measures.

RTPMM EG-2: For any project anticipated to require substantial electrical usage, the project implementation agency shall submit projected electricity and natural gas demand calculations to the local electricity or natural gas provider, respectively, for its analysis. Any infrastructure improvements necessary for project construction shall be completed according to the specifications of the energy provider.

RTPMM EG-3: Transit providers shall, as feasible, assure that designers of new transit stations incorporate solar panels in roofing and tap other renewable energy sources to offset new demand on conventional power sources.

RTPMM EG-4: SCAG shall encourage state and federal lawmakers and regulatory agencies to pursue the design of programs to either require or incentivize the expanded availability and use of alternative-fuel vehicles to reduce the impact of shifts in petroleum fuel supply and price.

RTPMM EG-5: SCAG shall continue to work with local jurisdictions and energy providers, through its Energy and Environment Committee and other means, to encourage regional-scale planning for improved energy management. Future impacts to energy shall be minimized through cooperative planning, and information sharing within the SCAG region. This cooperative planning shall occur during the update of the Energy chapter of SCAG's RCPG.

5.7.3 LEVEL OF IMPACT AFTER MITIGATION MEASURES

The regional increase in transportation-related energy demand as a result of implementing the 2004 RTP and 2007 AQMP is concluded to be a significant adverse cumulative impact in spite of implementing the above mitigation measures. Cumulative construction energy impacts associated with the 2004 RTP and 2007 AQMP are considered to be less than significant.

5.8 GEOLOGY AND SOILS

5.8.1 CUMULATIVE GEOLOGY AND SOILS IMPACTS

As concluded in the NOP/IS prepared for the 2007 AQMP, implementing 2007 AQMP control measures will not directly or indirectly expose people or structures to earthquake faults, seismic shaking, seismic-related ground failure including liquefaction, landslides, mudslides or substantial soil erosion for the following reasons. No comment letters were received disputing this conclusion. When implemented as rules or regulations, AQMP control measures do not directly or indirectly result in construction of new structures. Some structural modifications, however, at existing affected facilities may occur as a result of installing control equipment or making process modifications. In any event, existing affected facilities or modifications to existing facilities would be required to comply with relevant Uniform Building Code requirements in effect at the time of initial construction or modification of a structure which are expected to mitigate geology and soils impacts to less than significant.

According to the 2004 Final RTP PEIR, seismic events can damage transportation infrastructure through surface rupture, ground shaking, liquefaction, and landsliding. In addition, seismically induced tsunami and seiche waves can damage transportation infrastructure proximate to coastal areas. Potential impacts to property and public safety from seismic activity would be considered significant in some cases. The proposed mitigation measures described in subsection 5.8.2 would reduce these impacts to less than significant.

All of Southern California is susceptible to impacts from seismic activity. Numerous active faults are known to exist in the region that could potentially generate seismic events capable of significantly affecting existing and proposed transportation facilities. As such, new transportation facilities would be exposed to both direct and indirect effects of earthquakes. Potential effects from surface rupture and severe ground shaking could cause catastrophic damage to transportation infrastructure, particularly overpasses and underground structures.

Although seismic activity can cause damage to existing substandard construction, new designs taking account of current engineering knowledge can significantly reduce potential damage and harm. Earthquake-resistant designs employed on new structures minimize the impact to public safety from seismic events. As such, 2004 RTP projects that employ design standards which consider seismically active areas would reduce their potential for significant impacts.

The actions considered by the 2004 RTP have the potential to cause cumulatively considerable adverse effects on human beings, when considered at the regional scale. Given the ubiquitous distribution of potentially hazardous geological and seismic factors in southern California, and given the regional scale of transportation projects and programs considered as part of the 2004 RTP, when taken along with the urban form implications of these proposals, the cumulative impacts of the 2004 RTP on geological and seismic factors were concluded to be significant.

5.8.2 MITIGATION MEASURES

Mitigation measures were imposed in the 2004 Final RTP PEIR due to potentially significant geology and soils impacts associated with implementing the 2004 RTP

RTPMM GS-1: Implementation agencies shall ensure that projects are designed in accordance with county and city code requirements for seismic ground shaking. The design of projects shall consider seismicity of the site, soil response at the site, and dynamic characteristics of the structure, in compliance with the appropriate California Building Code standards for construction in or near fault zones.

RTPMM GS-2: Implementation agencies shall ensure that projects located within or across Alquist-Priolo Zones comply with design requirements provided in Special Publication 117, published by the California Geologic Survey, as well as relevant local, regional, state, and federal design criteria for construction in seismic areas.

RTPMM GS-3: The project implementation agencies shall ensure that geotechnical analyses are conducted within construction areas to ascertain soil types and local faulting prior to preparation of project designs.

RTPMM GS-4: The project implementation agencies shall ensure that project designs provide adequate slope drainage and appropriate landscaping to minimize the occurrence

of slope instability and erosion. Design features shall include measures to reduce erosion from stormwater. Road cuts shall be designed to maximize the potential for revegetation.

RTPMM GS-5: Implementation agencies shall ensure that projects avoid landslide areas and potentially unstable slopes wherever feasible.

RTPMM GS-6: Where practicable, routes and project designs that would permanently alter unique geologic features shall be avoided.

RTPMM GS-7: Implementation agencies shall ensure that geotechnical investigations are conducted by a qualified geologist to identify the potential for subsidence and expansive soils. Recommended corrective measures, such as structural reinforcement and replacing soil with engineered fill, shall be implemented in project designs.

RTPMM GS-8: Implementation agencies shall ensure that, prior to preparing project designs, new and abandoned wells are identified within construction areas to ensure the stability of nearby soils.

5.8.3 LEVEL OF IMPACT AFTER MITIGATION MEASURES

Mitigation measures are expected to reduce the potentially significant cumulative seismic and expansive soils impacts to less than significant. Given the topography, ecology and meteorology of southern California region, cumulative geology and soils impacts are expected to remain significant for long-term erosion and the potential for slope-failure as a result of implementing the 2004 RTP.

5.9 HAZARDS & HAZARDOUS MATERIAL

5.9.1 CUMULATIVE HAZARDS AND HAZARDOUS MATERIALS IMPACTS

The analysis of the hazard and hazardous material impacts associated with implementation of the 2007 AQMP concluded that the hazard impacts associated with reformulated coatings, solvents and consumer products, the use of alternative fuels, and the use of fuel additives are expected to be less than significant. The hazard impacts associated with the modifications at refineries to produce reformulated fuels and the increased use of ammonia in SCRs were concluded to be potentially significant.

According to the 2004 Final RTP PEIR, implementation of the 2004 RTP could facilitate the movement of goods, including hazardous materials through the region. The transportation system improvements in the 2004 RTP would generally improve transportation safety, thus, reducing the likelihood of hazardous material transportation incidents. Further, the 2004 RTP includes control measures (Maglev and capacity enhancements) that could occur within one-quarter mile of school sites, generating potentially significant hazard impacts.

Construction of projects identified in 2004 RTP control measures could involve construction through or next to sites that have been contaminated due to past chemical use or disposal, generating potentially significant hazard impacts.

5.9.2 MITIGATION MEASURES

Mitigation measures were imposed due to potentially significant hydrology and water quality impacts associated with implementing the 2007 AQMP (see subsection 4.4.3). The following mitigation measures were imposed in the 2004 Final RTP PEIR due to significant adverse hazard impacts from implementing the 2004 RTP:

RTPMM HZ3: SCAG shall encourage the U.S. DOT, the Office of Emergency Services, and the Caltrans to continue to conduct driver safety training programs and encourage the private sector to continue conducting driver safety training.

RTPMM HZ4: SCAG shall encourage the U.S. DOT and the California Highway Patrol to continue to enforce speed limits and existing regulations governing goods movements and hazardous materials transportation.

RTPMM HZ5: Prior to approval of any RTP project, the project implementation agency for each individual project shall consider existing and known planned school locations when determining the alignment of new transportation projects and modifications to existing transportation facilities.

RTPMM HZ6: Prior to approval of any RTP project, the project implementation agency shall consult all know databases of contaminated sites in the process of planning, environmental clearance, and construction for projects included in the 2004 RTP. Where contaminated sites are identified, the project implementation agency shall develop appropriate mitigation measures to assure that worker and public exposure is minimized to an acceptable level and to prevent any further environmental contamination as a result of construction.

RTPMM HZ7: As with new or expanded transportation projects, planners and private developers can and should check published lists which are continually updated of contaminated properties to identify cases where new development would involve the disturbance of contaminated properties.

5.9.3 LEVEL OF IMPACT AFTER MITIGATION MEASURES

The potential cumulative impacts associated with hazardous materials transportation, and the transportation of hazardous materials are concluded to be significant in spite of implementing mitigation measures.

The potential cumulative hazards and hazardous materials impacts on the disposal of hazardous materials from construction and maintenance of transportation facilities, and

the potential to uncover contaminated properties are concluded to be less than significant following mitigation.

5.10 HYDROLOGY/WATER QUALITY

5.10.1 HYDROLOGY AND WATER QUALITY IMPACTS

The conclusions of the analysis of hydrology/water quality impacts associated with implementation of the 2007 AQMP was that the potential water quality impacts associated with implementation of the 2007 AQMP from the use of chemical dust suppressants, the use of alternative fuels, the increase in disposal of electric batteries, *and* the installation of pollution control equipment were expected to be less than significant. The increase in water demand is not expected to exceed the SCAQMD's water demand significance threshold and is also less than significant. The water quality impacts associated with reformulation of coatings, solvents and consumer products are potentially significant.

According to the 2004 Final RTP PEIR, Project-specific studies would be necessary to determine the actual potential for significant impacts on water resources resulting from implementation of the 2004 RTP. However, the general program-level impacts from new transportation projects proposed in the 2004 RTP include the following:

- Local surface water quality would potentially be degraded by increased roadway runoff created by 2004 RTP projects, potentially violating water quality standards associated with wastewater and stormwater permits.
- Increased impervious surfaces due to transportation projects would reduce groundwater infiltration. The increase in impervious surfaces due to additional miles of roadway, in addition to urban development associated with the population distribution in 2030, would increase runoff and potentially affect groundwater recharge rates.
- The 2004 RTP would potentially increase flooding hazards by placing structures such as transportation investments on alluvial fans and within 100-year flood hazard areas and increase the rate or amount of surface runoff in a manner that would result in flooding or produce or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems.
- The 2004 RTP's influence on growth would contribute to the conversion of undeveloped land to urban uses, resulting in impacts to water quality, stormwater infiltration and ground water recharge.
- The 2004 RTP's influence on growth would contribute to the need for increased wastewater treatment capacity in the region by 2030.

- The 2004 RTP, by increasing mobility and by inclusion of land-use-transportation measures, influences the pattern of this urbanization in southern California. While existing supplies and infrastructure may not be sufficient to meet expected 2030 demands, most water agencies have plans in place to respond to future growth. However, the existing water supplies and infrastructure would not be sufficient to meet the expected demand in 2030.

5.10.2 MITIGATION MEASURES

The following mitigation measures were imposed in the 2004 Final RTP PEIR due to significant adverse hydrology and water quality impacts from implementing the 2004 RTP:

RTPMM HWQ7: Transportation improvements shall comply with federal, state, and local regulations regarding stormwater management. State-owned highways and other transportation facilities are subject to compliance with a statewide stormwater permit issued to Caltrans.

RTPMM HWQ8: Project implementation agencies shall ensure that new facilities include water quality control features such as drainage channels, detention basins, and vegetated buffers to prevent pollution of adjacent water resources by polluted runoff. Wherever feasible, detention basins shall be equipped with oil and grease traps and other appropriate, effective and well maintained control measures.

RTPMM HWQ9: Project implementation agencies shall ensure that operational BMP for street cleaning, litter control, and catch basin cleaning are implemented to prevent water quality degradation.

RTPMM HWQ10: SWPPPs shall be submitted to the SWRCB when proposed transportation improvement projects require construction activities. In these activities BMPs shall be followed to manage site erosion and spill control.

RTPMM HWQ11: Projects requiring the discharge of dredged or fill materials into U.S. waters, including wetlands, shall comply with sections 404 and 401 of the CWA including the requirement to obtain a permit from the USACE and the governing RWQCB.

RTPMM HWQ12: Long-term sediment control shall include an erosion control and revegetation program designed to allow reestablishment of native vegetation on slopes and undeveloped areas.

RTPMM HWQ13: Drainage of roadway runoff should, wherever possible, be designed to run through vegetated median strips, contoured to provide adequate storage capacity and to provide overland flow, detention and infiltration before it reaches culverts. Detention basins and ponds, aside from controlling runoff rates, can also remove particulate pollutants through settling.

RTPMM HWQ14: Project implementation agencies shall avoid designs that require continual dewatering where feasible.

RTPMM HWQ15: Project implementation agencies shall ensure that projects that do require continual dewatering facilities implement monitoring systems and long-term administrative procedures to ensure proper water management that prevents degrading of surface water and minimizes adverse impacts on groundwater for the life of the project. Construction designs shall comply with appropriate building codes and standard practices including the Uniform Building Code.

RTPMM HWQ16: Detention basins, infiltration strips, and other features to control surface runoff and facilitate groundwater recharge shall be incorporated into the design of new transportation projects.

RTPMM HWQ17: Natural riparian conditions near projects shall be maintained, wherever feasible, to minimize the effects of stormwater flows at stream crossings.

RTPMM HWQ18: Prior to construction, a drainage study shall be conducted for each new project. Drainage systems shall be designed to maximize the dissipation of storm flow velocities with the use of detention basins and vegetated areas, measures that will reduce storm flow risks to areas downstream of a project. Projects shall consider designs for the lateral transmission of stormwater and other similar means to minimize the risks of upstream flooding.

RTPMM HWQ19: All roadbeds for new highway and rail facilities should be elevated at least one foot above the 100-year base flood elevation. Since alluvial fan flooding is not often identified on FEMA flood maps, the risk of alluvial fan flooding shall be evaluated and projects shall be sited to avoid alluvial fan flooding where feasible.

RTPMM HWQ20: Transportation improvements shall comply with local, state, and federal floodplain regulations. Projects requiring federal approval or funding shall comply with Presidential Executive Order 11988 on Floodplain Management, which requires avoidance of incompatible floodplain development, restoration and preservation of the natural and beneficial floodplain values, and maintenance of consistency with the standards and criteria of the National Flood Insurance Program.

RTPMM HWQ21: Improvement projects on existing facilities shall include upgrades to stormwater drainage facilities to accommodate any increased runoff volumes. These upgrades may include the construction of detention basins or structures that will delay peak flows and reduce flow velocities. System designs shall be completed to eliminate increases in peak flow rates from current levels.

RTPMM HWQ22: SCAG shall continue to work with local jurisdictions and water quality agencies, through its Water Policy Task Force and other means, to encourage regional-scale planning for improved water quality management and pollution

prevention. Future impacts to water quality shall be avoided through cooperative planning, information sharing, and comprehensive pollution control measure development within the SCAG region. This cooperative planning shall occur during the update of the Water Resources and Water Quality chapters of SCAG's RCPG and through SCAG's Water Policy Task Force. This task force offers an opportunity for local jurisdictions and water agencies to share information and strategies to plan for water quality in the region.

RTPMM HWQ23: SCAG shall continue to work with local jurisdictions and water agencies, through its Water Policy Task Force and other means, including the update of the Water Quality and Water Resources chapters for SCAG's RCPG, to encourage regional-scale planning for improved stormwater management and groundwater recharge. Future adverse impacts shall be avoided through cooperative planning, information sharing, and comprehensive implementation efforts within the SCAG region. SCAG's Water Policy Task Force offers an opportunity for local jurisdictions and water agencies to share information and strategies for improving regional performance in these efforts.

RTPMM HWQ24: Local jurisdictions should encourage new development and industry to locate in those service areas with existing wastewater infrastructure and treatment capacity.

RTPMM HWQ25: Wastewater treatment agencies are encouraged to have expansion plans, approvals and financing in place once their facilities are operating at 80 percent of capacity. Through the update to the Water Quality and Water Resources chapter of SCAG's RCPG, SCAG shall provide opportunities for information sharing and program development.

RTPMM HWQ26: Local jurisdictions should promote reduced wastewater system demand by:

- designing wastewater systems to minimize inflow and infiltration to the extent feasible,
- reducing overall source water generation by domestic and industrial users,
- deferring development approvals for industries that generate high volumes of wastewater until wastewater agencies have expanded capacity.

RTPMM HWQ27: SCAG shall facilitate local water agencies' informing local jurisdictions of their continued efforts to evaluate future water demands and establish the necessary supply and infrastructure, as documented in their Urban Water Management Plans.

RTPMM HWQ28: SCAG shall facilitate local water agencies' informing local jurisdictions of their continued efforts to develop supplies to meet projected demand in 2030.

RTPMM HWQ29: SCAG shall facilitate information-sharing about the kind of regional coordination throughout California and the Colorado River Basin that develops and supports sustainable growth policies.

RTPMM HWQ30: Future impacts to water supply shall be minimized through cooperation, information sharing, and program development during the update of the Water Resources chapter of SCAG's RCPG and through SCAG's Water Policy Task Force. This task force presents an opportunity for local jurisdictions and water agencies to share information and strategies (such as those listed above) about their on-going water supply planning efforts, including the following types of actions:

- Minimize impacts to water supply by developing incentives, education and policies to further encourage water conservation and thereby reduce demand.
- Involve the region's water supply agencies in planning efforts in order to make water resource information, such as water supply and water quality, location of recharge areas and groundwater, and other useful information available to local jurisdictions for use in their land use planning and decisions.
- Provide, as appropriate, legislative support and advocacy of regional water conservation, supply and water quality projects.
- Promote water-efficient land use development.

The Water Policy Task Force and the update to SCAG's RCPG present an opportunity for SCAG to partner with the region's water agencies in outreach to local government on important water supply issues. SCAG provides a unique opportunity to increase communication between land use and water planners. The goals of the Task Force would not be to duplicate existing efforts of the water agencies.

5.10.3 LEVEL OF IMPACT AFTER MITIGATION MEASURES

The 2004 RTP control measures are expected to create significant adverse water quality and waste discharge conditions and/or unfavorably alter existing drainage patterns in a manner that would result in substantial erosion or siltation, generating potentially significant cumulative impacts. The 2004 RTP's influence on growth distribution is a cumulatively considerable contribution to this significant impact. Given current conditions, the 2004 RTP's effects on stormwater infiltration and groundwater recharge would contribute to a significant adverse cumulative impact on regional water resources. The 2004 RTP's effects on population distribution and its associated contribution to the impact of flooding hazards are significant.

The mitigation measures would lessen the impacts on wastewater treatment capacity in the region; however, they are not expected to prevent an imbalance between the demand for regional capacity and existing regional capacity. The cumulative impacts of

wastewater treatment capacity are concluded to be significant in spite of implementing mitigation measures.

Full implementation of water supply mitigation measures would provide an adequate and reliable future water supply and infrastructure. Although ensuring a reliable water supply for urban and other water demands in 2030 is probable, the current, existing water supply and infrastructure would not be able to support the population in the RTP in 2030. The cumulative impacts on water supply are concluded to be significant in spite of implementing mitigation measures.

The water quality impacts associated with an increase in impervious surfaces are expected to be mitigated to less than significant.

5.11 LAND USE/PLANNING

5.11.1 LAND USE/PLANNING IMPACTS

As concluded in the NOP/IS prepared for the 2007 AQMP, implementing 2007 AQMP control measures will have no impacts on land use planning. No comment letters were received that disputed this conclusion. The proposed 2007 AQMP generally is expected to impose control requirements on stationary sources at existing commercial or institutional facilities, establish emission exhaust specifications for mobile sources, and control emissions from mobile sources. As a result, the proposed 2007 AQMP does not require construction of structures or new land uses in any areas of the district and, therefore, is not expected to create divisions in any existing communities, conflict with existing land use plans or zoning requirements, or conflict with any applicable habitat conservation or natural community conservation plans. There are no provisions of the 2007 AQMP that would directly affect land use plans, policies, or regulations. The SCAQMD is specifically precluded from infringing on existing city or county land use authority (California Health & Safety Code §40414). Land use and other planning considerations are determined by local governments and no present or planned land uses in the region or planning requirements will be altered by the 2007 AQMP.

According to the 2004 Final RTP PEIR, implementation of the 2004 RTP would affect land use. Expected significant adverse impacts include loss of open space and recreation lands, inconsistencies with general plans, and cumulatively considerable changes to land use and the intensity of land use. Short-term construction related impacts and long-term or permanent displacement or offsite impacts from new facilities would potentially occur as a result of implementation of the 2004 RTP.

Implementation of the projects included in the 2004 RTP would result in a substantial loss or disturbance of existing open space and recreation lands. The results of this analysis show that the 2004 RTP would potentially affect approximately 1,400 acres of open space and recreation lands. The loss and disturbance of open space and recreation lands would be a significant impact of the 2004 RTP.

The 2004 RTP contains transportation projects and strategies to help more efficiently distribute population, housing, and employment growth. These transportation projects and strategies are generally consistent with the county and regional level general plan data available to SCAG. However, general plans are updated on an inconsistent basis and not all cities have general plans. Some of the general plans that SCAG relied upon when creating the 2004 RTP are not current and may not reflect current planning policy or practice. In addition, the RTP's 2030 horizon year is beyond the timeline of even the most recent general plans. It is likely that over the period of the 2004 RTP, transportation projects and resulting growth will be inconsistent with currently adopted general plans. With these limitations, there will be inconsistencies with general plans and potentially a significant effect. However, it is the goal of regional planning tools such as the 2004 RTP to set goals for efficient regional development. These goals would likely be reflected in general plans when they are revised and updated.

5.11.2 MITIGATION MEASURES

The following mitigation measures were imposed in the 2004 Final RTP PEIR due to potentially significant adverse land use planning impacts as a result of implementing the 2004 RTP.

RTPMM LU1: Project implementation agencies shall ensure that projects are consistent with Federal, State, and local plans that preserve open space.

RTPMM LU2: Project implementation agencies shall consider corridor realignment, buffer zones and setbacks, and berms and fencing where feasible, to avoid open space and recreation land and to reduce conflicts between transportation uses and open space and recreation lands.

RTPMM LU3: Project implementation agencies shall identify open space areas that could be preserved and shall include mitigation measures (such as dedication or payment of in-lieu fees) for the loss of open space.

RTPMM LU4: Prior to final approval of each project, the implementation agency shall conduct the appropriate project-specific environmental review, including consideration of loss of open space. Potential significant impacts to open space shall be mitigated, as feasible. The project implementation agencies or local jurisdiction shall be responsible for ensuring adherence to the mitigation measures prior to construction.

RTPMM LU5: For projects that require approval or funding by the USDOT, project implementation agencies shall comply with Section 4(f) of the USDOT Act.

RTPMM LU6: Future impacts to open space and recreation lands shall be avoided through cooperation, information sharing, and program development during the update of the Open Space and Conservation chapter of SCAG's RCPG and through SCAG's Energy and Environment Committee.

RTPMM LU7: SCAG shall encourage through regional policy comments that cities and counties in the region provide SCAG with electronic versions of their most recent general plan and any updates as they are produced.

RTPMM LU8: SCAG shall encourage through regional policy comments that cities and counties update their general plans at least every ten years, as recommended by the Governor's Office of Planning and Research.

RTPMM LU9: SCAG shall work with its member cities and counties to ensure that transportation projects and growth are consistent with the RTP and general plans.

RTPMM LU10: Planning is an iterative process and SCAG is a consensus building organization. SCAG shall work with cities and counties to ensure that general plans reflect RTP policies. SCAG will work to build consensus on how to address inconsistencies between general plans and RTP policies.

RTPMM LU11: SCAG's Growth Visioning program and the forthcoming Regional Growth Vision will be used to build a consensus in the region to support changes in land use to accommodate future population growth while maintaining the quality of life in the region.

5.11.3 LEVEL OF IMPACT AFTER MITIGATION MEASURES

Implementation of the 2004 RTP would result in a potentially substantial loss and/or disturbance of open space and recreation lands, resulting in potentially significant adverse cumulative land use impacts in spite of implementation mitigation measures.

In some instances, the 2004 RTP is expected to conflict with currently adopted general plans, which will need to be updated, especially general plans that are known to be out of date. Thus, the impact is concluded to be potentially significant in spite of implementing mitigation measures.

In order to accommodate six million more people as projected by 2030, the region will need to change land uses and increase the intensity of some existing land use. The cumulative land use impacts are concluded to be significant in spite of implementing mitigation measures.

5.12 MINERAL RESOURCES

5.12.1 CUMULATIVE MINERAL RESOURCES IMPACTS

As concluded in the NOP/IS prepared for the 2007 AQMP, implementing 2007 AQMP control measures will have no impacts on mineral resources. No comment letters were received that disputed this conclusion. Similarly, it was concluded in the 2004 Final RTP PEIR that there are no provisions in the 2004 RTP that would directly result in the loss of availability of a known mineral resource of value to the region and the residents of the

state, or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. The proposed 2007 AQMP is not expected to deplete non-renewable mineral resources, such as aggregate materials, metal ores, etc., at an accelerated rate or in a wasteful manner because neither the 2007 AQMP nor the 2004 RTP control measures are typically mineral resource intensive measures. Therefore, significant adverse impacts to mineral resources are not anticipated.

5.12.2 MITIGATION MEASURES

No significant cumulative impacts have been identified so mitigation measures are not required.

5.12.3 LEVEL OF IMPACT AFTER MITIGATION MEASURES

The cumulative mineral resources impacts are expected to be less than significant.

5.13 NOISE

5.13.1 CUMULATIVE NOISE IMPACTS

Construction Impacts: The 2007 AQMP may require existing commercial or industrial owners/operators of affected facilities to install air pollution control equipment or modify their operations to reduce stationary source emissions. Potential modifications will occur at facilities typically located in appropriately zoned industrial or commercial areas. It is not expected that any modifications to install air pollution control equipment would substantially increase ambient [operational] noise levels in the area, either permanently or intermittently, or expose people to excessive noise levels that would be noticeable above and beyond existing ambient levels. As a result, it was concluded in the NOP/IS that potential noise impacts associated with implementing the 2007 AQMP control measures are expected to be less than significant. No comment letters were received that disputed this conclusion.

According to the 2004 Final RTP PEIR, grading and construction activities associated with the proposed freeway, arterial, transit and Maglev projects identified in the 2004 RTP would intermittently and temporarily generate noise levels above ambient background levels. Noise levels in the immediate vicinity of the construction sites would increase substantially sometimes for extended duration, resulting in temporary noise increases at nearby sensitive receptors, creating potentially significant adverse noise impacts.

Operational Impacts: The 2007 AQMP may require existing commercial or industrial owners/operators of affected facilities to install air pollution control equipment or modify their operations to reduce stationary source emissions. Potential modifications will occur at facilities typically located in appropriately zoned industrial or commercial areas. It is not expected that any modifications to install air pollution control equipment would substantially increase ambient [operational] noise levels in the area, either permanently or

intermittently, or expose people to excessive noise levels that would be noticeable above and beyond existing ambient levels. As a result, it was concluded in the NOP/IS that potential noise impacts associated with implementing the 2007 AQMP control measures are expected to be less than significant. No comment letters were received that disputed this conclusion.

According to the 2004 Final RTP PEIR, noise-sensitive land uses and receptors could be exposed to noise in excess of normally acceptable noise levels or substantial increases in noise as a result of the operation of expanded or new transportation facilities (i.e., increased traffic resulting from new highways, addition of highway lanes, roadways, ramps, and use of new transit facilities as well as increased use of existing transit facilities, etc.). This is considered a potentially significant impact.

The 2004 RTP includes projects for rail transit and Metrolink. It is anticipated that any noise sensitive land uses located immediately adjacent to these lines would be significantly impacted. The existing urban rail and Metrolink system would experience increased use. Sensitive uses located along existing lines would be further exposed to noise associated with increased rail and light rail activities. Noise levels generated from the existing freeway are expected to be greater than the Maglev operational noise at the opposite side of the freeway.

Regional cumulative ambient noise levels could increase to exceed normally acceptable noise levels or have substantial increases in noise as a result of the operation of expanded or new transportation facilities (i.e., increased traffic resulting from new highways, addition of highway lanes, roadways, ramps, and new use of new transit facilities as well as increased use of existing transit facilities, etc.). This is considered a potentially significant impact.

5.13.2 MITIGATION MEASURES

The following mitigation measures were imposed in the 2004 Final RTP PEIR due to potentially significant adverse noise impacts identified as a result of implementing the 2004 RTP.

RTPMM N1: Project implementation agencies shall comply with all local sound control and noise level rules, regulations, and ordinances.

RTPMM N2: Project implementation agencies shall limit the hours of construction to between 6:00 a.m. and 8:00 p.m. on Monday through Friday and between 7:00 a.m. and 8:00 p.m. on weekends.

RTPMM N3: Equipment and trucks used for project construction shall utilize the best available noise control techniques (including mufflers, intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds) in order to minimize construction noise impacts.

RTPMM N4: Impact equipment (e.g., jack hammers, pavement breakers, and rock drills) used for project construction will be hydraulically or electrically powered wherever possible, to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatically powered tools is unavoidable, an exhaust muffler on the compressed air exhaust would be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves should be used where feasible, and this could achieve a reduction of five dBA. Quieter procedures will be used such as the use of drilling rather than impact equipment, whenever feasible.

RTPMM N5: Project implementation agencies shall ensure that stationary noise sources will be located as far from sensitive receptors as possible. If they must be located near existing receptors, they will be adequately muffled.

RTPMM N6: The project implementation agencies shall designate a complaint coordinator responsible for responding to noise complaints received during the construction phase. The name and phone number of the complaint coordinator will be conspicuously posted at construction areas and on all advanced notifications. This person will be responsible for taking steps required to resolve complaints, including periodic noise monitoring, if necessary.

RTPMM N7: Noise generated from any rock-crushing or screening operations performed within 3,000 feet of any occupied residence shall be mitigated by the project proponent by strategic placement of material stockpiles between the operation and the affected dwelling or by other means approved by the local jurisdiction.

RTPMM N8: Project implementation agencies shall direct contractors to implement appropriate additional noise mitigation measures including, but not limited to, changing the location of stationary construction equipment, shutting off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources to comply with local noise control requirements.

RTPMM N9: Project implementation agencies shall implement use of portable barriers during construction of subsurface barriers, debris basins, and storm water drainage facilities.

RTPMM N10: In residential areas, pile driving will be limited to daytime working hours. No piledriving or blasting operations shall be performed within 3,000 feet of an occupied residence on Sundays, legal holidays, or between the hours of 8:00 p.m. and 8:00 a.m. on other days. Any variance from this condition shall be obtained from the project proponent and must be approved by the local jurisdiction.

RTPMM N11: Wherever possible, sonic or vibratory pile drivers will be used instead of impact pile drivers (sonic pile drivers are only effective in some soils). If sonic or vibratory pile drivers are not feasible, acoustical enclosures will be provided as necessary

to ensure that pile driving noise does not exceed speech interference criterion at the closest sensitive receptor.

RTPMM N12: Engine and pneumatic exhaust controls on pile drivers will be required as necessary to ensure that exhaust noise from pile driver engines is minimized to the extent feasible.

RTPMM N13: Where feasible, pile holes will be pre-drilled to reduce potential noise and vibration impacts.

RTPMM N14: As part of the appropriate environmental review of each project, a project specific noise evaluation shall be conducted and appropriate mitigation identified and implemented.

RTPMM N15: Project implementation agencies shall employ, where their jurisdictional authority permits, land use planning measures, such as zoning, restrictions on development, site design, and use of buffers to ensure that future development is compatible with adjacent transportation facilities.

RTPMM N16: Project implementation agencies shall, to the extent feasible and practicable, maximize the distance between noise-sensitive land uses and new roadway lanes, roadways, rail lines, transit centers, park-and-ride lots, and other new noise-generating facilities.

RTPMM N17: Project implementation agencies shall construct sound reducing barriers between noise sources and noise-sensitive land uses. Sound barriers can be in the form of earth-berms or soundwalls. Constructing roadways so as appropriate and feasible that they are depressed below-grade of the existing sensitive land uses also creates an effective barrier between the roadway and sensitive receptors.

RTPMM N18: Project implementation agencies shall, to the extent feasible and practicable, improve the acoustical insulation of dwelling units where setbacks and sound barriers do not sufficiently reduce noise.

RTPMM N19: The project implementation agencies shall implement, to the extent feasible and practicable, speed limits and limits on hours of operation of rail and transit systems, where such limits may reduce noise impacts.

RTPMM N20: To reduce noise impacts, maximize distance of the Maglev route alignment from sensitive receptors. If the Maglev guideway is constructed along the center of a freeway, operation noise impacts would be reduced by the increase in distance to the noise sensitive sites and the masking effects of the freeway traffic noise.

RTPMM N21: Reduce Maglev speed in the vicinity of sensitive receptors.

RTPMM N22: As a last resort, eliminate the noise-sensitive receptor by acquiring rail and freeway right-of-way. This would ensure the effective operation of all transportation modes.

RTPMM N23: Passenger stations, central maintenance facilities, decentralized maintenance facilities, and electric substations should be located away from sensitive receptors.

5.13.3 LEVEL OF IMPACT AFTER MITIGATION MEASURES

The mitigation measures would reduce RTP noise impacts from RTP projects; however, cumulative construction noise impacts are concluded to be significant in the short term in spite of implementing mitigation measures.

Although mitigation measures would reduce operational noise impacts from RTP projects, they may not reduce noise levels to below regulatory levels, therefore, the cumulative noise impacts are concluded to be significant in spite of implementing mitigation measures.

5.14 POPULATION/HOUSING

5.14.1 POPULATION/HOUSING IMPACTS

The proposed 2007 AQMP generally affects existing commercial or industrial facilities located in predominantly industrial or commercial urbanized areas throughout the district. It is expected that the existing labor pool within the areas surrounding any affected facilities would accommodate the labor requirements for any modifications at affected facilities. In addition, it is not expected that affected facilities will be required to hire additional personnel to operate and maintain new control equipment on site because air pollution control equipment is typically not labor intensive equipment. In the event that new employees are hired, it is expected that the existing local labor pool in the district can accommodate any increase in demand for workers that might occur as a result of adopting the proposed 2007 AQMP. As concluded in the NOP/IS prepared for the 2007 AQMP, implementing 2007 AQMP control measures are not expected to result in changes in population densities or induce significant growth in population. No comment letters were received that disputed this conclusion.

According to the 2004 Final RTP PEIR, implementation of the 2004 RTP would affect population, households, and employment. Expected significant impacts include substantial induced population growth in areas of the region, right-of-way acquisitions that will displace a substantial number of existing businesses or homes, separation of residences from community facilities and services, and a cumulatively considerable impact on vacant natural land. Urbanization in the SCAG region will increase substantially by 2030. The 2004 RTP, by increasing mobility and including land-use-transportation measures, influences the pattern of this urbanization. The 2004 RTP's

influence on growth contributes to regional cumulatively considerable impacts to currently vacant natural land.

5.14.2 MITIGATION MEASURES

The following mitigation measures were imposed in the 2004 Final RTP PEIR due to potentially significant adverse impacts identified as a result of implementing the 2004 RTP.

RTPMM PH1: SCAG shall work with its member agencies to implement growth strategies to create an urban form designed to utilize the existing transportation networks and the transportation improvements contained in the 2004 RTP, enhancing mobility and reducing land consumption.

RTPMM PH2: For projects with the potential to displace homes and/or businesses, project implementation agencies shall evaluate alternate route alignments and transportation facilities that minimize the displacement of homes and businesses. An iterative design and impact analysis would help where impacts to homes or businesses are involved. Potential impacts shall be minimized to the extent feasible. If possible, existing rights-of-way should be used.

RTPMM PH3: Project implementation agencies shall identify businesses and residences to be displaced. As required by law, relocation assistance shall be provided to displaced residents and businesses, in accordance with the federal Uniform Relocation and Real Property Acquisition Policies Act of 1970 and the State of California Relocation Assistance Act, as well as any applicable City, County, and Port policies.

RTPMM PH4: Project implementation agencies shall develop a construction schedule that minimizes potential neighborhood deterioration from protracted waiting periods between right-of-way acquisition and construction.

RTPMM PH5: Project implementation agencies shall design new transportation facilities that consider access to existing community facilities, as feasible. During the design phase of the project, community amenities and facilities shall be identified and considered in the design of the project.

RTPMM PH6: Project implementation agencies shall design roadway improvements that minimize barriers to pedestrians and bicyclists, as feasible. During the design phase, pedestrian and bicycle routes shall be determined that permit connections to nearby community facilities.

RTPMM PH7: SCAG's Growth Visioning program and the forthcoming Regional Growth Vision shall be used to work toward building a consensus in the region to support changes in land use to accommodate future population growth while maintaining the quality of life in the region.

5.14.3 LEVEL OF IMPACT AFTER MITIGATION MEASURES

The policies included in the 2004 RTP seek to direct growth in a way that is efficient for both mobility and land consumption. However, implementation of the RTP would help distribute growth to certain vacant areas of the region. Thus, the cumulative impacts on population and housing are concluded to be significant in spite of implementing mitigation measures.

Not all of the projects in the 2004 RTP will be able to be built in existing rights-of-way. A substantial number of businesses and residences likely would be displaced through the development of projects in the 2004 RTP generating potentially significant adverse cumulative population and housing impacts in spite of implementing mitigation measures.

The 2004 RTP proposes projects that have the potential to disrupt or divide communities and, considering the scale and number of these projects, impacts cannot be mitigated to a less than significant level, generating potentially significant adverse cumulative population and housing impacts.

The accessibility afforded by the 2004 RTP and the expected shifts in population, households, and employment associated with the mobility benefits would change the growth patterns in the region, generating potentially significant adverse cumulative population and housing impacts in spite of implementing mitigation measures.

5.15 PUBLIC SERVICES

5.15.1 PUBLIC SERVICES IMPACTS

As concluded in the NOP/IS prepared for the 2007 AQMP, implementing 2007 AQMP control measures would not result in the need for new or physically altered government facilities in order to maintain acceptable service ratios, response times or other performance objectives. No comment letters were received that disputed this conclusion. Most industrial facilities have on-site security that controls public access to facilities so no increase in the need for police services are expected. Most industrial facilities have on-site fire protection personnel and/or have agreements for fire protection services with local fire departments. For these reasons, implementing the 2007 AQMP is not expected to require additional fire or police protection services.

Adopting the proposed 2007 AQMP is not expected to induce population growth. Thus, implementing the proposed control measures would not increase or otherwise alter the demand for schools and parks in the district. No significant adverse impacts to schools or parks are foreseen as a result of adopting the proposed 2007 AQMP.

According to the 2004 Final RTP PEIR, implementation of the 2004 RTP would adversely affect public services and utilities. Expected significant cumulative impacts would include demand for more police, fire, and emergency personnel and facilities,

demand for more school facilities and teachers, and increase in the number of houses in areas subject to wildfires (e.g., foothills).

Construction necessary to implement the 2004 RTP may uncover and potentially sever underground utility lines (electric and natural gas). Any groundbreaking in the SCAG region has the potential to encounter underground utility lines and potentially break those lines. However, the project implementation agency is normally required to incorporate the locations of existing utility lines into the construction schedule prior to construction. Prior knowledge and avoidance during construction of existing utility lines would reduce this impact to less than significant.

5.15.2 MITIGATION MEASURES

The following mitigation measures were imposed in the 2004 Final RTP PEIR due to public services impacts as a result of implementing the 2004 RTP.

RTPMM PS1: The project implementation agency shall ensure that prior to construction all necessary local and state road and railroad encroachment permits are obtained. The project implementation agency shall also comply with all applicable conditions of approval. As deemed necessary by the governing jurisdiction, the road encroachment permits may require the contractor to prepare a traffic control plan in accordance with professional engineering standards prior to construction. Traffic control plans should include the following requirements:

1. Identification of all roadway locations where special construction techniques (e.g., directional drilling or night construction) would be used to minimize impacts to traffic flow.
2. Development of circulation and detour plans to minimize impacts to local street circulation. This may include the use of signing and flagging to guide vehicles through and/or around the construction zone.
3. Scheduling of truck trips outside of peak morning and evening commute hours.
4. Limiting of lane closures during peak hours to the extent possible.
5. Usage of haul routes minimizing truck traffic on local roadways to the extent possible.
6. Inclusion of detours for bicycles and pedestrians in all areas potentially affected by project construction.
7. Installation of traffic control devices as specified in the California Department of Transportation Manual of Traffic Controls for Construction and Maintenance Work Zones.

8. Development and implementation of access plans for highly sensitive land uses such as police and fire stations, transit stations, hospitals, and schools. The access plans would be developed with the facility owner or administrator. To minimize disruption of emergency vehicle access, affected jurisdictions shall be asked to identify detours for emergency vehicles, which will then be posted by the contractor. Notify in advance the facility owner or operator of the timing, location, and duration of construction activities and the locations of detours and lane closures.
9. Storage of construction materials only in designated areas.
10. Coordination with local transit agencies for temporary relocation of routes or bus stops in work zones, as necessary.

RTPMM PS2: The project implementation agency shall identify projects in the 2004 RTP that require police protection, fire service, and emergency medical service and shall coordinate with the local fire department and police department to ensure that the existing public services and utilities would be able to handle the increase in demand for their services. If the current levels of services at the project site are found to be inadequate, infrastructure improvements and/or personnel requirements for the appropriate public service shall be identified in each project's CEQA documentation.

RTPMM PS3: Prior to construction, the implementation agency shall identify the locations of existing utility lines. The contractor shall avoid all known utility lines during construction.

RTPMM PS4: SCAG shall encourage local jurisdictions to strengthen and fully enforce fire codes and regulations.

RTPMM PS5: SCAG shall encourage the use of fire-resistant materials when constructing projects in areas with high fire threats.

RTPMM PS6: SCAG shall encourage the use of fire-resistant vegetation and the elimination of brush and chaparral in the immediate vicinity of development in areas with high fire threats.

RTPMM PS7: SCAG shall help reduce fire threats in the region as part of the Growth Visioning process and as policies in the update of SCAG's RCPs and Guide.

RTPMM PS8: Implementation agencies shall carefully evaluate the growth inducing potential of individual projects so that the full implications of the project are understood. Individual environmental documents shall quantify indirect impacts (growth that could be facilitated or induced) on public services and utilities to the extent feasible. Implementation agencies shall work with lead and responsible agencies to make any

necessary adjustments to the applicable General Plan. Any such identified adjustment shall be communicated to SCAG.

RTPMM PS9: Project implementation agencies shall undertake project specific review of the public utilities and services as part of project specific environmental review. For any identified impacts, project implementation agencies shall ensure that the appropriate school district has the school capacity, or is planning for the capacity, that the project will generate. Appropriate mitigation measures, such as new school construction or expansion, shall be identified. The project implementation agencies or local jurisdiction shall be responsible for ensuring adherence to the mitigation measures. SCAG shall be provided with documentation of compliance with any necessary mitigation measures.

RTPMM PS11: SCAG shall encourage the CIWMB to continue to enforce solid waste diversion mandates that are enacted by the Legislature.

RTPMM PS12: SCAG shall encourage local jurisdictions to continue to adopt programs to comply with state solid waste diversion rate mandates and, where possible, shall encourage further recycling to exceed these rates.

RTPMM PS13: Future impacts related to management of solid waste shall be minimized through cooperation, information sharing, and program development during the update of the Integrated Solid Waste Management chapter of SCAG's RCPG and through SCAG's Energy and Environment Committee. SCAG shall consult with the CIWMB during this process.

5.15.3 LEVEL OF IMPACT AFTER MITIGATION MEASURES

The cumulative public service impacts from the 2004 RTP on emergency response and impacts on underground utility lines are concluded to be significant in spite of implementing mitigation measures.

The following cumulative adverse impacts on public services are considered to remain significant following mitigation:

- The cumulative impacts on fire threats would remain significant because development would occur in areas that have a high, very high, or extreme threat of fire.
- The demand to hire and train approximately 22,000 police personnel and 7,000 fire and emergency personnel would remain a significant impact.
- The region's cumulative demand for approximately 1,000 new schools and approximately 50,000 new teachers would be a significant impact on public services.
- The regional increase in transportation-related energy demand as a result of implementing the 2004 RTP would remain a significant adverse impact, even with the above mitigation.

5.16 RECREATION

The cumulative impacts on recreation are consistent with the impacts from Land Use which is addressed in Section 5.11 – Land Use/Planning.

5.17 SOLID/HAZARDOUS WASTE

5.17.1 CUMULATIVE SOLID/HAZARDOUS WASTE IMPACTS

Implementing the 2007 AQMP could increase disposal of spent batteries and carbon adsorption filters, which are potentially significant adverse solid waste impacts.

With the implementation of mitigation measures, no significant solid/hazardous waste impacts were identified for solid waste impacts due to short-term air pollution control technologies, including the use of particulate traps and filters, catalysts used for catalytic oxidization, and the early retirement of equipment as part of the 2007 AQMP.

According to the 2004 Final RTP PEIR, implementation of the 2004 RTP has the potential to generate a significant amount of solid waste during construction, such as for new transit lines, capacity enhancement facilities and Maglev projects through grading and excavation activities. Construction debris is expected to be recycled or transported to the nearest landfill.

According to the 2004 Final RTP PEIR, the construction and maintenance of transportation facilities included in the 2004 RTP would involve the use of hazardous materials such as solvents, paints and other architectural coatings. The use and storage of these materials will be regulated by local fire departments, CUPAs, and the California Division of Occupational Safety and Health. Materials left over from construction projects can likely be re-used on other projects. For materials that cannot be, or are not reused, disposal would be regulated by the DTSC under state and federal hazardous waste regulations. With these regulations in place, this impact is expected to be less than significant.

5.17.2 MITIGATION MEASURES

The following mitigation measures were imposed in the 2004 Final RTP PEIR due to potentially significant soilis/hazardous waste impacts from implementing the 2004 RTP.

RTPMM SW1: Projects identified in the 2004 RTP that require solid waste collection will coordinate with the local public works department to ensure that the existing public services and utilities would be able 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 shall be identified in each project's CEQA documentation.

RTPMM SW2: Each of the proposed projects identified in the 2004 RTP shall comply with applicable regulations related to solid waste disposal.

RTPMM SW3: The construction contractor shall work with the respective County's Recycling Coordinator to ensure that source reduction techniques and recycling measures are incorporated into project construction.

RTPMM SW4: The amount of solid waste generated during construction will be estimated prior to construction, and appropriate disposal sites will be identified and utilized.

5.17.3 LEVEL OF IMPACT AFTER MITIGATION MEASURES

The cumulative impacts on solid/hazardous waste are concluded to be less than significant following mitigation.

5.18 TRANSPORTATION/TRAFFIC

5.18.1 CUMULATIVE TRANSPORTATION/TRAFFIC IMPACTS

As concluded in the NOP/IS prepared for the 2007 AQMP, implementing 2007 AQMP control measures is not expected to substantially increase vehicle trips or vehicle miles traveled in the district. No comment letters were received that disputed this conclusion. The 2007 AQMP relies on transportation and related control measures developed by SCAG (SCAG, 2004). These transportation control measures include strategies to enhance mobility by reducing congestion through transportation infrastructure improvements, mass transit improvements, increasing telecommunications products and services, enhanced bicycle and pedestrian facilities, etc. Specific strategies that serve to reduce vehicle trips and vehicle miles traveled, such as strategies resulting in greater reliance on mass transit, ridesharing, telecommunications, etc., are expected to result in reducing traffic congestion. Although population in the district will continue to increase, implementing the transportation control measures (in conjunction with the RTP) will ultimately result in greater percentages of the population using transportation modes other than single occupant vehicles. As a result, relative to population growth, existing traffic loads and the level of service designation for intersections district-wide would not be expected to decline at current rates due to implementing the AQMP. Implementing the 2007 AQMP will not hinder population growth in the district, as noted by the 2004 Final RTP PEIR, however, could hinder transportation/traffic improvements and congestion reduction benefits of the 2004 RTP.

According to the 2004 Final RTP PEIR, Compared to the existing condition, in 2030 even with the implementation of the 2004 RTP, there would be an increase in vehicle miles traveled, (VMT) and vehicle hours in delay for all vehicles and for heavy-duty trucks. The percent of work opportunities within 45 minutes travel time by auto trips or transit would increase. Fatality and injury accident rates however would improve.

In 2030 there would be substantially more total daily VMT than the current daily VMT. Implementation of the 2004 RTP would contribute to this increase. Substantial growth and development is anticipated to occur within the region between 2000 and 2030. Based on SCAG's modeling results, average daily VMT are expected to grow from 369 million miles in 2000 to 482 million miles per day in 2030. This change constitutes a 31 percent increase over this period and includes light-, medium- and heavy-duty vehicle VMT in all six counties. Though per capita VMT would decrease, the environment would experience an overall increase in VMT. The increase in VMT would be a significant impact.

In 2030 there would be substantially higher average travel delay than the current condition. Implementation of the 2004 RTP would contribute to this increase. Total daily travel delay is expected to grow from 2.2 million person-hours in 2000 to 3.2 million person-hours in 2030. This constitutes a 45 percent increase from conditions in 2000 and includes light, medium- and heavy duty vehicle delay in all six counties in SCAG's jurisdiction. The increase in daily travel delay would be a significant adverse impact.

In 2030 there would be substantially greater average delay for heavy-duty truck trips than the current condition. Total daily heavy-duty truck delay is expected to increase from 89,000 average daily heavy-duty truck vehicle hours of delay in 2000 to 161,000 hours in 2030. This constitutes a 79 percent increase from conditions in 2000. The increase in daily heavy-duty truck trip delay would be a significant adverse impact.

Implementation of the 2004 RTP would contribute to an increase in the percent of work opportunities within 45 minutes travel time by personal vehicle or by transit in 2030, relative to the existing condition. In 2000, approximately 88 percent of the evening work trips took 45 minutes or less by auto and 33 percent occur within 45 minutes by transit. In 2030, with the implementation of the RTP, 90 percent of evening work trips by auto would be 45 minutes or less and 34 percent of transit trips would occur within Forty-five minutes. Evening work trips are used for this measure as this is the portion of the day prone to the most delay. 45 minutes is used as a benchmark to account for reasonable commute lengths for both the auto and transit modes.

Implementation of the 2004 RTP would contribute to a lower system-wide fatality accident rate and injury rate for all travel modes in 2030 compared to the existing condition. The system-wide daily fatality rate would be 0.27 fatalities per million persons for all travel modes, 0.01 less than the existing rate of 0.28. The system-wide daily injury rate would be 10.6 injuries per million persons for all travel modes, a decrease of 0.4 daily injuries per million persons when compared to the existing rate of 11.0. The reduction in injury and fatality rates would be beneficial. The 2004 RTP includes Transportation System Management strategies that improve safety through reducing the concentration of weaving and merging and that clear existing incidents and accidents more quickly, among other measures.

Implementation of the 2004 RTP would contribute to a cumulatively considerable amount of transportation impacts, such as VMT and all-vehicle vehicle hours in delay, to counties outside of the SCAG region. As the population increases through 2030, the number of trips originating and ending in Santa Barbara, San Diego and Kern counties to and from the SCAG region would increase. The transportation demand from growth, in combination with the projects in the 2004 RTP would contribute to a cumulatively considerable transportation impact in these other counties.

5.18.2 MITIGATION MEASURES

Measures intended to reduce vehicle miles traveled are part of the 2004 RTP. These include: increasing rideshare and work-at-home opportunities to reduce demand on the transportation system, investments in non-motorized transportation and maximizing the benefits of the land use-transportation connection and other Travel Demand Management measures.

The following mitigation measures were imposed in the 2004 Final RTP PEIR due to potentially significant adverse transportation/traffic impacts as a result of implementing the 2004 RTP

RTPMM T1: Beyond the currently financially and institutionally feasible measures included in the 2004 RTP, SCAG shall identify further reduction in VMT that could be obtained through additional ridesharing programs, additional vanpools, additional bicycle programs, and implementation of a universal employee transit pass program.

RTPMM T2: The region's ports should extend operation hours in order to reduce heavy-duty truck traffic during peak traffic periods, thereby, reducing the vehicle hours these trucks spend in delay.

5.18.3 LEVEL OF IMPACT AFTER MITIGATION MEASURES

Implementation of mitigation measures identified in the 2004 RTP would be expected to reduce VMT, however even with mitigation, the 2030 VMT would be substantially greater than the existing VMT. Therefore, the increase in VMT would remain a significant adverse cumulative transportation and traffic impact in spite of implementing mitigation measures.

Implementation of measures beyond those institutionally and economically feasible measures identified in the 2004 RTP would be expected to reduce delay for all vehicles, however, even with mitigation, the 2030 total delay would be substantially greater than the existing delay. Therefore, the increase in total delay would remain a significant adverse cumulative transportation and traffic impact in spite of implementing mitigation measures.

Implementation of measures beyond those institutionally and economically feasible measures identified in the 2004 RTP would be expected to reduce delay for heavy duty

truck trips, however, even with mitigation, the 2030 heavy-duty truck delay would be substantially greater than the existing delay. Therefore, the increase in heavy-duty delay would remain a significant adverse cumulative transportation and traffic impact in spite of implementing mitigation measures.

The increase, between 2000 and 2030, in the percent of work trips accessible within 45 minutes travel time by auto or transit would be a beneficial transportation and traffic impact.

The decrease, between 2000 and 2030, of the system-wide fatality and injury accident rates would provide a beneficial transportation and traffic impact.