APPENDIX F

RTP / SCS Mitigation Measures Table

Appendix F: Examples of Measures that Could Reduce Impacts from Planning, Development and Transportation Projects

The following list of example measures is intended to function as a resource for lead agencies to consider in identifying mitigation measures to reduce impacts anticipated to result from future projects, as deemed applicable and feasible by such agencies. Some example measures are oriented to planning projects, while some measures are oriented to development and/or transportation projects. Some example measures are oriented to all types of projects. The list is non-exclusive and will not be used by SCAG in any way in reviewing regionally significant projects or project EIRs as part of SCAG's intergovernmental review (IGR) process. Nor are the example measures intended to serve as any kind of checklist to be used on a project-specific basis. Since every project and project setting is different, project specific analysis is needed to identify applicable and feasible mitigation. The following measures may be too generic to be applied on a project-by-project basis and therefore they are presented as examples of measures rather than templates to be followed.

Some of the example mitigation measures include legal requirements that may overlap with federal, state, and/or local regulation. Such legal requirements that incorporate or reference existing regulations are mandatory and any mitigation imposed as a result of a project-specific CEQA process cannot supersede these existing regulations. Nevertheless, SCAG has included these regulations for informational purposes only and to help the reader understand the existing regulatory framework that would assist in mitigating potential environmental impacts.

In addition, the inclusion of these measures that may overlap with existing regulation is not intended to supplant current law. While potential impacts are normally assessed assuming implementation of applicable legal requirements, here, many of the legal requirements are flexible and may require further interpretation or consultation with resource agencies. As such, the resulting reduction in impacts may be difficult to quantify. Thus, in the interest of providing information to the public, SCAG has included these measures containing legal requirements among the example measures.

As part of the CEQA process for each planning, development or transportation project, the Lead Agency is required to identify significant and potentially significant impacts and then mitigate them to the extent feasible. All mitigation measures below are phrased as "may" to allow for tailoring to project and agency-specific conditions as may be applicable and feasible. Use of the word "may" in measures that include legal requirements, or requirements that are otherwise committed, should not be construed to mean that compliance with legal requirements and existing commitments is optional. Furthermore, the text boxes below set forth additional details for the example measures which may apply should agencies choose to implement those measures.

Changes to the measures as compared to the measures presented in the Draft PEIR are shown with new text underlined and deleted text shown in strike-out font. Measures have been renumbered to be continuous.

AESTHETICS

AV1: Prior to the issuance of permits, project sponsors may construct noise barriers of materials whose color and texture complements the surrounding landscape and development. Noise barriers may 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. Natural landscaping may be used to minimize contrasts between the project and surrounding areas. Wherever possible, interchanges and transit lines at the grade of the surrounding land may limit view blockage.

AV2: Project sponsors may use natural landscaping to minimize contrasts between the project and surrounding areas. Wherever possible, structures may be designed to limit view blockage. Edges of major cut-and-fill slopes may be contoured to provide a more natural looking finished profile. Project sponsors may replace and

renew landscaping along corridors with road widenings, interchange projects, and related improvements. New corridor landscaping may be designed to respect existing natural and man-made features and to complement the dominant landscaping of surrounding areas.

AV3:* Prior to project approval, project sponsors may implement design guidelines, local policies, and programs aimed at protecting views of scenic corridors and avoiding visual intrusions. Projects may be designed to minimize contrasts in scale and massing between the project and surrounding natural forms and developments. Avoid, if possible, large cuts and fills when the visual environment (natural or urban) would be substantially disrupted. Site or design of projects may minimize their intrusion into important viewsheds and use contour grading to better match surrounding terrain.

AV4: Project sponsors may construct sound walls of materials whose color and texture complements the surrounding landscape and development and use color, texture, and alternating facades to "break up" large facades and provide visual interest. Where there is room, project sponsors may landscape the sound walls with plants that screen the sound wall, preferably with either native vegetation or landscaping that complements the dominant landscaping of surrounding areas.

AV5 Project sponsors may avoid construction of transportation facilities in state and locally designated scenic highways and/or vista points. When avoidance is not possible, project sponsors may minimize visual quality intrusions to the maximum extent feasible.

AV6:* For projects in designated or eligible Scenic Highway corridors, prior to project approval, project sponsors may complete design studies 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.

AV7: If projects are constructed in state- and locally-designated scenic highways and/or vista points, design, construction, and operation of the transportation facility may be consistent with applicable guidelines and regulations for the preservation of scenic resources along the designated scenic highway.

AV8: Project sponsors may design projects to minimize contrasts in scale and massing between the project and surrounding natural forms and development. Project sponsors may design projects to minimize their intrusion into important viewsheds and use contour grading to better match surrounding terrain. To the maximum extent feasible, landscaping along highway corridors may be designed to add significant natural elements and visual interest to soften the hard-edged, linear travel experience that would otherwise occur.

AV9: Project sponsors may develop design guidelines projects that make elements of proposed buildings/facilities visually compatible with surrounding areas. Visual design guidelines may, at a minimum, include setback buffers, landscaping, color, texture, signage, and lighting criteria. The following methods may be employed whenever possible:

- Transportation systems may be developed to be compatible with the surrounding environment (i.e., colors and materials of construction material).
- Vegetation used as screening and landscaping may blend in and complement the natural landscape.
- Trees bordering highways may remain or be replaced so that clear-cutting is not evident.
- Grading may blend with the adjacent landforms and topography.

AV10: In visually sensitive areas and prior to project approval, local land use agencies may 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.

AV11:* Project sponsors may ensure that sites may be kept in a blight/nuisance-free condition. Any existing blight or nuisance may be abated within 60-90 days of approval, unless an earlier date is specified elsewhere.

AV12:* Project sponsors may ensure that proposed lighting fixtures are adequately shielded to a point below the light bulb and reflector and that prevent unnecessary glare onto adjacent properties. Plans may be submitted to the Lead Agency (or other government agency as appropriate) for review and approval. All lighting may be architecturally integrated into the site.

AIR QUALITY

AQ1:* Transportation Control Measures (TCMs) may be implemented by local agencies and project sponsors as appropriate. TCMs included in the Plan are identified in the Transportation Conformity Appendix to the 2012-2035 RTP/SCS (starting on page 26). CAA Section 108(f)(1)(A) lists sixteen measures as illustrative of TCMs:

AQ2:* Local air districts, local jurisdictions and project sponsors may implement measures adopted by ARB designed to attain federal air quality standards for PM2.5 and 8-hour ozone. ARB's strategy includes the following elements:

- Set technology forcing new engine standards;
- Reduce emissions from the in-use fleet;
- Require clean fuels, and reduce petroleum dependency;
- Work with USEPA to reduce emissions from federal and state sources; and
- Pursue long-term advanced technology measures.
- Proposed new transportation–related SIP measures include:

  On-road and off-road Sources

  - ✓ Improvements and Enhancements to California's Smog Check Program
  - ✓ Expanded Passenger Vehicle Retirement
  - ✓ Modifications to Reformulated Gasoline Program
  - ✓ Cleaner In-Use Heavy-Duty Trucks
  - ✓ Ship Auxiliary Engine Cold Ironing and Other Clean Technology
  - ✓ Cleaner Ship Main Engines and Fuel
  - ✓ Port Truck Modernization
  - ✓ Clean Up Existing Commercial Harbor Craft
  - ✓ Cleaner Construction and Other Equipment
  - ✓ Cleaner In-Use Off-Road Equipment
  - ✓ Agricultural Equipment Fleet Modernization
  - ✓ New Emission Standards for Recreational Boats
  - ✓ Off-Road Recreational Vehicle Expanded Emission Standards

AQ3:* Project sponsors may ensure that water or "toxic free" dust suppressants are applied to exposed earth surfaces to control emissions as necessary to control dust and comply with applicable regulations.

AQ4:* Project sponsors may ensure that all excavating and grading activities cease during second stage smog alerts and periods of high winds.

AQ5:* Project sponsors may ensure that all trucks hauling dirt, sand, soil, or other loose materials off-site be covered or wetted or maintain at least two feet of freeboard (i.e., minimum vertical distance between the top of the load and the top of the trailer).

AQ6:* Project sponsors may ensure that all construction roads that have high traffic volumes, be surfaced with base material or decomposed granite, or be paved or otherwise be stabilized.

AQ7:* Project sponsors may ensure that public streets be cleaned, swept or scraped at frequent intervals or at least three times a week if visible soil material has been carried onto adjacent public roads.

AQ8:* Project sponsors may ensure that construction equipment be visually inspected prior to leaving the site and loose dirt be washed off with wheel washers as necessary.

AQ9:* Project sponsors may ensure that water, hydroseed, or non-toxic soil stabilizers are applied to inactive construction areas as needed to reduce off-site transport of fugitive dust.

AQ10:* Project sponsors may ensure that traffic speeds on all unpaved surfaces may not exceed 25 mph.

AQ11:* Project sponsors may ensure that all construction diesel engines with a rating of 50 horsepower or higher meet, at a minimum, the USEPA Tier 3 standards for non-road engines. From January 1, 2015 onward, project sponsors may ensure that all construction equipment meets or exceeds equivalent emissions performance to that of USEPA Tier 4 standards for non-road engines. In the event that Tier 3 or 4 engines are not available for any off-road equipment larger than 100 hp, that equipment be equipped with a Tier 2 engine, or an engine that is equipped with retrofit

controls to reduce exhaust emissions of nitrogen oxides and diesel particulate matter to no more than Tier 2 levels unless certified by engine manufacturers or the on-site air quality construction mitigation manager that the use of such devices is not practical for specific engine types. For purposes of this condition, the use of such devices is "not practical" for the following, as well as other, reasons.

1. There is no available retrofit control device that has been verified by either the ARB or USEPA to control the engine in question to Tier 2 equivalent emission levels and the highest level of available control using retrofit or Tier 1 engines is being used for the engine in question; or
2. The construction equipment is intended to be on site for five days or less.
3. Relief may be granted from this requirement if a good faith effort has been made to comply with this requirement and that compliance is not practical.

The use of a retrofit control device may be terminated immediately, provided that a replacement for the equipment item in question meeting the required controls occurs within ten days of termination of the use, if the equipment would be needed to continue working at this site for more than 15 days after the use of the retrofit control device is terminated, if one of the following conditions exists:

1. The use of the retrofit control device is excessively reducing the normal availability of the construction equipment due to increased down time for maintenance, and/or reduced power output due to an excessive increase in back pressure.
2. The retrofit control device is causing or is reasonably expected to cause engine damage.
3. The retrofit control device is causing or is reasonably expected to cause a substantial risk to workers or the public.
4. Any other seriously detrimental cause which has the approval of the project manager prior to implementation of the termination.

AQ12:* Project sponsors may ensure that deliveries related to construction activities that affect traffic flow may be scheduled during off-peak hours (e.g., 10:00 a.m. and 3**:**00 p.m.) and coordinated to achieve consolidated truck trips, where feasible. When the movement of construction materials and/or equipment impacts traffic flow, temporary traffic control may be provided to improve traffic flow (e.g., flag person).

AQ13:* Project sponsors may ensure that to the extent possible, that construction activities utilize electricity from power poles rather than temporary diesel power generators and/or gasoline power generators**.**

AQ14:* Local jurisdictions or agencies may, as practical and feasible, revegetate exposed earth surfaces following construction. Application of xeriscape principles, including such techniques and materials as native or low water use plants and low precipitation sprinklers heads, bubblers, drip irrigation systems and timing devices, may also be considered.

AQ15: Local jurisdictions may set, and enforce, specific limits on idling time for commercial vehicles, including delivery and construction vehicles, which prohibit vehicle and engine idling in excess of five minutes, where conditions allow.

AQ16:* Project sponsors may ensure that sandbags or other erosion control measures are installed to prevent silt runoff to public roadways as needed.

AQ17:* Project sponsors may designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties may include holidays and weekend periods when work may not be in progress. The name and telephone number of such persons may be provided to the local air district prior to the start of construction as well as posted on-site over the duration of construction.

AQ18:* Project sponsors may ensure that appropriate wind-breaks are installed at the construction site to minimize windblown dust.

AQ19: In order to address the California Air Resources Board Air Quality and Land Use Handbook (June 2005) and achieve an acceptable interior air quality level for sensitive receptors, project sponsors may identify appropriate measures, to be incorporated into project building design for residential, school and other sensitive uses located within 500 feet of freeways, heavily travelled arterials, railways and other sources of Diesel Particulate Matter and other known carcinogens. The appropriate measures may include one or more of the following methods as may be appropriate:

a. The project sponsor may retain a qualified air quality consultant to prepare a health risk assessment (HRA) in accordance with the California Air Resources Board and the Office of Environmental Health and Hazard Assessment requirements to determine the exposure of project residents/occupants/users to stationary and mobile (e.g., cars and trucks) sources of air pollution prior to issuance of a demolition, grading, or building permit. The HRA may be submitted to the Lead Agency for review and approval. The sponsor may implement the approved HRA recommendations, if any. If the HRA concludes that the air quality risks from nearby sources are at or below acceptable levels, then additional measures are not required.

b. The project sponsor may implement the following features that have been found to reduce the air quality risk to sensitive receptors and may be included in the project construction plans. These may be submitted to the appropriate agency for review and approval prior to the issuance of a demolition, grading, or building permit and ongoing.

   i. Do not locate sensitive receptors near distribution center's entry and exit points.
   ii. Do not locate sensitive receptors in the same building as a perchloroleythene dry cleaning facility.
   iii. Maintain a 50-foot buffer from a typical gas dispensing facility (under 3.6 million gallons of gas per year).
   iv. Install, operate and maintain in good working order a central heating and ventilation (HV) system or other air take system in the building, or in each individual residential unit, that meets the efficiency standard of the MERV 13. The HV system may include the following features: Installation of a high efficiency filter and/or carbon filter-to-filter particulates and other chemical matter from entering the building. Either HEPA filters or ASHRAE 85% supply filters may be used.
   v. Retain a qualified HV consultant or HERS rater during the design phase of the project to locate the HV system based on exposure modeling from the mobile and/or stationary pollutant sources.
   vi. Maintain positive pressure within the building.
   vii. Achieve a performance standard of at least one air exchange per hour of fresh outside filtered air.
   viii. Achieve a performance standard of at least 4 air exchanges per hour of recirculation
   ix. Achieve a performance standard of .25 air exchanges per hour of in unfiltered infiltration if the building is not positively pressurized.

c. Project sponsor may maintain, repair and/or replace HV system or prepare an Operation and Maintenance Manual for the HV system and the filter. The manual may include the operating instructions and maintenance and replacement schedule. This manual may be included in the CC&R's for residential projects and distributed to the building maintenance staff. In addition, the sponsor may prepare a separate Homeowners Manual. The manual may contain the operating instructions and maintenance and replacement schedule for the HV system and the filters. It may also include a disclosure to the buyers of the air quality analysis findings.

MM-AQ20: To the maximum extent practicable the Lead Agency may ensure that private (individual and common) exterior open space, including playgrounds, patios, and decks, may either be shielded from sources of air pollution by buildings or otherwise buffered to further reduce air pollution for project occupants.

AQ21: As applicable and feasible, local jurisdictions may investigate (using for example procedures and guidelines for PM hotspot analysis consistent with USEPA (2010) PM guidance) the relationship between 1) any increases in PM10 and PM2.5 within 500 feet of freeways in their jurisdiction, and 2) existing sensitive receptors in that area that do not have adequate air filtration to reduce such impacts to a less than significant level. To the extent that existing sensitive receptors are identified that do not have adequate air filtration, local jurisdictions may establish a program by which project sponsors can mitigate significant increases in PM10 and PM2.5 (e.g., by providing a retrofit program for older higher emitting vehicles, anti-idling requirements or policies, controlling fugitive dust, routing traffic away from populated zones, replacing older buses with cleaner buses, and paying in to a fund established to retrofit sensitive receptors with HEPA filters when sensitive receptors are located within 500 feet of freeways and high-traffic volume roadways that generate substantial diesel particulate emissions).

AQ22: As applicable and feasible, project sponsors may plant appropriate vegetation to reduce PM10/PM2.5 when constructing a sensitive receptor within 500 feet of freeways and high-traffic volume roadways generating substantial diesel particulate emissions.

AQ23: As applicable and feasible, for major transportation projects (especially those that generate substantial diesel particulate emissions) in the region, if health risks are shown to increase significantly at sensitive receptors within 500 feet of a transportation facility, project sponsors are required under CEQA to consider applicable mitigation. Examples include planting appropriate vegetation and retrofitting existing sensitive uses with air filtration to reduce potential health risk impacts to a less than significant level.

BIOLOGICAL RESOURCES AND OPEN SPACE

Ecosystems in the SCAG Region

BIO/OS1:* Project sponsors may assess displacement of habitat due to removal of native vegetation during route planning/project location planning. Routes/project sites may be planned in coordination with state and local resources agencies and may consider inventories of natural resources, such as CDFG and CNDDB. Routes may be planned in order to avoid and/or minimize removal of native vegetation, by comparing proposed infrastructure with state and local conservation plans and by creating maps of resource habitat overlaid with the transportation network. Projects located in or adjacent to habitat areas may incorporate buffers to minimize lighting, noise, and other project impacts that can severely disrupt wildlife. Vegetation buffers may be appropriate to the adjacent vegetation association and protect the genetic integrity of the adjacent habitat. If avoidance is not possible, agencies/project sponsors may consult with the appropriate resource agencies to develop mitigation activities.

BIO/OS2: When avoidance of native vegetation removal is not possible, project sponsors may replant disturbed areas with commensurate native vegetation of high habitat value adjacent to the project that will result in a net environmental benefit (i.e., as opposed to ornamental vegetation with relatively less habitat value). When possible, habitat rehabilitation may use recycled material from rehabilitated infrastructure.

BIO/OS3:* Project sponsors may include on-site habitat enhancement as a first priority and offsite habitat enhancement or restoration to compensate for unavoidable habitat losses from each project site as appropriate and necessary.

Special Status Species and Natural Communities

BIO/OS4:* Pre-construction special status species surveys may be conducted by a qualified biologist to verify presence or absence of species at risk. For rare plants, surveys may be conducted when: 1) natural vegetation occurs on the site; 2) it is unknown if rare, threatened, or endangered plants or habitats occur on the site; and 3) the project has the potential for direct or indirect effects on vegetation. Species surveys may occur during the portion of the species' life cycle where the species is most likely to be identified within the appropriate habitat. In all cases, impacts on special status species and/or their habitat may be avoided during construction to the maximum extent feasible.

BIO/OS5: For projects located in sensitive habitat areas, project sponsors may develop and implement a Worker Awareness Program (environmental education) to inform project workers of their responsibilities in regards to avoiding and minimizing impacts on sensitive biological resources.

BIO/OS6: Project sponsors may appoint an Environmental Inspector to serve as a contact for issues that may arise concerning implementation of mitigation measures, and to document and report on adherence to these measures.

BIO/OS7:* Project sponsors may 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.

BIO/OS8:* Project sponsors may schedule projects to avoid construction during critical life stages or sensitive seasons (e.g. the nesting season; see Mitigation Measures **BIO/OS25**, and **BIO/OS15** through **BIO/OS35**).

BIO/OS9: Project sponsors may precede construction, as appropriate, by pre-construction monitoring to ensure no sensitive species' habitat would be unnecessarily destroyed (also see Mitigation Measures **BIO/OS4** through **BIO/OS13**). All discovered sensitive species habitat may be avoided where feasible, or disturbance may be minimized.

BIO/OS10:* Project sponsors may fence and/or mark sensitive habitat to prevent unnecessary machinery or foot traffic during construction activities.

BIO/OS11:* Project sponsors may ensure that sensitive habitats (native vegetative communities identified as rare and/or sensitive by the CDFG) and special-status plant species (including vernal pools) impacted by projects may be restored and augmented. Project sponsors may consult with CDFG, as applicable, to ensure that

significant impacts are avoided, mitigated, and/or minimized to the extent feasible. The Lead Agency may require other activity as described below.

- If impacts are temporary, mitigation may be at a 1**:**1 ratio (compensation acres to impacted acres). Permanent impacts may be compensated for by creating or restoring habitats at a **3:**1 ratio as close as possible to the site of the impact. The CDFG may recommend mitigation ratios that vary on a project-by-project basis.

BIO/OS12: When work is conducted in or adjacent to identified sensitive habitat areas, and/or areas of intact native vegetation, construction protocols may require the salvage of perennial plants and the salvage and stockpile of topsoil (the surface material from 6 to 12 inches deep) and may be used in restoring native vegetation to all areas of temporary disturbance within the project area.

BIO/OS13: When removal and/or damage to sensitive species habitat are unavoidable during construction, project sponsors may ensure that any disturbed natural areas are replanted with appropriate native vegetation following the completion of construction activities. In the case of permanent losses to sensitive species habitat, mitigation may follow the offsite habitat compensation guidance.

BIO/OS14:* A qualified wetland scientist may review construction drawings as part of each project-specific environmental analysis to determine whether wetlands will be impacted, and if necessary, perform a formal wetland delineation. Appropriate state and federal permits may be obtained, and each project EIR may contain language clearly stating the provisions of such permits, including avoidance measures, restoration procedures, and in the case of permanent impacts compensatory creation or enhancement measures to ensure a no net loss of wetland extent or function and values.

BIO/OS15: Suitable habitat for listed vernal pool crustaceans may be avoided to the extent feasible. If infeasible, impacts may be mitigated in accordance with the Programmatic Biological Opinion (PBO) for vernal pool invertebrates, issued by the USFWS Sacramento Field Office in 1995. Surveys may be conducted, with USFWS approval, in accordance with the 1996 *Interim Survey Guidelines to Permittees for Recovery Permits under* Section 10(a)(1)(A) *of the Endangered Species Act for the Listed Vernal Pool Branchiopods,* to establish whether or not listed invertebrates are present.

BIO/OS16: Project sponsors may avoid removal of wetland or riparian vegetation. Specific vegetation that is not to be removed may be so marked during construction. Wetland and riparian vegetation removal may be minimized as much as possible.

BIO/OS17:* Project sponsors may 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. See Mitigation Measures **BIO/OS1** through **BIO/OS14**.

BIO/OS18:* Project sponsors may ensure that when individual projects include unavoidable losses of riparian or aquatic habitat, adjacent or nearby riparian or aquatic habitat be enhanced (e.g., through removal of non-native invasive wetland species and replacement with more ecologically valuable native species).

BIO/OS19:* For projects near water resources project sponsors may 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. (See also Water Resources Mitigation Measures.)

BIO/OS20:* If specific project area trees are designated as "Landmark Trees" or "Heritage Trees", then approval for removals may be obtained through the appropriate entity, and appropriate mitigation measures may be developed at that time, to ensure that the trees are replaced. Mitigation trees may be locally-collected native species.

BIO/OS21:* Project sponsors may prioritize retention of trees on-site consistent with local regulations. For example, the Lead Agency may require additional protection during the construction period for any trees that are to remain standing, including the actions described below.

a. Before the start of any clearing, excavation, construction or other work on the site, every protected tree deemed to be potentially endangered by said site work, may be securely fenced off. Such fences may remain in place for duration of all such work. All trees to be removed may be clearly marked. A scheme

may be established for the removal and disposal of logs, brush, earth and other debris that will avoid injury to any protected tree.

b. Where proposed development or other site work could encroach upon the protected perimeter of any protected tree, special measures can habitat for listed vernal pool crustaceans may be avoided to the extent feasible. If infeasible, impacts may be mitigated in accordance with the Programmatic Biological Opinion (PBO) for vernal pool invertebrates, issued by the USFWS Sacramento Field Office in 1995. Surveys may be conducted, with USFWS approval, in accordance with the 1996 *Interim* and may be incorporated to allow the roots to breathe and obtain water and nutrients. Any excavation, cutting, filing, or compaction of the existing ground surface within the protected perimeter may be minimized. No change in existing ground level may occur from the base of any protected tree at any time. No burning or use of equipment with an open flame may occur near or within the protected perimeter of any protected tree.

c. No storage or dumping of oil, gas, chemicals, or other substances that may be harmful to trees may occur from the base of any protected trees, or any other location on the site from which such substances may enter the protected perimeter. No heavy construction equipment or construction materials may be operated or stored within a distance from the base of any protected trees. Wires, ropes, or other devices may not be attached to any protected tree, except as needed for support of the tree. No sign, other than a tag showing the botanical classification, may be attached to any protected tree.

d. Periodically during construction, the leaves of protected trees may be thoroughly sprayed with water to prevent buildup of dust and other pollution that would inhibit leaf transpiration.

e. If any damage to a protected tree occurs during or as a result of work on the site, the project sponsor may immediately notify the appropriate local agency of such damage. If, such tree cannot be preserved in a healthy state, the local agency may require replacement of any tree removed with another tree or trees on the same site deemed adequate by the local agency to compensate for the loss of the tree that is removed.

f. All debris created as a result of any tree removal work may be removed by the project sponsor from the property within two weeks of debris creation, and such debris may be properly disposed of by the project sponsor in accordance with all applicable laws, ordinances, and regulations.

BIO/OS22:* Project sponsors with projects within the range and within suitable habitat for species listed as threatened or endangered under California Endangered Species Act (such as the Mohave ground squirrel) or the Federal Endangered Species Act (such as the Arroyo toad) may conduct surveys, with CDFG and/or USFWS approval, in accordance with established and approved survey methods appropriate for the species of interest, such as the 1999 USFWS *Survey Protocol for the Arroyo Toad,* to establish whether or not the species is present. If species is determined present, project sponsors may consult with the USFWS and/or CDFG, as applicable, to ensure that significant impacts are avoided, mitigated, and/or minimized to the extent feasible. Project sponsors should obtain an Incidental Take Permit under Section 2081 of the Fish and Game Code before proceeding with authorization of any project subject to CESA. Additional authorization may be required by the USFWS for take of federal-listed species or their occupied habitat. The Lead Agency may require other activity as described below.

- A pre-construction survey may be conducted by a qualified biologist at each site to identify suitable habitat for the species of interest and to determine what avoidance measures, including relocation, fencing installation, and avoidance of breeding season may be required.
- Mitigation for occupied habitat impacted is likely to be compensatory off-site acquisition or protection of similar habitats at a ratio of 3**:**1 (compensation acres to that impacted)) or other similar ratio with the approval of the USFWS and/or CDFG).
- Project sponsors must obtain an Incidental Take Permit under Section 2081 of the Fish and Game Code before proceeding with authorization of any project subject to CESA. Additional authorization may be required by the USFWS for take of federal-listed species or their occupied habitat.

BIO/OS23:* Project sponsors with projects within the range and within suitable habitat for the blunt-nosed leopard lizard may conduct surveys, with USFWS approval, in accordance with the 2004 CDFG *Approved Survey Methodology for the Blunt-Nosed Leopard Lizard,* to establish whether or not the species is present. If species is determined present project sponsors should consult with the USFWS and/or CDFG, as applicable, to ensure that significant impacts are avoided, mitigated, and/or minimized to the extent feasible. As part of the consultation, the Lead Agency may require other activity as described below.

- Mitigation for occupied habitat impacted is likely to be compensatory off-site acquisition or protection of similar habitats at a ratio of 3:1 (compensation acres to that impacted) or other similar ratio with the approval of the USFWS and/or CDFG). No direct taking of the blunt-nosed leopard lizard may occur as this is a CDFG fully protected species with no regulatory mechanism to authorize direct taking (killing) of individuals.

BIO/OS24:* Project sponsors with projects within the range and within suitable habitat for the California red-legged frog may implement the measures detailed in the Programmatic Biological Opinion (PBO) for construction impacts to the red-legged frog that was issued by the USFWS (Federal Register 1999) to the USACE. The measures listed below are taken largely from the PBO and, if applied to the western pond turtle as well as the frog, would be adequate as standard mitigation for both species. A similar level of effort for survey protocol can also be applied to the Mountain yellow-legged frog, with adjustments to its climate, habitat, and breeding requirements.

- The name and credentials of a biologist qualified to act as a construction monitor may be submitted to USFWS for approval at least 15 days prior to commencement of work;
- The USFWS-approved biologist may survey the site two weeks prior to the onset of work activities and immediately prior to commencing work. If red-legged frog adults, tadpoles, or eggs are found, the approved biologist may contact USFWS to determine whether relocating any life stages is appropriate;
- The USFWS-approved biologist may ensure that the introduction or spread of invasive exotic plant species is avoided to the maximum extent possible, by removing weeds from areas of exposed bare soil within the construction zone where construction occurs in riparian vegetation.
- The number and size of access routes, staging areas, and total area of activity may be limited to the minimum necessary to achieve the project goal;
- If work sites require dewatering, the intakes may be screened with a maximum mesh sizes of 5 millimeters;
- The USFWS-approved biologist may permanently remove and destroy from within the project area any individuals of exotic species, such as bullfrogs, crayfish, and centrarchid fishes, to the maximum extent practicable.

BIO/OS25:* Project sponsors with projects within the range and within suitable habitat for the Coachella Valley fringe-toed lizard may conduct surveys, with USFWS/CDFG approval, in accordance with the CDFG *Protocol for Determining Coachella Valley Fringe-Toed Lizard (CVFTL) Presence,* to establish whether or not the species is present. If species is determined present, project sponsors should consult with the USFWS and/or CDFG, as applicable, to ensure that significant impacts are avoided, mitigated, and/or minimized to the extent feasible. As part of the consultation, the Lead Agency may require other activity as described below.

- Mitigation for occupied habitat impacted is likely to be compensatory off-site acquisition or protection of similar habitats at a ratio of 3**:**1 (compensation acres to that impacted) or other similar ratio with the approval of the USFWS and/or CDFG).

BIO/OS26:* Project sponsors with projects within the range and within suitable habitat for the desert tortoise may conduct surveys, with USFWS approval, in accordance with the 1992 USFWS *Field Survey Protocol For Any Federal Action That may Occur Within The Range Of The Desert Tortoise,* to establish whether or not the species is present. If the species is determined present, project sponsors should consult with the USFWS and/or CDFG, as applicable, to ensure that significant impacts are avoided, mitigated, and/or minimized to the extent feasible. As part of the consultation, the Lead Agency may require other activity as described below.

- Upon approval by the USFWS, preconstruction surveys of project impact areas may be required to salvage and relocate individual desert tortoise out of harm's way. Following removal of individuals, construction areas may be fenced with temporary exclusionary silt fencing.
- Mitigation for occupied habitat impacted is likely to be compensatory acquisition of mitigation credits or off-site acquisition or protection of similar habitats at a ratio of 3**:**1 (compensation acres to that impacted) or other similar ratio with the approval of the USFWS and/or CDFG).

BIO/OS27:* California species of special concern (CSC), such as the two-striped garter snake and several bat species are considered special-status species that meet the definition of rare, threatened or endangered species for the purposes of CEQA. Projects within the range and within suitable habitat for California species of special concern may conduct surveys in accordance with the best professional judgment of a qualified biologist. : Project sponsors should consult with the USFWS and/or CDFG, as applicable, to ensure that significant impacts are avoided, mitigated, and/or minimized to the extent feasible. As part of the consultation, the Lead Agency may require other activity as described below.

- Preconstruction surveys of project impact areas may be required to salvage and relocate individual two-striped garter snakes out of harm's way. Following removal of individuals, construction areas may be fenced with temporary exclusionary silt fencing.

- Similarly appropriate survey, salvage, and mitigation measures may be taken with regard to other CSC classified species. If avoidance of impacts to species is not feasible, on site and/or off site protection of appropriate mitigation lands in perpetuity may be secured for these species.
- Mitigation for occupied habitat is likely to be compensatory acquisition of mitigation credits or off-site acquisition or protection of similar habitats at a ratio of 3:1 (compensation acres to that impacted) or other similar ratio with the approval of the USFWS and/or CDFG. The two-striped garter snake is not formally listed but considered a special-status species worthy of measures to avoid and minimize impacts to the extent feasible.

BIO/OS28:* Project sponsors may ensure avoiding disrupting nesting Swainson's hawks, by conducting construction activities at known nesting locations between September and March, outside the nesting season (nesting typically occurs from March 1 through September 15).Alternatively, if construction activities take place during the nesting season, a qualified biologist may conduct a pre-construction survey. Pre-construction surveys may commence in January utilizing approved protocol methods in consultation with CDFG and before the start of construction for any given milepost. . If pre-construction surveys locate a nest site within one-half mile of any project (assuming available authorized access) a Swainson's hawk Monitoring and Mitigation Plan may be prepared in consultation with CDFG. Plans may be prepared by a qualified biologist approved by the CDFG. Plans may include detailed measures to avoid and minimize impacts to Swainson's hawks in and near the construction areas. The Lead Agency may require other activity as described below.

a. If a nest site is found, design the project to allow sufficient foraging and fledging area to maintain the nest site.
b. During the nesting season, ensure no new disturbances, habitat conversions, or other project-related activities that may cause nest abandonment or forced fledging occur within one-half mile of an active nest between March 1 and September 15. Buffer zones may be adjusted in consultation with CDFG and the Lead Agency.
c. Do not remove Swainson's hawk nest trees unless avoidance measures are determined to be infeasible. Removal of such trees may occur only during the timeframe of October 1 and the last day in February.

BIO/OS29:* Project sponsors may ensure that no more than two weeks before construction in any given milepost, a survey for burrows and burrowing owls may be conducted by a qualified biologist within 500 feet of the project (assuming available authorized access). The Lead Agency may require subsequent mitigation to be performed in conformance with applicable guidelines as described below.

The survey may conform to the protocol described by the California Burrowing Owl Consortium's 1993 Burrowing Owl Protocol and Mitigation Guideline which includes up to four surveys on different dates if there are suitable burrows present as well as the CDFG's 1995 Staff Report on Burrowing Owl Mitigation. Both mitigation guidelines also recommend habitat land acquisition and protection in perpetuity for project-related loss of occupied wintering and breeding habitat for burrowing owls. If occupied burrowing owl dens are found within the survey area, a determination may be made by a qualified biologist in consultation with CDFG whether or not project work will impact the occupied burrows or disrupt reproductive behavior.

- If it is determined that construction will not impact occupied burrows or disrupt breeding behavior, construction may proceed without any restriction or mitigation measures.
- If it is determined that construction will impact occupied burrows during August through February, the subject owls may be passively relocated from the occupied burrow(s) using one-way doors. There may be at least two unoccupied burrows suitable for burrowing owls within 300 feet of the occupied burrow before one-way doors are installed. Artificial burrows may be in place at least one-week before one-way doors are installed on occupied burrows. One-way doors will be in place for a minimum of 48 hours before burrows are excavated.
- If it is determined that construction will physically impact occupied burrows or disrupt reproductive behavior during the nesting season (March through July) then avoidance is the only mitigation available. Construction may be delayed within 300 feet of occupied burrows until it is determined that the subject owls are not nesting or until a qualified biologist determines that juvenile owls are self-sufficient or are no longer reliant on the natal burrow as their primary source of shelter and survival.
- Mitigation for occupied habitat is likely to be compensatory acquisition of mitigation credits or off-site acquisition or protection of similar habitats at a ratio of 3:1 (compensation acres to that impacted) or other similar ratio with the approval of the USFWS and/or CDFG.

BIO/OS30:* Project sponsors may ensure that when working within 100 feet of salt or brackish marshland presence for the California black rail, California clapper rail, and Yuma clapper rail may be assumed for either species during the period February 1- August 31 and construction may be scheduled to begin no earlier than September 1 and end no later than January 31 to avoid potential impact on reproduction. The Department of Fish and Game and United States Fish and Wildlife Service may be consulted when projects identify occupied habitat or habitat capable of supporting California clapper rail, light-footed clapper rail, and Yuma clapper rail.

BIO/OS31:* Project sponsors with projects within the range and within suitable habitat for the coastal California gnatcatcher may conduct surveys, with USFWS approval, in accordance with the 1997 USFWS *Coastal California Gnatcatcher Presence/Absence Survey Guidelines,* to establish whether or not the species is present. If the species is determined to be present, project sponsors should consult with the USFWS and/or CDFG, as applicable, to ensure that significant impacts are avoided, mitigated, and/or minimized to the extent feasible. As part of the consultation, the Lead Agency may require other activity as described below.

- To avoid disrupting nesting coastal California gnatcatchers, construction activities at known nesting locations may occur between September and March outside the nesting season (nesting typically occurs from March 1 through September 1). Alternatively, if construction activities take place during the nesting season, a qualified biologist may conduct a pre-construction survey no more than two weeks before the start of construction for any given milepost and report whether or not there are nesting coastal California gnatcatchers within 500 feet of any project (assuming available authorized access). If there are nesting coastal California gnatcatchers present within the 500-foot buffer areas, construction may be delayed until the USFWS and/or CDFG has been consulted to determine suitable avoidance measures. A potential avoidance measure may include delaying all construction activity within 500 feet of an active coastal California gnatcatchers nest until the adults and/or young of the year are no longer reliant on the nest site for survival as determined by a qualified biologist.
- Mitigation for occupied habitat impacted is likely to be compensatory off-site acquisition or protection of similar habitats at a ratio of 3**:**1 (compensation acres to that impacted) or other similar ratio with the approval of the USFWS and/or CDFG).

BIO/OS32:* Project sponsors with projects within the range and within suitable habitat for the least Bell's vireo may conduct surveys, with USFWS approval, in accordance with the 2001 USFWS *Least Bell's Vireo Survey Guidelines,* to establish whether or not the species is present. If the species is determined to be present, project sponsors should consult with the USFWS and/or CDFG, as applicable, to ensure that significant impacts are avoided, mitigated, and/or minimized to the extent feasible. As part of the consultation, the Lead Agency may require other activity as described below.

- To avoid disrupting nesting least Bell's vireo, construction activities at known nesting locations may occur between September and March outside the nesting season (nesting typically occurs from March 1 through September 1). Alternatively, if construction activities take place during the nesting season, a qualified biologist may conduct a pre-construction survey no more than two weeks before the start of construction for any given milepost and report whether or not there are nesting least Bell's vireo within 500 feet of any project (assuming available authorized access). If there are nesting least Bell's vireo present within the 500-foot buffer areas, construction may be delayed until the CDFG has been consulted to determine suitable avoidance measures. A potential avoidance measure may include delaying all construction activity within 500 feet of an active least Bell's vireo nest until the adults and/or young of the year are no longer reliant on the nest site for survival as determined by a qualified biologist.
- Mitigation for occupied habitat impacted is likely to be compensatory off-site acquisition or protection of similar habitats at a ratio of 3**:**1 (compensation acres to that impacted or other similar ratio with the approval of the USFWS and/or CDFG).

BIO/OS33:* Project sponsors with projects within the range and within suitable habitat for the southwestern willow flycatcher may conduct surveys, with USFWS approval, in accordance with the 2000 USFWS *Southwestern Willow Flycatcher Protocol Survey Guidelines (Revision 2000),* to establish whether or not the species is present. Project sponsors should consult with the USFWS and/or CDFG, as applicable, to ensure that significant impacts are avoided, mitigated, and/or minimized to the extent feasible. As part of the consultation, the Lead Agency may require other activity as described below.

- To avoid disrupting nesting southwestern willow flycatcher, construction activities at known nesting locations may occur between September and March outside the nesting season (nesting typically occurs from March 1 through September 15). Alternatively, if construction activities take place during the nesting season, a qualified biologist may conduct a pre-construction survey no more than two weeks

before the start of construction for any given milepost and report whether or not there are nesting southwestern willow flycatcher within 500 feet of any project (assuming available authorized access). If there are nesting southwestern willow flycatchers present within the 500-foot buffer areas, construction may be delayed until the CDFG has been consulted to determine suitable avoidance measures. A potential avoidance measure may include delaying all construction activity within 500 feet of an active southwestern willow flycatcher nest until the adults and/or young of the year are no longer reliant on the nest site for survival as determined by a qualified biologist.

- Mitigation for occupied habitat impacted is likely to be compensatory off-site acquisition or protection of similar habitats at a ratio of 3**:**1 (compensation acres to that impacted) or other similar ratio with the approval of the USFWS and/or CDFG).

BIO/OS34:* Project sponsors may ensure that suitable nesting sites for migratory nongame native bird species protected under the Federal Migratory Bird Treaty Act and/or trees with unoccupied raptor nests (large stick nests or cavities) may only be removed prior to February 1, or following the nesting season.

A survey to identify active raptor and other migratory nongame bird nests may be conducted by a qualified biologist at least two weeks before the start of construction at project sites from February 1st through August 31st. Any active non-raptor nests identified within the project area or within 300 feet of the project area may be marked with a 300-foot buffer, and the buffer area may need to be avoided by construction activities until a qualified biologist determines that the chicks have fledged. Active raptor nests within the project area or within 500 feet of the project area may be marked with a 500-foot buffer and the buffer avoided until a qualified biologist determines that the chicks have fledged. If the 300-foot buffer for non-raptor nests or 500-foot buffer for raptor nests cannot be avoided during construction of the project, the project sponsor may retain a qualified biologist to monitor the nests on a daily basis during construction to ensure that the nests do not fail as the result of noise generated by the construction. The biological monitor may be authorized to halt construction if the construction activities cause negative effects, such as the adults abandoning the nest or chicks falling from the nest.

- Beginning thirty days prior to the disturbance of suitable nesting habitat, the project sponsor may arrange for weekly bird surveys conducted by a qualified biologist with experience in conducting breeding bird surveys to detect protected native birds occurring in the habitat that is to be removed and any other such habitat within 300 feet of the construction work area (within 500 feet for raptors) as access to adjacent areas allows. The last survey may be conducted no more than 3 days prior to the initiation of clearance/construction work.
- If an active raptor nest is found within 500 feet of the project or nesting habitat for a protected native bird is found within 300 feet of the project a determination may be made by a qualified biologist in consultation with CDFG whether or not project construction work will impact the active nest or disrupt reproductive behavior.
- If it is determined that construction will not impact an active nest or disrupt breeding behavior, construction will proceed without any restriction or mitigation measure. If it is determined that construction will impact an active raptor nest or disrupt reproductive behavior then avoidance is the only mitigation available. Construction may be delayed within 300 feet of such a nest (within 500 feet for raptor nests), until August 31 or as determined by CDFG, until the adults and/or young of the year are no longer reliant on the nest site for survival and when there is no evidence of a second attempt at nesting as determined by a qualified biologist. Limits of construction to avoid a nest may be established in the field with flagging and stakes or construction fencing marking the protected area 300 feet (or 500 feet) from the nest. Construction personnel may be instructed on the sensitivity of the area.
- Documentation to record compliance with applicable State and Federal laws pertaining to the protection of native birds may be recorded.

Natural Lands

BIO/OS35: Project sponsors may conduct site-specific analyses of opportunities to preserve or improve habitat linkages with areas on- and off-site before project construction begins. Habitat linkages/wildlife movement corridors may be analyzed on a broader and cumulative impact analysis scale to avoid adverse impacts from linear projects that have potential for impacts on a broader scale or critical narrow choke points that could reduce function of recognized movement corridors on a larger scale. Before construction, a qualified biologist may review construction drawings and habitat connectivity mapping provided by the CDFG or CNDDB may be used to determine the risk of habitat fragmentation. Mitigation banking to preserve habitat linkages and corridors

(opportunities to purchase, maintain, and/or restore off-site habitat) is one opportunity that project sponsor and local jurisdictions may pursue.

BIO/OS36: Project sponsors may evaluate the potential for overpasses, underpasses, and culverts in cases where a roadway or other transportation project may interrupt the flow of species through their habitat. Wildlife crossings/access may be provided in accordance with proven standards, such as FHWA's Critter Crossings or Ventura County Mitigation Guidelines and the Wildlife Crossings Assessment & Mitigation Manual (Meese, et al., 2007.), and in consultation with wildlife corridor authorities with sufficient knowledge of both regional and local wildlife corridors, and at locations useful and appropriate for the species of concern.

BIO/OS37: Project sponsors may include analysis of wildlife corridors during project planning, in order to minimize or avoid impacts to these corridors. In addition, project sponsors may include analysis to identify where additional linkages and/or culverts/under crossings would be needed that do not exist.

BIO/OS38: Project sponsors may use wildlife fencing where appropriate to minimize the probability of wildlife injury due to direct interaction between wildlife and roads. Wildlife fencing used may be based on proven designs for impacted species and developed in conjunction with wildlife corridor authorities with sufficient knowledge of both regional and local wildlife corridors. Project sponsors may take advantage of natural environmental buffers (i.e. streams or fields) to protect wildlife habitat from nearby transportation infrastructure. Inclusion of this mitigation measure may 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. Also see **BIO/OS1** through **BIO/OS21**.

BIO/OS39: Project sponsors may avoid siting new 2012-2035 RTP/SCS transportation facilities within areas not presently exposed to impacts from transportation facilities. If avoidance is infeasible, the project may minimize vehicular accessibility to areas beyond the actual transportation surface. This can be accomplished through fencing and signage. Additionally, the area of native habitats to be lost to proximity to a transportation facility may be assessed and habitat at a quality of equal or superior value may be secured and protected in perpetuity.

Threats to Biological Resources in the SCAG Region

BIO/OS40: Project sponsors may establish litter control programs in appropriate areas, such as receptacles at road turnouts, rest stops, and viewpoints. All refuse containers may be provided with mechanisms which prevent scavenging animals from gaining access to the contents of such containers.

BIO/OS41: Project sponsors may use road noise minimization methods, such as brush and tree planting, at heavy noise-producing transportation areas that may affect wildlife. Native vegetation may be used.

BIO/OS42: Project sponsors may avoid and/or minimize construction activities that have the potential to expose species to noise, smoke, or other disturbances. Pre-construction surveys may be conducted as appropriate to determine the presence of any species that would need to be protected from such an impact.

Protection of Biological Resources in the SCAG Region

BIO/OS43: Any Conservation opportunity areas identified by SCAG or others may be used by local jurisdictions and project sponsors as priority areas for mitigating impacts to open space resources. SCAG's forthcoming regional conservation planning policy will include additional information on conservation opportunity areas.

BIO/OS44: Project sponsors may ensure that transportation systems proposed in the 2012-2035 RTP/SCS avoid or mitigate significant impacts to natural lands, community open space and important farmland, including cumulative impacts and open space impacts from the growth associated with transportation projects and improvements.

BIO/OS45: Individual projects may either avoid significant impacts to regionally significant open space resources or mitigate the significant impacts. All projects submitted for IGR review may demonstrate consideration of alternatives that would avoid or reduce impacts to open space.

BIO/OS46: Project sponsors may include into project design, to the maximum extent practicable, mitigation measures and recommended best practices aimed at minimizing or avoiding impacts to natural lands, including, but not

limited to FHWA's Critter Crossings, Ventura County Mitigation Guidelines, CDFG's Wildlife Action Plan and any applicable conservation plans.

BIO/OS47:* For projects adjacent to natural watercourses, project sponsors may submit a vegetation management plan for review and approval by the Lead Agency that includes, as deemed appropriate, the following measures:

- Identify and do not disturb a buffer distance (to be determined as appropriate on a case-by-case basis) from the top of the natural watercourse. If the top of bank cannot be identified, leave a 50-foot buffer from the centerline of the watercourse or as wide a buffer as possible between the watercourse centerline and the proposed site development.
- Identify and leave" islands" of vegetation in order to prevent erosion and landslides and protect nesting habitat.
- Leave at least 6 inches of vegetation on the site.
- Trim tree branches from the ground up (limbing up) and leave tree canopy intact.
- Leave stumps and roots from cut down trees to prevent erosion.
- Plant fire-appropriate, drought-tolerant, preferably native vegetation.
- Err on the side of caution; if a plant, tree or area is sensitive, obtain a second opinion before cutting.
- Provide erosion and sediment control protection if cutting vegetation on a steep slope.
- Leave tall shrubbery at least 3-feet high.
- Fence off sensitive plant habitats and creek areas to protect from animal grazing as appropriate and necessary.
- Do not clear-cut vegetation. This can lead to erosion and severe water quality problems and destroy important habitat.
- Do not remove vegetation within 20-feet of the top of bank. If the top of bank cannot be identified, do not cut within 50-feet of the centerline of the natural watercourse or as wide a buffer as possible between the natural watercourse centerline and the proposed site development.
- Do not trim/prune branches that are larger than 4 inches in diameter.
- Do not remove tree canopy.
- Do not dump cut vegetation in a creek.
- Do not cut tall shrubbery to less than 3-feet high.
- Do not cut of short vegetation (grasses, ground-cover) to less than 6-inches high.

BIO/OS48:* As appropriate conduct a biological assessment for any site/corridor where there is the potential for impacts to significant biological resources including threatened or endangered species, sensitive habitats/species and/or protected trees.

BIO/OS49: Shade Tree Planting: Local jurisdictions or agencies may promote the planting of shade trees and establish shade tree guidelines and specifications, including:

- Recommendations for tree planting based on the land use (residential, commercial, parking lots, etc.);
- Recommendations for tree types based on species size, branching patterns, whether deciduous or evergreen, whether roots are invasive, etc.;
- Recommendations for placement, including distance from structures, density of planting, and orientation relative to structures and the sun.

BIO/OS50: Urban Forestry Management: Local jurisdictions or agencies may develop an Urban Forestry Program to consolidate policies and ordinances regarding tree planting, maintenance, and removal, including:

- Establish a tree-planting target and schedule to support the goals of the California Climate Action Team to plant 5 million trees in urban areas by 2020;
- Establish guidelines for tree planting, including criteria for selecting deciduous or evergreen trees low-VOC-producing trees, and emphasizing the use of drought-tolerant native trees and vegetation.

BIO/OS51: Local jurisdictions or agencies may establish policies and programs to restore, protect, manage and preserve conservation areas, including forested areas, agricultural lands, wildlife habitat and corridors, wetlands, watersheds, and groundwater recharge areas, that remove and sequester carbon from the atmosphere.

BIO/OS52: Conservation Area Development: Local jurisdictions or agencies may consider establishing programs and funding mechanisms to create protected conservation areas For example, local jurisdictions may:

- Impose mitigation fees for development on lands that would otherwise be conservation areas, and use the funds generated to protect other areas from development;
- Consider proposals for voters to approve a small tax increment (e.g., a quarter cent sales tax, perhaps for a finite time period that could be renewed) to fund the purchase of development rights in conservation areas, or purchase of the land outright.

BIO/OS53: Conservation Area Preservation: Local jurisdictions or agencies may establish policies to preserve existing conservation areas, and to discourage development in those areas.

BIO/OS54: Local jurisdictions or agencies may manage its stock of vegetation to reduce GHG emissions.

BIO/OS55: Local jurisdictions may conduct a comprehensive inventory and analysis of the urban forest, and coordinate tree maintenance responsibilities with all responsible departments, consistent with best management practices.

BIO/OS56: Local jurisdictions or agencies may evaluate existing landscaping and options to convert reflective and impervious surfaces to landscaping, and install or replace vegetation with drought-tolerant, low-maintenance native species or edible landscaping that can also provide shade and reduce heat-island effects.

CULTURAL RESOURCES

CUL1:* As part of the appropriate project/environmental review of individual projects, project sponsors may identify potential impacts to historic resources. A record search at the appropriate Information Center may be conducted to determine whether the project area has been previously surveyed and whether historic resources were identified.

CUL2:* If indicated as necessary by a records search, prior to construction activities, project sponsors may obtain a qualified architectural historian to conduct 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 may make a recommendation on whether a survey is warranted based on the sensitivity of the project area for historical resources within 1,000 feet of the project.

CUL3:* Project sponsors may comply with Section 106 of the National Historic Preservation Act (NHPA) including, but not limited to, projects for which federal funding or approval is required for the individual project. 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. These mitigation measures may include, but are not limited to the following:

- Where appropriate, project sponsors may employ design measures to avoid historical resources and undertake adaptive reuse where appropriate and feasible. If resources are to be preserved, as feasible, project sponsors may carry out the maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation or reconstruction in a manner consistent with the Secretary of the Interior's Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings. If resources would be impacted, impacts may be minimized to the extent feasible.
- Where feasible, noise buffers/walls and/or visual buffers/landscaping may be constructed to preserve the contextual setting of significant built resources.

CUL4:* Project sponsors may 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, and architectural drawings, as mitigation for the effects of demolition of a resource. However, such documentation will not mitigate the effects to less than significant.

CUL5:* As part of the appropriate project/environmental review of individual projects, project sponsors may consult with the Native American Heritage Commission (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. Federal, State, counties, and cities lead agencies may require that a check of the NAHC sacred lands files be

undertaken by all projects and that the Native American tribes or individuals identified by the NAHC be contacted by the project proponent for further information and consultation on the project.

CUL6:* Prior to construction activities, project sponsors may 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. Federal, State, counties, and cities lead agencies may require a qualified archeologist conduct a record search at the appropriate Information Center on the project.

CUL7:* Prior to construction activities, project sponsors may 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 may make a recommendation on whether a survey is warranted based on the sensitivity of the project area for archaeological resources. Federal, State, counties, and cities lead agencies may conduct a phase I archeological or historic architectural survey for all project that have not been previously surveyed or have not been surveyed in the past ten years.

CUL8:* If the record search indicates that the project is located in an area rich with cultural materials, project sponsors may 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. Federal, State, counties, and cities lead agencies require that a Native American monitor be employed by the project proponent or tribe to monitor the subsurface operations or any earth movement in all projects. It is also strongly recommended that a pre-excavation agreement be implemented with culturally affiliated tribes.

CUL9:* Construction activities and excavation may be conducted to avoid cultural resources (if identified). If avoidance is not feasible, further work may be needed to determine the importance of a resource. Project sponsors may obtain a qualified archaeologist familiar with the local archaeology, and/or as appropriate, an architectural historian who may 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 may need to be mitigated. Avoidance is the preferred alternative. If avoidance is not feasible, Federal, State, counties, and cities lead agencies may require that the project sponsor consult with culturally affiliated Native American Tribes in the determination of importance of the resource.

CUL10:* Project sponsors may stop construction activities and excavation in the area where cultural resources are found until a qualified archaeologist can determine the importance of these resources. Federal, State, counties, and cities lead agencies may require that the project sponsor consult with culturally affiliated Native American Tribes in the determination of importance of the resource.

CUL11:* As part of the appropriate project/environmental review of individual projects, project sponsors may obtain a qualified paleontologist to identify and evaluate paleontological resources where potential impacts are considered high; the paleontologist may also conduct a field survey in these areas.

CUL12:* Project sponsors may ensure that construction activities 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.

CUL13:* Project sponsors may ensure that when a construction activity could significantly disturb soils or geologic formations in areas identified as having a moderate to high potential to support paleontological resources, a qualified researcher must be stationed on-site to observe during excavation operations and recover scientifically valuable specimens. As part of this mitigation, the following actions may be taken:

- A certified paleontologist may be retained (or required to be retained) by the project sponsor prior to construction to establish procedures for surveillance and the preconstruction salvage of exposed resources if fossil-bearing sediments have the potential to be impacted.
- The paleontologist may provide preconstruction coordination with contractors, oversee original cutting in previously undisturbed areas of sensitive formations, halt or redirect construction activities as appropriate to allow recovery of newly discovered fossil remains, and oversee fossil salvage operations and reporting.
- This measure may be placed as a condition on all plans where excavation and earthmoving activity is proposed in a geologic unit having a moderate or high potential for containing fossils.

- Excavations of paleontological resources may be overseen by the qualified paleontologist and the paleontological resources given to a local agency, or other applicable institution, where they could be displayed or used for research.

CUL14:* Where practicable, project sponsors may avoid routes and project designs that would permanently alter unique features with archaeological and/or paleontological significance.

CUL15:* As part of project oversight of individual projects, project sponsors may, 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, may 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.

CUL16:* If any discovered remains are of Native American origin:

- The coroner may contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner may 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 Native American Heritage Commission is unable to identify a descendant, or the descendant failed to make a recommendation within 24 hours after being notified by the commission, the landowner or their authorized representative may 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 Native American Heritage Commission is unable to identify a descendent;
    - The descendant identified fails to make a recommendation; or
    - The landowner or their authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

GEOLOGY, SOILS AND MINERAL RESOURCES

GEO1:* Project sponsors may ensure that projects located within or across Alquist-Priolo Zones comply with design requirements provided in Special Publication 117, published by the California Geological Survey, as well as relevant local, regional, State, and federal design criteria for construction in seismic areas.

GEO2:* Project sponsors may ensure that projects are designed in accordance with county and city code requirements for seismic ground shaking. The design of projects may consider seismicity of the site, soil response at the site, and dynamic characteristics of the structure, in compliance with the appropriate California Building Code and State of California design standards for construction in or near fault zones, as well as all standard design, grading, and construction practices in order to avoid or reduce geologic hazards.

GEO3:* Project sponsors may ensure that site-specific geotechnical investigations conducted by a qualified geotechnical expert may be required prior to preparation of project designs. These investigations would identify areas of potential failure and recommend remedial geotechnical measures to eliminate any problems.

GEO4:* Project sponsors may ensure that site-specific geotechnical investigations conducted by a qualified geotechnical expert are conducted to ascertain soil types and local faulting prior to preparation of project designs. These investigations would identify areas of potential failure and recommend remedial geotechnical measures to eliminate any problems.

GEO5:* Project sponsors may ensure that project designs provide adequate slope drainage and appropriate landscaping to minimize the occurrence of slope instability and erosion. Design features may include measures to reduce erosion caused by stormwater. Road cuts may be designed to maximize the potential for revegetation.

GEO6:* Project sponsors may ensure that, prior to preparing project designs, new and abandoned wells are identified within construction areas to ensure the stability of nearby soils.

GEO7: Project sponsors may ensure that projects avoid geologic units or soils that are unstable, expansive soils and soils prone to lateral spreading, subsidence, liquefaction, or collapse wherever feasible.

GEO8: Project sponsors may ensure that projects avoid landslide areas and potentially unstable slopes wherever feasible.

GEO9: Project sponsors may ensure that site-specific geotechnical investigations conducted by a qualified geotechnical expert may be required prior to preparation of project designs to identify the potential for subsidence and expansive soils. These investigations would identify areas of potential failure and recommend remedial geotechnical measures to eliminate any problems. Recommended corrective measures, such as structural reinforcement and replacing soil with engineered fill, may be implemented in project designs.

GEO10: Local jurisdictions may review availability of aggregate and mineral resources in their jurisdiction and may develop a long-range plan to meet demand.

GREENHOUSE GAS EMISSIONS

GHG1: SCAG member cities and the county governments may adopt and implement Climate Actions Plans (CAPS, also known as Plans for the Reduction of Greenhouse Gas Emissions as described in CEQA Guidelines Section 15183.5 Tiering and Streamlining the Analysis of Greenhouse Gas Emissions)

Climate Action Plans generally follow the steps and contain components described below.

a) Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities within their respective jurisdictions;
b) Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable;
c) Identify and analyze the GHG emissions resulting for specific actions or categories of actions anticipated within their respective jurisdictions;
d) Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;
e) Establish a mechanism to monitor the plan's progress toward achieving that level and to require amendment if the plan is not achieving specified levels; and
f) Be adopted in a public process following environmental review.

CAPs may, when appropriate, incorporate planning and land use measures from the California Attorney General's latest list of example policies to address climate change at both the plan and project level. Specifically, at the plan level, land use plans may, when appropriate, incorporate planning and land use measures from the California Attorney General's latest list of example policies to address climate change (http://ag.ca.gov/globalwarming/pdf/ GP_policies.pdf), including, but not limited to policies from that web page such as:

- Smart growth, jobs/housing balance, transit-oriented development, and infill development through land use designations, incentives and fees, zoning, and public-private partnerships
- Create transit, bicycle, and pedestrian connections through planning, funding, development requirements, incentives and regional cooperation, and create disincentives for auto use
- Energy and water-efficient buildings and landscaping through ordinances, development fees, incentives, project timing, prioritization, and other implementing tools

In addition, member cities and the county governments may incorporate, as appropriate, policies to encourage implementation of the Attorney General's list of project specific mitigation measures available at the following web site: http://ag.ca.gov/globalwarming/pdf/GW_mitigation_ measures.pdf, including, but not limited to measures from the web page such as:

- Adopt a comprehensive parking policy that discourages private vehicle use and encourages the use of alternative transportation
- Build or fund a major transit stop within or near development
- Provide public transit incentives such as free or low-cost monthly transit passes to employees, or free ride areas to residents and customers

- Incorporate bicycle lanes, routes and facilities into street systems, new subdivisions, and large developments
- Require amenities for non-motorized transportation, such as secure and convenient bicycle parking.

They may also incorporate, when appropriate, planning and land use measures from additional resources listed by the California Attorney General at the following webpage: http://ag.ca.gov/globalwarming/ceqa/resources.php.

In addition, CAPs may also incorporate analysis of climate change adaptation, in recognition of the likely and potential effects of climate change in the future regardless of the level of mitigation and in conjunction with Executive Order S-13-08, which seeks to enhance the State's management of climate impacts including sea level rise, increased temperatures, shifting precipitation, and extreme weather events by facilitating the development of State's first climate adaptation strategy.

GHG2: Project sponsors may require Best Available Control Technology (BACT) during construction and operation of projects, including:

a) Solicit bids that include use of energy and fuel efficient fleets;
b) Solicit preference construction bids that use BACT, particularly those seeking to deploy zero- and/or near zero emission technologies;
c) Employ use of alternative fueled vehicles;
d) Use lighting systems that are energy efficient, such as LED technology;
e) Use CEQA Guidelines Appendix F, Energy Conservation, to create an energy conservation plan;
f) Streamline permitting process to infill, redevelopment, and energy-efficient projects;
g) Use an adopted emissions calculator to estimate construction-related emissions;
h) Use the minimum feasible amount of GHG-emitting construction materials that is feasible;
i) Use of cement blended with the maximum feasible amount of flash or other materials that reduce GHG emissions from cement production;
j) Use of lighter-colored pavement where feasible;
k) Recycle construction debris to maximum extent feasible; and
l) Plant shade trees in or near construction projects where feasible.

GHG3: Local jurisdictions may establish a coordinated, creative public outreach activities, including publicizing the importance of reducing GHG emissions and steps community members may take to reduce their individual impacts.

GHG4: Pedestrian and Bicycle Promotion: Local jurisdictions may work with local community groups and business associations to organize and publicize walking tours and bicycle events, and to encourage pedestrian and bicycle modes of transportation.

GHG5: Waste Reduction: Local jurisdictions may organize workshops on waste reduction activities for the home or business, such as backyard composting, or office paper recycling, and may schedule recycling drop-off events and neighborhood chipping/mulching days.

GHG6: Water Conservation: Local jurisdictions may support and/or sponsor workshops on water conservation activities, such as selecting and planting drought tolerant, native plants in landscaping, and installing advanced irrigation systems.

GHG7: Energy Efficiency: Local jurisdictions may organize workshops on steps to increase energy efficiency in the home or business, such as weatherizing the home or building envelope, installing smart lighting systems, and how to conduct a self-audit for energy use and efficiency.

GHG8: Schools Programs: Local jurisdictions may develop and implement a program to present information to school children about climate change and ways to reduce GHG emissions, and may support school-based programs for GHG reduction, such as school based trip reduction and the importance of recycling.

HAZARDOUS MATERIALS

HM1:* Project sponsors may comply with all applicable laws, regulations, and health and safety standards set forth by federal, state, and local authorities that regulate the proper handling of such materials and their containers

to the routine transport, use, and disposal of hazardous materials does not create a significant hazard to the public or the environment.

HM2:* Project sponsors may consider any known or planned school locations when determining the alignment of new transportation projects and modifications to existing transportation facilities as well as any industrial or other use that could pose a hazard to students.

HM3:* Project sponsors may ensure that Best Management Practices (BMPs) are implemented as part of construction to minimize the potential negative effects to groundwater and soils. These may include the following:

- Follow manufacturer's recommendations on use, storage, and disposal of chemical products used in construction;
- Avoid overtopping construction equipment fuel gas tanks;
- During routine maintenance of construction equipment, properly contain and remove grease and oils;
- Properly dispose of discarded containers of fuels and other chemicals;
- Ensure that construction would not have a significant impact on the environment or pose a substantial health risk to construction workers and the occupants of the proposed development. Soil sampling and chemical analyses of samples may be performed to determine the extent of potential contamination beneath all UST's, elevator shafts, clarifiers, and subsurface hydraulic lifts when on-site demolition, or construction activities would potentially affect a particular development or building; and
- If soil, groundwater or other environmental medium with suspected contamination is encountered unexpectedly during construction activities (e.g., identified by odor or visual staining, or if any underground storage tanks, abandoned drums or other hazardous materials or wastes are encountered), the project sponsor may cease work in the vicinity of the suspect material, the area may be secured as necessary, and the project sponsor may take all appropriate measures to protect human health and the environment. Appropriate measures may include notification of regulatory agency(ies) and implementation of actions as necessary, to identify the nature and extent of contamination. Work may not resume in the area(s) affected until the measures have been implemented under the oversight of the City or regulatory agency, as appropriate.

HM4:* As appropriate, project sponsors may submit documentation to determine whether radon or vapor intrusion from the groundwater and soil is located on-site as part of the Phase I documents. The Phase I analysis may be submitted to the appropriate government agency for review and approval, along with a Phase II report if warranted by the Phase I report for the project site. The reports may make recommendations for remedial action, if appropriate, and may be signed by a Registered Environmental Assessor, Professional Geologist, or Professional Engineer. The project sponsor may implement the approved recommendations.

HM5:* As appropriate each project sponsor may submit a Hazardous Materials Business/Operations Plan for review and approval by the appropriate local agency. Once approved, this plan will then be kept on file with the Lead Agency (or other appropriate government agency) and may be updated as applicable. The purpose of the Hazardous Materials Business/Operations Plan is to ensure that employees are adequately trained to handle the materials and provides information to the local fire protection agency may emergency response be required. The Hazardous Materials Business/Operations Plan may include the following:

- The types of hazardous materials or chemicals stored and/or used on-site, such as petroleum fuel products, lubricants, solvents, and cleaning fluids
- The location of such hazardous materials
- An emergency response plan including employee training information
- A plan that describes the manner in which these materials are handled, transported and disposed

HM6:* Project sponsors may implement all of the following Best Management Practices (BMPs) regarding potential soil and groundwater hazards.

- Soil generated by construction activities may be stockpiled on-site in a secure and safe manner. All contaminated soils determined to be hazardous or non-hazardous waste must be adequately profiled (sampled) prior to acceptable reuse or disposal at an appropriate off-site facility. Specific sampling and handling and transport procedures for reuse or disposal may be in accordance with applicable local, State and federal agencies laws.
- Groundwater pumped from the subsurface may be contained onsite in a secure and safe manner, prior to treatment and disposal, to ensure environmental and health issues are resolved pursuant to applicable laws

and policies. Engineering controls may be utilized, which include impermeable barriers to prohibit groundwater and vapor intrusion into the building.

- Prior to issuance of any demolition, grading, or building permit, the sponsor may submit for review and approval by the Lead Agency (or other appropriate government agency), written verification that the appropriate federal, State and/or local oversight authorities, including, but not limited to the Regional Water Quality Control Board (RWQCB), have granted all required clearances and confirmed that the all applicable standards, regulations and conditions for all previous contamination at the site.

HM7:* Project sponsors may consult all known databases of contaminated sites and undertake a standard Phase I Environmental Site Assessment in the process of planning, environmental clearance, and construction for projects included in the 2012-2035 RTP/SCS, including development projects.

HM8:* Where contaminated sites are identified, project sponsors may 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.

HM9:* If asbestos-containing materials (ACM) are found to be present in building materials to be removed project sponsors may submit specifications signed by a certified asbestos consultant for the removal, encapsulation, or enclosure of the identified ACM in accordance with all applicable laws and regulations, including but not necessarily limited to: California Code of Regulations, Title 8; Business and Professions Code; Division 3; California Health & Safety Code Section 25915-25919.7; and other local regulations as applicable.

HM10:* Prior to issuance of demolition, grading, or building permits, project sponsors may submit to the appropriate agency responsible for hazardous materials/wastes oversight, a Phase II Environmental Site Assessment report if warranted by a Phase I report for the project site. The reports may make recommendations for remedial action, if appropriate, and may be signed by a Registered Environmental Assessor, Professional Geologist, or Professional Engineer.

HM11:* Project sponsors may submit a comprehensive assessment report to the appropriate agency, signed by a qualified environmental professional, documenting the presence or lack thereof of ACM, lead-based paint, and any other building materials or stored materials classified as hazardous waste by State or federal law.

HM12:* If a Phase II Environmental Site Assessment report recommends remedial action, the project sponsor may:

- Consult with the appropriate local, State, and federal environmental regulatory agencies to ensure sufficient minimization of risk to human health and environmental resources, both during and after construction, posed by soil contamination, groundwater contamination, or other surface hazards including, but not limited to, underground storage tanks, fuel distribution lines, waste pits and sumps;
- Obtain and submit written evidence of approval for any remedial action if required by a local, State, or federal environmental regulatory agency; and
- Submit a copy of all applicable documentation required by local, State, and federal environmental regulatory agencies, including but not limited to: permit applications, Phase I and II environmental site assessments, human health and ecological risk assessments, remedial action plans, risk management plans, soil management plans, and groundwater management plans.

HM13:* If lead-based paint is present, project sponsors may submit specifications to the appropriate agency, signed by a certified Lead Supervisor, Project Monitor, or Project Designer for the stabilization and/or removal of the identified lead paint in accordance with all applicable laws and regulations, including but not necessarily limited to: California Occupational Safety and Health Administration's (Cal OSHA's) Construction Lead Standard, Title 8 California Code of Regulations (CCR) Section 1532.1 and Department of Health Services (DHS) Regulation 17 CCR Sections 35001-36100, as may be amended. If other materials classified as hazardous waste by State or federal law are present, the project sponsor may submit written confirmation to the appropriate local agency that all State and federal laws and regulations may be followed when profiling, handling, treating, transporting and/or disposing of such materials.

HM14:* If materials classified as hazardous waste by State or federal law are present, project sponsors may submit written confirmation to appropriate local agency that all State and federal laws and regulations may be followed when profiling, handling, treating, transporting and/or disposing of such materials.

LAND USE AND AGRICULTURAL RESOURCES

LU1:* Local jurisdictions may provide for new housing consistent with the regional Housing Needs Assessment (RHNA) to accommodate their share of the forecasted regional growth.

LU2:* Significant adverse impacts to community cohesion resulting from the displacement of residences or businesses may be mitigated with specific relocation measures as dictated by local, state or federal requirements on a project-by project basis. Such measures include assistance in finding a new location, assistance with moving, or compensation for losses. Where it has been determined that displacement is necessary and displaced individuals are eligible, a relocation assistance program consistent with the State Uniform Location Assistance and Real Properties Acquisition Policies Act provides compensation and assistance in finding new residence for displaced individuals.

LU3: Project sponsors may design new transportation facilities that consider access to existing community facilities. During the design phase of the project, community amenities and facilities may be identified and considered in the design of the project.

LU4: Project sponsors may design roadway improvements that minimize barriers to pedestrians and bicyclists. During the design phase, pedestrian and bicycle routes may be determined that permit connections to nearby community facilities.

LU5:* For projects that require approval or funding by the USDOT, project sponsors may comply with Section 4(f) U.S. Department of Transportation Act of 1966 (USDOT Act).

LU6: Project sponsors may ensure that at least one acre of unprotected open space is permanently conserved for each acre of open space developed as a result of transportation projects/improvements.

LU6: Local jurisdictions may seek funding to prepare specific plans and related environmental documents to facilitate mixed-use development at selected sites, and to allow these areas to serve as receiver sites for transfer of development rights away from environmentally sensitive lands and rural areas outside established urban growth boundaries.

LU7:* Local jurisdictions may preserve and create open space and parks. Preserve existing trees, and plant replacement trees at a set ratio.

LU8: Project sponsors may 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.

LU9:* Prior to final approval of each project and when feasible and prudent, the project sponsor may establish conservation easement programs to mitigate impacts to prime farmland.

LU10:* Prior to final approval of each project, the project sponsor may to the extent practical and feasible, avoid impacts to prime farmlands or farmlands that support crops considered valuable to the local or regional economy.

LU11: Local jurisdictions may establish programs to direct growth to less agriculturally valuable lands and ensure, where possible, the continued protection of the most agriculturally valuable land within each county. The following are offered as examples of programs:

- The development or participation in transfer of development rights programs to encourage the preservation of agricultural lands.
- Tools for the preservation of agricultural lands such as eliminating estates and ranchettes and clustering to retain productive agricultural land.
- Easing restrictions on farmer's markets and encourage cooperative farming initiatives to increase the availability of locally grown food.
- Considering partnering with school districts to develop farm-to-school programs.

LU12: Local jurisdictions may avoid the premature conversion of farmlands by promoting infill development and the continuation of agricultural uses until urban development is imminent; if development of agricultural lands is necessary, growth may be directed to those lands on which the continued viability of agricultural production has been compromised by surrounding urban development on the loss of local markets.

LU13: Local jurisdictions may encourage patterns of urban development and land use, which reduce costs on infrastructure and make better use of existing facilities. Strategies that local jurisdictions may pursue include:

- Increasing the accessibility to natural areas lands for outdoor recreation.
- Promoting infill development and redevelopment to revitalize existing communities
- Utilizing "green" development techniques
- Promoting water-efficient land use and development.

LU14: Project sponsors and local jurisdictions may promote infill development and redevelopment to encourage the efficient use of land and minimize the development of agricultural and open space lands.

LU15: Local jurisdictions may consider the following land use principles that use resources efficiently, and to the extent practical and feasible minimize pollution and reduce waste generation:

- Mixed-use residential and commercial development that is connected with public transportation and utilizes existing infrastructure.
- Land use and planning strategies to increase biking and walking trips.

LU16:* 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.

LU17: For projects in agricultural areas, project sponsors may 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 may be evaluated in project-specific environmental documents. The analysis may use the land evaluation and site assessment (LESA) analysis method (CEQA Guidelines §21095), as appropriate. The project sponsors or local jurisdictions may be responsible for ensuring adherence to the mitigation measures prior to construction. Mitigation measures may include conservation easements or the payment of in-lieu fees.

LU18:* For those projects that require federal funding, the federal agency evaluates the effects of the action to agricultural resources using the criteria set forth in the Farmland Protection Policy Act (FPPA). The FPPA is administered by the NRCS, which determines impacts to farmland that could occur due to the proposed project. The determination is made through coordination between the federal agency proposing or supporting the project and NRCS. The assessment of potential impacts to farmland from corridor type projects, which is typical of transportation projects analyzed in this PEIR, may require completion of Form NRCS-CPA-106, Farmland Conservation Impact Rating for Corridor Type Projects. NRCS may make a determination, using set thresholds, as to whether additional project specific mitigation would be required.

LU19: Prior to final approval of each project, the project sponsor may encourage enrollments of agricultural lands for counties that have Williamson Act programs, where applicable.

LU20: Project sponsors and local jurisdictions may submit for IGR review projects with potentially significant impacts to important farmlands.

LU21: Local jurisdictions may consider policies to preserve forested areas, agricultural lands, wildlife habitat and corridors, wetlands, watersheds, groundwater recharge areas and other open space that provide carbon sequestration benefits.

LU22: Local jurisdictions may require best management practices in agriculture and animal operations to reduce emissions, conserve energy and water, and utilize alternative energy sources, including biogas, wind and solar.

LU23: Local jurisdictions may encourage patterns of urban development and land use, which reduce costs on infrastructure and make better use of existing facilities.

LU24:* Local jurisdictions may adopt and implement General Plan Housing Elements that accommodate the housing need identified through the RHNA process. Affordable housing may be provided consistent with the RHNA income category distribution adopted for each jurisdiction.

LU25: Local jurisdictions may consider shared regional priorities, as outlined in the Compass Blueprint, 2012-2035 RTP/SCS and other ongoing regional planning efforts, in determining their own development goals and drafting local plans.

LU26: Local jurisdictions and subregional organizations may encourage the cleanup and redevelopment of brownfield sites.

LU27: Local jurisdictions or agencies may consider adopting and implement a development pattern that utilizes existing infrastructure; reduces the need for new roads, utilities and other public works in new growth areas; and enhances non-automobile transportation.

LU28: Local jurisdictions or agencies may consider ordinances or programs to limit suburban sprawl; with measures that streamline entitlement processes for projects that are not considered sprawl.

LU29:* Urban development may occur only where urban public facilities and services exist or can be reasonably made available.

LU30:* The improvement and expansion of one urban public facility or service may not stimulate development that significantly precedes the local jurisdiction's ability to provide all other necessary urban public facilities and services at adequate levels.

LU31: Local jurisdictions may redirect new growth into existing city/urban reserve areas.

LU32: Local jurisdictions may maintain a one dwelling unit per 10-acre minimum lot size or lower density in areas outside designated urban service lines.

LU33: Local jurisdictions may consider encouraging high-density, mixed-use, infill development and creative reuse of brownfield, under-utilized and/or defunct properties within the urban core.

LU34:* Local jurisdictions may consider increasing densities in urban core areas to support public transit.

LU35: Local jurisdictions may remove barriers to the development of accessory dwelling units in existing residential neighborhoods as appropriate

LU36: Local jurisdictions may reduce required road width standards wherever feasible to calm traffic and encourage alternative modes of transportation.

LU37: Local jurisdictions may reduce parking space requirements, unbundle parking from rents and charge for parking in new developments.

LU38: Local jurisdictions may add bicycle facilities to streets and public spaces.

LU39: Local jurisdictions may plan for and create incentives for mixed-use development.

LU40: Local jurisdictions may identify sites suitable for mixed-use development and establish appropriate site-specific standards to accommodate the mixed uses. Site-specific standards could include:

- Increasing allowable building height or allowing height limit bonuses;
- Allowing flexibility in applying development standards (such as FAR2 and lot coverage) based on the location, type, and size of the units, and the design of the development;
- Allowing the residential component to be additive rather than within the established FAR for that zone, and eliminating maximum density requirements for residential uses in mixed use zones;
- Allowing reduced and shared parking based on the use mix, and establishing parking maximums where sites are located within 0.25 miles of a public transit stop;
- Allowing for tandem parking, shared parking and off-site parking leases;

- Requiring all property owners in mixed-use areas to unbundle parking from commercial and residential leases;
- Creating parking benefit districts, which invest meter revenues in pedestrian infrastructure and other public amenities;
- Establishing performance pricing of street parking, so that it is expensive enough to promote frequent turnover and keep 15 percent of spaces empty at all times.

LU41: Local jurisdictions may enable prototype mixed-use structures for use in neighborhood center zones that can be adapted to new uses over time with minimal internal remodeling.

LU42: Local jurisdictions may identify and facilitate the inclusion of complementary land uses not already present in local zoning districts, such as supermarkets, parks and recreational fields, schools in neighborhoods, and residential uses in business districts, to reduce the vehicle miles traveled and promote bicycling and walking to these uses.

LU43:* Local jurisdictions may work with employers developing larger projects to ensure local housing opportunities for their employees, and engage employers to find ways to provide housing assistance as part of their employee benefits packages; major projects in mixed-use areas may include work-force housing where feasible.

LU44: Local jurisdictions may revise zoning ordinance(s) to allow local-serving businesses, such as childcare centers, restaurants, banks, family medical offices, drug stores, and other similar services near employment centers to minimize midday vehicle use.

LU45: Local jurisdictions may develop form-based community design standards to be applied to development projects and land use plans, using a comprehensive community outreach, for areas designated mixed-use.

LU46: Local jurisdictions may mix affordable housing units with market rate units as opposed to building segregated affordable housing developments.

LU47: Where practical and feasible, local jurisdictions may develop programs that enable the reuse of underutilized commercial, office and/or industrial properties for housing or mixed-use housing.

LU48: Local jurisdictions may consider consistency with "smart growth" principles – mixed-use, infill, and higher density projects that provide alternatives to individual vehicle travel and promote the efficient delivery of services and goods.

LU49: Local jurisdictions may meet recognized "smart growth" benchmarks.

LU50: Project sponsors may incorporate public transit into the project's design.

LU51: Project sponsors may include pedestrian and bicycle facilities within projects and ensure that existing non-motorized routes are maintained and enhanced.

LU52: Local jurisdictions may encourage residential development in High Quality Transit Areas (HQTAs). Such development may include a generally walkable transit village that has a minimum density of 20 dwelling units per acre and is within a ½ mile of a well-serviced transit stop, and includes transit corridors with minimum 15-minute or less service frequency during peak commute hours.

LU53: Local jurisdictions may promote greater linkage between land uses and transit, as well as other modes of transportation.

LU54: Local jurisdictions may ensure new development is designed to make public transit a viable choice for residents, including:

- Locating medium-high density development near activity centers that can be served efficiently by public transit and alternative transportation modes;
- Locating medium-high density development near streets served by public transit whenever feasible;
- Linking neighborhoods to bus stops by continuous sidewalks or pedestrian paths.

LU55: Local jurisdictions may establish city-centered corridors, directing development to existing transportation corridors.

LU56: Local jurisdictions may develop form-based community design standards to be applied to development projects and land use plans, using a comprehensive community outreach program, for areas designated mixed-use

LU57: Local jurisdictions may locate affordable housing in transit-oriented development whenever feasible

LU58: Local jurisdictions may consider jobs/housing balance, to the extent practical and feasible, and encourage the development of communities where people live closer to work, bike, walk, and take transit as a substitute for personal auto travel.

LU59: Project sponsors may consider community cohesion in designing projects through communities. Transit facilities may be designed to integrate with the community and encourage walking and bicycling as well as park and ride. New or widened roadways (and freeways) may be designed to minimize impacts to the extent feasible through landscaping, pedestrian furniture as appropriate. New roadways or freeways may consider feasible innovative designs such as cap parks that maintain community cohesion.

LU60: Local jurisdictions may promote development and preservation of neighborhood characteristics that encourage walking and bicycle riding in lieu of automobile-based travel.

LU61: Local jurisdictions may create and preserve distinct, identifiable neighborhoods whose characteristics support pedestrian travel, especially within, but not limited to, mixed-use and transit-oriented development areas, including:

- Designing or maintaining neighborhoods where the neighborhood center can be reached in approximately five minutes of walking;
- Increasing housing densities from the perimeter to the center of the neighborhood;
- Directing retail, commercial, and office space to the center of the neighborhood;
- Encouraging pedestrian-only streets and/or plazas within developments, and destinations that may be reached conveniently by public transportation, walking, or bicycling;
- Allowing flexible parking strategies in neighborhood activity centers to foster a pedestrian-oriented streetscape;
- Providing continuous sidewalks with shade trees and landscape strips to separate pedestrians from traffic;
- Encouraging neighborhood parks and recreational centers near concentrations of residential areas (preferably within one quarter mile) and include pedestrian walkways and bicycle paths that encourage non-motorized travel.

LU62: Local jurisdictions may ensure pedestrian access to activities and services, especially within, but not limited to, mixed-use and transit-oriented development areas, including:

- Ensuring new development that provides pedestrian connections in as many locations as possible to adjacent development, arterial streets, thoroughfares;
- Ensuring a balanced mix of housing, workplaces, shopping, recreational opportunities, and institutional uses, including mixed-use structures;
- Locating schools in neighborhoods, within safe and easy walking distances of residences served;
- For new development, primary entrances may be pedestrian entrances, with automobile entrances and parking located to the rear;
- Support development where automobile access to buildings does not impede pedestrian access, by consolidating driveways between buildings or developing alley access;
- Street parking provided may be utilized as a buffer between sidewalk pedestrian traffic and the automobile portion of the roadway;
- Establish pedestrian and bicycle connectivity standards for new development, with block sizes between 1 and 2 acres;
- For existing areas that do not meet established connectivity standards, prioritize the physical development of pedestrian connectors;
- Prioritizing grade-separated bicycle / pedestrian crossings where appropriate to enhance connectivity or overcome barriers such as freeways, railways and waterways.

LU63: Local jurisdictions may review fee structures and other opportunities to provide financial and administrative incentives to support desired land uses, development patterns, and alternative modes of transportation.

LU64: Local jurisdictions may promote desired land uses by considering criteria for scaled developer fees. Examples include:

- Increasing or reducing fees proportionally with distance from the city center or preferred transit sites;
- Increasing or reducing fees based on the degree to which mixed uses are incorporated into the project;
- Reducing fees for creative re-use of brownfield sites;
- Increasing fees for the use of greenfield sites.

LU65: Local jurisdictions may consider providing fast-track permitting and reductions in processing fees for desired projects. Local jurisdictions may research and implement a program of incentives for development projects that are fully consistent with the 2012-2035 RTP/SCS.

LU66: Local jurisdictions may consider providing incentive funding and/or infrastructure loans to support desired projects.

LU67: Local jurisdictions may give preference for infrastructure improvements that support or enhance desired land uses and projects.

LU68: Local jurisdictions may reduce heat gain from pavement and other hardscaping, including:

- Reduce street rights-of-way and pavement widths to pre-World War II widths (typically 22 to 34 feet for local streets, and 30 to 35 feet for collector streets, curb to curb), unless landscape medians or parkway strips are allowed in the center of roadways;
- Reinstate the use of parkway strips to allow shading of streets by trees;
- Include shade trees on south- and west-facing sides of structures;
- Include low-water landscaping in place of hardscaping around transportation infrastructure and in parking areas;
- Install cool roofs, green roofs, and use cool paving for pathways, parking, and other roadway surfaces;
- Establish standards that provide for pervious pavement options;
- Remove obstacles to xeriscaping, edible landscaping and low-water landscaping.

NOISE

NO1:* To reduce noise impacts due to construction, project sponsors may require construction contractors to implement a site-specific noise reduction program, subject to the Lead Agency (or other appropriate government agency) review and approval, which includes the following measures:

- Equipment and trucks used for project construction may utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds, wherever feasible).
- Except as may be exempted by the Lead Agency (or other appropriate government agency), impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction may be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust may be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves may be used, if such jackets are commercially available and this could achieve a reduction of 5 dBA. Quieter procedures may be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures.
- Stationary noise sources may be located as far from adjacent sensitive receptors as possible and they may be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the Lead Agency (or other appropriate government agency) to provide equivalent noise reduction.

NO2: Prior to the issuance of a building permit, along with the submission of construction documents, each project sponsor may submit to the Lead Agency (or other government agency as appropriate) a list of measures to respond to and track complaints pertaining to construction noise. These measures may include:

- A procedure and phone numbers for notifying the Lead Agency staff and local Police Department; (during regular construction hours and off-hours);
- A sign posted on-site pertaining with permitted construction days and hours and complaint procedures and who to notify in the event of a problem. The sign may also include a listing of both the Lead Agency and construction contractor's telephone numbers (during regular construction hours and off-hours);
- The designation of an on-site construction complaint and enforcement manager for the project;
- Notification of neighbors and occupants within 300 feet of the project construction area at least 30 days in advance of extreme noise generating activities about the estimated duration of the activity; and
- A preconstruction meeting may be held with the job inspectors and the general contractor/on-site project manager to confirm that noise measures and practices (including construction hours, neighborhood notification, posted signs, etc.) are completed.

NO3: Project sponsor may implement use of portable barriers in the vicinity of sensitive receptors during construction including construction of subsurface barriers, debris basins, and storm water drainage facilities.

NO4:* For projects that require pile driving or other construction noise above 90 dBA in proximity to sensitive receptors, to further reduce potential pier drilling, pile driving and/or other extreme noise generating construction impacts greater than 90dBA, a set of site-specific noise attenuation measures may be completed under the supervision of a qualified acoustical consultant. Prior to commencing construction, a plan for such measures may be submitted for review and approval by the Lead Agency (or other appropriate government agency) to ensure that maximum feasible noise attenuation is achieved. This plan may be based on the final design of the project. A third-party peer review, paid for by the project sponsor, may be required to assist the Lead Agency in evaluating the feasibility and effectiveness of the noise reduction plan submitted by the project sponsor. The criterion for approving the plan may be a determination that maximum feasible noise attenuation is achieved. The noise reduction plan may include, but not be limited to, an evaluation of implementing the following measures. These attenuation measures may include as many of the following control strategies as applicable to the site and construction activity:

- Erect temporary plywood noise barriers around the construction site, particularly along on sites adjacent to residential buildings;
- Implement "quiet" pile driving technology (such as pre-drilling of piles, the use of more than one pile driver to shorten the total pile driving duration), where feasible, in consideration of geotechnical and structural requirements and conditions;
- Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site;
- Evaluate the feasibility of noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings by the use of sound blankets for example and implement such measure if such measures are feasible and would noticeably reduce noise impacts**;** and
- Monitor the effectiveness of noise attenuation measures by taking noise measurements.

NO5: Noise generated from any rock-crushing or screening operations performed within 3,000 feet of any occupied residence may be mitigated by the project sponsor by strategic placement of material stockpiles between the operation and the affected dwelling or by other means approved by the local jurisdiction.

NO6: Where feasible, pile holes may be pre-drilled to reduce potential noise and vibration impacts.

NO7: As necessary, each project sponsor may retain a structural engineer or other appropriate professional to determine threshold levels of vibration and cracking that could damage any adjacent historic or other structure subject to damage, and design means and construction methods to not exceed the thresholds.

NO8:* Project sponsors may comply with all local sound control and noise level rules, regulations, and ordinances.

NO9:* As part of the appropriate environmental review of each project, a project specific noise evaluation may be conducted and appropriate mitigation identified and implemented.

NO10: Project sponsors may 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.

NO11: As a last resort, project sponsors may eliminate noise-sensitive receptors by acquiring freeway and rail rights-of-way. This would ensure the effective operation of all transportation modes.

NO12: Project sponsors may, 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.

NO13: Project sponsors may 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.

NO14: Project sponsors may, to the extent feasible and practicable, improve the acoustical insulation of dwelling units where setbacks and sound barriers do not sufficiently reduce noise.

NO15: The project sponsors may 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.

NO16: As applicable and feasible, project sponsors may reduce noise impacts, by maximizing distance between sensitive receptors and new transportation projects. *Above measure is clarified and simplified.*

NO17: Transit-related passenger stations, central maintenance facilities, decentralized maintenance facilities, and electric substations may be located away from sensitive receptors to the maximum extent feasible.

NO18:* Local jurisdictions or agencies may, as practical and feasible, adhere to published local, state and federal guidelines concerning groundborne vibration impacts.

POPULATION, HOUSING, AND EMPLOYMENT

POP1:* For projects with the potential to displace homes and/or businesses, project sponsors may 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 in order to minimize impacts to the extent feasible. This may include use of existing rights-of-way.

POP2: Project sponsors may develop a construction schedule that minimizes potential neighborhood deterioration from protracted waiting periods between right-of-way acquisition and construction.

POP3:* Project sponsors may mitigate impacts to affordable housing as feasible through construction of affordable units (deed restricted to remain affordable for an appropriate period of time) or payment of any fee established to address loss of affordable housing.

PUBLIC SERVICES AND UTILITIES

PS1:* Project implementation agencies may ensure that prior to construction all necessary local and state road and railroad encroachment permits are obtained. The project implementation agency may 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 may include the following:

- 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.
- 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.
- Scheduling of truck trips outside of peak morning and evening commute hours.
- Limiting of lane closures during peak hours to the extent possible.
- Usage of haul routes minimizing truck traffic on local roadways to the extent possible.
- Inclusion of detours for bicycles and pedestrians in all areas potentially affected by project construction.
- Installation of traffic control devices as specified in the California Department of Transportation Manual of Traffic Controls for Construction and Maintenance Work Zones.
- 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 may be asked to identify detours for emergency vehicles, which may 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.
- Storage of construction materials only in designated areas.
- Coordination with local transit agencies for temporary relocation of routes or bus stops in work zones, as necessary.

PS2:* Project sponsors may identify projects in the 2012-2035 RTP/SCS that require police protection, fire service, and emergency medical service and may coordinate with local fire and police departments to ensure that the existing public services 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 may be identified in each project's CEQA documentation.

PS3: Project sponsors may ensure that during project construction, all construction vehicles and equipment may be fitted with spark arrestors to minimize accidental ignition of dry construction debris and surrounding dry vegetation.

PS4:* Project sponsors may encourage the use of fire-resistant vegetation native to Southern California and/or to the local microclimate (e.g., vegetation that has high moisture content, low growth habits, ignition-resistant foliage, or evergreen growth), eliminate brush and chaparral, and discourage the use of fire-promoting species especially non-native, invasive species (e.g., pampas grass, fennel, mustard, or the giant reed) in the immediate vicinity of development in areas with high fire threat.

PS5: Project sponsors may encourage natural re-vegetation or seeding with local, native species after a fire and discourage re-seeding of non-native, invasive species to promote healthy, natural ecosystem re-growth. Native vegetation is more likely to have deep root systems that prevent slope failure and erosion of burned areas than shallow-rooted non-natives.

PS6: Project sponsors may submit a fire safety plan (including phasing) to the Lead Agency and local fire agency for their review and approval. The fire safety plan may include all of the fire safety features incorporated into the project and the schedule for implementation of the features. The local fire protection agency may require changes to the plan or may reject the plan if it does not adequately address fire hazards associated with the project as a whole or the individual phase.

PS7: Local jurisdictions may discourage development on potentially hazardous developments in hillsides, canyons, areas with steep slopes or that are susceptible to flooding, earthquakes, wildfire and other known hazards, and areas with limited access for emergency equipment.

PS8:* Local jurisdictions may promote Fire-wise Land Management: by encouraging the use of fire-resistant vegetation and the elimination of brush and chaparral in the immediate vicinity of development in areas with high fire threat.

PS9: Local jurisdictions may promote Fire Management Planning that help reduce fire threats in the region as part of the Compass Blueprint process and other ongoing regional planning efforts.

PS10:* Local jurisdictions may encourage the use of fire-resistant materials when constructing projects in areas with high fire threat. Local jurisdictions may discourage development in high fire hazard areas and recommend using project design to reduce risk including building with a compact defensible footprint and minimizing perimeter length.

PS11: The growth inducing potential of individual RTP projects may be carefully evaluated so that the full implications of the projects are understood. Individual environmental documents may quantify indirect impacts (growth that could be facilitated or induced) on public services and utilities to the extent feasible. Lead and responsible agencies may then make any necessary adjustments to the applicable General Plan. Any such identified adjustment may be communicated to SCAG.

PS12:* Project sponsors may undertake project-specific review of the impacts to educational facilities as part of project specific environmental review. For any identified impacts, project sponsors may ensure that the appropriate school district fees are paid in accordance with State law. The project sponsors or local jurisdiction may be responsible for ensuring adherence to required mitigation. SCAG may be provided with documentation of compliance with any necessary mitigation measures.

PS13:* Project sponsors may ensure that projects are consistent with federal, state, and local plans that preserve open space.

PS14:* Project sponsors may 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.

PS15: Project sponsors may identify open space areas that could be preserved and may include mitigation measures (such as dedication or payment of in-lieu fees) for the loss of open space.

PS16:* Prior to final approval of each project, the project sponsor may conduct the appropriate project-specific environmental review, including consideration of loss of open space. Potential significant impacts to open space may be mitigated, as feasible. The project sponsors or local jurisdiction may be responsible for ensuring adherence to the mitigation measures prior to construction.

PS17: Local jurisdictions may prepare a Needs Assessment to determine the level of adequate community open space level for their areas.

PS18: Local jurisdictions may participate in regional efforts to identify regionally significant open space resources within their jurisdictions as feasible and appropriate.

PS19: Where practical and feasible, project sponsors and local jurisdictions may consider increasing the accessibility to natural areas and lands for outdoor recreation. Such measures may be coordinated with local and regional open space planning or management agencies.

PS20: Local jurisdictions may encourage multiple use spaces and encourage redevelopment in areas where it will provide more opportunities for recreational uses and access to natural areas close to the urban core.

PS21: Project level mitigation for significant cumulative and growth-inducing impacts on open space resources may include the conservation of natural lands, community open space and important farmland through existing projects in the region.

PS22: Local governments may consider the most recent annual report on open space conservation in planning and evaluating projects and programs in areas with regionally significant open space resources.

PS23: Local governments may encourage patterns of urban development and land use, which reduce costs on infrastructure and make better use of existing facilities. Strategies local governments may pursue include:

- Increasing the accessibility to natural areas lands for outdoor recreation.
- Promoting infill development and redevelopment to revitalize existing communities
- Utilizing "green" development techniques
- Promoting water-efficient land use and development.

PS24: Project sponsors and local governments may encourage multiple use spaces and encourage redevelopment in areas where it will provide more opportunities for recreational uses and access to natural areas close to the urban core.

PS25: Future impacts to open space and recreation lands may be avoided through cooperation, information sharing, and program development as part of SCAG's ongoing regional planning efforts.

PS26:* Project sponsors for projects identified in the 2012-2035 RTP/SCS may comply with applicable regulations related to solid waste disposal.

PS27:* Projects sponsors may work with the respective local jurisdiction's Recycling Coordinator to ensure that source reduction techniques and recycling measures are incorporated into project construction.

PS28: Local jurisdictions may estimate the amount of solid waste generated during construction prior to construction, and appropriate disposal sites may be identified and utilized.

PS29: Project sponsors may integrate green building measures into project design such as those identified in the U.S. Green Building Council's Leadership in Energy and Environmental Design, energy Star Homes, Green Point Rated Homes, and the California Green Builder Program. These measures could include the following:

- Reuse and minimization of construction and demolition (C&D) debris and diversion of C&D waste from landfills to recycling facilities.
- The inclusion of a waste management plan that promotes maximum C&D diversion.
- Source reduction through (1) use of materials that are more durable and easier to repair and maintain, (2) design to generate less scrap material through dimensional planning, (3) increased recycled content, (4) use of reclaimed materials, and (5) use of structural materials in a dual role as finish material (e.g. stained concrete flooring, unfinished ceilings, etc.).
- Reuse of existing structure and shell in renovation projects.
- Design for deconstruction without compromising safety.
- Design for flexibility through the use of moveable walls, raised floors, modular furniture, moveable task lighting and other reusable building components.
- Development of indoor recycling program and space.

PS30:* Local jurisdictions and waste management agencies may discourage the siting of new landfills unless all other waste reduction and prevention actions have been fully explored. If landfill siting or expansion is necessary, landfills may be sited with an adequate landfill-owned, undeveloped land buffer to minimize the potential adverse impacts of the landfill in neighboring communities.

PS31: Project sponsors may discourage exporting of locally generated waste outside of the SCAG region during the construction and implementation of a project. Disposal within the county where the waste originates may be encouraged as much as possible. Green technologies for long-distance transport of waste (e.g., clean engines and clean locomotives or electric rail for waste-by-rail disposal systems) and consistency with SCAQMD and 2012-2035 RTP/SCS policies may be required.

PS32: Project sponsors may encourage waste reduction goals and practices and look for opportunities for voluntary actions to exceed the 50 percent waste diversion target.

PS33: Project sponsors and local jurisdictions may encourage the development of local markets for waste prevention, reduction, and recycling practices by supporting recycled content and green procurement policies, as well as other waste prevention, reduction and recycling practices.

PS34: Local jurisdictions may develop ordinances that promote waste prevention and recycling activities such as: requiring waste prevention and recycling efforts at all large events and venues; implementing recycled content procurement programs; and developing opportunities to divert food waste away from landfills and toward food banks and composting facilities.

PS35:* Local jurisdictions and waste management agencies may develop alternative waste management strategies such as composting, recycling, and conversion technologies.

PS36:* Project sponsors, local jurisdictions and waste management agencies, where practical and feasible, may develop and site composting, recycling, and conversion technology facilities that have minimum environmental and health impacts.

PS37: Local jurisdictions may require the reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard).

PS38: Project sponsors may integrate reuse and recycling into residential industrial, institutional and commercial projects.

PS39: Local jurisdictions may provide easy and convenient recycling opportunities for residents, the public, and tenant businesses.

PS40: Local jurisdictions may provide education and publicity about reducing waste and available recycling services.

PS41:* The California Integrated Waste Management Board may continue to enforce solid waste diversion mandates that are enacted by the Legislature.

PS42: Local jurisdictions may continue to adopt programs to comply with state solid waste diversion rate mandates and, where possible, may encourage further recycling to exceed these rates.

PS43: Local jurisdictions may implement or expand city or county-wide recycling and composting programs for residents and businesses. This could include extending the types of recycling services offered (e.g., to include food and green waste recycling) and providing public education and publicity about recycling services.

PS44: Local jurisdictions, waste management agencies and SCAG may coordinate regional approaches and strategic siting of waste management facilities.

PS45: Local jurisdictions and waste management agencies may encourage and, where practical and feasible, facilitate the creation of synergistic linkages between community businesses and the development of eco-industrial parks and materials exchange centers where one entity's waste stream becomes another entity's raw material.

PS46: Local jurisdictions and waste management agencies may prioritize siting of new solid waste management facilities including recycling, composting, and conversion technology facilities in conjunction with existing waste management or material recovery facilities.

PS47: Local jurisdictions and waste management agencies may increase programs to educate the public and increase awareness of reuse, recycling, composting, and green building benefits and raise consumer education issues at the county and city level, as well as at local school districts and education facilities.

PS48:* For projects identified in the 2012-2035 RTP/SCS that require solid waste collection, project sponsors may 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 may be identified in each project's CEQA documentation.

PS49:* The growth inducing potential of individual projects may be carefully evaluated so that the full implications of the projects are understood. Individual environmental documents may quantify indirect impacts (growth that could be facilitated or induced) on public services and utilities to the extent feasible. Lead and responsible agencies then may make any necessary adjustments to the applicable General Plan. Any such identified adjustment may be communicated to SCAG.

PS50:* Prior to construction, the project implementation agency may identify the locations of existing utility lines. The contractor may avoid all known utility lines during construction.

PS51: In reviewing projects Lead Agencies and project sponsors may consider energy implications of construction processes. In general the most energy efficient construction process and long-term operational design may be selected unless there is an overriding reason why not.

PS52:* Local jurisdictions may include energy analyses in environmental documentation and general plans with the goal of conserving energy through the wise and efficient use of energy. For any identified energy impacts, appropriate mitigation measures may be developed and monitored. SCAG recommends the use of Appendix F, Energy Conservation, of the *CEQA Guidelines.*

PS53: Project sponsors may consider the most cost-effective alternative and renewable energy generation facilities.

PS54:* Project sponsors may require that projects use efficient lighting. (Fluorescent lighting uses approximately 75% less energy than incandescent lighting to deliver the same amount of light.)

PS55: Project sponsors may require measures that reduce the amount of water sent to the sewer system. (Reduction in water volume sent to the sewer system means less water has to be treated and pumped to the end user, thereby saving energy.)

PS56: Project sponsors may pursue incentives to encourage the use of energy efficient equipment and vehicles.

PS57: State and federal lawmakers and regulatory agencies may pursue the design of programs to either require or incentivize the expanded availability including the expansion of alternative fuel filling stations and use of alternative-fuel vehicles to reduce the impact of shifts in petroleum fuel supply and price.

PS58: Local jurisdictions may consider various best practices and technological improvements that can reduce the consumption of fossil fuels, such as:

- Expanding light-duty vehicle retirement programs
- Increasing commercial vehicle fleet modernization
- Implementing driver training module on fuel consumption
- Replacing gasoline powered mowers with electric mowers
- Reducing idling from construction equipment
- Incentivizing alternative fuel vehicles and equipment
- Developing infrastructure for alternative fueled vehicles
- Increasing use and mileage of High Occupancy Vehicle (HOV), High Occupancy Toll (HOT) and dedicated Bus Rapid Transit (BRT) lanes
- Implementing truck idling rule, devices, and truck-stop electrification
- Requiring electric truck refrigerator units
- Reducing locomotives fuel use
- Modernizing older off-road engines and equipment
- Limit use and develop fleet rules for construction equipment
- Requiring zero, and/or near zero-emission forklifts

PS59: Local jurisdictions or agencies with purview over utilities may, as practical and feasible, streamline permitting and provide public information to facilitate accelerated construction of geothermal, solar and wind power generation facilities and transmission line improvements.

PS60:* Utilities may increase capacity of existing transmission lines to meet forecast demand that supports sustainable growth, where feasible and appropriate in coordination with local planning agencies.

PS61: Project sponsors may support programs to reduce single occupancy vehicle trips such as telecommuting, ridesharing, alternative work schedules, and parking cash-outs.

PS62:* Project sponsors may submit projected electricity and natural gas demand calculations to the local electricity or natural gas provider, for any project anticipated to require substantial utility consumption. Any infrastructure improvements necessary for project construction may be completed according to the specifications of the energy provider.

PS63: Project sponsors may encourage, to the extent practical and feasible, ensure that new buildings incorporate solar panels in roofing and tap other renewable energy sources to offset new demand on conventional power sources. For example, transit providers may, as feasible, assure that designers of new transit stations incorporate solar panels in roofing.

PS64:* Project sponsors may encourage energy efficient design for buildings, potentially including strengthening local building codes for new construction and renovation to achieve a higher level of energy efficiency. This may include strengthening local building codes for new construction and renovation to require a higher level of energy efficiency.

PS65: Local jurisdictions may seek funding through utility-sponsored programs to conduct energy efficiency "tune-ups" of existing buildings, as practical and feasible, by checking, repairing, and readjusting heating, ventilation, air conditioning, lighting, hot water equipment, insulation and weatherization.

PS66:* Project sponsors may provide individualized energy management services for large energy users.

PS67: Local jurisdictions and project sponsors may encourage the use of energy efficient appliances and office equipment.

PS68: Project sponsors may pursue incentives and technical assistance for lighting efficiency.

PS69: Local jurisdictions may provide public education and publicity about energy efficiency programs and incentives in cooperation with local utility providers.

PS70:* If a carbon trading system is established, a lead agency may consider whether carbon offsets would be an appropriate means of project mitigation. The project sponsor could, for example, fund off-site projects (e.g., alternative energy projects) that will reduce carbon emissions, or could purchase "credits" from another entity that will fund such projects. The lead agency may ensure that any mitigation taking the form of carbon offsets is specifically identified and that such mitigation will in fact occur

PS71: Local jurisdictions may encourage the integration of green building measures into project design and zoning such as those identified in the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED), Energy Star Homes, Green Point Rated Homes, and the California Green Builder Program. Energy saving measures for new and remodeled buildings include:

- Using energy efficient materials in building design, construction, rehabilitation, and retrofit
- Encouraging new development to exceed Title 24 energy efficiency requirements
- Developing Cool Communities measures including tree planting and light-colored roofs. These measures focus on reducing ambient heat, which reduces energy consumption related to air conditioning and other cooling equipment.
- Utilizing efficient commercial/residential space and water heaters: This could include the advertisement of existing and/or development of additional incentives for energy efficient appliance purchases to reduce excess energy use and save money. Federal tax incentives are provided online at http://www.energystar.gov/index.cfm?c=Productspr_tax_credits
- Encouraging landscaping that requires no additional irrigation: utilizing native, drought tolerant plants can reduce water usage up to 60 percent compared to traditional lawns.
- Encouraging combined heating and cooling (CHP), also known as cogeneration, in all buildings.
- Encouraging neighborhood energy systems, which allow communities to generate their own electricity
- Orienting streets and buildings for best solar access
- Encouraging buildings to obtain at least 20% of their electric load from renewable energy

PS72: Project sponsors may install energy efficient lighting (e.g., light emitting diodes (LEDs)), heating and cooling systems, appliances, equipment, and control systems.

PS73: Project sponsors may use passive solar design, e.g., orient buildings and incorporate landscaping to maximize passive solar heating during cool seasons, minimize solar heat gain during hot seasons, and enhance natural ventilation.

PS74: Project sponsors may design buildings to take advantage of sunlight.

PS75: Project sponsors may install light colored "cool" roofs and cool pavements.

PS76: Install efficient lighting (including LEDs) for traffic, street and other outdoor lighting.

PS77: Project sponsors may reduce unnecessary outdoor lighting.

PS78: Project sponsors may use automatic covers, efficient pumps and motors, and solar heating for pools and spas.

PS79: Project sponsors may provide education on energy efficiency to residents, customers and/or tenants.

PS80: Project sponsors may use paving materials with a Solar Reflective Index (SRI) of at least 29, or open grid paving systems.

PS81: Project sponsors may use roofing material with SRI of at least 29 on covered parking (underground, beneath decking or roofs, or beneath a building).

PS81:* Local jurisdictions may adopt a Heat Island Mitigation Plan that requires cool roofs, cool pavements, and strategically placed shade trees, and actively inspect and enforce state requirements for cool roofs on non-residential re-roofing projects.

PS82: Local jurisdictions may pursue policies and programs to improve energy efficiency of existing buildings.

PS83: Local jurisdictions may require the performance of energy audits for residential and commercial buildings prior to completion of sale, and that audit results and information about opportunities for energy efficiency improvements be presented to the buyer.

PS84:* Local jurisdictions may create an outreach and incentive program to promote energy efficiency and conservation in the community, including:

- Launching an "energy efficiency challenge" campaign for community residents;
- Implementing a low-income weatherization assistance program;
- Implementing conservation campaigns specifically targeted to residents, and separately to businesses;
- Promoting the purchase of Energy Star® appliances, including, where feasible, incentive grants and vouchers;
- Promoting participation in the local "Green Business" program;
- Distributing free CFL bulbs or other efficiency fixtures to community members;
- Offering exchange programs for high-energy-use items, such as halogen torchiere lamps;
- Adopting an ordinance requiring energy upgrades at time of property sale.

PS85: Project sponsors may install solar, wind, and geothermal power systems and solar hot water heaters.

PS86: Project sponsors may install solar panels on unused roof and ground space and over carports and parking areas.

PS87: Project sponsors may include energy storage where appropriate to optimize renewable energy generation systems and avoid peak energy use.

PS88: Project sponsors may use combined heat and power (CHP) in appropriate applications.

PS89:* Local jurisdictions may identify possible sites for production of renewable energy (such as solar, wind, small hydro, and biogas), as compatible with surrounding uses, and protect and promote that use, including:

- Designating suitable sites to prioritize their development for renewable energy generation;
- Evaluating potential land use, environmental, economic, and other constraints on that use, and mitigate such constraints, as feasible;
- Adopting measures to protect the renewable energy use of the sites and their resources, such as utility easements, rights-of-way, and land set-a-sides.

PS90: Local jurisdictions may allow renewable energy projects in areas zoned for open space, where consistent with the Open Space element, and other uses and values.

PS91: Local jurisdictions may promote and require renewable energy generation, and co-generation projects where feasible and appropriate.

PS92: Local jurisdictions may require that new office/retail/commercial or industrial development, or major rehabilitation (e.g., additions of 25,000 square feet commercial, or 100,000 square feet industrial) incorporate renewable energy generation either on- or off-site to provide 15 percent or more of the project's energy needs.

PS92: Local jurisdictions may promote and encourage cogeneration projects for commercial and industrial facilities, provided they meet all applicable air quality standards and provide a net reduction in GHG emissions associated with energy production.

PS93: Local jurisdictions may require that, where feasible, all new buildings be constructed to allow for easy, cost-effective installation of solar energy systems in the future, using such "solar-ready" features as:

- Designing the building to include optimal roof orientation (between 20 to 55 degrees from the horizontal), with sufficient south-sloped roof surface;
- Clear access without obstructions (chimneys, heating and plumbing vents, etc.) on the south sloped roof;
- Designing the roof framing to support the addition of solar panels;
- Installation of electrical conduit to accept solar electric system wiring;
- Installation of plumbing to support a solar hot water system and provision of space for a solar hot water storage tank.

PS94: Local jurisdictions may require that residential projects of 6 units or more participate in the California Energy Commission's New Solar Homes Partnership, which provides rebates to developers who offer solar power in at least 50 percent of new units, or a program with similar provisions.

PS95: Local jurisdictions may require that any building constructed in whole or in part with local jurisdiction funds incorporate passive solar design features, such as daylighting and passive solar heating, where feasible.

PS96: Local jurisdictions may protect active and passive solar design elements and systems from shading by neighboring structures and trees, as consistent with existing tree shading requirements.

PS97: Local jurisdictions may provide, where feasible, creative financing for renewable energy projects, including subsidized or other low-interest loans, and the option to pay for system installation through long-term assessments on individual property tax bills.

PS98:* Local jurisdictions may pursue partnerships with other governmental entities and with private companies and utilities to establish incentive programs for renewable energy.

PS99: Local jurisdictions may establish and maintain a clearinghouse of information on available funding alternatives for renewable energy projects, rates of return, and other information to support developers and community members interested in pursuing renewable energy projects.

PS100: Local jurisdictions may establish targets for the purchase of renewable energy, in excess of the state Renewable Portfolio Standards, using such mechanisms as green tags or renewable energy certificates.

PS101: Local jurisdictions may evaluate the feasibility and effectiveness of using Community Choice Aggregation as a model for providing renewable energy to meet the community's electricity needs, including potential partnerships with other jurisdictions.

PS102: Local jurisdictions may prepare and implement a comprehensive plan to improve energy efficiency of municipal facilities, including:

- Conduct energy audits for all municipal facilities;
- Retrofit facilities for energy efficiency where feasible and when remodeling or replacing components, including increased insulation, installing green or reflective roofs and low-emissive window glass;
- Implement an energy tracking and management system;
- Install energy-efficient exit signs, street signs, and traffic lighting;
- Install energy-efficient lighting retrofits and occupancy sensors, and institute a "lights out at night" policy;
- Retrofit heating and cooling systems to optimize efficiency (e.g., replace chillers, boilers, fans, pumps, belts, etc.);
- Install Energy Star® appliances and energy-efficient vending machines;
- Improve efficiency of water pumping and use at municipal facilities, including a schedule to replace or retrofit system components with high-efficiency units (i.e., ultra-low-flow toilets, fixtures, etc.);
- Provide chilled, filtered water at water fountains and taps in lieu of bottled water;
- Install a central irrigation control system and time its operation for off-peak use;
- Adopt an accelerated replacement schedule for energy inefficient systems and components.

PS103: Local jurisdictions may require that any newly constructed, purchased, or leased municipal space meet minimum standards as appropriate, such as:

- Requirements for new commercial buildings to meet LEED criteria established by the U.S. Green Building Council;
- Requirements for new residential buildings to meet criteria of the Energy Star® New Homes Program established by U.S. EPA;
- Incorporation of passive solar design features in new buildings, including daylighting and passive solar heating;
- Retrofitting of existing buildings to meet standards under Title 24 of the California Building Energy Code, or to achieve a higher performance standard as established by the local jurisdiction;
- Retrofitting of existing buildings to decrease heat gain from non-roof impervious surfaces with cool paving, landscaping, and other techniques.

- Training & Support: Local jurisdictions or agencies may ensure that staff receives appropriate training and support to implement objectives and policies to reduce GHG emissions, including:
- Providing energy efficiency training to design, engineering, building operations, and maintenance staff;
- Providing information on energy use and management, including data from the tracking and management system, to managers and others making decisions that influence energy use;
- Providing energy design review services to departments undertaking new construction or renovation projects, to facilitate compliance with LEED standards.

MM-PS104:* Local jurisdictions may collaborate with local energy suppliers and distributors to establish energy conservation programs, Energy Star® appliance change-out programs, rebates, vouchers, and other incentives to install energy-efficient technology and products and to cooperate on advertising.

TRANSPORTATION, TRAFFIC & SECURITY

TR-1 Project-specific workshops on Sustainability Planning and Development may be held by local agencies.

TR-2 Transit operators may incorporate ITS technologies as part of their security and emergency preparedness and share that information with other operators. Aside from deploying ITS technologies for advanced customer information, transit agencies may work intensely with ethnic, local and disenfranchised communities through public information / outreach sessions ensuring public participation is utilized to its fullest. In case of evacuation, these transit dependent persons may need additional assistance to evacuate to safety.

TR3: Local jurisdictions may institute teleconferencing, telecommute and/or flexible work hour programs to reduce unnecessary employee transportation.

TR4: Local jurisdictions may create a ride-sharing program, including promoting existing ride sharing programs e.g., by designating a certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading for ride sharing vehicles, and providing a web site or message board for coordinating rides.

TR5: Local jurisdictions may create or accommodate car sharing programs, e.g., provide parking spaces for car share vehicles at convenient locations accessible by public transportation.

TR6: Local jurisdictions may provide a vanpool for employees for commute trips.

TR7: Transportation Planning: Local jurisdictions may encourage that new developments incorporate both local and regional transit measures into the project design that promote the use of alternative modes of transportation.

TR8: As may be appropriate, project sponsors may submit fair share traffic payments to the local agency for funding capital improvement projects to accommodate future traffic demand in the area.

TR9: Local jurisdictions may coordinate controlled intersections so that traffic passes more efficiently through congested areas. Where traffic signals or streetlights are installed, may require the use of Light Emitting Diode (LED) technology.

TR10: Local jurisdictions may promote ride sharing programs e.g., by designating a certain percentage of parking spaces for high-occupancy vehicles, providing larger parking spaces to accommodate vans used for ride-sharing, and designating adequate passenger loading and unloading and waiting areas.

TR11: Local jurisdictions may encourage the use of car-sharing programs such as ZipCar. Accommodations for such programs include providing parking spaces for the car-share vehicles at convenient locations accessible by public transportation.

TR12: Project sponsors of a commercial use may submit to the Lead Agency (or other appropriate government agency) a Transportation Demand Management (TDM) plan containing strategies to reduce on-site parking demand and single occupancy vehicle travel. The sponsor may implement the approved TDM plan. The TDM may include strategies to increase bicycle, pedestrian, transit, and carpools/vanpool use. All four modes of travel may be considered. Strategies to consider include the following:

- Inclusion of additional bicycle parking, shower, and locker facilities that exceed the requirement

- Construction of bike lanes per the prevailing Bicycle Master Plan (or other similar document)
- Signage and striping onsite to encourage bike safety
- Installation of pedestrian safety elements (such as cross walk striping, curb ramps, countdown signals, bulb outs, etc.) to encourage convenient crossing at arterials
- Installation of amenities such as lighting, street trees, trash and any applicable streetscape plan.
- Direct transit sales or subsidized transit passes
- Guaranteed ride home program
- Pre-tax commuter benefits (checks)
- On-site car-sharing program (such as City Car Share, Zip Car, etc.)
- On-site carpooling program
- Distribution of information concerning alternative transportation options
- Parking spaces sold/leased separately
- Parking management strategies; including attendant/valet parking and shared parking spaces

TR13:* Project sponsors and construction contractors may meet with the appropriate Lead Agency (or other government agency) to determine traffic management strategies to reduce, to the maximum extent feasible, traffic congestion and the effects of parking demand by construction workers during construction of this project and other nearby projects that could be simultaneously under construction. The project sponsor may develop a construction management plan for review and approval by the Lead Agency (or other government agency as appropriate). The plan may include at least the following items and requirements:

- A set of comprehensive traffic control measures, including scheduling of major truck trips and deliveries to avoid peak traffic hours, detour signs if required, lane closure procedures, signs, cones for drivers, and designated construction access routes.
- Notification procedures for adjacent property owners and public safety personnel regarding when major deliveries, detours, and lane closures will occur.
- Location of construction staging areas for materials, equipment, and vehicles at an approved location.
- A process for responding to, and tracking, complaints pertaining to construction activity, including identification of an onsite complaint manager. The manager may determine the cause of the complaints and may take prompt action to correct the problem. The Lead Agency may be informed who the Manager is prior to the issuance of the first permit.
- Provision for accommodation of pedestrian flow.
- As necessary, provision for parking management and spaces for all construction workers to ensure that construction workers do not park in on street spaces.
- Any damage to the street caused by heavy equipment, or as a result of this construction, may be repaired, at the project sponsor's expense, within one week of the occurrence of the damage (or excessive wear), unless further damage/excessive wear may continue; in such case, repair may occur prior to issuance of a final inspection of the building permit. All damage that is a threat to public health or safety may be repaired immediately. The street may be restored to its condition prior to the new construction as established by the Lead Agency (or other appropriate government agency) and/or photo documentation, at the sponsor's expense, before the issuance of a Certificate of Occupancy.
- Any heavy equipment brought to the construction site may be transported by truck, where feasible.
- No materials or equipment may be stored on the traveled roadway at any time.
- Prior to construction, a portable toilet facility and a debris box may be installed on the site, and properly maintained through project completion.
- All equipment may be equipped with mufflers.
- Prior to the end of each work-day during construction, the contractor or contractors may pick up and properly dispose of all litter resulting from or related to the project, whether located on the property, within the public rights-of-way, or properties of adjacent or nearby neighbors.

TR14: Local jurisdictions may encourage the use of public transit systems by enhancing safety and cleanliness on vehicles and in and around stations, providing shuttle service to public transit, offering public transit incentives and providing public education and publicity about public transportation services.

TR15: Local jurisdictions may encourage bicycling and walking by incorporating bicycle lanes into street systems in regional transportation plans, new subdivisions, and large developments, creating bicycle lanes and walking paths directed to the location of schools and other logical points of destination and provide adequate bicycle parking, and encouraging commercial projects to include facilities on-site to encourage employees to bicycle or walk to work.

TR16: Transit agencies may encourage bicycling to transit facilities by providing additional bicycle parking, locker facilities, and bike lane access to transit facilities when feasible.

TR17:* Project sponsors may ensure that prior to construction all necessary local and State road and railroad encroachment permits are obtained. 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 may include the following requirements:

- 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.
- 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.
- Scheduling of truck trips outside of peak morning and evening commute hours.
- Limiting of lane closures during peak hours to the extent possible.
- Usage of haul routes to minimize truck traffic on local roadways to the extent possible.
- Inclusion of detours for bicycles and pedestrians in all areas potentially affected by project construction.
- Installation of traffic control devices as specified in the California Department of Transportation Manual of Traffic Controls for Construction and Maintenance Work Zones.
- 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 may 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.
- Storage of construction materials only in designated areas
- Coordination with local transit agencies for temporary relocation of routes or bus stops in work zones, as necessary.

TR18: Local jurisdictions may meet an identified transportation-related benchmark.

TR19: Local jurisdictions may adopt a comprehensive parking policy that discourages private vehicle use and encourages the use of alternative transportation.

TR20: Project sponsors may build or fund a major transit stop within or near the development.

TR21: Local jurisdictions and transit agencies may provide public transit incentives such as free or low-cost monthly transit passes to employees, or free ride areas to residents and customers.

TR22: Local jurisdictions and project sponsors may promote “least polluting” ways to connect people and goods to their destinations.

TR23: Local jurisdictions and project sponsors may incorporate bicycle lanes, routes and facilities into street systems, new subdivisions, and large developments.

TR24: Local jurisdictions may require amenities for non-motorized transportation, such as secure and convenient bicycle parking.

TR25: Local jurisdictions may ensure that the project enhances, and does not disrupt or create barriers to, non-motorized transportation.

TR26: Local jurisdictions may connect parks and open space through shared pedestrian/bike paths and trails to encourage walking and bicycling.

TR27: Local jurisdictions may create bicycle lanes and walking paths directed to the location of schools, parks and other destination points.

TR28: Local jurisdictions may work with the school districts to improve pedestrian and bike access to schools and to restore or expand school bus service using lower-emitting vehicles.

TR29: Local jurisdictions and transit agencies may provide information on alternative transportation options for consumers, residents, tenants and employees to reduce transportation-related emissions.

TR30: Local jurisdictions may educate consumers, residents, tenants and the public about options for reducing motor vehicle-related greenhouse gas emissions. Include information on trip reduction; trip linking; vehicle performance and efficiency (e.g., keeping tires inflated); and low-, and/or near zero- and/or zero-emission vehicles.

TR31: Local jurisdictions may purchase, or create incentives for purchasing, low-, and/or near zero and/or zero-emission vehicles.

TR32: Local jurisdictions may create local "light vehicle" networks, such as neighborhood electric vehicle systems.

TR33: * Local jurisdictions may enforce and follow limits idling time for commercial vehicles, including delivery and construction vehicles.

TR34: Local jurisdictions may provide the necessary facilities and infrastructure to encourage the use of low-, and/or near zero- and/or zero-emission vehicles.

TR35: Local jurisdictions may reduce GHG emissions by reducing vehicle miles traveled and by increasing or encouraging the use of alternative fuels and transportation technologies.

TR36: Local jurisdictions may reduce VMT-related emissions by encouraging the use of public transit through adoption of new development standards that would require improvements to the transit system and infrastructure, increase safety and accessibility, and provide other incentives.

TR37: Project Selection: Local jurisdictions may give priority to transportation projects that would contribute to a reduction in vehicle miles traveled per capita, while maintaining economic vitality and sustainability.

TR38: Equal Pedestrian Access Local jurisdictions may include separated sidewalks whenever possible, on both sides of all new street improvement projects, except where there are severe topographic or natural resource constraints.

TR39:* Public Involvement: Local jurisdictions may carry out a comprehensive public involvement and input process that provides information about transportation issues, projects, and processes to community members and other stakeholders, especially to those traditionally underserved by transportation services.

TR40: System Interconnectivity: Local jurisdictions may create an interconnected transportation system that allows a shift in travel from private passenger vehicles to alternative modes, including public transit, ride sharing, car sharing, bicycling and walking, by incorporating the following:

- Ensuring transportation centers are multi-modal to allow transportation modes to intersect;
- Providing adequate and affordable public transportation choices, including expanded bus routes and service, as well as other transit choices such as shuttles, light rail, and rail;
- To the extent feasible, extending service and hours of operation to underserved arterials and population centers or destinations such as colleges;
- Focusing transit resources on high-volume corridors and high-boarding destinations such as colleges, employment centers and regional destinations;
- Coordinating schedules and routes across service lines with neighboring transit authorities;
- Supporting programs to provide "station cars" for short trips to and from transit nodes (e.g., neighborhood electric vehicles);
- Studying the feasibility of providing free transit to areas with residential densities of 15 dwelling units per acre or more, including options such as removing service from less dense, underutilized areas to do so;
- Employing transit-preferential measures, such as signal priority and bypass lanes. Where compatible with adjacent land use designations, right-of-way acquisition or parking removal may occur to accommodate transit-preferential measures or improve access to transit. The use of access management may be considered where needed to reduce conflicts between transit vehicles and other vehicles;
- Providing safe and convenient access for pedestrians and bicyclists to, across, and along major transit priority streets;

- Using park-and-ride facilities to access transit stations only at ends of regional transitways or where adequate feeder bus service is not feasible.

TR41: Transit System Infrastructure: Local jurisdictions may upgrade and maintain transit system infrastructure to enhance public use, including:

- Ensuring transit stops and bus lanes are safe, convenient, clean and efficient;
- Ensuring transit stops have clearly marked street-level designation, and are accessible;
- Ensuring transit stops are safe, sheltered, benches are clean, and lighting is adequate;
- Placing transit stations along transit corridors within mixed-use or transit-oriented development areas at intervals of three to four blocks, or no less than one-half mile.

TR42: Customer Service: Transit agencies may enhance customer service and system ease-of-use, including:

- Developing a Regional Pass system to reduce the number of different passes and tickets required of system users;
- Implementing "Smart Bus" technology, using GPS and electronic displays at transit stops to provide customers with "real-time" arrival and departure time information (and to allow the system operator to respond more quickly and effectively to disruptions in service);
- Investigating the feasibility of an on-line trip-planning program.

TR43: Transit Funding: Local jurisdictions may prioritize transportation funding to support a shift from private passenger vehicles to transit and other modes of transportation, including:

- Give funding preference to improvements in public transit over other new infrastructure for private automobile traffic;
- Before funding transportation improvements that increase roadway capacity and VMT, evaluate the feasibility and effectiveness of funding projects that support alternative modes of transportation and reduce VMT, including transit, and bicycle and pedestrian access.

TR44: Transit and Multimodal Impact Fees: Local jurisdictions may consider the use of transit and multimodal impact fees on new developments to fund public transportation infrastructure, bicycle infrastructure, pedestrian infrastructure and other multimodal accommodations.

TR45: Local jurisdictions may implement traffic and roadway management strategies to improve mobility and efficiency, and reduce associated emissions.

TR46: System Monitoring: Local jurisdictions may monitor traffic and congestion to determine when and where new transportation facilities are needed in order to increase access and efficiency.

TR47: Arterial Traffic Management: Local jurisdictions may modify arterial roadways to allow more efficient bus operation, including bus lanes and signal priority/preemption where necessary.

TR48: Signal Synchronization: Local jurisdictions may expand signal timing programs where emissions reduction benefits can be demonstrated, including maintenance of the synchronization system, and coordination with adjoining jurisdictions as needed to optimize transit operation while maintaining a free flow of traffic.

TR49: HOV Lanes: Local jurisdictions may encourage the construction of high-occupancy vehicle (HOV) lanes or similar mechanisms whenever necessary to relieve congestion and reduce emissions.

TR50: Delivery Schedules: Where operationally feasible, local jurisdictions may establish ordinances or land use permit conditions limiting the hours when deliveries can be made to off-peak hours in high traffic areas.

TR51: Local jurisdictions may reduce VMT related-emissions by implementing and supporting trip reduction programs.

TR52: Ride-Share Programs: Local jurisdictions may promote ride-sharing programs, including:

- Designate a certain percentage of parking spaces for ride-sharing vehicles;
- Designate adequate passenger loading, unloading, and waiting areas for ride-sharing vehicles;
- Provide a web site or message board for coordinating shared rides;

- Encourage private, for-profit community car-sharing, including parking spaces for car share vehicles at convenient locations accessible by public transit;
- Hire or designate a rideshare coordinator to develop and implement ridesharing programs.

TR53: Employer-based Trip Reduction: Local jurisdictions may support voluntary, employer-based trip reduction programs, including:

- Provide assistance to regional and local ridesharing organizations;
- Advocate for legislation to maintain and expand incentives for employer ridesharing programs;
- Require the development of Transportation Management Associations for large employers and commercial/ industrial complexes;
- Provide public recognition of effective programs through awards, top ten lists, and other mechanisms.

TR54: Ride Home Programs: Local jurisdictions may implement a "guaranteed ride home" program for those who commute by public transit, ride-sharing, or other modes of transportation, and encourage employers to subscribe to or support the program.

TR55: Local Area Shuttles: Transit agencies may encourage and utilize shuttles to serve neighborhoods, employment centers and major destinations.

TR56: Local jurisdictions and transit agencies may create a free or low-cost local area shuttle system that includes a fixed route to popular tourist destinations or shopping and business centers.

TR57: Local jurisdictions may work with existing shuttle service providers to coordinate their services.

TR58: Low- and No-Travel Employment Opportunities: Local jurisdictions may facilitate employment opportunities that minimize the need for private vehicle trips, including:

- Amend zoning ordinances and the Development Code to include live/work sites and satellite work centers in appropriate locations;
- Encourage telecommuting options with new and existing employers, through project review and incentives, as appropriate.

TR59:* Local jurisdictions may support bicycle use as a mode of transportation by enhancing infrastructure to accommodate bicycles and riders, and providing incentives.

TR60: Development Standards for Bicycles: Local jurisdictions may establish standards for new development and redevelopment projects to support bicycle use, including:

- Amending the Development Code to include standards for safe pedestrian and bicyclist accommodations, by incorporating the following:
    - "Complete Streets" policies that foster equal access by all users in the roadway design;
    - Bicycle and pedestrian access internally and in connection to other areas through easements;
    - Safe access to public transportation and other non-motorized uses through construction of dedicated paths;
    - Safe road crossings at major intersections, especially for school children and seniors;
    - Adequate, convenient and secure bike parking at public and private facilities and destinations in all urban areas;
    - Street standards may include provisions for bicycle parking within the public right of way.

TR61: Local jurisdictions may require new development and redevelopment projects to include bicycle facilities, as appropriate with the new land use, including:

- Construction of weatherproof bicycle facilities where feasible, and at a minimum, bicycle racks or covered, secure parking near the building entrances;
- Provision and maintenance of changing rooms, lockers, and showers at large employers or employment centers.
- Prohibit projects that impede bicycle and pedestrian access, such as large parking areas that cannot be safely crossed by non-motorized vehicles, and developments that block through access on existing or potential bicycle and pedestrian routes;

- Encourage the development of bicycle stations at intermodal hubs, with attended or "valet" bicycle parking, and other amenities such as bicycle rental and repair, and changing areas with lockers and showers;
- Conduct a connectivity analysis of the existing bikeway network to identify gaps, and prioritize bikeway development where gaps exist.

TR62: Bicycle and Pedestrian Trails: Local jurisdictions may establish a network of multi-use trails to facilitate safe and direct off-street bicycle and pedestrian travel, and provide bike racks along these trails at secure, lighted locations

TR63: Bicycle Safety Program: Local jurisdictions may develop and implement a bicycle safety educational program to teach drivers and riders the laws, riding protocols, routes, safety tips, and emergency maneuvers.

TR64: Bicycle and Pedestrian Project Funding: Local jurisdictions may pursue and provide enhanced funding for bicycle and pedestrian facilities and access projects, including, as appropriate:

- Apply for regional, State, and federal grants for bicycle and pedestrian infrastructure projects;
- Establish development exactions and impact fees to fund bicycle and pedestrian facilities;
- Use existing revenues, such as State gas tax subventions, sales tax funds, and general fund monies for projects to enhance bicycle use and walking for transportation.

TR65: Bicycle Parking: Local jurisdictions may adopt bicycle parking standards that ensure bicycle parking sufficient to accommodate 5 to 10 percent of projected use at all public and commercial facilities, and at a rate of at least one per residential unit in multiple-family developments (suggestion: check language with League of American Bicyclists).

TR66: Local jurisdictions may establish parking policies and requirements that capture the true cost of private vehicle use and support alternative modes of transportation.

TR67: Parking Policy: Local jurisdictions may adopt a comprehensive parking policy to discourage private vehicle use and encourage the use of alternative transportation by incorporating the following:

- Reduce the available parking spaces for private vehicles while increasing parking spaces for shared vehicles, bicycles, and other alternative modes of transportation;
- Eliminate or reduce minimum parking requirements for new buildings;
- "Unbundle" parking (require that parking is paid for separately and is not included in the base rent for residential and commercial space);
- Use parking pricing to discourage private vehicle use, especially at peak times;
- Create parking benefit districts, which invest meter revenues in pedestrian infrastructure and other public amenities;
- Establish performance pricing of street parking, so that it is expensive enough to promote frequent turnover and keep 15 percent of spaces empty at all times;
- Encourage shared parking programs in mixed-use and transit-oriented development areas.

TR68: Event Parking Policies: Local jurisdictions may establish policies and programs to reduce onsite parking demand and promote ride-sharing and public transit at large events, including:

- Promote the use of peripheral parking by increasing on-site parking rates and offering reduced rates for peripheral parking;
- Encourage special event center operators to advertise and offer discounted transit passes with event tickets;
- Encourage special event center operators to advertise and offer discount parking incentives to carpooling patrons, with four or more persons per vehicle for on-site parking;
- Promote the use of bicycles by providing space for the operation of valet bicycle parking service.

TR69: Parking "Cash-out" Program: Local jurisdictions may require new office developments with more than 50 employees to offer a Parking "Cash-out" Program to discourage private vehicle use.

TR70: Electric/Alternative Fuel Vehicle Parking: Local jurisdictions may require new commercial and retail developments to provide prioritized parking for electric vehicles and vehicles using alternative fuels.

TR71: Local jurisdictions may support and promote the use of low-, and/or near zero- and/or zero-emission vehicles, and alternative fuels, and other measures to directly reduce emissions from motor vehicles.

TR72: Low-, and/or near zero and/or Zero Emission Vehicles: Local jurisdictions may support and promote the use of low-, and/or near zero- and/or zero-emission vehicles, by doing the following:

- Develop the necessary infrastructure to encourage the use of low-, and/or near zero- and/or zero-emission vehicles and clean alternative fuels, such as development of electric vehicle charging facilities and conveniently located alternative fueling stations;
- Encourage new construction to include vehicle access to properly wired outdoor receptacles to accommodate ZEV and/or plug in electric hybrids (PHEV);
- Encourage transportation fleet standards to achieve the lowest emissions possible, using a mix of alternate fuels, PZEV or better fleet mixes;
- Establish incentives, as appropriate, to taxicab owners to use alternative fuel or gas-electric hybrid vehicles.

TR73:* Vehicle Idling: Local jurisdictions may enforce State idling laws for commercial vehicles, including delivery and construction vehicles.

TR74: Pedestrian and Bicycle Promotion: Local jurisdictions may work with local community groups and downtown business associations to organize and publicize walking tours and bicycle events, and to encourage pedestrian and bicycle modes of transportation.

TR75: Local jurisdictions may organize events and workshops to promote GHG-reducing activities.

TR76: Fleet Replacement: Local jurisdictions and agencies may establish a replacement policy and schedule to replace fleet vehicles and equipment with the most fuel efficient vehicles practical, including gasoline hybrid and alternative fuel or electric models.

TR77: Local jurisdictions may implement measures to reduce employee vehicle trips and to mitigate emissions impacts from municipal travel.

TR78: Trip Reduction Program: Local jurisdictions may implement a program to reduce vehicle trips by employees, including:

- Providing incentives and infrastructure for vanpooling and carpooling, such as pool vehicles, preferred parking, and a website or bulletin board to facilitate ride-sharing;
- Providing subsidized passes for mass transit;
- Offering compressed work hours, off-peak work hours, and telecommuting, where appropriate;
- Offer a guaranteed ride home for employees who use alternative modes of transportation to commute.

TR79: Bicycle Transportation Support: Local jurisdictions may promote and support the use of bicycles as transportation, including:

- Providing bicycle stations with secure, covered parking, changing areas with storage lockers and showers, as well as a central facility where minor repairs can be made;
- Providing bicycles, including electric bikes, for employees to use for short trips during business hours;
- Implementing a police-on-bicycles program;
- Providing a bicycle safety program, and information about safe routes to work.

TR80: Municipal Parking Management: Local jurisdictions may implement a Parking Management Program to discourage private vehicle use, including:

- Encouraging carpools and vanpools with preferential parking and a reduced parking fee;
- Institute a parking cash-out program;
- Renegotiate employee contracts, where possible, to eliminate parking subsidies;
- Install on-street parking meters with fee structures designed to discourage private vehicle use;
- Establish a parking fee for all single-occupant vehicles.

TR81: Travel Mitigation: Local jurisdictions may mitigate business-related travel, especially air travel, through the annual purchase of verified carbon offsets.

TR82: Transit Access to Municipal Facilities: Local jurisdiction and agency facilities may be located on major transit corridors, unless their use is plainly incompatible with other uses located along major transit corridors.

TR83: Local jurisdictions and development project sponsors may and are encouraged to coordinate and consult early with the Caltrans District Planning offices of Local Development Intergovernmental Review on any land use proposal that would be located within 500 feet of state transportation facilities to enable consideration of the site specific access and operational safety impacts.

WATER RESOURCES

W1: Local jurisdictions may encourage new development and industry to locate in those service areas with existing wastewater infrastructure and treatment capacity, making greater use of those facilities prior to incurring new infrastructure costs.

W2: Local jurisdictions may promote reduced wastewater system demand by: designing wastewater systems to minimize inflow and increase upstream treatment 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.

W3: Wastewater treatment agencies are encouraged to have expansion plans, approvals and financing in place once their facilities are operating at 80 percent of capacity.

W4: Project sponsors may coordinate with the local wastewater provider in order to ensure that existing and/or planned sewer conveyance and treatment facilities are capable of meeting wastewater flow capacity requirements. Each project sponsor may identify specific on- and off-site improvements needed to ensure that impacts related to wastewater conveyance capacity are addressed prior to issuance of plans. Sewer capacity clearance from the local wastewater provider may be required at the time that a sewer connection permit application is submitted.

W5:* As appropriate, confirmation of the capacity of the surrounding stormwater and sanitary sewer system and state of repair may be completed by a qualified civil engineer with funding from the project sponsor. The project sponsor may be responsible for the necessary stormwater and sanitary sewer infrastructure improvements to accommodate the proposed project. In addition, the sponsor may be required to pay any fees to improve sanitary sewer infrastructure as may be required by the applicable local agencies. Improvements to the existing sanitary sewer collection system may specifically include, but are not limited to, mechanisms to control or minimize increases in infiltration/inflow to offset sanitary sewer increases associated with the proposed project. To the maximum extent practicable, the sponsor may be required to implement Best Management Practices to reduce the peak stormwater runoff from the project site. Additionally, the project sponsor may be responsible for payment of any required installation or hook-up fees to the affected service providers.

W6: Wastewater treatment agencies may maximize efficiency of wastewater treatment and pumping equipment.

W7:* Project sponsors with projects requiring the discharge of dredged or fill materials into U.S. waters, including wetlands, may comply with sections 404 and 401 of the Clean Water Act including the requirement to obtain a permit from the U.S. Army Corps of Engineers and the governing Regional Water Quality Control Board.

W8:* Project sponsor may ensure that natural riparian conditions near projects are maintained, wherever feasible, to minimize the effects of stormwater flows at stream crossings. Where feasible, riparian areas may be restored or expanded to mitigate additional impervious surface and associated runoff.

W9:* Prior to construction within the vicinity of a watercourse, the project sponsor may obtain all necessary regulatory permits and authorizations from the U.S. Army Corps of Engineers (Corps), Regional Water Quality Control Board (RWQCB), California Department of Fish and Game, California Coastal Commission, and local jurisdictions, and may comply with all conditions issued by applicable agencies. Required permit approvals and certifications may include, but not be limited to the following:

- U.S. Army Corps of Engineers (Corps): Section 404. Permit approval from the Corps may be obtained for the placement of dredge or fill material in Waters of the U.S., if any, within the interior of the project site, pursuant to Section 404 of the federal Clean Water Act.

- Regional Walter Quality Control Board (RWQCB): Section 401 Water Quality Certification. Certification that the project will not violate state water quality standards is required before the Corps can issue a 404 permit, above.
- California Department of Fish and Game (CDFG): Section 1602 Lake and Streambed Alteration Agreement. Work that will alter the bed or bank of a stream requires authorization from CDFG.

A qualified environmental consultant may be retained and paid for by the project sponsor to make site visits as necessary; and as a follow-up, submit to the Lead Agency a letter certifying that all required conditions have been instituted during the grading activities.

W10:* Prior to issuance of a demolition, grading, or building permit within vicinity of a watercourse project sponsors may develop a final detailed landscaping and irrigation plan for review and approval by the appropriate local jurisdiction prepared by a licensed landscape architect or other qualified person. Such a plan may include a planting schedule, detailing plant types and locations, and a system for temporary irrigation of plantings.

- Plant and maintain only drought-tolerant plants on the site where appropriate, as well as native and riparian plants in and adjacent to riparian corridors. Along the riparian corridor, native plants may not be disturbed to the maximum extent feasible. Any areas disturbed along the riparian corridor may be replanted with mature native riparian vegetation and be maintained to ensure survival.
- All landscaping indicated on the approved landscape plan may be installed prior to the issuance of a Final inspection of the building permit, otherwise permitted.

All landscaping areas shown on the approved plans may be maintained in neat and safe conditions, and all plants may be maintained in good growing condition and, whenever necessary replaced with new plant materials to ensure continued compliance with all applicable landscaping requirements. All paving or impervious surfaces may occur only on approved areas.

W11:* Project sponsors may comply with the State-wide construction storm water discharge permit requirements including preparation of Storm Water Pollution Prevention Plans for transportation improvement construction projects. Roadway construction projects may comply with the Caltrans storm water discharge permit. Best Management Practices may be identified and implemented to manage site erosion, wash water runoff, and spill control.

W12:* Project sponsors may comply with the requirements of the National Pollutant Discharge Elimination System (NPDES) to address stormwater runoff. Detailed examples of potential mitigation activities that may be required by the Lead Agency are described below.

Project sponsors may submit with the application for a building permit (or other construction-related permit) a completed Construction-Permit-Phase Stormwater Supplemental Form. The project drawings submitted for the building permit (or other construction-related permit) may contain a stormwater management plan, for review and approval by the appropriate agency, to manage stormwater run-off and to limit the discharge of pollutants in stormwater after construction of the project to the maximum extent practicable. The post-construction stormwater management plan may include and identify the following:

- All proposed impervious surface on the site;
- Anticipated directional flows of on-site stormwater runoff; and
- Site design measures to reduce the amount of impervious surface area and directly connected impervious surfaces; and
- Source control measures to limit the potential for stormwater pollution;
- Stormwater treatment measures to remove pollutants from stormwater runoff; and
- Hydromodification management measures so that post-project stormwater runoff does not exceed the flow and duration of pre-project runoff, if required under the NPDES permit.

The following additional information may be submitted with the post-construction stormwater management plan:

- Detailed hydraulic sizing calculations for each stormwater treatment measure proposed; and
- Pollutant removal information demonstrating that any proposed manufactured/mechanical (i.e. non-landscape-based) stormwater treatment measure, when not used in combination with a landscape-based treatment measure, is capable or removing the range of pollutants typically removed by landscape-based treatment measures and/or the range of pollutants expected to be generated by the project.

All proposed stormwater treatment measures may incorporate appropriate planting materials for stormwater treatment (for landscape-based treatment measures) and may be designed with considerations for vector/mosquito control. Proposed planting materials for all proposed landscape-based stormwater treatment measures may be included on the landscape and irrigation plan for the project. The sponsor is not required to include on-site stormwater treatment measures in the post-construction stormwater management plan if he or she secures approval from an appropriate agency that an alternate approach is appropriate. The project sponsor may implement the approved stormwater management plan.

W13:* Project sponsors may consult with the RWQCB and Storm Water Management Plan permit holders as projects are designed to ensure that projects protect the goals of the Clean Water Act and comply with federal storm water NPDES permits.

W14:* Project sponsors may ensure that new facilities include structural water quality control features such as drainage channels, detention basins, oil and grease traps, filter systems, and vegetated buffers to prevent pollution of adjacent water resources by polluted runoff where required by applicable urban storm water runoff discharge permits.

W15:* Structural storm water runoff treatment may be provided according to the applicable urban storm water runoff permit where facilities will be operated by a permitted municipality or county. Where Caltrans is the operator, the statewide permit applies.

W16:* Project sponsors may ensure that operational best management practices for street cleaning, litter control, and catch basin cleaning are implemented to prevent water quality degradation in compliance with applicable storm water runoff discharge permits. Efforts may be made to assure treatment controls are in place as early as possible, such as during the acquisition process for rights-of-way, not just later during the facilities design and construction phase.

W17:* In compliance with applicable municipal separate storm sewer system discharge permits as well as Caltrans' storm water discharge permit, long-term sediment control may be affected through erosion control and revegetation programs designed to allow reestablishment of native vegetation on slopes and undeveloped areas.

W18:* Drainage of roadway runoff may comply with Caltrans' storm water discharge permit. Wherever possible, roadways may be designed to convey storm water through vegetated median strips that provide detention capacity and allow for infiltration before reaching culverts.

W19:* Treatment and control features such as detention basins, infiltration strips, and porous paving, other features to control surface runoff and facilitate groundwater recharge may be incorporated into the design of new transportation projects early on in the process to ensure that adequate acreage and elevation contours are provided during the right-of-way acquisition process.

W20:* Project sponsors may assure projects mitigate for changes to the volume of runoff, where any downstream receiving water body has not been designed and maintained to accommodate the increase in flow velocity, rate, and volume without impacting the water's beneficial uses. Pre-project flow velocities, rates, and volumes must not be exceeded. This applies not only to increases in storm water runoff from the project site, but also to hydrologic changes induced by flood plain encroachment. Projects may not cause or contribute to conditions that degrade the physical integrity or ecological function of any downstream receiving waters.

W21:* Impacts may be reduced to the extent possible by providing culverts and facilities that do not increase the flow velocity, rate, or volume and/or acquiring sufficient storm drain easements that accommodate an appropriately vegetated earthen drainage channel.

W22:* Project sponsors of improvement projects on existing facilities may 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, including expansion and restoration of wetlands and riparian buffer areas. System designs may be completed to eliminate increases in peak flow rates from current levels.

W23:* Local jurisdictions may encourage Low Impact Development and incorporation of natural spaces that reduce, treat, infiltrate and manage stormwater runoff flows in all new developments, where practical and feasible.

W24:* Project sponsor may ensure that for sites less than one acre, project drawings submitted for a building permit (or other construction-related permit) contain a final site plan to be reviewed and approved by the appropriate local agency. The final site plan may incorporate appropriate site design measures to manage stormwater runoff and minimize impacts to water quality after the construction of the project. These measures may include, but are not limited to, the following:

- Minimize impervious surfaces, especially directly connected impervious surfaces;
- Utilize permeable paving in place of impervious paving where appropriate;
- Cluster buildings;
- Preserve quality open space; and
- Establish vegetated buffer areas.

The approved plan may be implemented and the site design measures shown on the plan may be permanently maintained.

W25:* Project sponsors may implement BMPs to reduce erosion, sedimentation, and water quality impacts during construction to the maximum extent practicable. Plans demonstrating BMPs may be submitted for review and approval by the Lead Agency. At a minimum, the project sponsor may provide filter materials deemed acceptable to the Lead Agency at nearby catch basins to prevent any debris and dirt from flowing into the local storm drain system and creeks.

W26:* Project sponsors for sites over one acre, may obtain coverage under the General Construction Activity Storm Water Permit (General Construction Permit) issued by the State Water Resources Control Board (SWRCB). The project sponsor may file a notice of intent (NOI) with the SWRCB. The project sponsor may be required to prepare a stormwater pollution prevention plan (SWPPP) and submit the plan for review and approval by the Lead Agency. At a minimum, the SWPPP may include a description of construction materials, practices, and equipment storage and maintenance; a list of pollutants likely to contact stormwater; site-specific erosion and sedimentation control practices; a list of provisions to eliminate or reduce discharge of materials to stormwater; BMPs, and an inspection and monitoring program. Prior to the issuance of any construction-related permits, the project sponsor may submit to the lead agency a copy of the SWPPP and evidence of submittal of the NOI to the SWRCB. Implementation of the SWPPP may start with the commencement of construction and continue through the completion of the project. After construction is completed, the project sponsor may submit a notice of termination to the SWRCB.

W27:* Project sponsors may ensure that project drawings submitted for a building permit (or other construction-related permit) contain a drainage plan to be reviewed and approved by the appropriate agency. The drainage plan may include measures to reduce the post-construction volume and velocity of stormwater runoff to the maximum extent practicable. Stormwater runoff may not be augmented to adjacent properties or creeks. The drainage plan may include and identify the following:

- All proposed impervious surface on the site;
- Anticipated directional flows of on-site stormwater runoff;
- Site design measures to reduce the amount of impervious surface area and directly connected impervious surfaces;
- Source control measures to limit the potential for stormwater pollution; and
- Stormwater treatment measures to remove pollutants from stormwater runoff.

W28:* Project sponsors may submit an erosion and sedimentation control plan for review and approval by the appropriate government agency. All work may incorporate all applicable BMPs for the construction industry, including BMP's for dust, erosion and water quality. The measures may include, but are not limited to, the following:

- On sloped properties, the downhill end of the construction area must be protected with silt fencing (such as sandbags, filter fabric, silt curtains, etc.) and hay bales oriented parallel to the contours of the slope (at a constant elevation) to prevent erosion into the street, gutters, stormdrains.
- In accordance with an approved erosion control plan, the project sponsor may implement mechanical and vegetative measures to reduce erosion and sedimentation, including appropriate seasonal maintenance. One hundred (100) percent degradable erosion control fabric may be installed on all graded slopes to protect and stabilize the slopes during construction and before permanent vegetation gets established. All graded areas may be temporarily protected from erosion by seeding with fast growing annual species. All bare slopes may be covered with staked tarps when rain is occurring or is expected.

- Minimize the removal of natural vegetation or ground cover from the site in order to minimize the potential for erosion and sedimentation problems. Maximize the replanting of the area with native vegetation as soon as possible.
- Install filter materials acceptable to the appropriate agency at the storm drain inlets nearest to the project site prior to the start of the wet weather season (October 15); site dewatering activities; street washing activities; saw cutting asphalt or concrete; and in order to retain any debris flowing into the storm drain system. Filter materials may be maintained and/or replaced as necessary to ensure effectiveness and prevent street flooding.
- Ensure that concrete/granite supply trucks or concrete/plaster finishing operations do not discharge wash water into water courses, street gutters, or storm drains.
- Direct and locate tool and equipment cleaning so that wash water does not discharge into the street, gutters, or stormdrains.
- Create a contained and covered area on the site for storage of bags of cement, paints, flammables, oils, fertilizers, pesticides, or any other materials used on the project site that have the potential for being discharged to the storm drain system by the wind or in the event of a material spill. No hazardous waste material may be stored on-site.
- Gather all construction debris on a regular basis and place them in a dumpster or other container which is emptied or removed on a weekly (or other interval approved by the Lead Agency) basis. When appropriate, use tarps on the ground to collect fallen debris or splatters that could contribute to stormwater pollution.
- Remove all dirt, gravel, refuse, and green waste from the sidewalk, street pavement, and storm drain system adjoining the project site. During wet weather, avoid driving vehicles off paved areas and other outdoor work.
- As appropriate, broom sweep the street pavement adjoining the project site on a daily basis. Caked-on mud or dirt may be scraped from these areas before sweeping. At the end of each workday, the entire site may be cleaned and secured against potential erosion, dumping, or discharge to the street, gutter, and/or stormdrains.
- All erosion and sedimentation control measures implemented during construction activities, as well as construction site and materials management may be in strict accordance with the control standards listed in the latest edition of the Erosion and Sediment Control Field Manual published by the RWQB.

All erosion and sedimentation control measures may be monitored regularly by the project sponsor. If measures are insufficient to control sedimentation and erosion then the project sponsor may develop and implement additional and more effective measures immediately.

W29:* Project sponsors may ensure that projects requiring continual dewatering facilities implement monitoring systems and long-term administrative procedures to ensure proper water management that prevents degrading of surface water and minimizes, to the greatest extent possible, adverse impacts on groundwater for the life of the project. Construction designs may comply with appropriate building codes and standard practices including the Uniform Building Code.

W30:* Project sponsors, lead agencies, and local jurisdictions may maximize, where practical and feasible, permeable surface area in existing urbanized areas to protect water quality, reduce flooding, allow for groundwater recharge, and preserve wildlife habitat. New impervious surfaces may be minimized to the greatest extent possible, including the use of in-lieu fees and off-site mitigation.

W31: Project sponsors may avoid designs that require continual dewatering where feasible.

W32: Where feasible, transportation facilities may be sited away from groundwater recharge areas, to prevent conversion of those areas to impervious surface.

W33: Project sponsors may reduce hardscape to the extent feasible to facilitate groundwater recharge as appropriate.

W34:* Project sponsor may ensure that all roadbeds for new highway and rail facilities 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 may be evaluated and projects may be sited to avoid alluvial fan flooding. Delineation of floodplains and alluvial fan boundaries may attempt to account for future hydrologic changes caused by global climate change.

W35:* Project sponsors of transportation improvements may comply with local, state, and federal floodplain regulations. Projects requiring federal approval or funding may comply with 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.

W36:* Local jurisdictions may, to the extent feasible and appropriate, prevent development in flood hazard areas that do not have appropriate protections, especially in alluvial fan areas of the region.

W37:* Local water agencies may continue to evaluate future water demands and establish the necessary supply and infrastructure to meet that demand, as documented in their Urban Water Management Plans.

W38: Project sponsors, local jurisdictions, and water agencies may include conjunctive use as a water management strategy when feasible.

W39:* Regional water agencies may consider, to the greatest extent feasible, potential climate change hydrology and attendant impacts on available water supplies and reliability in the process of creating or modifying systems to manage water resources for both year-round use and ecosystem health. As the methodology and base data for such decisions is still developing, agencies may use the best currently available science in decision-making. Local jurisdictions and water agencies may rely on current regional analyses when making local decisions regarding future water supply and reliability.

W40: Project sponsors and local jurisdictions may reduce exterior uses of water in public areas, and may promote reductions in private homes and businesses, by shifting to drought-tolerant native landscape plantings, using weather-based irrigation systems, educating other public agencies about water use, and installing related water pricing incentives. Local jurisdictions may also work with local retailers and vendors to promote the availability of drought resistant landscaping options and provide information on where these can be purchased. Use of recycled water especially in median landscaping and hillside landscaping may be implemented where feasible.

W41:* Project sponsors may coordinate with the local water provider to ensure that existing and/or planned water supply and water conveyance facilities are capable of meeting water demand/pressure requirements. In accordance with State Law, a Water Supply Assessment may be required for projects that meet the size requirements specified in the regulations. In coordination with the local water provider, each project sponsor may identify specific on- and off-site improvements needed to ensure that impacts related to water supply and conveyance demand/pressure requirements are addressed prior to issuance of a certificate of occupancy. Water supply and conveyance demand/pressure clearance from the local water provider may be required at the time that a water connection permit application is submitted.

W42:* Project sponsors may coordinate with the local fire service provider in order to ensure that existing and/or planned fire hydrants are capable of meeting fire flow demand/pressure requirements. The issuance of building permits may be dependent upon submission, review, approval, and testing of fire flow demand and pressure requirements, as established by the local fire service provider prior to occupancy.

W43:* Project sponsors may implement water conservation measures in new development that may include but not be limited to the following:

- Installation of high-efficiency toilets (1.28 gallons per flush or less, includes dual flush.
- High-efficiency urinals (0.125 gallons per flush or less, includes waterless)
- Restroom faucet flow rate of 1.5 gallons per minute or less
- Public restroom faucet flow rate of 0.5 gallons per minute or less and self-closing
- Showerhead flow rate of 2.0 gallons per minute or less
- Limit of one showerhead per shower stall
- High efficiency clothes washers (water factor of 4.0 or less)
- High efficiency dishwashers (Energy Star rated)
- Domestic water heating system located in close proximity to point(s) of use, as feasible; use of tankless and on-demand water heaters as feasible
- Cooling towers must be operated at a minimum of 5.5 cycles of concentration
- Install on-site water recycling as feasible
- Use of recycled water (if available) for appropriate end uses (irrigation, cooling towers, sanitary)

- Single pass cooling may be prohibited (e.g. any vacuum pumps or ice machines)
- Irrigation may include:
- Weather-based irrigation controller with rain shutoff
- Flow sensor and master valve shutoff (for large landscaped areas)
- Matched precipitation (flow) rates for sprinkler heads
- Drip/microspray/subsurface irrigation where appropriate
- Minimum irrigation system distribution uniformity of 75%
- Proper hydro-zoning, turf minimization and use of native/drought tolerant plant materials
- Use of landscape contouring to minimize precipitation runoff

W44:* Project sponsors may consult with the local water provider to identify feasible and reasonable measures to reduce water consumption, including, but not limited to, systems to use recycled water for landscaping, drip irrigation, re-circulating hot water systems, water conserving landscape techniques (such as mulching, installation of drip irrigation systems, landscape design to group plants of similar water demand, soil moisture sensors, automatic irrigation systems, clustered landscaped areas to maximize the efficiency of the irrigation system), water conserving kitchen and bathroom fixtures and appliances, thermostatically controlled mixing valves for baths and showers, and insulated hot water lines.

W45:* Project sponsors may incorporate compliance with local drought measures as appropriate including prohibiting hose watering of driveways and associated walkways; requiring decorative fountains to use recycled water, and repairing water leaks in a timely manner.

W46:* Project sponsors may incorporate automatic sprinkler systems that irrigate landscaping during morning hours or during the evening to reduce water losses from evaporation. Sprinklers may be required to reset to water less often in cooler months and during the rainfall season, so that water is not wasted in excessive landscape irrigation.

W47:* Prior to issuance of building permits, project sponsors may pay any appropriate fees imposed by local water providers to off-set any fair share project costs as identified by the local water provider.

W48: As part of the general plan update process, local jurisdictions may coordinate with water providers to identify water budgets for development within their jurisdiction. Local water providers may provide for new water supply through a combination of water conservation (on and potentially off-site) and recycled water, such that the net increase in water demand (not including demand for recycled water) does not exceed the calculated demand anticipated in the most recent Urban Water Management Plan or other similar document.

W49:* Project sponsors may create water-efficient landscapes.

W50:* Project sponsors may install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls and use water-efficient irrigation methods.

W51:* Project sponsors may incorporate water-reducing features into building and landscape design.

W52: Project sponsors may make effective use of graywater for landscape irrigation. (Graywater is untreated household wastewater from bathtubs, showers, bathroom wash basins, and water from clothes washing machines.)

W53:* Project sponsors may implement low-impact development practices that maintain the existing hydrology of the site to manage storm water and protect the environment by doing the following:

- Devise a comprehensive water conservation strategy appropriate for the project and location.
- Design buildings to be water-efficient. Install water-efficient fixtures and appliances.
- Offset water demand from new projects so that there is no net increase in water use.
- Provide education about water conservation and available programs and incentives.

W54: Local jurisdictions may adopt and implement a comprehensive strategy to increase water conservation and the use of recycled water that includes similar measure to the following:

- **Water Consumption Reduction Target:** Regional water agencies may work together to set a target for to reduce per capita water consumption by 2020.

- **Water Conservation Plan:** Regional water agencies may establish a water conservation plan that may include such policies and actions as:
- Tiered rate structures for water use;
- Restrictions on time of use for landscape watering, and other demand management strategies;
- Performance standards for irrigation equipment and water fixtures;
- Requirements that increased demand from new construction be offset with reductions so that there is no net increase in water use.
- **Recycled Water Use:** Local jurisdictions and regional water agencies may establish programs and policies to increase the use of recycled water, including:
- Create an inventory of non-potable water uses within the jurisdiction that could be served with recycled water;
- Produce and promote the use of recycled water for agricultural, industrial, and irrigation purposes, including grey water systems for residential irrigation;
- Produce and promote the use of treated, recycled water for potable uses where GHG emissions from producing such water are lower than from other potable sources.
- **Water Conservation Outreach:** Local jurisdictions and regional water agencies may implement a public education and outreach campaign to promote water conservation, and highlights specific water-wasting activities to discourage, such as the watering of non-vegetated surfaces and using water to clean sidewalks and driveways.

W55: Local jurisdictions may ensure that building standards and permit approval processes promote and support water conservation.

W56:* Local jurisdictions may establish building design guidelines and criteria to promote water-efficient building design, including minimizing the amount of non-roof impervious surfaces around the building(s).

W57:* Local jurisdictions may establish menus and check-lists for developers and contractors to ensure water-efficient infrastructure and technology are used in new construction, including low-flow toilets and shower heads, moisture-sensing irrigation, and other such advances.

W58:* Local jurisdictions may establish criteria and standards to permit the safe and effective use of gray water (on-site water recycling), and review and appropriately revise, without compromising health and safety, other building code requirements that may prevent the use of such systems.

W59: Local jurisdictions may establish programs and policies to ensure landscaping and forests are installed and managed to optimize their climate benefits.

W60:* Project sponsors may install water efficient landscapes and irrigation, including:

- Planting drought-tolerant and native species, and covering exposed dirt with moisture-retaining mulch;
- Installing water-efficient irrigation systems and devices, including advanced technology such as moisture-sensing irrigation controls; and/or
- Installing edible landscapes that provide local food.

W61:* Regional water agencies may maximize efficiency at drinking water treatment, pumping, and distribution facilities.

W62: Impacts to waters of the state (i.e., water bodies, drainages, and the beneficial uses they support) from proposed transportation (and/or development) projects -- or loss of beneficial uses from cumulative projects and their impacts, may be mitigated by enhancing or restoring water quality attributes and environmental values of water bodies impacted by previous transportation (and/or development) projects. For example, a new project could examine where an earlier project (preferably in close proximity to the new project area), created impairment to a riparian wildlife corridor, and then plan to remove this impairment as mitigation. Alternatively a new project could remove an obstruction to sediment transport or remove a check dam currently preventing fish (for example, steelhead trout) migration.