Looking Ahead – Beyond the Horizon

The RTP strategies discussed in Chapter 2: Transportation Investments, represent the region’s collective vision for addressing our transportation needs within the constraints of committed, available, or reasonably available revenue sources. Despite the substantial commitments of over $500 billion contained in the RTP and the associated benefits discussed in Chapter 5: Measuring Up, this level of investment does not meet the full needs identified through the RTP development process. If we truly want to address all the needs set forth in this RTP, we must look toward additional strategies and investments to get us there. Often this will entail controversial and difficult choices that will push the envelope and test the boundaries of what is politically acceptable. For now, these elements are contained in the Strategic Plan with the recognition that they merit further study and that, over time and with further consensus-building, these programs and policies may move forward into the constrained RTP.

The concept of a Strategic Plan was first incorporated into the 2008 RTP. It was envisioned that the 2012 and subsequent RTPs would draw from the projects contained in the Strategic Plan. This has in fact occurred. The 2012 RTP/SCS investments discussed in Chapter 2 attest to the success of the 2008 Strategic Plan, since several of its projects and strategies have now moved to the constrained portion of the 2012 RTP/SCS. These include:

- **Preservation Investments** – The 2008 Strategic Plan called for a higher level of investment to preserve the region’s multi-modal system. The 2012 RTP/SCS includes $65 billion in additional preservation funding.

- **Operations Investments (TSM)** – The 2008 Strategic Plan recommended increasing funding to the cost-effective transportation system management strategies that increase the productivity of the existing system. The 2012 RTP/SCS allocates $5 billion to TSM.

- **Dedicated Lanes for Clean-Technology Trucks on the East West Corridor** – The 2008 Strategic Plan called for more detailed study of the different east west corridors and recommending one for inclusion in the RTP. The 2012 RTP/SCS includes the recommended East West Freight Corridor and provides full funding for it.

- **Metrolink and LOSSAN Rail Improvements** – The 2008 Strategic Plan included unfunded improvements to the Metrolink and LOSSAN Rail corridors. The 2012 RTP/
SCS fully funds these improvements, partially using newly available federal and state funds.

- **The Westside Purple Line Extension** – The 2008 Strategic Plan included the unfunded Purple Line Extension to Westwood. The 2012 RTP/SCS now fully funds this extension, relying on the recently adopted Measure R in Los Angeles.

The 2008 Strategic Plan strongly influenced the 2012 Constrained Plan as originally intended. Moving forward, it is again envisioned that updates to the 2012 RTP/SCS would draw from the projects contained in this Strategic Plan; exceptions would be handled on a case-by-case basis.

The remainder of this chapter provides a brief illustrative overview of the additional strategies and investments that the region would pursue if additional funding were to become available, and after further consensus building to solidify commitment around specific projects and policies.

### Long-Term Emission Reduction Strategies for Rail

Included in this strategic RTP/SCS is a recommendation to continue ongoing work with railroads, air quality management agencies and other stakeholders to reach our goal of a zero emissions rail system. Freight rail activity emits five percent and four percent of regional NO\(_x\) and PM goods movement related emissions, respectively. Mitigation of rail emissions is currently underway with agreements to upgrade engines and reduce idling at certain rail yards, but more must be done to improve regional air quality, help meet federal requirements and reduce health impacts for communities near rail activity. There are several options for a zero emission rail system including electrification, battery-hybrid systems and fuel cells. Since 2008, SCAG has worked with representatives from major rail lines, the AQMD and the ARB to carefully evaluate potential zero emissions options for freight rail. In particular, three forms of electrification have been considered to date.

- **Electric Catenary Rail Systems** – These are perhaps the most technologically ready, however, construction of an electrified rail system in Southern California would be a major undertaking in terms of labor, timeline, and cost for the SCAG region, and would require large investment as well as cooperation and investment by the BNSF and UP railways.

- **Dual Mode Locomotives** – These have been deployed for passenger rail applications but would need development for freight applications. They have the ability to operate both on a catenary or with traditional diesel power. The ability to operate in both modes could potentially reduce operational difficulties associated with the need to remove the engine at the end of the electrified system. However, additional operational considerations remain to be addressed.

- **Linear Synchronous Motors** – This technology propels rail cars by creating an electromagnetic field from motors embedded in the railway. One advantage of LSM is that overhead electric lines would not be needed, allowing the electric rail system to extend further into ports and rail yards. LSM technology is in its early stages and costs cannot be estimated, however demonstration projects are underway.

The 2012 RTP specifies further study of these technologies to resolve operational challenges and to better quantify the costs of implementation and potential savings or cost increases of eliminating diesel fuel. In addition, several other technologies such as hybrid diesel-electric locomotives and battery electric tender cars will be considered. Such technologies have the potential to reduce or even eliminate the need for catenary wire infrastructure. We also plan to participate in regional efforts to develop prototypes, proof of concept testing and both small and full scale demonstrations of these technologies. Please see the Technical Appendix of the RTP and the SCAG Rail Electrification Study for more information about these technologies and next steps for development and deployment.
Long-Term Emissions Reduction Strategies for Trucks

Equally important to SCAG’s long term vision of a zero emission goods movement system is the reduction or elimination of emissions from heavy duty trucking. Heavy Duty Trucks comprise 75 percent of regional goods movement NOX emissions and 58 percent of goods movement related PM emissions. In the near term, the RTP proposes an aggressive program to bring more currently available, clean fuel trucks and hybrid trucks into service. In the longer term, we suggest that our infrastructure serve as a catalyst for the development and deployment of zero and near zero emission trucks such as those powered by hybrid, fuel-cell, or battery technologies.

The trucking market offers unique challenges due to heavy weights, operational performance requirements, and high incremental costs. However, several reduced emissions trucks are currently commercially available and many zero and near zero emission trucks are under development for future deployment. For instance, reduced emission natural gas trucks have already been deployed at the ports and several hundred hybrid electric trucks are on the road due to the ARB’s Hybrid Truck and Bus Voucher Incentive Project (HVIP).

Other promising technologies include plug-in hybrid-electric trucks, which have batteries that are charged through an external power source and battery electric trucks which can generate their own power or receive power from an outside source. Plans for zero emission truck lanes on the I-710 and the East West Freight Corridor offer the opportunity to include wayside power systems that could extend the range of these trucks. The provision of zero emission corridors may also provide the certainty needed for original equipment manufacturers to more heavily invest in new technology. More research is needed to determine if wayside power is the right strategy for our region, but the RTP plans for flexible design of new infrastructure to allow for this use.

SCAG intends to work closely with our partners and existing collaborative efforts to facilitate development of these technologies. Stakeholder input will be critical to understand the performance needs of the technology and any operational concerns. As technologies are developed, appropriate funding support and other incentive mechanisms should be applied. Existing efforts are proposed to lead to formation of a logistics working group to promote, evaluate and secure funding for these technologies. For more information on steps towards development and deployment of these technologies, please see the Technical Appendix.

Unfunded Operational Improvements

It has been shown around the state and the region that some well-targeted investments in physical operational improvements on roadway system (both highway and arterials) can significantly improve their productivity. These investments include interchange improvements, auxiliary lanes, ramp widening, and others. The recent Caltrans CSMP development process identified a number of these projects for a subset of the State Highway System. Between now and the 2016 RTP/SCS, SCAG will work with its stakeholders and partners to identify additional cost effective investments and seek funding.

Unfunded Capital Improvements

Regionally significant major corridor improvements and strategies in the Strategic Plan are identified in Table 7.1. A more complete list is contained in the RTP Project List available at www.scag.ca.gov/rtp2012.
### Major Strategic Plan Projects

<table>
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<th>Strategic Plan Project Description</th>
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<tr>
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<td>Bus Rapid Transit on Beach, Edinger, La Palma, and Katella, and in South County</td>
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<td>California High-Speed Train System Phase II</td>
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<td>California/Nevada Super-Speed Train Anaheim to Ontario IOS</td>
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<td>Coachella Valley Daily Rail Service Between Downtown Los Angeles and Indio</td>
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<td>DesertXpress High-Speed Rail Between Palmdale-Victorville-Las Vegas</td>
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<td>Express Bus Service Throughout Orange County, and Between Orange County and Los Angeles and Riverside Counties</td>
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<td>Long-Term Goods Movement Emission Reduction Strategies for Rail and Trucks</td>
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<td>Metro Gold Line Eastside Extension Beyond Phase II Terminus</td>
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<td>US-101 HOV Lanes From Route 23 to Topanga Canyon</td>
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### Ultimate Vision for a High-Speed Rail System

Our ultimate vision for a true High-Speed Train System that would link major urban areas and activity centers within our region and beyond would be incomplete without Phase II of the proposed California High-Speed Train (HST) system. Phase II would link Los Angeles Union station to San Diego via the Inland Empire in our region. The project is being planned in segments all in different degrees of project readiness. This corridor is approximately 160 miles long, stretching from Union Station in downtown Los Angeles through San Bernardino and Riverside Counties, and terminating in San Diego County. With 20.8 million residents, these four counties make up approximately 56 percent of the state's current population and will grow significantly by 2050.

Phase II of the CA HST project, by adding connections to the Inland Empire and San Diego County, completes the backbone of a true regional High-Speed Transport system. The LOSSAN, Metrolink system, and CA HST Phase I investments discussed in previous chapters will provide high-speed travel alternatives in Northern Los Angeles County, the San Fernando Valley, the Gateway Cities, and Orange County; Phase II will extend those alternatives to the San Gabriel Valley and the Inland Empire. Upon completion, Phase II will provide important access to planned and existing regional centers, including Los Angeles Ontario Airport, the March Inland Port, and possibly San Bernardino International and Corona airports, helping to meet SCAG’s long-term goal of regionalizing air travel in Southern California. Furthermore, Phase II may one day be the basis for further high-speed rail extensions into Nevada or Arizona.

The CA HST system will provide excellent regional connectivity to our region by connecting with a robust network of intercity and commuter rail, subway and light-rail, and fixed-route transit systems. The proper planning and service levels of these connecting services will allow them and the CA HST to feed and complement each other. While commuter, intercity and interregional rail services are distinct travel markets, the proper coordination of their schedules will further increase the region's rail and transit ridership by attracting crossover passengers to these different markets. It will also significantly relieve capacity constraints of the existing air and highway transportation system as increases in intercity travel demand in California occur. By attracting a large number of trips from current auto and air travel markets, a significant decrease in GHG emissions will be achieved in our region. In addition, the HST project will provide a much cheaper...
alternative to building additional airport and highway capacity to serve intrastate aviation routes and auto trips.

In addition, several other high-speed rail transportation projects are part of the Strategic Plan that, if completed, would deliver a robust regional high-speed transport system. The DesertXpress proposal would one day link our region with Las Vegas, providing a high-speed alternative to the highly congested I-15 corridor, and relieving traffic in our region’s fifth largest domestic air travel market. High-speed transport systems connecting Anaheim with Ontario and Santa Clarita would provide important onward connections for those using the state HST system, and link important regional destinations. Similarly, daily Amtrak corridor service to the Coachella Valley would link an additional SCAG subregion to our regional rail network.

**Greater Vision for our Commuter Rail System**

Metrolink provides our region’s commuter rail service operating 164 trips on seven lines carrying 42,000 passengers on weekdays. With the investments proposed within the Constrained Plan in Chapter 2, we expect to achieve more than double the ridership by 2035. But, we believe, the Metrolink system has even greater untapped potential for our region.

Our region boasts 4.32 commuter rail route miles per 100,000 residents, which is over 2.5 times the median for large metropolitan regions. However, in 2008, residents of the SCAG region took only 0.7 per capita trips on the commuter rail system, well below the national median of 0.82. Chicagoans, by contrast, took 8.28 trips per capita, on a network that provides 11.8 route miles for every 100,000 residents. Residents of Baltimore took 34 percent more commuter rail trips per capita on a network similar to that of the SCAG region.

The average speed for Metrolink is about 40 mph today. The average speeds vary by line and while top speeds are 79 mph, the number of stops and physical capacity and geographic constraints result in this average system speed which is lower than one would think. This shows the need to fund capital projects in order to speed up the service and make Metrolink more attractive to the SOV commuter.

The recent release of the CAHSRA’s draft 2011 Business Plan puts off the arrival of the CA HST system in our region to 2033, and greatly escalates the official project cost. This confirms long-standing stakeholder concerns of the project’s implementation timeline and viability, and therefore confirms the need to spend HSR dollars on our region’s current rail services. In fact, the new Business Plan calls for “blended” rail services whereby incremental operating segments of the CA HST system will connect with existing rail services until the entire project gets built.

Our Strategic Plan vision for Metrolink speed and service improvements calls for an intensive investment in capital projects to further increase speed and service levels over and above the Constrained Plan. The Strategic Plan results in even more segments of the network operating at speeds of 110 mph or greater. These projects include additional double tracking, sidings, station improvements, grade separations, and grade crossings. Not only will this benefit commuter rail trips in our region, but will benefit Amtrak inter-city and CA HST inter-regional trips also as the three systems feed and complement each other. While these are three distinct travel markets, improving all three networks encourages cross-over rail travel market trips.

In addition to capital improvements, our strategic vision calls for:

- A doubling of system use by 2020, and possibly doubling again by 2035,
- Considerably more express trips,
- Regular special event services,
- A connection to Ontario airport,
- The implementation of new BRT services that directly connect with the Metrolink system,
- A robust growth of TOD around Metrolink stations, and
- The implementation of first mile/last mile policies for robust bicycle and pedestrian improvements around Metrolink stations.
Our Vision for Active Transportation Beyond 2035

The 2012 RTP Constrained Plan proposes investing over $6 billion towards active transportation, including the development of over 7,000 miles of bikeways and improvements to add over 1,200 miles of sidewalks. In addition to these projects, SCAG hopes to substantially increase bicycling and walking in the region by creating and maintaining an active transportation system that includes well-maintained bicycle and pedestrian facilities, easy access to transit facilities, and increased safety and security for all users. The active transportation vision for the strategic transportation system is one where bicycling or walking are simply the most logical and efficient choices for most short trips. To achieve that vision, SCAG and local jurisdictions must create the conditions by which active transportation is more attractive than driving for short trips (less than three miles for bicycles, one-half mile for walking). The goals are to develop and build a dense bicycle network so that all SCAG residents and visitors can easily find and access a route to their destination, incorporate Complete Streets policies in street design/redesign and Compass Blueprint strategies for land use, and ensure ADA compliance on all sidewalks.

BIKEWAYS

Further enhancements to the active transportation system should be considered to make bicycling and walking a more feasible and desirable transportation option. The strategic bikeway plan envisions a three-tiered system to achieve those goals: an expanded regional bikeway network, citywide bikeways in each city, and neighborhood bikeways.

- The Regional Bikeway Network is expanded over the constrained plan, developing a grid pattern where possible in urbanized areas. Each designated regional bikeway links to other regional bikeways and to city bikeways for commuters and recreational riders. Although not free-flowing as freeways, the regional bicycle network links the cities in the region in a similar manner. To the greatest extent possible, the regional bikeway network should be Class 1, Class 2 bikeways/cycle tracks or even painted sharrows with appropriate signage and wayfinding.

- Citywide bikeways link neighborhood bikeways to regional bikeways and major city destinations, such as employment, retail and entertainment centers. These will
often be on arterial and collector streets, which are already part of the grid system. Bikeways will likely need to be either Class 2 bikeways (painted or unpainted) or Cycle tracks. When going through large suburban areas, they can be designated bicycle boulevards. Citywide bikeways should be no farther than one half mile apart.

- Neighborhood bikeways link neighborhoods to local amenities, such as schools, parks, grocery stores and local retail, eating and entertainment. These facilities will be primarily on low speed streets and be identified through sharrows, bicycle boulevards and wayfinding signage. While every residential street should be considered a neighborhood bikeway, the focus should be on streets that connect across blocks and neighborhoods. In addition, neighborhood bikeways should link to other neighborhood bikeways providing a low speed, low stress environment for families and youths to bicycle with minimal interaction with faster, busier streets.

Completion of this system will require coordination among cities as well as parallel improvements within each city and unincorporated areas of counties. It will involve roughly a doubling of the bicycle network beyond the constrained plan to 24,000 miles, with a cost estimated at around $12 billion.

**PEDESTRIANS**

Pedestrian accessibility and mobility may be addressed through increased safety and security and land use. Integration of Safe Routes to School strategies, Safe Routes to Parks programs, incorporating active transportation in SCAG’s Compass Blueprint Projects, and developing active transportation best practices around transit stations, may further enhance the walking environment. In addition, local jurisdictions can integrate active transportation and Complete Street concepts with their land use decisions. Inclusions of bulb-outs, median sanctuaries, and traffic calming can increase pedestrian safety by reducing collisions, particularly at intersections. Other strategies include more prominent deployment of left-turn signals and no-right turn on red signals in high pedestrian environments. In addition, SCAG encourages and is prepared to work with appropriate implementation agencies to mapping, development, and implementation of recreational trails throughout the region, including the SCAG portion of the California Coastal Trail, river trails, urban and wilderness hiking areas/trails.

The cost for completion of this element varies widely, depending upon the level of improvements and methodologies used, and ranges from $6 billion to $35 billion.
Strategic Finance

Following the adoption of the 2008 RTP, SCAG initiated a comprehensive study of congestion pricing strategies, which has come to be known as the Express Travel Choices Study. The emerging regional congestion pricing strategy is structured to help the region meet its transportation demand management and air quality goals while providing a reliable and dedicated revenue source. The pricing strategy could allow users of the transportation system to know the true cost of their travel, resulting in informed decision-making and more efficient use of the transportation system. Pricing strategies evaluated through the Express Travel Choices Study include a regional high-occupancy toll (HOT or Express) lane network and a mileage-based user fee, both of which are incorporated into the 2012 RTP. Nevertheless, these strategies still face a number of significant hurdles before their full benefits can be realized. A second phase on the Express Travel Choices Study will continue beyond the adoption of the 2012 RTP and establish an implementation plan for the regional congestion pricing strategy. SCAG will also participate in state and national efforts to address the long-term transition of excise fuel taxes to mileage-based user fees.

In addition to SCAG’s regional congestion pricing initiative, a number of local efforts to establish additional transportation revenues are underway or may be in the near future. In 2004, the voters in Ventura County were asked to approve a local sales tax measure for transportation. While the voters did not approve the sales tax increase, it remains a popular option for the region’s counties to generate a significant amount of revenues dedicated to transportation. All of the other counties in the SCAG region have a local sales tax measure dedicated to transportation.

The Los Angeles County Metropolitan Transportation Authority (MTA) is evaluating the feasibility of a Congestion Mitigation Fee as part of a proposed restructuring of its Congestion Management Program (CMP). If enacted, the fee would be imposed on new development and would generate new revenue to assist MTA in addressing congestion caused by growth. MTA has also proposed and is advocating for a program known as “America Fast Forward” (formerly known as the “30/10 Initiative”). The concept of America Fast Forward is to use the long-term revenue from the Measure R sales tax as collateral for long-term bonds and a federal loan which will allow MTA to build 12 key mass transit projects in 10 years, rather than 30. Accelerating construction of these projects will result in substantial cost savings. SCAG intends to work closely with our partners to deliver a more sustainable funding future, including identifying specific actions that can help leverage existing revenue sources and expedite project delivery.