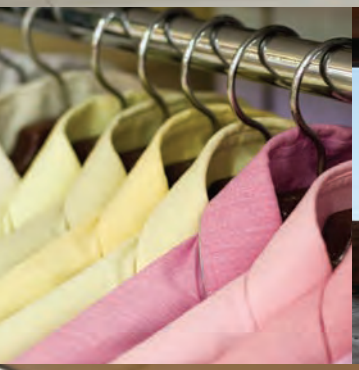


ON THE MOVE

SOUTHERN CALIFORNIA DELIVERS THE GOODS

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

FREIGHTWORKS
SOUTHERN CALIFORNIA DELIVERS THE GOODS

Comprehensive Regional Goods Movement Plan and Implementation Strategy

ON THE MOVE

SOUTHERN CALIFORNIA DELIVERS THE GOODS

Comprehensive Regional Goods Movement Plan
and Implementation Strategy

final
report

prepared for

The Southern California Association of Governments

prepared by

Cambridge Systematics, Inc.

with

Arellano Associates

Diverse Strategies for Organizing, Inc.

Economics and Politics, Inc.

ICF International

Leachman and Associates

**METRANS Transportation Center –
University of Southern California and
California State University at Long Beach**

Public Financial Management, Inc.

URS Corporation

Wiltec, Inc.

February 2013

The preparation of this report was financed in part through grants from the United States Department of Transportation (U.S. DOT).

9 Paving the Path Forward

The Comprehensive Regional Goods Movement Plan and Implementation Strategy builds on almost two decades of work to develop an understanding of the role and needs of goods movement in Southern California. The Plan used as its starting point, the Multi-County Goods Movement Action Plan but went beyond this prior work in several key areas:

- The analysis included a very deep focus on the linkage between goods movement and the regional economy. This led to a much stronger emphasis on the importance of understanding key goods movement markets and functions and a stronger connection between the strategies and the markets they serve. This should help increase the economic benefits of the strategies that were developed for the Plan. The analysis includes a more in-depth analysis of economic impacts of the strategies than has been included in previous goods movement planning efforts.
- There were significant improvements to goods movement analysis tools and a wealth of data were collected that can be mined for future goods movement studies. The regional heavy-duty truck (HDT) model was improved with new components added that address port secondary movements and domestic intermodal truck trips. The model also now allows for the ability to track different truck markets as a way of producing a more refined understanding of which goods movement markets will most benefit from highway improvements. New technologies (truck GPS) and data sources were used that improved modeling information and also provide the basis for conducting more detailed operational analysis of truck movements.
- The study produced a more comprehensive understanding of warehouse space and demand and its relationship to industrial land supply. Building on this information, the region can begin to look at how changes in warehouse configurations and operations will affect future supply imbalances. The data also shows for the first time how important domestic trade is to warehouse demand in the SCAG region and can be linked to future studies of the role of the region as a national distribution center. In the long run, these data can also help SCAG play a regional coordinating role with respect to establishing rational industrial land use policies that benefit the region as a whole.
- The study conducted some of the most in-depth analysis of zero-emission technology options that have been conducted for the region and identified some possible pathways for introducing these technologies. A comprehensive review of zero-emission highway technologies was conducted along with an analysis of a potential implementation strategy and operational approach. A similar analysis was conducted for zero-emission and near zero-emission rail technologies. General feasibility evaluations of these technologies were also conducted.
- Detailed analysis was conducted of the East-West Freight Corridor option including right-of-way evaluations, demand analysis, emissions, analysis, and market analysis in order to identify the most feasible alignments and operating characteristics. This sets the stage for continued project development including future engineering feasibility studies of particular alignment concepts and environmental review of alternatives.

- A strategy was introduced to address truck bottlenecks. This was a first attempt to understand the impacts of congestion hot spots that have particularly high levels of truck delay and to determine how projects already in the pipeline and new concepts would help mitigate these bottlenecks.
- A re-evaluation of mainline rail and intermodal terminal capacity was conducted based on updated demand and capacity data. A consistent evaluation framework was used to assess vehicle delay, safety, and emissions impacts at rail-road at-grade crossings that allows for a relative comparison of grade separation needs. Efforts were initiated to forge a regional coalition to support a comprehensive package of rail improvements. While most of these improvement needs were already identified prior to initiation of this study, the Plan provided an on-going forum for key stakeholders to interact and discuss rail program needs going forward.
- A framework for evaluating freight financing options using principles of allocating cost responsibility for funding based on benefits accrued was introduced and some critical gaps in available financing mechanisms were identified. This should help provide some focus to future regional policy positions on national freight policy as the federal surface transportation bill re-authorization discussions begin again in the near future.

The Comprehensive Regional Goods Movement Plan and Implementation Strategy points a way to the future. Much work remains, including:

- There is additional engineering and environmental analysis that needs to be done to refine the EWFC alignment and to continue the process of project development.
- Continuing discussions need to take place between Metrolink and the Class I railroads to establish what level of future demand can be accommodated on shared-use corridors. The completion of the California Statewide Rail Plan creates another opportunity to review potential implementation strategies to ensure that the region has adequate capacity for both passenger and freight rail growth. Environmental processes that are currently underway to select alternatives for much needed intermodal terminal capacity expansion (both on-dock and near dock) need to be completed.
- Partnerships have been forming between local agencies and the private sector (technology developers and users) to develop a comprehensive research, development, and demonstration program that will lead to commercialized zero-emission technologies. This Plan will be implemented over the next decade with key milestones that have been identified in the SCAG RTP/SCS. More active engagement and funding from the Federal government will also be needed to help advance this program.
- As described in the previous chapter, there are substantial funding and financing needs for the goods movement projects. One of the biggest gaps is what is needed at the federal level. This includes clear direction on how the National Strategic Freight Network will be designated and how improvements and maintenance of this system will be undertaken. In addition to direct funding for freight projects of national significance, there are a number of projects on last mile connectors and general freight access that are particularly difficult to fund with local sources because of the difficulty freight projects have competing with passenger projects for these limited funds. Federal and state grant-in-aid programs should be an important component of this funding. Finally, there are opportunities to enhance various tools that can leverage private sector and local revenue streams through changes in existing credit support programs, tax credits, and various forms of user fees. Some of these opportunities will require federal and state actions to change the existing rules or create new programs. Some of these opportunities were identified and described in the previous chapter.

The remainder of this concluding chapter is divided into two sections. The first section summarizes some of the key findings of the Plan (What We Have Learned). This is followed by a brief discussion of some of the critical next steps that need to be taken to ensure that the strategies described in this Plan are fully implemented in the future.

9.1 What We Have Learned – Key Accomplishments of the Comprehensive Regional Goods Movement Plan and Implementation Strategy

Goods Movement is Critical to the Region's Economy and Serves a Diverse Set of Functions, Markets and Industries

The focus on markets and functions in the Comprehensive Regional Goods Movement Plan and Implementation Strategy guided the identification of critical multi-modal corridors and modal connections as well as guiding the selection of strategies. While previous goods movement plans focused heavily on understanding the impacts and implications of rapidly expanding international trade (and developing strategies to help cope with the associated freight traffic and community and environmental impacts), this Plan took a broader view of the linkages between goods movement and the regional economy. The Plan identified critical goods movement dependent industries that generated over $249 billion in GRP (35%of the regional total) and 2.9 million jobs in 2010. These industries trade in various markets and are supported by a goods movement system that provides four major functions:

- Providing access to international gateways
- Supporting regional manufacturing
- Serving local businesses and consumers
- Supporting a thriving logistics industry.

The Plan demonstrated the importance of each of these functions and showed the relationship of key elements of the goods movement infrastructure to these functions including how growth in demand for these functions will lead to system improvement needs.

Truck Markets and the Selection of Strategies

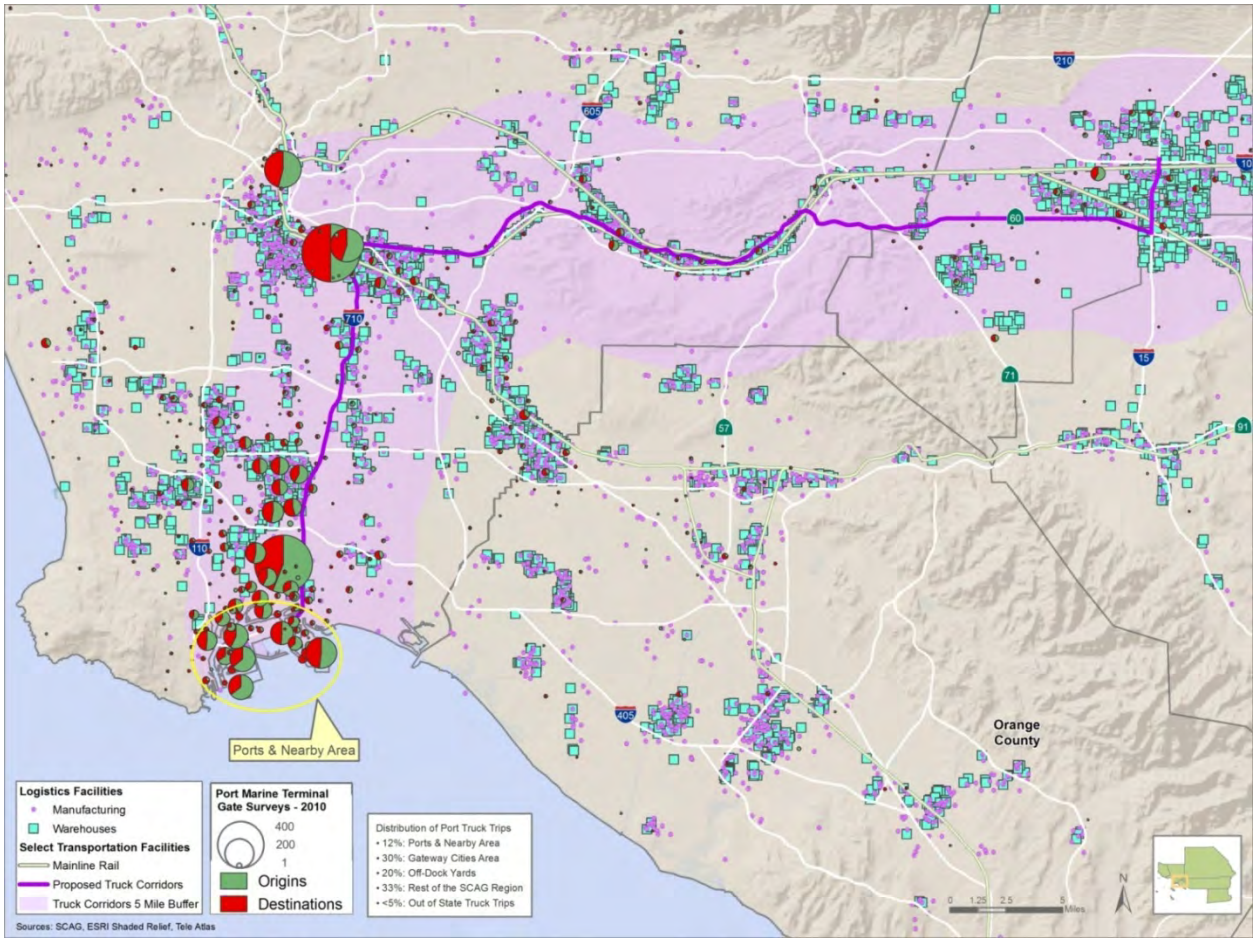
The enhanced understanding of goods movement markets developed in the Comprehensive Regional Goods Movement Plan and Implementation Strategy was critical to the development of the Plan strategies. For example, our understanding of truck markets made it clear that while the previously planned freight corridor system will provide value by serving the large and rapidly growing truck flows through the central core of the region, the markets for this freight corridor system are not primarily international traffic trying to move through the region to reach inland locations, as many had previously assumed. While port traffic does dominate demand for the I-710 portion of the Freight Corridor System, the fraction of trucks using the EWFC that are port trucks declines markedly moving east along the corridor. Whereas segments between I-710 and I-605 would have almost 60 percent of the users being port trucks, between Grove and Archibald Avenue in San Bernardino County, this percentage drops to 24 percent without any appreciable drop in the total volume of trucks using the Freight Corridor. Trucks serving inter-regional domestic trade, local distribution and warehousing, and regional manufacturing make up a substantial amount of demand for trucks on the EWFC. This linkage to markets was a major factor in selecting the recommended corridor alignment for the EWFC, as over 50 percent of regional warehousing space and 27 percent of regional manufacturing employment is in a corridor within 5 miles of the highest potential alignment.

Analyzing the geography of demand for the EWFC also informed the development of a zero-emission technology option for the corridor. In the 2008 RTP, it was assumed that a high speed zero-emission system using a fixed guideway was part of the plan, independent of the truck lane system that was also planned for the region. Understanding markets made it clear that these two parallel systems would compete for the same traffic and that the two strategies should be merged into a single strategy. During work on the I-710 EIR/EIS, it had already been determined that a fixed guideway system lacked many advantages as compared to zero-emission truck options. Market analysis of the EWFC confirmed this conclusion by showing that there were no obvious nodes in the system that could provide demand centers for a fixed guideway system and that trucks provided a level of flexibility that would be needed to appeal to the user market. The EWFC analysis

conducted for the Comprehensive Regional Goods Movement Plan and Implementation Strategy also showed that it might be possible to build a system with wayside power either embedded within or over the roadway to provide power to electric trucks that could charge batteries on the corridor and operate off of these batteries after they leave the corridor. There is a sufficient market of origins and destinations for these trucks within 5 miles of the corridor such that the range limitations of current battery technology would not be a problem in this configuration. This is illustrated in Figure 9.1. While no specific zero-emission technology has been selected at this time, this observation about the linkage between markets, alignment selection, and technology illustrates the type of planning which can be done with the information compiled for the Comprehensive Regional Goods Movement Plan and Implementation Strategy.

The analysis of truck markets and goods movement functions also made it clear that the Comprehensive Regional Goods Movement Plan and Implementation Strategy needed to address a broader set of truck market needs than could be addressed through a single freight corridor system. Simply put, trucks are everywhere in the region serving every goods movement function and every goods movement dependent industry. In fact, over 87 percent of the truck trips generated in the region in 2008 were associated with short-haul intra-regional trucking serving households, local retailers and wholesalers, construction, regional manufacturing and other local pickup and delivery activities. It was also observed that truck delay at congestion hot spots on many of the region's truck corridors are major problems for a wide array of industries and a program to address these truck bottlenecks is needed. Truck congestion in urban areas within the region resulted in $2.6 billion in costs from wasted labor and fuel. The truck bottleneck relief strategy developed for the Comprehensive Regional Goods Movement Plan and Implementation Strategy identified a number of projects already in the pipeline as well as some new project concepts that could help mitigate congestion costs to the region. Raising the priority of the existing projects by taking into account these goods movement benefits as well as the general mobility benefits is important.

Figure 9.1 Origins and Destinations of Truck Traffic Within Five Miles of the Freight Corridor System.



Rail Intermodal Markets and Future Needs

Working alongside parallel efforts by the ports, the Comprehensive Regional Goods Movement Plan and Implementation Strategy developed a more refined understanding of the various rail intermodal markets in the region which are comprised of Inland Point Intermodal (IPI), transload, and true domestic traffic. The first two markets are associated with international trade traffic and are estimated to represent over 68 percent of the region's intermodal rail traffic in 2010. This share is anticipated to top 73 percent of the regional intermodal traffic by 2035. Transloading is growing as a logistics strategy and this has implications for demand for warehouse space and demand for intermodal terminal capacity. Analysis conducted for this Plan and other parallel efforts showed that without expansion of intermodal terminal capacity in the region (both on-dock and off-dock), there will be insufficient capacity and the losses to the regional economy would be significant. While much attention has been paid to ensuring that there will be sufficient terminal capacity to handle growth in IPI demand (through expansion of on-dock and near-dock capacity), less was understood about how growth in transload demand would be accommodated. Since transloaded cargo is shipped in domestic trailers and containers, it is hard to distinguish this traffic from true domestic cargo. Knowing how much of the region's domestic cargo is transload cargo and the relative growth rate of transload as compared to true domestic traffic, suggests that overall domestic intermodal traffic in the region (transload plus true domestic) may be growing at a faster rate than most previous forecasts have shown. This could put strains on existing domestic intermodal terminals.

Analysis conducted for the Comprehensive Regional Goods Movement Plan and Implementation Strategy suggests that the loss to the regional economy on a per TEU basis is greater if transload traffic cannot be accommodated in the regional rail system than if IPI cargo cannot be accommodated. Analysis of warehouse demand and supply patterns conducted for the Plan also showed that warehouse space nearest the Ports (in the Gateway Cities and South Bay Cities subregions) is likely to be filled first for transloading, pushing some future demand for transload facilities to more inland locations. If this raises the cost of transloading, it could affect the region's competitiveness as an international gateway for the distribution channels that are most beneficial to the regional economy. The analysis conducted for the Comprehensive Regional Goods Movement Plan and Implementation Strategy is not conclusive with respect to how future warehouse supply is likely to affect transloading costs in the region but this is a trend that should be watched carefully.

Warehouse Markets and Future Needs

At the conclusion of the MCGMAP, it was believed that Southern California was facing a severe shortage of warehouse space over the next 20 years without substantial expansion of warehouse supply and that this would be driven almost entirely by demand for port-related warehousing. The Comprehensive Regional Goods Movement Plan and Implementation Strategy forecasts a much more modest demand for future warehousing because we now understand that a smaller fraction of the total warehouse demand is associated with port uses. While this is the fastest growing component of warehouse demand, by 2035 about 25 percent of the total demand for warehouse space will be generated by port uses. Warehousing will be used more intensively with rapid turnover of inventory. Since most of the supply will come from areas where warehousing already exists, current patterns of warehousing land use are a good guide to where supporting infrastructure will be needed and this was taken into account in selecting the alignment for the EWFC. Nonetheless, there is still projected to be a shortage of over 200 million square feet of warehouse space even if all of the zoned and land appropriate to warehouse development is developed as warehousing. A number of factors including changes in warehouse space utilization, warehouse heights, automation, and more rapid inventory turnover could reduce future space demand and eliminate shortages.

A Promising Alignment for the EWFC

As noted previously, the Comprehensive Regional Goods Movement Plan and Implementation Strategy conducted a variety of corridor level analyses to determine which freeway corridor among the several that traverse the region presents the most favorable conditions for an EWFC. The analysis, results of which are presented in Chapter 6, considered factors such as access to markets, right-of-way constraints and impacts, mobility impacts, safety impacts, and environmental impacts. While many of the corridors that were examined could have been selected on the basis on any single criteria, the SR-60 corridor presented the overall best choice based on the criteria considered. An EWFC built in this corridor would provide access to over 50 percent of the region's warehouse space and over 25 percent of the region's manufacturing employment within 5 miles of the corridor. It would also provide significant mobility, safety, and environmental benefits including:

- Potential truck volumes using the corridor of over 60,000 to 70,000 trucks per day in most segments, of which roughly 65-70 percent would be heavy-heavy trucks. Even with tolling, the facility would carry larger volumes of trucks than most other freeways in the region.
- The corridor would provide substantial mobility benefits to the region, reducing truck delay in the influence area by 11 percent and total vehicle delay by 4.3 percent. Impacts on parallel freeways and arterials would also be substantial.
- By separating trucks and autos, safety in the corridor could be improved, eliminating as much as 20-30 truck involved accidents per mile per year in some segments.
- With zero-emission operation of the corridor, it could eliminate 4.7 tons of NO_x and 0.16 tons of $PM_{2.5}$ daily., and 2,401 tons CO_2 daily.

A specific alignment within the corridor was analyzed more extensively because of its potential to significantly reduce community impacts by moving the EWFC away from many neighborhoods along the SR-60 corridor and providing more direct access to warehouse and industrial facilities. This alignment would be adjacent to portions of the UP Los Angeles subdivision, along the San Jose Creek flood control channel, and then along SR-60 itself. This alignment is not without challenges, including some difficult transitions from one alignment segment to another, potential impacts to neighborhoods at these transition points, and high costs for the portion over the San Jose Creek. Next steps to address these issues and advance the project are discussed later in this chapter.

Continued Refinement of Regional Rail Strategies

The Comprehensive Regional Goods Movement Plan and Implementation Strategy developed updated forecasts of regional rail traffic and conducted new simulation studies to determine mainline capacity needs in the future. These studies largely confirmed the continuing need for most of the capacity improvements that were identified in the MCGMAP and 2008 RTP, including the potential to reduce operational impacts and costs of improvements if a Modified Status Quo routing option is pursued by the UP. Data compiled during the development of the Plan also confirmed continuing need for expansion of intermodal terminal capacity in the region. Since much of this need will be driven by continued growth in international trade traffic, priority should be given to on-dock and near-dock terminal expansion projects wherever they can be developed with minimum environmental and community impacts.

As already noted, a comprehensive evaluation of grade separations was also conducted for the Comprehensive Regional Goods Movement Plan and Implementation Strategy. This evaluation used an approach and modeling tools that can be adopted by all of the counties to ensure that the data used to prioritize grade separation projects is consistent across the region. The analysis showed that the 71 priority grade separation projects would:

- Eliminate 5,780 hours of vehicle delay per day crossings by 2035.
- Eliminate 22,000 lbs. of combined pollution per day from vehicles idling at the crossings.

The Comprehensive Regional Goods Movement Plan and Implementation Strategy also conducted an extensive evaluation of near-zero and zero emission rail technologies including full and partial electrification strategies. The study evaluated technology readiness, operational impacts, environmental and energy use implications, and an extensive cost analysis. The study concluded that there is much work that would need to be done before an electrification strategy could be adopted for the region, work that would likely stretch any potential implementation of such a strategy out beyond the time horizon for this Plan. However, the technology developments that have occurred over the last five years are promising and justify continued RD&D as part of the overall effort to move goods movement in the region to near-zero and zero emissions.

A Regional Goods Movement Environmental Action Plan

Working with a wide range of stakeholders and partner agencies, the Comprehensive Regional Goods Movement Plan and Implementation Strategy contributed to the development of the first regional goods movement environmental action plan to be adopted as part of the SCAG RTP. This action plan consists of a two-pronged approach with aggressive near-term pursuit of clean fuels technologies and operating strategies and a long-term RD&D program for zero-emission technology. The action plan lays out a timetable for RD&D and key decision-milestones that can be coordinated with regional and state air quality plans.

In parallel with this effort, regional stakeholders identified a near term demonstration opportunity for electric trucks using wayside power. This is one of the technology options that has high potential for implementation in the regional freight corridor system. This effort is being led by the South Coast Air Quality Management District in partnership with SCAG, county transportation agencies, and the San Pedro Bay ports. In cooperation with these agencies, the Los Angeles County Metro has also established a Zero Emission Freight Collaborative that will be making major contributions in partnership with the private sector to advancing zero-emission freight technologies in the region.

9.2 Where Do We Go From Here? Completing Implementation of the Comprehensive Regional Goods Movement Plan and Implementation Strategy

The Comprehensive Regional Goods Movement Plan and Implementation Strategy has accomplished much in terms of collecting critical data, developing analytical tools, conducting analysis, and working collaboratively with key stakeholders. Regional goods movement strategies have been refined and are being pursued on many fronts within the region. But much work remains to be done if the benefits of the Plan are to be fully realized.

Completing the East-West Freight Corridor

The alignment concepts studied in the SR-60 corridor hold much promise for developing an EWFC that can meet regional goals while minimizing neighborhood impacts. But there are some specific challenges that must be addressed. The next step must include more detailed conceptual engineering of particular segments of the alignment to demonstrate full engineering feasibility. In particular, some of the following issues should be addressed in engineering feasibility studies:

- Connections between the I-710 Freight Corridor and the EWFC, Conceptual Layout Adjacent to the UP Mainline and Connection to the San Jose Creek Segment. There are several challenges that were identified in this segment of the alignment and as part of the planning work completed to date, some alternative configurations and geometrics were examined that could help inform future engineering feasibility studies. While most of the alignment in this segment is through industrial areas, there are several locations where the alignment moves through commercial and residential areas. The Plan looked at potential options in these segments in order to minimize ROW impacts. Factors that need to be taken into account in examining these alternatives include the need to preserve rail access to a number of properties that are connected to the UP mainline by industrial spurs that would need to be preserved, safety issues where the freight corridor is close to the rail mainline, and potential costs of structural work associated with geometries that avoid property impacts.
- Elevated Structure Designs and the Need to Meet Flood Control Hydraulic Standards for the San Jose Creek. The structures that were assumed in the conceptual layout and feasibility study of the San Jose Creek segment appear to meet hydraulic standards that would be set by the Army Corps of Engineers and the Los Angeles County Department of Public Works. But this comes at the cost of a very expensive structure. Since this cost drives much of the costs of the entire project, a more complete engineering analysis of alternative designs would be useful.
- Connections Between the San Jose Creek Segment and the SR-60 Segment Through the City of Diamond Bar. This connection presents some serious challenges if property impacts are to be avoided. A number of different alignments were reviewed but detailed geometric studies were not completed. While there are alignments that could be developed to meet Caltrans standards, those that were examined have some performance drawbacks. The way that the alignment interacts with the improvements that are currently planned for the SR-60/SR-57 interchange may present opportunities but also presents challenges. Detailed engineering studies of this area would be beneficial.
- Alignment and Configuration Alternatives on SR-60 East of Diamond Bar. High level right-of-way analysis conducted for this study suggests that there is substantial right-of-way available along much of the segment of SR-60 moving through San Bernardino County between Diamond Bar and I-15. However, particularly in the western end of this segment, SR-60 does move through some residential areas where the right-of-way is especially constrained and more focused analysis of how the freight corridor could be accommodated within the existing freeway right-of-way is needed. It would also be useful to better understand any right-of-way constraints and traffic impacts associated with the approach from SR-60 to I-15 and how this connection will be accomplished.
- Overall Value Engineering of the Project. The alignment that was selected for analysis and financial planning for the project was very expensive. Certain segments had costs per mile that are much higher than typical freeway construction projects in the region. An overall value engineering effort must be undertaken in an effort to reduce these project costs to develop a financially feasible project.

While an engineering feasibility assessment or major corridor study that allows for a comprehensive assessment of alternatives from an overall corridor perspective would be beneficial, this will be costly and given other priorities of the various agencies that would need to be involved, a more incremental strategy may be more feasible. This project is also complicated by the fact that it crosses county lines and would require substantial cooperation among Caltrans, Metro, and SANBAG in its ultimate implementation. An alternative approach that would keep the implementation process moving would be a series of targeted engineering and planning studies to focus on the issues identified above. These could be undertaken for less cost than a comprehensive corridor study and would fill in some critical holes that would be necessary in order to proceed to an EIR/EIS. Further, these studies could be undertaken by individual agencies and would be less institutionally complex to implement. This would also create an opportunity to involve local agencies such as the sub-regional COGs and/or key city public works departments as the project concept evolves. Armed with this additional information, it should be feasible to initiate environmental studies within the next 5 years.

Another issue that will need to be addressed in the longer term is a governance structure for the corridor improvements. The complexity of dealing with a multi-county project has already been discussed, but the analysis conducted for this study suggests that even if the project is to be constructed in phases that are entirely contained within a single county, proceeding without a coordinated plan for the entire corridor could lead to unintended bottlenecks at segment limits. There are a number of obvious models for how to involve all of the key agencies through at least the environmental phases of the project including multi-agency collaborative funding and a policy committee of elected officials (like the I-710 EIR) or joint powers authorities. SCAG can play an important role by continuing to facilitate this process.

Implementing the Regional Rail Strategy – A Coalition of Common Interests

Early in the Comprehensive Regional Goods Movement Plan and Implementation Strategy, several stakeholders suggested that Southern California's rail program suffered from a lack of coordination among all of the region's stakeholders. The Chicago CREATE program was held up as a model of how public and private stakeholders have come together to present a unified plan for rail improvements in the region and how this has been successful in attracting funding for major investments. Some important rail projects in the SCAG region have also received state and federal funding but on some occasions, even these projects have been the focus of contentious interactions among key rail stakeholders in the region.

Clearly, a more collaborative approach would be beneficial to the region. It would provide clarity about the highest priority projects and their timing and could result in better, more coordinated planning. It would also send a message to state and federal agencies that Southern California can be an effective partner in the development of state and national rail and freight plans.

In order to move ahead with a Southern California rail collaboration, the partner agencies would need to agree on a package of projects that should be included in the regional priority list. While all of the projects in the Comprehensive Regional Goods Movement Plan and Implementation Strategy are high priority, it is unlikely that all regional partners would want to include them in a package to be advanced initially. With respect to capacity improvements, the Class I railroads do not plan for capacity improvements 20 years into the future. Recent history also suggests that there are significant financial disincentives to the railroads to having excess capacity. Very lean capacity has resulted in higher profitability in some cases and the railroads have been rewarded for this practice by financial markets. Given the high cost of capital investment for rail capacity expansion, it is very risky to commit to long-term investments in light of uncertainty about the future of Southern California rail markets. Port growth is somewhat contingent on other improvements being made and some of these projects face local opposition. Perhaps a more significant issue is understanding just how much expansion of passenger rail services is likely to occur on shared-use track. The Comprehensive Regional Goods Movement Plan and Implementation Strategy made certain assumptions about future passenger services based on Metrolink plans. While these plans would contribute to overall regional mobility goals, agreements need to be worked out between the railroads and Metrolink in order to achieve these levels of service. Once these agreements have been reached, a revised assessment of capacity needs should be conducted.

Whether all or only a subset of the rail projects presented in this Plan are included in a package, each party would be responsible for funding their respective project(s). It is understood that these funds are not completely fungible – for example, funds that cities or county transportation commissions put into grade separation projects would not be available for improving intermodal terminals. Nonetheless, showing the improvements as a complete package with funding contributions from each of the key public and private parties is a crucial aspect of building a regional and national funding partnership. This approach demonstrates that each partner is truly committed to the complete package..

The CREATE model is only one way of organizing such a collaborative program of rail improvements. Another model is that of the FAST Corridor program in Washington State. In the FAST program, the Class I railroads, the state DOT, the state's Freight Mobility Strategic Investment Board (FMSIB), and various city and county governments signed a Memorandum of Understanding that stated the ground rules for establishing a list of priority projects for the corridor and identifying how and how much each partner would contribute to the package. Those ground rules recognize that the share that each partner contributes to any particular project may vary depending on the nature of the project and the restrictions on the use of funds. The important point is that the MOU lays out priority projects that all partners agree to support and to work together to advance as a whole package. It is understood that by doing so, they are more likely to gain the benefits of the entire package by working together to advance individual projects as funding becomes available. This type of approach might be effective in Southern California, although whether such a collaborative process should be undertaken through an MOU or some other form of governance needs further discussion.

Building for the Zero Emission Future

The region has established an ambitious vision for how zero and near-zero emission technologies can be applied in the goods movement sector. This should signal to technology developers that there will be a market in Southern California and should encourage collaboration to develop the market. There is substantial data available from this Plan to help refine estimates of the markets for zero-emission technologies by identifying the types of applications and origin-destination patterns that lend themselves to the capabilities of evolving technologies. In upcoming work in the Gateway Cities, there will be more in-depth analysis of markets for initial applications of zero-emissions technologies in the I-710 corridor. SCAG can work in partnership with the SCAQMD to conduct other market studies for near-term demonstration and commercialization opportunities and share these analyses with the private sector.

Just as the initial concept for a demonstration project with a wayside power system connecting the Ports with near-dock intermodal terminals has come about through collaboration of various agencies, similar demonstration opportunities should be developed. Local partners should also be meeting with federal agencies (including the Environmental Protection Agency and the Department of Energy) to discuss the types of funding programs that would be most adaptable to the RD&D needs of deploying zero-emission technologies in Southern California, so that the region is well positioned to compete for these funds.

Closing the Funding Gap

As described in Chapter 8 and mentioned again in this chapter, the goods movement investments that need to be made in Southern California are beyond the current funding capacity of the region alone. There is no question that many key investments in the SCAG region are critical components of the national freight system. The economic analysis conducted for this project shows that while these projects have substantial benefits to the regional economy, they benefit the national economy as well. Chapter 8 presents a clear policy framework for developing financing plans by allocating cost responsibility in rough proportion to the allocation of benefits. The chapter presents illustrative approaches for implementing these policy principles with an array of financing tools. These include some new ideas for local user fees that allocate costs to the private sector as well as using local self-help funds.

While it is clear that the region and private sector stakeholders will need to make a major financial commitment if the Comprehensive Regional Goods Movement Plan and Implementation Strategy is to advance, there are a number of ways that the federal and state governments can help and not all of these involve providing grant-in-aid funding. Southern California has looked at the role of container fees or other types of freight user fees in funding nationally significant freight investments and has concluded that this type of program needs to be implemented on a national scale for it to be truly effective. The illustrative financing plans presented in this report provide a clear and justifiable role for such fees but research done in the region also shows that such fees could cause shifts to other markets that would create new strains on these other regions and potentially lead to higher overall costs for consumers. It should be possible to develop a managed national approach to user fees that emphasizes their application to support the National Strategic Freight Network that MAP-21 designates. Another area where federal action is important is to create greater leveraging opportunities for local funding of freight projects through credit support provisions of programs such as TIFIA. Finally, extending tax credit provisions and sources such as Private Activity Bonds provide other options for funding freight infrastructure.

Ultimately, more federal funding needs to be made available to Projects of National Significance. Whether these are discretionary programs similar to the TIGER grants or formula grants that are allocated to projects on the National Strategic Freight Network, this funding is an important component of the overall effort to maintain and improve nationally significant infrastructure. This issue has not been fully addressed in MAP-21 and the region should be able to use the data and analysis prepared for the Comprehensive Regional Goods Movement Plan and Implementation Strategy to present a cogent argument for the type and amount of funding that is needed from a federal contribution to goods movement financing.

9.3 Conclusions

The Comprehensive Regional Goods Movement Plan and Implementation Strategy has advanced the regional goods movement programs through the development of new data and tools; an expanded understanding of goods movement markets and the role of goods movement in the regional economy; evaluation of many long-standing issues and identification of new solutions to goods movement problems. A set of next steps have also been identified and will need to be pursued. Following the path laid out in this Plan, Southern California should be able to effectively realize the goods movement vision that framed this effort.

> *"To develop a world-class goods movement system that accommodates growth in the throughput of freight to the region and nation in ways that support the region's economic vitality, attainment of clean air standards, and quality of life for our communities"*