

**Phase IV: Full Scale Demonstrations and Commercial Deployment**—includes implementation of regulatory and market mechanisms needed to launch commercialization.

It is important that the region work collaboratively to pursue advanced technologies and secure funding for their development and deployment. Although several regional forums currently exist, SCAG anticipates building on these efforts by establishing a logistics working group with key stakeholders. Participants may include government agencies, logistics industry representatives, and original equipment manufacturers (OEMs).

Modeling of environmental strategies has determined that significant emissions benefits could be achieved from implementation of different zero and near-zero emission environmental strategies. As summarized in **TABLE 2.11**, the zero-emission East-West Freight Corridor would eliminate 4.7 tons of NO<sub>x</sub>, 0.16 tons of PM<sub>2.5</sub>, and 4,000 tons of CO<sub>2</sub> emissions daily, and would set the stage for broader regional deployment of zero-emission technologies and additional emission reductions. Full electrification of the rail system, though still a concept at this point, would remove comparable amounts of NO<sub>x</sub>, PM<sub>2.5</sub>, and CO<sub>2</sub>. Regionally, a 20 percent market penetration of plug-in hybrid trucks would achieve a reduction of 8.3 tons of NO<sub>x</sub>, 0.16 tons of PM<sub>2.5</sub>, and 3,200 tons of CO<sub>2</sub> daily.

**TABLE 2.11** Environmental Benefits

Strategy	Impact		
	NO <sub>x</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
East-West Freight Corridor with 100% Zero-Emission Vehicles (ZEVs)	4.7	0.16	4,000
Full Railroad Main Line Electrification*	10.4	0.19	2,400
20% Penetration of Plug-in Hybrid Trucks	8.3	0.16	3,200

\* Further evaluation is required to determine feasible options for implementation of rail electrification or other zero-emission rail systems.

## 2012 RTP Environmental Mitigation

SAFETEA-LU, the reauthorization of TEA-21, was enacted into law by President Bush on August 10, 2005. Pursuant to Section 6001 of this legislation, statewide or metropolitan long-range plans must include a discussion of potential environmental mitigation activities and potential areas to carry out these activities. This includes activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan.” As such, the RTP includes a discussion of mitigation measures in order to comply with this requirement. As a public agency in California, SCAG first and foremost fulfills mitigation requirements by complying with CEQA.

In addition, as part of the planning process, states and MPOs “shall consult, as appropriate, with state and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation concerning the development of a long-range transportation plan.” They also must consider, if available, “conservation plans and maps” and “inventories of natural or historic resources.”

California law requires SCAG to prepare and certify a Program Environmental Impact Report (PEIR) prior to adopting the RTP. The PEIR evaluates the environmental impacts of the RTP and proposes specific measures to mitigate impacts to the maximum extent feasible. Although the 2012 RTP, in and of itself, is a plan to mitigate the transportation-related effects of population growth, such as traffic congestion and poor air quality, because the transportation improvements can result in additional growth, the PEIR goes further by recommending additional environmental mitigation at the program level for those resource areas that would be affected by the Plan (and associated growth) such as land use, biological resources and open space, water and greenhouse gases.

The section below summarizes the mitigation program. A list of all the mitigation measures included in the 2012 RTP PEIR will be included in the Environmental Mitigation Report of the Final 2012 RTP. The general purpose of the mitigation measures included in the PEIR is to identify how to protect the environment, improve air quality, and promote energy efficiency in concert with the proposed transportation improvements and related planning. This provides a framework through which implementing agencies and subregions can address the environmental impacts of RTP projects, while implementing RTP goals and policies.

## Mitigation Strategies

The PEIR provides three different categories of mitigation measures for consideration and implementation, as indicated below:

- **Regional Mitigation Measures:** Within this category are mitigation measures that can be implemented by SCAG at the regional level. These measures are generally aimed at gathering additional information that can assist in measuring impacts and determining appropriate mitigation and promoting policies and programs that would reduce impacts.
- **Local Mitigation Measures:** The second type of mitigation measures are those that would be implemented at the local level by individual cities and counties. These measures can strengthen planning documents to ensure the provision of appropriate mitigation measures in the planning process.
- **Project-Specific Mitigation Measures:** This category includes project-specific mitigation measures that are required by the appropriate agency under whose jurisdiction the project falls (i.e., city or county). As a programmatic document, many of the measures in the PEIR refer to performance standards because site-specific conditions cannot reasonably be evaluated at the programmatic level.

## Conservation Planning Policy

SAFETEA-LU requires that the RTP contain a discussion of types of potential environmental mitigation activities and potential areas to carry out these activities. This includes activities that may have the greatest potential to restore and maintain environmental functions affected by the plan [Sec. 6001(i)(2)(B)(i)]. As such, this is being addressed in the RTP and is separate and distinct from the mitigation measures addressed in the PEIR. SCAG could demonstrate progress and satisfy SAFETEA-LU requirements through the large-scale acquisition and management of critical habitat to mitigate impacts related to future transportation projects.

Suggested steps to develop a conservation policy of this type could include the following:

- Engage in a strategic planning process to determine the critical components and implementation steps for identifying and addressing open space resources
- Identify and map regional priority conservation areas based on the most recent land use data for future consideration and potential inclusion in future plans.

- Engage with various partners, including CTCs, to determine priority conservation areas and develop an implementable plan.
- Develop regional mitigation policies or approaches for the 2016 RTP.

This strategy supports natural land restoration, conservation, protection and acquisition offering Greenhouse Gas (GHG) emissions reduction benefits. Post-RTP strategic planning efforts would include addressing various pertaining to this proposed approach such as identifying appropriate agencies to partner with and determining specific mapping parameters (for example, geographic scale).

In addition, this type of strategic planning approach could also be applied to address impacts to other resource areas.



## Summary of the Environmental Mitigation Program

As required by SAFETEA-LU, the RTP includes an environmental mitigation program that links transportation planning to the environment. Building on its strong commitment to the environment as demonstrated in the 2008 PEIR, SCAG's mitigation program creates an implementation strategy to show varying levels of authority (state, regional, and local). This mitigation discussion also utilizes documents created by federal, state and local agencies to guide environmental planning for transportation projects. The following discussion focuses on specific resource areas and the proposed approaches to mitigate impacts to these areas.

### BIOLOGICAL RESOURCES AND OPEN SPACE

The RTP Programmatic Environmental Impact Report (PEIR) includes two regional scale maps that identify sensitive environmental resources, such as protected lands and sensitive habitats.

According to the Federal Highway Administration, there are more than 3.9 million center-line miles of public roads that span the United States. Each day, an estimated one million animals are killed on roads, making road kill the greatest human cause of wildlife mortality in the country. As in previous RTPs, the 2012 RTP seeks to minimize transportation-related impacts on wildlife, and also better integrate transportation infrastructure into the environment.

Impacts to biological resources generally include displacement of native vegetation and habitat on previously undisturbed land; habitat fragmentation and decrease in habitat connectivity; and displacement and reduction of local, native wildlife including sensitive species. Building new transportation routes and facilities through undisturbed land or expanding facilities and increasing the number of vehicles traveling on existing routes will directly injure wildlife species, cause wildlife fatalities, and disturb natural behaviors such as breeding and nesting. This will result in the direct reduction or elimination of species populations (including sensitive and special-status species) and native vegetation (including special-status species and natural communities) as well as the disruption and impairment of ecosystem services provided by native habitat areas.

The biological resources mitigation program includes the following types of measures:

- Planning transportation routes to avoid/minimize removal of native vegetation, displacement of wildlife, and impacts to regionally and locally significant habitat types such as oak woodlands, vernal pools, estuaries, lagoons, and other riparian areas
- Including provisions for habitat enhancement such as mitigation banking, improving/retaining habitat linkages, preserving wildlife corridors and wildlife crossings to minimize the impact of transportation projects on wildlife species and habitat fragmentation
- Conducting appropriate surveys to ensure no sensitive species' habitat or special-status natural communities is unnecessarily destroyed
- Avoiding and minimizing impacts to wildlife activities (such as breeding, nesting, and other behaviors) during construction of the project by avoiding construction during critical life stages or sensitive seasons
- Avoiding and minimizing impacts to habitat during project construction through actions such as fencing off sensitive habitat, minimizing vehicular accessibility, and salvaging native vegetation and topsoil
- Minimizing further impacts to wildlife and their habitats after project construction by replanting disturbed areas; providing vegetation buffers at heavily trafficked transportation facilities; and restoring local, native vegetation

## LOCATIONS FOR MITIGATION

As part of the 2008 Regional Comprehensive Plan, SCAG mapped locations of the protected and unprotected areas in relation to wildlife linkages, linkage design areas, park and recreation areas (from SCAG's 2008 land use inventory), agricultural lands, and developed lands. Together, these form the region's open space infrastructure. Maps were created showing the distribution of protected and unprotected lands within the SCAG region and its vicinity. It also shows the location of county-level conservation efforts such as Habitat Conservation Plans (HCPs) and Natural Communities Conservation Plans (NCCPs). Although portions of these areas fall within the "protected" category, large portions of habitat within these areas remain "unprotected" and therefore should still be considered for mitigation activities. These maps will be updated as a function of post-RTP planning efforts.

Specifically, those areas that are "unprotected" could be possible locations for mitigation. SCAG does not have the authority to purchase or manage lands. Conservation of these areas will be achieved through already-established programs. SCAG will continue to work with its regional partners to help facilitate conservation.

## Types of Mitigation Activities

The mitigation program of the 2012 RTP generally includes strategies to reduce impacts where transportation and sensitive lands intersect and also encourages smart land use strategies that maximize the existing system and eliminate the need for new facilities that might impact open space and habitat. Potential mitigation programs include better planning of transportation projects to avoid or lessen impacts to open space, recreation land, and agricultural lands through information and data sharing, increasing density in developed areas and minimizing development in previously undeveloped areas that may contain important open space.

The mitigation program also emphasizes the importance of integrating consideration of wildlife and habitat into the design of transportation facilities in those areas where impacts cannot be avoided. SCAG encourages project sponsors to review Ventura County's Wildlife Crossing Guidelines and FHWA's Critter Crossings. Both documents provide examples of context-sensitive solutions (CSS) which is a way of involving all stakeholders to develop transportation facilities that fit their physical setting and preserve scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility. CSS is an approach that considers the total context within which a transportation improvement project will exist. CSS principles include the employment of early,

continuous, and meaningful involvement of the public and all stakeholders throughout the project development process. Additional information on CSS is available on FHWA's website at: <http://www.fhwa.dot.gov/context/index.cfm>

In summary, the biological resources and open space mitigation programs include the following types of measures:

- Identifying open space areas that can be preserved and developing mitigation measures such as mitigation banking, transfer of development rights (for agricultural lands), and payment of in lieu fees
- Updating General Plan information from cities to provide the most recent land use data to the region
- Coordinating with cities and counties to implement growth strategies that maximize the existing transportation network
- Evaluating project alternatives and alternative route alignments where projects intersect with sensitive habitats
- Integrating the planning of transportation facilities with context-sensitive design elements such as wildlife crossings

## GREENHOUSE GASES

California is the fifteenth largest emitter of GHGs on the planet. The transportation sector, primarily, cars and trucks that move goods and people, is the largest contributor with 36.5 percent of the State's total GHG emissions in 2008. On road emissions (from passenger vehicles and heavy duty trucks) constitute 93 percent of the transportation sector total. In order to disclose potential environmental effects of the RTP, SCAG has prepared an estimated inventory of the region's existing GHG emissions, identified mitigation measures, and compared alternatives in the PEIR.

The GHG mitigation program includes, but is not limited to, the following types of measures:

- Land use changes included in the SCS that reduce number and length of trips
- Encouragement of green construction techniques such as using the minimum amounts of GHG emitting construction equipment;
- Public outreach campaigns publicizing the importance of reducing GHG emissions
- Promotion of pedestrian and bicycle as modes of transportation