



# ON THE MOVE

*SOUTHERN CALIFORNIA DELIVERS THE GOODS*

SOUTHERN CALIFORNIA



ASSOCIATION of GOVERNMENTS



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**

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The contents of this report reflect the views of the Consultant who is responsible for the collection of facts and data presented herein, as well as the reasonable assessment of such facts and data. The contents do not necessarily reflect the official views or policies of SCAG or DOT. This report does not constitute a standard, specification or regulation.

# 8

## Paying for the Plan

### 8.1 Introduction

This chapter outlines possible financing strategies for the Comprehensive Regional Goods Movement Plan and Implementation Strategy. The financing strategies were developed with several objectives:

- Use the most appropriate Federal, state, local, and private funding sources to ensure effective projects and equitable allocation of costs, benefits, and risks;
- Capitalize on available and pending state and Federal revenue sources; and
- Form public private partnerships whenever feasible and appropriate to attract private sector investment.

The analysis of financing strategies was structured around three major packages of projects:

- **The East-West Freight Corridor and the I-15 portion of the Freight Corridor System.**<sup>1</sup> The package includes the EWFC with an alignment roughly paralleling SR 60 from the I-710 to I-15. It also includes a freight corridor on I-15 between SR 60 and I-10. In the remainder of the chapter this package is referred to as the EWFC for convenience even though it includes the I-15 segment of the regional freight corridor system.
- **Rail System Improvement Projects.** The Rail System Improvement Projects include all of the rail capacity improvements proposed for the BNSF Railway (BNSF) and Union Pacific Railroad (UP) mainlines and the 71 proposed projects that would eliminate at-grade rail and highway crossings along the most heavily traveled rail lines.
- **Truck Bottleneck Relief Projects, Intermodal Terminal Capacity Improvements (On-Dock and Near-Dock), and Other Truck Corridor and Access Improvements to Major Goods Movement Facilities.** This is a large package of varied projects. It includes several major highway capacity improvement projects (e.g., the I-710 Freight Corridor and the High Desert Corridor) and over 40 projects that relieve truck bottlenecks. Other highway projects would improve interchanges, widen streets, repair bridges, add truck climbing lanes, and improve access to the San Pedro Bay ports, the Port of Hueneme, and the Imperial County international ports of entry. The rail projects included in the package are on-dock and near-dock intermodal terminal capacity improvements and rail access improvements at the San Pedro Bay ports.

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<sup>1</sup> The I-710 portion of the Freight Corridor System was not included in this package of projects because LA Metro has been developing a funding package for this portion of the Freight Corridor System as it is likely to be the first portion of the Freight Corridor System to be developed and is a candidate for one of Metro's public-private partnership initiatives.



The private sector will benefit directly from all three packages through lower truck- and rail-shipping costs, more cost-effective and reliable supply chains, and a stronger competitive position in domestic and global markets. The public sector will benefit from all three packages through reduced roadway congestion and community impacts, reduced rail system congestion, from the growth in jobs and tax revenues generated by a productive and growing economy, and from a strengthening of the region as the nation's premier international trade gateway. An analysis of these benefits and economic impacts of these projects was presented in Chapters 6 and 7.

It is anticipated that the public sector will take a lead role in funding and implementing many of the projects under these packages for the following reasons:

- First, the public sector owns and operates the regional highway and local road systems, and it has a critical interest in the capacity and performance of the rail system as the region's key provider of freight transportation for long-distance domestic and international trade.
- Second, the public sector can bear the upfront costs and risks. A number of the projects in the plan, such as the EWFC and the mainline rail expansions, are high-cost projects that will require billions of dollars of investment over many years. These and a number of the smaller projects are also high-risk projects in that they must address complex community and economic development issues and comply with extensive, legally mandated environmental reviews. The public sector can accommodate the long-term risks of undertaking major regional freight projects; few private sector firms can take on such risks.
- Finally, the public sector will have a lead role in these projects because the public sector has the financing mechanisms to pay for the investments and taxing power to recapture the benefits of the projects. The transportation and economic benefits of these initiatives will be realized over decades by road and rail users and the many businesses and communities inside and outside the region that depend on safe and cost-effective goods movement. The benefits will accrue at local, regional, state, and national levels; to the public and private sectors; and within the private sector, to freight carriers, shippers, receivers, and their suppliers. It is difficult for a private sector firm to capture a stream of revenue from such a diverse group of beneficiaries, but the public sector can do so through motor fuel and vehicles user fees, tolls, other user fees, and sales taxes.

However, the public sector financing strategies for each package must ensure an appropriate and equitable distribution of benefits, costs, and risks: those who benefit should pay in reasonable proportion to their benefits. A consensus on the allocation of cost responsibility between the public and private sectors and among Federal, state, and local governments will be critical to gaining support for the goods movement plan.

This chapter outlines initial financing strategies for each of the goods movement plan packages. It summarizes the anticipated costs and funding sources, the likely distribution of benefits, and the probable allocation of cost responsibilities. The financing strategies are intended to illustrate how potential revenue streams can be used to fund the projects so that the allocation of cost responsibility is roughly equivalent to the distribution of benefits. However, not all of these revenue streams are available today and many of those that are available are limited in the degree to which they can be used to fund specific types of projects.

The discussion of each financing strategy includes identification of critical financial policy issues that are relevant to that particular package. These issues are brought together at the conclusion of the chapter with a discussion of the underlying policy issues and a call to action to ensure that the necessary funding mechanisms are in place as the region moves ahead with implementation of the Comprehensive Regional Goods Movement Plan and Implementation Strategy.

## 8.2 East-West Freight Corridor and I-15 Freight Corridor (EWFC)

### *Package Cost*

The analysis of the EWFC assumes that the truck lanes will be completed in four phases over a 10-year period beginning in 2022 and ending in 2032. The cost of the corridor is estimated at \$12.4 billion to \$16.2 billion depending on alignment and design. Table 8.1 lists the length, construction period, and range of costs of each segment of the project.

**Table 8.1 EWFC/I-15 Freight Corridor Cost Estimates and Phasing Plan**

| Segment      | Description                | Length<br>(Centerline Miles) | Construction Timeframe | Cost<br>(Billions)   |
|--------------|----------------------------|------------------------------|------------------------|----------------------|
| 1            | I-710 to I-605/SR 60       | 7.0                          | 2022-2024              | \$2.4                |
| 2            | I-605/SR 60 to SR 60/SR 57 | 17.4 -19.6                   | 2022-2029              | \$5.3-\$9.1          |
| 3            | SR 60/SR 57 to I-15        | 15.0                         | 2025-2029              | \$3.8                |
| 4            | I-15 to I-10               | 3.0                          | 2030-2032              | \$0.9                |
| <b>Total</b> |                            |                              |                        | <b>\$12.4-\$16.2</b> |

### *Package Funding Sources*

Table 8.2 sets out the anticipated funding sources for the EWFC package. The financing strategy anticipates funding half or more of the capital costs through bonds and loans that would be paid back with toll revenues. The balance of the capital cost would be funded through a combination of local, state, and Federal transportation funds, tax revenues, and equity investments by private sector partners. The revenue from truck tolls is the same for either alignment of Segment 2 since the choice of alignment does not change the volume of truck traffic. However, if lower costs can be realized, then more of the capital cost can be covered by toll revenues and Federal loans, substantially reducing the need for direct Federal, state, and local funding.

**Table 8.2 EWFC Capital Funding Sources**

| Funding Sources              | Amount (Billions)    | Share         |
|------------------------------|----------------------|---------------|
| Toll Revenue Bonds           | \$4.9                | 30.3%-39.5%   |
| State and Local Sources      | \$1.3-\$4.3          | 10.8%-26.3%   |
| TIFIA Loan                   | \$4.2-\$3.6          | 22.3%-33.7%   |
| Federal Transportation Funds | \$1.4-\$2.8          | 11.0%-17.3%   |
| Equity Investments           | \$0.6                | 3.7%-5.1%     |
| <b>Total Capital Sources</b> | <b>\$12.4-\$16.2</b> | <b>100.0%</b> |

The current sources and possible future sources of funding for the EWFC are as follows:

**Toll Revenue Bonds**

The bond issues provide \$4.9 billion in proceeds. The bonds would be issued as senior toll revenue bonds in 2022, 2035, and 2030. The proceeds would fund the construction of the segments and be repaid with revenue from the tolls on the truck lanes. To reduce the cost of capitalized interest for the project and the required annual debt service coverage, the State could provide a pledge or “backstop” for the toll bonds and any Federal loans in the form of a road user fee or an e-commerce tax. These options are described further under the state and local revenue sources. State support would reduce the required debt service coverage (compared to debt payable only from toll revenue) and increase the amount of funding that could be leveraged by the project.

For the purposes of this plan, it is anticipated that upon completion of the first segment in 2025, a toll of \$0.84 per mile would be collected during peak periods and a toll of \$0.42 per mile would be collected during off-peak periods. The tolls would be applied to each of the subsequent segments as they are opened to traffic. The tolls would increase by 2 percent annually; in 2060 the tolls would be \$1.68 per mile during peak periods and \$0.84 per mile during off-peak periods. The revenue projections anticipate that truck traffic in the toll lanes will also increase by approximately 2 percent annually until 2035, when the truck lanes reach capacity. Table 8.3 lists the anticipated tolls by 5-year period through 2060.

**Table 8.3 EWFC Freight Corridor Toll Rates**

| Year | Peak Period |             | Off-Peak |             |
|------|-------------|-------------|----------|-------------|
|      | Per Mile    | Full Length | Per Mile | Full Length |
| 2025 | \$0.84      | \$5.89      | \$0.42   | \$2.94      |
| 2030 | \$0.93      | \$38.63     | \$0.46   | \$19.32     |
| 2035 | \$1.03      | \$45.73     | \$0.51   | \$22.87     |
| 2040 | \$1.13      | \$50.49     | \$0.57   | \$25.25     |
| 2045 | \$1.25      | \$55.75     | \$0.63   | \$27.87     |
| 2050 | \$1.38      | \$61.55     | \$0.69   | \$30.77     |
| 2055 | \$1.52      | \$67.96     | \$0.76   | \$33.98     |
| 2060 | \$1.68      | \$75.03     | \$0.84   | \$37.51     |

The toll rates are based on a travel time savings analysis and estimated value of time for truckers of \$80 per hour (2010\$).<sup>2</sup> Truckers using the EWFC would see time savings relative to traveling on more congested parallel route and would compare the value of these time savings to the tolls that would be charged. The SCAG HDT model was used to estimate the number of truck users who would see sufficient time savings to justify paying the tolls and traffic and revenue estimates were developed based on the model results.

<sup>2</sup> Memorandum documenting Truck Value of Time Assumptions, prepared by Michael Fischer for I-710 Tolling Working Group, January 19, 2011, in support of toll analysis for the I-710 EIR/EIS. Value of time data draw heavily on research by the American Transportation Research Institute (ATRI), *An Analysis of the Operational Costs of Trucking*, December 2008 (adjusted by Washington State DOT for use in statewide freight analysis) and Southern California truck drayage rates compiled by Southern California representatives of Grubb & Ellis for a February 2010 presentation to the Distribution Managers Association of Southern California.

## State and Local Sources

State and local funding for the EWFC could be drawn from a number of potential sources, including:

- **State Transportation Programs** – The future of the State Highway Account (SHA) is uncertain; however an adjustment to the existing state excise tax rate could be made to enable funding of freight projects through the State Transportation Improvement Program (STIP). SCAG’s 2012-2035 Regional Transportation Plan/Sustainable Communities Strategies (RTP/SCS) assumes an additional \$0.15 per gallon state gasoline tax (also applicable to federal rates) starting in 2017 to 2024, which would provide additional revenue for the state transportation programs and be used to support freight projects.
- **GARVEE Bond Proceeds** – The State could allocate a portion of its formula share of annual federal-aid highway funds to the EWFC project, but the State also has the option of issuing Grant Anticipation Revenue Vehicle (GARVEE) bonds against those federal funds. GARVEE bonds allow states to issue debt backed by future federal-aid highway revenues. The state would be responsible for debt repayment.
- **Mileage-Based Road-User-Fee Revenues** – Mileage-based fee programs charge automobile and truck drivers for their use of roadways based on the number of miles they travel. Mileage-based or vehicle miles-of-travel (VMT) fees have been proposed as a supplement or replacement for motor fuel taxes because the revenue yield from motor fuel taxes has been declining relative to vehicle-miles of travel as car and truck engines have become more fuel efficient. With VMT fees, road users pay in direct proportion to their use of roadways, and the fees can be adjusted to account for the time of day, the type of road, the weight and size of vehicle, the type of engine and fuel, and the level of roadway congestion. Vehicle-miles of travel are used today to apportion truck registration and motor fuel taxes, with the tax revenues distributed in proportion to the total miles accrued by trucking firms within each state. States are testing VMT fee systems, looking for approaches that are cost-effective to use and administer, but also protect driver privacy.

SCAG’s 2012 RTP/SCS assumes that a mileage-based road-user fee would be adopted to replace the motor fuel tax beginning in 2025. This would generate substantial revenues for the region and the financing strategy for the EWFC package assumes that some of this funding would be available to help pay a portion of the costs of the Freight Corridor System.

- **Warehouse Business-Tax Revenues** – It may be appropriate to levy a business tax on warehousing, distribution and logistics firms that benefit from the faster and more reliable truck travel times provided by the EWFC/I-15 project. In California, a business tax can be levied on all businesses in a similar trade, subject to two-thirds voter approval by the city, county or special district electorate. Several of the cities in the region currently levy a variety of business taxes. Such taxes are usually based on the square footage of building space occupied by a firm. Over 500 million square feet, or 50 percent, of the region’s warehouse and distribution center supply is within 5 miles of SR 60. If a warehouse business tax were levied to help pay for goods movement infrastructure, it would be appropriate to apportion a significant share of the revenues to the EWFC project.
- **Infrastructure Financing Districts** – California cities and counties have had authority since 1990 to create infrastructure financing districts (IFDs) to fund local infrastructure improvements. IFDs can divert an incremental portion of property tax revenues for 30 years to fund improvements including highways and transit projects. IFDs have been used very sparingly probably because of the cumbersome process for formation and the fact that redevelopment agencies were also authorized to divert incremental property tax revenues. Although the State eliminated redevelopment agencies in 2011, local governments can still establish IFDs to support infrastructure investments that benefit local businesses and economic development. The cities surrounding the proposed EWFC project could form one or more IFDs to partially fund the project. IFD funds would go towards pay-as-you-go capital costs. As with the redevelopment authorities, creation of an IFD would require a two-thirds voter approval; however, the State Legislature has considered bills that would either eliminate or reduce the voter approval thresholds to 55 percent (Senate Bill 214 Wolk, Assembly Bill 2144 Perez). Although these bills were not enacted, there has been continuous policy dialogue about the need for changes to existing IFD law for implementation. As the impact of eliminating redevelopment agencies becomes better understood, modifications to tax increment allocations may be more palatable to the state and local jurisdictions.



- **E-Commerce Tax Revenues** – California law requires that residents pay a tax on the purchase amount of goods and services when their order is placed (or price and terms of the sale are negotiated) over the internet, an extranet, an EDI network, by electronic mail or over similar on-line systems. The e-commerce tax rate is equal to the sales tax rate. As of September 2012, the State also requires out-of-state and internet retailers who are part of a commonly controlled group or who work through California affiliates to pay a use tax. The State estimates that this recent change in law will result in an additional \$260 million in revenue for FY 2013. A portion of this e-commerce revenue could reasonably be dedicated to transportation purposes given the high volume of e-retailing and distribution businesses in California and the SCAG region and e-retailing industry’s dependence on fast, reliable, and cost-effective goods movement. If e-commerce revenues were used solely for transportation and if those revenues were allocated in proportion to population, then the SCAG region would receive an estimated \$3.1 billion through 2035.

### **TIFIA Loan**

The TIFIA program (authorized by the Transportation Infrastructure Finance and Innovation Act) provides federal credit assistance to nationally or regionally significant surface transportation projects, including highway, transit and rail projects. The program is designed to fill market gaps and leverage substantial private co-investment by providing projects with supplemental or subordinate debt. The program offers more flexible repayment terms and more favorable interest rates than other lenders.

TIFIA loan proceeds are assumed to contribute between \$3.6 billion and \$4.2 billion in funding for the project. Debt payments would be made over a 35-year period from 2030 to 2065. The loan would be repaid with toll and interest revenue after payment of debt service on the senior toll revenue bonds. The amount of the TIFIA loan is constrained by the net amount of toll revenues that can be generated by the EWFC project and the debt service coverage requirement. Congress recently renewed the TIFIA program, increasing the amount of money available for loans and credit guarantees while also raising the maximum TIFIA loan amount to 49 percent of eligible project cost from 33 percent. However, the net toll revenues projected for the EWFC project will only support a TIFIA loan equivalent to 33 percent of the project cost.

### **Federal Transportation Program Funds**

Congress reauthorized the Federal surface transportation programs in July 2012. The legislation – “Moving Ahead for Progress in the 21<sup>st</sup> Century Act” (MAP-21) – maintains current Federal transportation funding levels (adjusted for inflation) for the Federal fiscal years 2013 and 2014. The EWFC project financing strategy assumes that the State will continue to receive Federal transportation funds for the next several or more years at levels consistent with what California has received under the previous transportation bills.

The longer-term outlook for Federal transportation funding is less clear, but Congress laid the groundwork in MAP-21 for what might eventually become a national freight program. MAP-21 calls for the establishment of a national freight policy and goals, designation of a national freight network, development of a national freight strategic plan, compilation of a freight transportation condition and performance report, and encouragement of state freight plans. It also provided for a higher Federal contribution to the construction of high-priority transportation projects, including freight projects. The new guidelines allow up to 95 percent (compared to the current 90 percent) Federal funding for Interstate Highway projects and 90 percent (compared to 80 percent) on other federal-aid eligible projects. This opens up the possibility of future funding for nationally and regionally significant freight projects such as the EWFC project.

### **Equity Investments**

The EWFC assumes that a public-private partnership owner/operator would make an equity contribution of between \$600 to \$635 million to fund upfront expenditures in exchange for return-on-investment income from future residual toll and local revenues. The investor would receive all toll revenue after senior toll revenue bond and TIFIA debt service payments, with up to an 11 percent annual return on contributed equity. Payments to the equity investor would be made over a 49-year period ending in 2080. The involvement of a private party also has the potential to lower life-cycle project costs.

Tables 8.4 and 8.5 detail the projected revenues and the anticipated capital, operations, maintenance, and debt service expenditures by year for the high-cost and the low-cost estimates of project costs to illustrate a range of potential financing options depending on project costs.

**Table 8.4 Cash Flow Projections for High-Cost Assumptions**  
**Revenues and Capital, O&M, and Debt Service Expenditures**  
*Millions of Dollars*

|      | Revenues                |            |               |               |                |                     |                                | Expenditures  |                 |                   |                    |               |
|------|-------------------------|------------|---------------|---------------|----------------|---------------------|--------------------------------|---------------|-----------------|-------------------|--------------------|---------------|
|      | State and Local Sources | MAP-21     | Toll Revenues | Bond Proceeds | TIFIA Proceeds | Equity Contribution | Interest Earnings <sup>1</sup> | Capital Costs | Operating Costs | Bond Debt Service | TIFIA Debt Service | Equity Return |
| 2022 | \$ 74.4                 | \$ -       | \$ -          | \$ 2,803.0    | \$ -           | \$ -                | \$ -                           | \$ 1,795.5    | \$ -            | \$ -              | \$ -               | \$ -          |
| 2023 | 499.3                   | -          | -             | -             | 515.9          | -                   | 29.8                           | 1,853.0       | -               | 190.2             | 83.7               | -             |
| 2024 | 293.0                   | -          | -             | -             | 1,886.1        | -                   | 7.3                            | 1,912.3       | -               | 190.2             | 83.9               | -             |
| 2025 | 322.5                   | -          | 56.2          | 1,715.0       | -              | -                   | 7.3                            | 1,825.8       | 8.1             | 190.2             | 76.9               | -             |
| 2026 | 1,003.1                 | -          | 58.5          | -             | 1,207.2        | -                   | 12.2                           | 1,884.3       | 8.4             | 305.7             | 82.6               | -             |
| 2027 | 324.8                   | 1,344.6    | 60.9          | -             | -              | 600.0               | 12.2                           | 1,944.6       | 8.7             | 305.7             | 83.5               | -             |
| 2028 | 874.8                   | 1,455.4    | 63.3          | -             | -              | -                   | 12.2                           | 2,006.8       | 8.9             | 305.7             | 84.3               | -             |
| 2029 | 2,393.7                 | -          | 65.9          | -             | -              | -                   | 12.2                           | 2,071.0       | 9.2             | 306.3             | 49.6               | 35.6          |
| 2030 | 83.4                    | -          | 407.4         | 379.8         | -              | -                   | 12.2                           | 276.6         | 56.5            | 315.8             | 90.0               | 40.6          |
| 2031 | 264.8                   | -          | 423.8         | -             | -              | -                   | 15.1                           | 285.4         | 58.3            | 350.6             | 70.5               | 42.1          |
| 2032 | 380.4                   | -          | 440.9         | -             | -              | -                   | 13.1                           | 294.6         | 60.2            | 363.8             | 72.3               | 43.6          |
| 2033 | 87.1                    | -          | 491.8         | -             | -              | -                   | 13.1                           | -             | 66.6            | 378.3             | 99.3               | 47.8          |
| 2034 | 88.4                    | -          | 511.7         | -             | -              | -                   | 13.1                           | -             | 68.7            | 393.6             | 101.3              | 49.5          |
| 2035 | 90.9                    | -          | 532.4         | -             | -              | -                   | 13.1                           | -             | 70.9            | 409.5             | 104.5              | 51.4          |
| 2036 | 92.2                    | -          | 543.0         | -             | -              | -                   | 13.1                           | -             | 73.2            | 417.7             | 105.2              | 52.3          |
| 2037 | 93.6                    | -          | 553.9         | -             | -              | -                   | 13.1                           | -             | 75.5            | 426.1             | 105.8              | 53.2          |
| 2038 | 94.9                    | -          | 565.0         | -             | -              | -                   | 13.1                           | -             | 78.0            | 434.6             | 106.3              | 54.1          |
| 2039 | 96.3                    | -          | 576.3         | -             | -              | -                   | 13.1                           | -             | 80.5            | 443.3             | 106.9              | 55.0          |
| 2040 | 97.7                    | -          | 587.8         | -             | -              | -                   | 13.1                           | -             | 83.0            | 452.1             | 107.4              | 56.0          |
| 2041 | 99.1                    | -          | 599.6         | -             | -              | -                   | 13.1                           | -             | 85.7            | 461.2             | 107.9              | 56.9          |
| 2042 | 100.5                   | -          | 611.5         | -             | -              | -                   | 13.1                           | -             | 88.4            | 470.4             | 108.4              | 57.9          |
| 2043 | 102.0                   | -          | 623.8         | -             | -              | -                   | 13.1                           | -             | 91.3            | 479.8             | 108.9              | 58.9          |
| 2044 | 103.4                   | -          | 636.3         | -             | -              | -                   | 13.1                           | -             | 94.2            | 489.4             | 109.3              | 59.9          |
| 2045 | 104.9                   | -          | 649.0         | -             | -              | -                   | 13.1                           | -             | 97.2            | 499.2             | 109.7              | 60.9          |
| 2046 | 106.4                   | -          | 662.0         | -             | -              | -                   | 13.1                           | -             | 100.3           | 509.2             | 110.1              | 61.9          |
| 2047 | 108.0                   | -          | 675.2         | -             | -              | -                   | 13.1                           | -             | 103.5           | 519.4             | 110.4              | 63.0          |
| 2048 | 109.5                   | -          | 688.7         | -             | -              | -                   | 13.1                           | -             | 106.8           | 529.8             | 110.7              | 64.0          |
| 2049 | 111.1                   | -          | 702.5         | -             | -              | -                   | 13.1                           | -             | 110.2           | 540.4             | 110.9              | 65.1          |
| 2050 | 112.7                   | -          | 716.5         | -             | -              | -                   | 13.1                           | -             | 113.8           | 550.3             | 112.0              | 66.2          |
| 2051 | 114.3                   | -          | 730.9         | -             | -              | -                   | 13.1                           | -             | 117.4           | 559.8             | 113.7              | 67.4          |
| 2052 | 116.0                   | -          | 745.5         | -             | -              | -                   | 318.8                          | -             | 121.2           | 569.4             | 393.4              | 96.3          |
| 2053 | 117.7                   | -          | 760.4         | -             | -              | -                   | 5.4                            | -             | 125.0           | 230.4             | 459.1              | 68.9          |
| 2054 | 119.4                   | -          | 775.6         | -             | -              | -                   | 5.4                            | -             | 129.1           | 233.3             | 467.9              | 70.1          |
| 2055 | 121.1                   | -          | 791.1         | -             | -              | -                   | 190.5                          | -             | 133.2           | 236.3             | 645.0              | 88.1          |
| 2056 | 122.8                   | -          | 806.9         | -             | -              | -                   | 1.0                            | -             | 137.4           | 34.6              | 686.5              | 72.1          |
| 2057 | 124.6                   | -          | 823.1         | -             | -              | -                   | 1.0                            | -             | 141.8           | 35.2              | 698.2              | 73.3          |
| 2058 | 126.4                   | -          | 839.5         | -             | -              | -                   | 1.0                            | -             | 146.4           | 35.9              | 710.1              | 74.6          |
| 2059 | 128.2                   | -          | 856.3         | -             | -              | -                   | 1.0                            | -             | 151.1           | 36.5              | 722.1              | 75.9          |
| 2060 | 130.1                   | -          | 873.4         | -             | -              | -                   | 41.4                           | -             | 155.9           | 37.1              | 771.1              | 80.8          |
| 2061 | 130.1                   | -          | 890.9         | -             | -              | -                   | 0.0                            | -             | 160.9           | -                 | 781.9              | 78.2          |
| 2062 | 130.1                   | -          | 908.7         | -             | -              | -                   | 0.0                            | -             | 166.0           | -                 | 793.4              | 79.3          |
|      | \$ 9,793.6              | \$ 2,800.0 | \$ 22,306.2   | \$ 4,897.8    | \$ 3,609.2     | \$ 600.0            | \$ 947.7                       | \$ 16,149.8   | \$ 3,491.6      | \$ 13,237.3       | \$ 9,954.7         | \$ 2,120.9    |

1 - Includes release of debt service reserve fund.

**Table 8.5 Cash Flow Projections for Low-Cost Assumptions  
Revenues and Capital, O&M and Debt Service Expenditures  
Millions of Dollars**

|      | Revenues                |                          |               |               |                |                     |                                | Expenditures  |                 |                   |                    |               |
|------|-------------------------|--------------------------|---------------|---------------|----------------|---------------------|--------------------------------|---------------|-----------------|-------------------|--------------------|---------------|
|      | State and Local Sources | National Freight Program | Toll Revenues | Bond Proceeds | TIFIA Proceeds | Equity Contribution | Interest Earnings <sup>1</sup> | Capital Costs | Operating Costs | Bond Debt Service | TIFIA Debt Service | Equity Return |
| 2022 | \$ 74.4                 | \$ -                     | \$ -          | \$ 2,803.0    | \$ -           | \$ -                | \$ -                           | \$ 1,376.6    | \$ -            | \$ -              | \$ -               | \$ -          |
| 2023 | 265.7                   | -                        | -             | -             | -              | -                   | 38.2                           | 1,420.7       | -               | 190.2             | -                  | -             |
| 2024 | 480.2                   | -                        | -             | -             | 1,030.1        | -                   | 11.2                           | 1,466.1       | -               | 190.2             | 59.0               | -             |
| 2025 | 211.7                   | -                        | 56.2          | 1,715.0       | -              | -                   | 7.3                            | 1,365.4       | 8.1             | 190.2             | 52.6               | -             |
| 2026 | 1,056.1                 | -                        | 58.5          | -             | 262.3          | -                   | 19.7                           | 1,409.1       | 8.4             | 305.7             | 47.3               | -             |
| 2027 | 326.8                   | -                        | 60.9          | -             | 1,416.7        | -                   | 12.2                           | 1,454.2       | 8.7             | 305.7             | 48.1               | -             |
| 2028 | 325.5                   | -                        | 63.3          | -             | 1,463.2        | -                   | 12.2                           | 1,500.7       | 8.9             | 305.7             | 48.9               | -             |
| 2029 | 322.7                   | 913.7                    | 65.9          | -             | -              | 635.0               | 12.2                           | 1,548.7       | 9.2             | 306.3             | 49.6               | 35.6          |
| 2030 | 83.4                    | -                        | 407.4         | 379.8         | -              | -                   | 12.2                           | 276.6         | 56.5            | 315.8             | 90.0               | 40.6          |
| 2031 | 113.1                   | 151.6                    | 423.8         | -             | -              | -                   | 15.1                           | 285.4         | 58.3            | 350.6             | 70.5               | 42.1          |
| 2032 | 85.9                    | 294.6                    | 440.9         | -             | -              | -                   | 13.1                           | 294.6         | 60.2            | 363.8             | 72.3               | 43.6          |
| 2033 | 87.1                    | -                        | 491.8         | -             | -              | -                   | 13.1                           | -             | 66.6            | 378.3             | 99.3               | 47.8          |
| 2034 | 88.4                    | -                        | 511.7         | -             | -              | -                   | 13.1                           | -             | 68.7            | 393.6             | 101.3              | 49.5          |
| 2035 | 90.9                    | -                        | 532.4         | -             | -              | -                   | 13.1                           | -             | 70.9            | 409.5             | 104.5              | 51.4          |
| 2036 | 92.2                    | -                        | 543.0         | -             | -              | -                   | 13.1                           | -             | 73.2            | 417.7             | 105.2              | 52.3          |
| 2037 | 93.6                    | -                        | 553.9         | -             | -              | -                   | 13.1                           | -             | 75.5            | 426.1             | 105.8              | 53.2          |
| 2038 | 94.9                    | -                        | 565.0         | -             | -              | -                   | 13.1                           | -             | 78.0            | 434.6             | 106.3              | 54.1          |
| 2039 | 96.3                    | -                        | 576.3         | -             | -              | -                   | 13.1                           | -             | 80.5            | 443.3             | 106.9              | 55.0          |
| 2040 | 97.7                    | -                        | 587.8         | -             | -              | -                   | 13.1                           | -             | 83.0            | 452.1             | 107.4              | 56.0          |
| 2041 | 99.1                    | -                        | 599.6         | -             | -              | -                   | 13.1                           | -             | 85.7            | 461.2             | 107.9              | 56.9          |
| 2042 | 100.5                   | -                        | 611.5         | -             | -              | -                   | 13.1                           | -             | 88.4            | 470.4             | 108.4              | 57.9          |
| 2043 | 102.0                   | -                        | 623.8         | -             | -              | -                   | 13.1                           | -             | 91.3            | 479.8             | 108.9              | 58.9          |
| 2044 | 103.4                   | -                        | 636.3         | -             | -              | -                   | 13.1                           | -             | 94.2            | 489.4             | 109.3              | 59.9          |
| 2045 | 104.9                   | -                        | 649.0         | -             | -              | -                   | 13.1                           | -             | 97.2            | 499.2             | 109.7              | 60.9          |
| 2046 | 106.4                   | -                        | 662.0         | -             | -              | -                   | 13.1                           | -             | 100.3           | 509.2             | 110.1              | 61.9          |
| 2047 | 108.0                   | -                        | 675.2         | -             | -              | -                   | 13.1                           | -             | 103.5           | 519.4             | 110.4              | 63.0          |
| 2048 | 109.5                   | -                        | 688.7         | -             | -              | -                   | 13.1                           | -             | 106.8           | 529.8             | 110.7              | 64.0          |
| 2049 | 111.1                   | -                        | 702.5         | -             | -              | -                   | 13.1                           | -             | 110.2           | 540.4             | 110.9              | 65.1          |
| 2050 | 112.7                   | -                        | 716.5         | -             | -              | -                   | 13.1                           | -             | 113.8           | 550.3             | 112.0              | 66.2          |
| 2051 | 114.3                   | -                        | 730.9         | -             | -              | -                   | 13.1                           | -             | 117.4           | 559.8             | 113.7              | 67.4          |
| 2052 | 116.0                   | -                        | 745.5         | -             | -              | -                   | 318.8                          | -             | 121.2           | 569.4             | 393.4              | 96.3          |
| 2053 | 117.7                   | -                        | 760.4         | -             | -              | -                   | 5.4                            | -             | 125.0           | 230.4             | 459.1              | 68.9          |
| 2054 | 119.4                   | -                        | 775.6         | -             | -              | -                   | 5.4                            | -             | 129.1           | 233.3             | 467.9              | 70.1          |
| 2055 | 121.1                   | -                        | 791.1         | -             | -              | -                   | 190.5                          | -             | 133.2           | 236.3             | 645.0              | 88.1          |
| 2056 | 122.8                   | -                        | 806.9         | -             | -              | -                   | 1.0                            | -             | 137.4           | 34.6              | 686.5              | 72.1          |
| 2057 | 124.6                   | -                        | 823.1         | -             | -              | -                   | 1.0                            | -             | 141.8           | 35.2              | 698.2              | 73.3          |
| 2058 | 126.4                   | -                        | 839.5         | -             | -              | -                   | 1.0                            | -             | 146.4           | 35.9              | 710.1              | 74.6          |
| 2059 | 128.2                   | -                        | 856.3         | -             | -              | -                   | 1.0                            | -             | 151.1           | 36.5              | 722.1              | 75.9          |
| 2060 | 130.1                   | -                        | 873.4         | -             | -              | -                   | 41.4                           | -             | 155.9           | 37.1              | 771.1              | 80.8          |
| 2061 | 130.1                   | -                        | 890.9         | -             | -              | -                   | 0.0                            | -             | 160.9           | -                 | 781.9              | 78.2          |
| 2062 | 130.1                   | -                        | 908.7         | -             | -              | -                   | 0.0                            | -             | 166.0           | -                 | 793.4              | 79.3          |
|      | \$ 6,625.0              | \$ 1,359.9               | \$ 22,306.2   | \$ 4,897.8    | \$ 4,172.4     | \$ 635.0            | \$ 967.4                       | \$ 12,398.1   | \$ 3,491.6      | \$ 13,237.3       | \$ 9,715.7         | \$ 2,120.9    |

1 - Includes release of debt service reserve fund.

## Package Benefits

The major beneficiaries of the EWFC and their key benefits are listed in Table 8.6. Regional beneficiaries – primarily road users, businesses, and communities in the SCAG region – are differentiated from national beneficiaries to allow comparisons in the next sections of who benefits and who pays.

**Table 8.6 EWFC Beneficiaries and Key Benefits**

| EWFC Beneficiaries |   | Key Benefits      |  |
|--------------------|---|-------------------|--|
| Regional Economy   | Roadway Users                           | Truckers          | <ul style="list-style-type: none"> <li>• Reduced travel time and driver and fuel costs;</li> <li>• More predictable travel times to meet pick-up and delivery windows; and</li> <li>• Better equipment utilization.</li> </ul>   |
|                    |   | General Motorists | <ul style="list-style-type: none"> <li>• Reduced travel time and driver and fuel costs;</li> <li>• Reduce driver stress because of separation of autos and trucks; and</li> <li>• Fewer truck-involved crashes.</li> </ul>   |
|                    | Ports and Local and Regional Businesses |                   | <ul style="list-style-type: none"> <li>• More cost effective and reliable supply chains and distribution networks;</li> <li>• Lower cost of doing business in LA region; and</li> <li>• Improved competitiveness in national and global markets, especially for e-retailers who stage distribution out of the region.</li> </ul> |
|                    | Communities, the Region and the State   |                   | <ul style="list-style-type: none"> <li>• Reduced air pollution and greenhouse gas (GHG) emissions;</li> <li>• Lower losses from fatalities, injuries and property damage in truck-involved crashes; and</li> <li>• More economically competitive economy generating jobs and tax revenues.</li> </ul>                            |
| National Economy   | National/International Businesses       |                   | <ul style="list-style-type: none"> <li>• More cost effective and reliable supply chains; and</li> <li>• Lower cost of locating and expanding business in Southern California.</li> </ul>   |
|                    | Federal Government                      |                   | <ul style="list-style-type: none"> <li>• Improved access to and from the nation’s largest international container port and trade gateway;</li> <li>• Improved NHS (freight system) capacity and connectivity; and</li> <li>• Sustained economic growth in the nation’s 2nd largest metropolitan region.</li> </ul>               |

The analysis of economic benefits, reported in Chapter 7, estimates that 70 percent of the long-run direct and indirect economic benefits of the EWFC will accrue to the region and 30 percent to the rest of California and the nation. By sector, the analysis estimates that 95 percent of the benefits will accrue to the private sector (e.g., highway users, businesses, and equity investors) and 5 percent to the public sector (through increased revenues, etc.).

## Package Cost Responsibility

Financial analysis for the EWFC involved allocating cost responsibility to the various beneficiary groups as a first approximation of who would pay for the EWFC – through their purchase of goods and services, user fees, as well as direct and indirect taxes. Table 8.7 shows the estimated cost responsibility of the major beneficiaries of the EWFC. The cost responsibility is determined by looking at who actually pays for each of the proposed revenue sources.

**Table 8.7 EWFC Beneficiaries and Cost Responsibility**

| EWFC Beneficiaries |                         | Cost Responsibility   |
|--------------------|-------------------------|---|
| Regional Economy   | Highway Users           | <ul style="list-style-type: none"> <li>• \$4.9 billion in truck lane tolls</li> <li>• \$3.6 to \$4.2 billion in TIFIA loan repayments</li> <li>• \$3.4 to \$0.4 billion in regional VMT road user fees</li> </ul> |
|                    | City/County Governments | <ul style="list-style-type: none"> <li>• \$0.6 billion in Infrastructure Financing District property taxes</li> <li>• \$0.6 to \$0.1 billion in interest earnings on surplus toll revenues</li> </ul>             |
|                    | Businesses              | <ul style="list-style-type: none"> <li>• \$0.15 to \$0.25 billion in warehouse business taxes</li> </ul>  |
| National Economy   | Federal Government      | <ul style="list-style-type: none"> <li>• \$2.8 to \$1.4 billion in USDOT highway program grants</li> </ul>  |
|                    | Private Investors       | <ul style="list-style-type: none"> <li>• \$0.60 to \$0.63 billion in equity investments</li> </ul>  |

The allocation of cost responsibility suggests that about 85 percent of the costs would be borne regionally and 15 percent nationally (by the Federal government and private equity investors). By sector, about 80 percent of the costs would be borne by the private sector (e.g., Highway users, businesses, equity investors) and 20 percent by the public sector (e.g., city, county and Federal government).

The estimates of who benefits and who pays are first approximations, but comparison of the benefits and cost responsibilities suggests that for the financing strategy presented in this report (which takes into account potential availability of the different funding sources as well as attempting to match who pays with who benefits) the region is contributing a large share and the nation a small share in relation to their anticipated benefits. Restructuring the financing strategy to better balance benefits and costs would require a greater Federal contribution, which would in turn require a greater Federal commitment to funding projects of national and regional significance such as the EWFC. The impediments to obtaining more federal funding are discussed in the final section of this chapter, which deals with the underlying policy actions.

### 8.3 Rail Capacity and Improvements Program

#### *Package Costs*

As described in Chapter 6, the rail capacity and improvements program would add rail capacity along the BNSF and UP mainlines and eliminate at-grade rail-rail and road-rail crossings along the most heavily traveled rail lines. The program has two major elements: expansion of mainline rail capacity with an estimated cost of \$3.1 billion; and separation of existing, at-grade, road-rail crossings with an estimated cost of \$5.6 billion. The cost of the rail improvement program is estimated at \$8.7 billion over 20 years.

Table 8.8 lists the estimated costs of the key projects.

**Table 8.8 Mainline Rail Capacity Expansion Projects and Costs**  
*Nominal Dollars*

| Capacity Enhancement  | Estimated Costs (Millions) |
|---|----------------------------|
| Colton rail-to-rail grade separation – BNSF Cajon Subdivision   | \$243.6                    |
| BNSF San Bernardino Subdivision third and fourth mainline tracks – Barstow to Keenbrook                 | \$762.1                    |
| UP Mojave Subdivision second main track – Colton Crossing to Redondo Junction                           | \$1,188.7                  |
| UP Alhambra Subdivision double tracking – Devore Road to West Colton (including Rancho Flying Junction) | \$522.0                    |
| West Colton to City of Industry – UP Los Angeles Subdivision  | \$376.1                    |
| <b>Total</b>  | <b>\$3,092.4</b>           |

The grade separation portion of the rail capacity program is intended to reduce vehicle delays at road-rail at-grade crossings and reduce pollutant emissions from automobiles and diesel locomotives forced to idle in stopped traffic at existing at-grade crossings. As noted earlier, the estimated costs of the grade separation program is \$5.5 billion.

### ***Funding Sources***

Table 8.9 lists the anticipated funding sources for the rail capacity improvements program. Approximately \$2.7 billion or 31 percent of the \$8.7 billion is committed and programmed for funding in SCAG’s 2013 Federal Transportation Improvement Program (FTIP). Committed funds include a mix of local funds, state funds from the Trade Corridor Improvement Fund bond issue, and some federal funding from TIGER grants. The financial analysis addressed the unfunded portion of the rail expansion projects by issuing \$1.3 billion in Metrolink revenue bonds (that would need to be supported by pledges of resources from the county transportation commissions, potentially through a supplemental regional/local sales tax initiative(s)) and the Class I railroads contributing \$1.7 billion. The unfunded portion of the grade separation program could be funded by using \$2.1 billion from port and shipper contributions, \$0.497 million from city/county transportation commission contributions, and \$0.632 million from Federal grant funding.

**Table 8.9 Rail Capacity and Improvement Program Capital Funding Sources**

| Funding Sources                 | Amount (Millions) |
|---------------------------------|-------------------|
| <b><i>Rail Expansion</i></b>    |                   |
| Railroad Contributions          | \$1,658.8         |
| Metrolink Revenue Bonds         | \$1,305.1         |
| State Grants                    | \$94.7            |
| Federal Grants                  | \$33.8            |
| <b><i>Grade Separations</i></b> |                   |
| Port/Shipper Contribution       | \$2,092.4         |
| Committed Funds                 | \$2,298.0         |
| City Contribution               | \$497.0           |
| Federal Contribution            | \$631.6           |
| <b>Total</b>                    | <b>\$8,611.4</b>  |

## Package Benefits

The major beneficiaries of the rail capacity program and their key benefits are listed in Table 8.10.

**Table 8.10 Rail Capacity Program Beneficiaries and Key Benefits**

| Rail Program Beneficiaries |  | Key Benefits  |   |
|----------------------------|--|---|---|
| Regional Economy           | <i>From mainline rail capacity expansion projects:</i> |   |   |
|                            | Ports  | <ul style="list-style-type: none"> <li>• Increased throughput at the ports;</li> <li>• Reduced congestion and delays within the port terminals and at the port gates;</li> <li>• Stronger competitive position relative to Canadian, Mexican, and US Gulf and East Coast ports;</li> <li>• Sufficient future rail capacity to maintain and increase share of Pacific Rim import/export trade; and</li> <li>• Additional port and distribution industry jobs.</li> </ul> |   |
|                            | Metrolink  | <ul style="list-style-type: none"> <li>• Additional commuter rail capacity and services;</li> <li>• Reduced rail congestion and schedule delays; and</li> <li>• Better equipment utilization.</li> </ul>  |   |
|                            | Communities, Region, the State, and Local Businesses   | <ul style="list-style-type: none"> <li>• Growth in logistics jobs for low and middle income residents due to port growth; and</li> <li>• Lower transportation costs for domestic shippers of consumer goods leading to lower costs for consumers in the region.</li> </ul>  |   |
|                            | <i>From grade separation projects:</i>                 |   |   |
|                            | Auto and Truck Drivers                                 | <ul style="list-style-type: none"> <li>• Reduced delays at rail grade crossings; and</li> <li>• Reduced local trucking costs.</li> </ul>  |   |
|                            | Businesses   | <ul style="list-style-type: none"> <li>• More cost effective and reliable supply chains and distribution networks;</li> <li>• Lower cost of doing business in SCAG region; and</li> <li>• Improved competitiveness in national and global markets, especially for e-retailers that stage distribution out of the region.</li> </ul>   |   |
|                            | Communities  | <ul style="list-style-type: none"> <li>• Less truck traffic congestion, reduced AQ and GHG emissions;</li> <li>• Improved public safety; and</li> <li>• Enhanced community cohesion.</li> </ul>   |   |
|                            | National Economy                                       | <i>From mainline rail capacity expansion projects:</i>  |   |
|                            |  | Class I Railroads   | <ul style="list-style-type: none"> <li>• Future capacity to expand transcontinental intermodal rail service and compete cost-effectively with all-water/Panama Canal shipping;</li> <li>• Reduced risk of delays and crashes at rail/rail grade crossings; and</li> <li>• Improved network velocity.</li> </ul> |
| Importers and Exporters    |  | <ul style="list-style-type: none"> <li>• Lower rail intermodal shipping costs; and</li> <li>• More competitive freight transportation services; e.g., transcontinental intermodal rail versus containership via Panama Canal.</li> </ul>  |   |
| Federal Government         |  | <ul style="list-style-type: none"> <li>• Maintain and improve the capacity of the POLA/LB as a critical international trade gateway;</li> <li>• Expand national freight rail system capacity and connectivity; and</li> <li>• Sustain economic competitiveness and development.</li> </ul>  |   |

The analysis of economic benefits of this package of improvements reported in Chapter 7 is more complex than in the case of the EWFC and raises some different issues. Most of the direct benefits and a large share of the total benefits to the SCAG region are the result of economic activities associated with the ability of the San Pedro Bay ports to grow to meet demand. This generates logistics-related jobs in various economic sectors. Without the rail capacity investments, this activity would be lost to other port regions. From a national perspective, this loss to the SCAG region is simply a transfer from one region to another. But the consequences to the national economy of this shift to other regions would be higher transportation costs for shippers.

Investments in the Southern California rail system directly benefit shippers by allowing them to continue taking advantage of the lower costs associated with the Southern California logistics system. The gains in economic activity in the SCAG region also generate indirect and induced economic gains in the rest of the U.S. In total, the economic gains nationally are roughly equivalent to the economic gains in the SCAG region.<sup>3</sup> By sector, the analysis estimates that about 97 percent of the benefits will accrue to private sector (e.g., highway users, businesses, and equity investors) and only 3 percent to the public sector through increased revenues, better passenger rail service, etc.

### ***Cost Responsibility***

Allocating cost responsibility to the beneficiary groups provides a first approximation of who will pay for the rail capacity program. The results are summarized in Table 8.11.

**Table 8.11 Rail Capacity Program and Cost Responsibility**

| Rail Capacity Beneficiaries |                    | Cost Responsibility  |
|-----------------------------|--------------------|--|
| <b>Regional Economy</b>     | Ports/Shippers     | <ul style="list-style-type: none"> <li>• \$2,092.4 million from shippers in port access fees</li> <li>• \$197.9 million for grade separations near the ports from port fees in direct and indirect port use and access fees</li> </ul> |
|                             | County Governments | • \$2,100.1 million from committed grade separation project funding  |
|                             | City Governments   | • \$497.0 million from roadway funds   |
|                             | Metrolink          | • \$1,287.3 million from revenue bonds for rail expansion  |
|                             | State              | • \$70.0 million from state rail programs  |
| <b>National Economy</b>     | Railroads          | • \$1,735.1 million from capital investment revenues   |
|                             | Federal Government | • \$631.6 million from U.S. DOT highway/rail grade separation and freight program grants   |

The allocation of cost responsibility based on the initial financial analysis above suggests that 75 percent of the costs would be borne by the region (e.g., ports/shippers, city, county, state, Metrolink) and 25 percent by the railroads and the Federal government. By sector, about 50 percent of the costs would be borne by the private sector (e.g., ports, shippers, and railroads) and 50 percent by the public sector (e.g., city and county governments, Metrolink, and the Federal government).

<sup>3</sup> While national economic benefits of the rail program are roughly equivalent to SCAG region benefits, it is not technically accurate to say that SCAG region benefits are 50% of total national benefits. In the case of the rail benefits analysis, the SCAG region benefits cannot be added directly to the national benefits (see Chapter 7 for a more detailed discussion).



A comparison of the cost responsibility and benefits suggests that the public sector is bearing a greater share of the costs than it derives in benefits. This occurs because the public sector accrues most of the relatively high cost of grade separation projects. The grade separations benefit the communities abutting the rail lines through reductions in automobile and truck delays at crossing, fewer engine emissions and better safety; however, the aggregate value of these benefits is modest compared to the public costs incurred and the private benefits realized. As with the EWFC corridor, this imbalance argues for greater railroad and Federal funding of grade crossings reflecting the greater private sector and national benefits created by the rail capacity program.

MAP-21 identifies grade separation projects as eligible for increased federal share of funding, but there is no appropriation of new money to fund this increased share. It is also not clear how grade separation projects will be treated in the creation of the National Strategic Freight Network, since most of the SCAG region's grade separation projects are on local roads and not on the Interstate system.

A potential mechanism that could provide additional federal funding for the freight rail component is a federal tax credit on private investment for new freight infrastructure (potentially coupled with grade separation initiatives). Several federal legislators have recognized the need to address an identified shortfall in the nation's rail infrastructure spending, in addition to rail capital needs driven by regulations for safety purposes, and have introduced legislation that would have created a 25 percent tax credit for businesses that make expenditures for new rail capital. A comparable tax credit would facilitate the financing of the rail investments identified in this plan.

Additional federal funding could also be provided through subsidized loans from the existing TIFIA (as analyzed for the EWFC) or Railroad Rehabilitation and Improvement Financing (RRIF) programs. The financing plan for the freight rail improvements includes both Metrolink debt financing and private rail investments. Because of the potential for the federal loans to offer a lower interest cost (depending on the relative level of US Treasury interest rates) and flexible repayment terms that can defer debt service payments, the loans may be more suitable in comparison to a Metrolink tax-exempt financing or freight rail corporate financing.

Another national policy issue raised by the proposed rail funding package is the approach to addressing port/shipper contributions. One option that has been considered in the past is a container or other user fee, similar to the fees that are currently charged for the Alameda Corridor. The Ports of Los Angeles and Long Beach had, in recent years, developed an Infrastructure Cargo Fee program to pay for a clearly identified set of infrastructure improvements in the Harbor District, but this fee has never been implemented because of concerns about competitive impacts in the wake of severe drops in import volumes during the height of the recent recession. SCAG's own recent studies have determined that a locally imposed container fee would have a much greater effect to divert rail traffic to other West Coast ports than previously thought, although this diversion would vary by market.<sup>4</sup> To reduce these diversionary impacts, a national fee program would need to be adopted, although even a national fee could carry risks with respect to competition with Canadian and Mexican ports. Members of the Marine Transportation System National Advisory Committee (MTNSAC) continue to debate the pros and cons of a national fee system even though no such fee was incorporated in MAP-21. The issue of port fees is a question that would be more appropriately addressed at the national level.

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<sup>4</sup> *Port and Modal Elasticity Study, Phase II*, Leachman & Associates, prepared for SCAG, 2010.

## 8.4 Truck Bottleneck Relief Projects, Intermodal Terminal Capacity Improvements (On-Dock and Near-Dock), and Other Truck Corridor and Access Improvements for Major Goods Movement Facilities

### *Package Costs*

The final financing strategy addresses all of the remaining projects in the Comprehensive Regional Goods Movement Plan and Implementation Strategy. This package includes improvements at locations of major truck bottlenecks, truck corridor improvements, intermodal terminal capacity improvements, and other projects improving access to major goods movement facilities. This is a very diverse package of projects – described in Chapter 6 – with a variety of funding sources already committed. Yet there is also a significant gap in funding that needs to be filled if these packages are to be implemented. The cost of these projects is estimated at \$33.5 billion. For the purposes of this report, the projects are organized into three packages: I-710 truck lane improvements; roadway access improvements to major goods movement facilities and truck bottleneck relief; and rail improvements at the ports to reduce truck congestion. Table 8.12 summarizes the anticipated costs of the major elements in the three packages.

**Table 8.12 Truck Bottlenecks and Access Improvements Costs**

| Truck Bottlenecks and Access Improvements         | Cost (Millions) |
|---|-----------------|
| I-710 Truck Lanes                                 | \$5,580         |
| Roadway Access to Major Goods Movement Facilities | \$11,528        |
| High Desert Corridor Access Improvements          | \$6,925         |
| Truck Bottlenecks Relief                          | \$5,000         |
| Rail Access at POLALB                             | \$1,538         |
| On-Dock Rail                                      | \$998           |
| Off- and Near-Dock Intermodal Terminal Access     | \$1,923         |
| Zero-Emission Container Movement Pilot            | \$35            |
| <b>Total</b>                                      | <b>\$33,528</b> |

### *Package Funding Sources*

Approximately \$4.054 billion (or 12 percent) of the estimated \$33.528 is funded. The potential sources of funding for this program generally parallel those for the EWFC and include revenue bonds, state and federal grants and loan guarantees, mileage-based road-user fees, business taxes, infrastructure financing districts, etc.

### *Package Benefits*

The major beneficiaries of the truck corridors and access improvements program and their key benefits are shown in Table 8.13.

**Table 8.13 Major Beneficiaries of the Truck Corridors and Access Improvements Program**

| Truck Bottlenecks/Access Program Beneficiaries |   | Key Benefits      |   |
|--|---|-------------------|---|
| Regional Economy                               | Roadway Users                           | Truckers          | <ul style="list-style-type: none"> <li>• Reduced travel time, driver and fuel costs;</li> <li>• More predictable travel times to meet pick-up and delivery windows; and</li> <li>• Better equipment utilization.</li> </ul>                             |
|  |   | General Motorists | <ul style="list-style-type: none"> <li>• Reduced travel time and fuel costs; and</li> <li>• Improved roadway safety.</li> </ul>   |
|  | Ports and Local and Regional Businesses |                   | <ul style="list-style-type: none"> <li>• Reduced local delivery, interplant and intermodal drayage trucking costs;</li> <li>• Better access to suppliers and customers in region; and</li> <li>• Lower cost of doing business in the region.</li> </ul> |
|  | Communities, the Region, and the State  |                   | <ul style="list-style-type: none"> <li>• Reduced air pollution and greenhouse gas (GHG) emissions; and</li> <li>• More economically competitive economy generating jobs and tax revenues.</li> </ul>  |
| National Economy                               | National/International Businesses       |                   | <ul style="list-style-type: none"> <li>• Lower cost of locating and expanding business in Southern California.</li> </ul>   |
|  | Federal Government                      |                   | <ul style="list-style-type: none"> <li>• Sustained economic growth in the nation’s 2<sup>nd</sup> largest metropolitan region.</li> </ul>   |

Because of the diversity of projects and funding sources in this program, a detailed cost allocation analysis was not attempted for the Comprehensive Regional Goods Movement Plan and Implementation Strategy. However, the distribution of benefits and allocation of cost responsibilities for highway projects should parallel the distribution for the EWFC and the distribution of benefits and allocation of costs for the rail terminals and rail access improvements should parallel those of the mainline rail capacity and grade separation improvement program. Therefore similar funding and financing strategies should be pursued.

## 8.5 Discussion of Policy Issues and Actions

Goods movement is central to the economic well-being of the region, and the region is a critical international trade gateway and national distribution center. Goods movement warrants greater local and regional investment, but also national investment. However, local, regional, and national investment in freight transportation has not kept pace with the growth in the economy and freight transportation demand. This section explores the reasons why investment in the goods movement system has lagged nationally and the issues that must be addressed to successfully fund the Comprehensive Regional Goods Movement Plan and Implementation Strategy.

The key impediments to greater investment in goods movement are: the shortage of Federal transportation funds, the lack of a national freight transportation policy, the need for new sources of state and local funding, and the goal of equitably allocating the costs, benefits, and risks of goods movement projects between the public and private sectors.

### *Shortage of Federal Transportation Funds*

The EWFC, and especially mainline rail improvements, would benefit the national economy as well as the SCAG region, but significant Federal funding for such projects, even when they improve national and international trade flows, is unlikely. Federal transportation user fees and tax receipts no longer cover program outlays with the current gap estimated at about

\$8 billion annually and projections for the gap to double over the next decade. As a result, fewer Federal funds have been available to state and local governments for freight projects.

Growth in motor fuel tax revenues, the major source of funding for federal transportation programs, has been declining. Motor fuel tax revenues are tapering off because Congress has not increased or indexed the Federal motor fuel tax since 1993. A dollar of fuel tax revenue collected today buys less than two-thirds of what it did in 1993. And as motorists switch to more fuel efficient cars, they are consuming less gas and paying less in motor fuel taxes, further reducing revenue yield. There is no political consensus as yet on increasing or replacing the gas tax. In the interim, Congress is transferring funds from general tax revenues (about \$35 billion to date) to make up the shortfall in motor fuel tax revenues.

The decline in motor fuel tax revenues has reduced the funds available to states through Federal formula grants as well as special and discretionary grants. Formula grants are distributed to each state on the basis of factors such as population, miles of roadway, and vehicle miles of travel. The major grant programs are the Interstate Maintenance, National Highway, and Surface Transportation programs. These programs directly benefit highway freight transportation, but most of the available funds are being applied to existing Interstate Highway System and National Highway System roadways and bridges, many of which were built in the 1970s and are now reaching the end of their effective service life. Relatively little formula grant money is available for new highway freight projects.

Special and discretionary grants are monies set aside from the Federal Highway Trust Fund (and general revenue) by Congress for specific purposes. These grants can be awarded to state and local governments on a competitive basis or at discretion of the Secretary of Transportation. Examples are Projects of National and Regional Significance program and TIGER grant programs, both of which funded projects that improved freight movement within and between modes. However, the pool of funds available for special and discretionary grants has been shrinking because Congress has mandated that almost all the Highway Trust Fund revenues be redistributed back to the states through formula grants, leaving relatively little funding for discretionary grants. In MAP-21, which reauthorized the Federal surface transportation programs, the annual appropriation bills have reduced the funding for a number of the special and discretionary programs or rescinded them altogether.

The discretionary grant programs have also been affected by public pressure on Congress to reduce earmarking. It had become common practice for Congress to mandate that special and discretionary funds be spent on specific projects. Congress has now adopted the general position that if it cannot allocate special funds through earmarks, then the Administration (and accordingly the U.S. DOT) should not have that politically favorable option either. This has led to further curtailment of special and discretionary grant programs for transportation projects.

Congress has partially compensated for the shortfall in grant funds by increasing the government's loan and credit guarantee program. The leading example of this is the TIFIA program, which provides Federal funds to provide backup financial support to state and local government transportation projects in the form of loan and credit guarantees. (The Federal loan guarantees provided for the Alameda Corridor project were the prototype for the TIFIA program.) TIFIA funding was significantly expanded under MAP-21, with the total obligation ceiling lifted from \$122 million per year in recent years to nearly \$1 billion per year in 2013 and 2014. The allowable Federal cost share was raised from 33 to 49 percent (but in practice is expected to stay at about 33 percent to stretch funds).

Goods movement projects are eligible, including rail, intermodal terminals, and terminal access projects. However TIFIA and related loan and credit guarantee programs are designed to complement and leverage – not replace – state and local funds.

Congress has the options of increasing motor fuel taxes to sustain the Highway Trust Fund; substituting new user fees, such as a national vehicle-mileage fee, for current motor fuel taxes; introducing a value-added tax on business' freight transactions, as done in Europe; or diverting more general revenues to transportation. Congress' willingness to pursue one or more of these options depends on how it sees the future Federal role in freight transportation.

## ***Lack of a National Freight Transportation Policy***

State and local governments, industry, and the freight transportation sectors increasingly argue that the nation needs more investment in its freight transportation systems to maintain competitiveness in national and global markets. However, there is no clear Federal policy today on funding national freight transportation systems. The Federal government has taken widely differing roles in freight transportation.

- The transcontinental railroad was built by the private sector in public-private joint venture with the Federal government.
- The Interstate Highway System was built by the states in a public-public venture led by the Federal government.
- To accomplish the deregulation of the commercial transportation industry in the 1980s and salvage airlines and railroads sliding into bankruptcy, the Federal government disengaged itself from economic and rate regulation of the industry after almost 100 years of direct oversight.
- With the ISTEA legislation in 1991, the Federal government effectively declared the end of the Interstate Highway construction program, devolving control of transportation investment decisions to state and local government. ISTEA gave state and local governments a new mandate to address freight issues, but provided few specific tools to do so and left open the question of an appropriate Federal role.

Effective Federal contributions to nationally significant freight projects such as the classes of projects needed in the SCAG region will require both policy and program direction. MAP-21 began the debate on role of Federal government in the freight transportation system of the 21<sup>st</sup> Century. It calls for designation of a National Freight Network, including a 30,000-mile primary freight network, but does not address the door-to-door needs of today's supply chains nor does it address metropolitan freight movement – which is critical to making supply chains function and industries economically competitive. It provides little change to the current formula grant programs and, while there is room for interpretation, is generally highway-centric and not yet explicitly multimodal. Finally, there are no dedicated freight funds.

MAP-21 provides a positive nod in the right direction and a foundation for directing more funds to national freight needs in the future, but does not provide a national policy and program direction today. The full draft of MAP-21 envisioned a national freight program to drive economic development, but it may take two or more reauthorization cycles to evolve. Congress recognizes the linkage between freight and economic development, but in the short term, there is little support for a new Federal program, no strategy yet to replace diminishing fuel tax revenues, and no sustainable consensus on appropriate Federal, state and local roles. In this environment, “NextMAP” will be shaped by the experience of states and regions with efforts such as the SCAG Comprehensive Regional Goods Movement Plan and Implementation Strategy.

## ***Need for New Sources of State and Local Funding***

Short of Congressional action to provide significant new Federal funding for freight projects, the SCAG region's public agencies and private freight stakeholders must look beyond current funding sources.

As with the Federal government, states have the option of increasing state motor fuel taxes and sales taxes. While further increases in motor fuel taxes may be considered, the financing strategies focus on other revenue sources, especially those that might better match user fees to user benefits. These sources include port access and use fees (e.g., gate fees), general traffic and truck lane toll revenues, vehicle-miles of travel (VMT) road user fees, improvement district assessments, e-commerce taxes, and warehouse business taxes. Some of these sources could be initiated locally with little or no state action while others would require state action.

## ***Equitable Allocation of the Costs, Benefits, and Risks of Goods Movement Projects***

The final policy consideration in selecting financing strategies for goods movement improvements is cost responsibility. A key political consensus underlying U.S. transportation policy is that users of the transportation system should – as a general rule – bear most of the responsibility of paying for the system. For freight transportation, the expectation is that the private sector should bear most of the costs because the private sector (e.g., shippers, carriers, terminal operators, etc.) controls most the freight transportation. But the public sector has a large role in freight transportation because it owns and operates most highway and road networks and therefore has a major interest in freight transportation and projects that improve goods movement. The public sector invests in freight transportation to:

- Enable economic growth by increasing productivity, trade, and access to resources, markets, and labor.
- Ensure network continuity and connectivity across geographic regions and political jurisdictions.
- Achieve economies and synergies of scale. Public sector investment often supplements private sector investment in freight systems to advance both public and private services.
- Defray risk. The cost of large transportation projects, the complexity of achieving political consensus on their design, environmental clearance, and construction, the potential for disruption by natural events and war, and the need to realize benefits over a long economic life cycle often exceed the risk-capacity of the private sector.
- Ensure equity in who pays and who benefits. The railroads are a closed network, allowing railroad companies to closely control who uses rail services and how much they pay. By contrast, the highway system (with the exception of a relatively small proportion of tolled highway miles) is largely an open system, which makes it difficult to ensure that all users pay their fair share. In the U.S., highways are a public good, open for common use, and the public role in establishing, collecting, and enforcing motor fuel taxes, is both a financing strategy and means of reducing the number of free riders and ensuring that costs are borne by all users in some proportion to use.
- Remedy externalities. The impacts of building and operating freight systems are felt as air, noise, and water pollution, environmental and community disruption, greenhouse gas emissions, fatalities, property damage, etc. Many of these costs cannot be readily measured and allocated to individual carriers or vehicles and reflected in the price of freight and other transportation services charged to shippers and consumers. Here again, the public sector has an interest and role in minimizing impacts and defraying their costs by participating the projects and regulating who pays and who benefits.

Where the public sector takes a role in freight transportation, financing strategies must consider how the costs, benefits, and risks are allocated between the public and private sectors and among private sector freight system users.

The consensus on the proper allocation of cost responsibility for investments in freight transportation has shifted with the changing public sector roles in transportation. There is a growing recognition that investment in freight transportation is important for economic development and many individual projects serve as examples of how the public sector can participate in the freight transportation system, but to date there is no consensus on an acceptable allocation or methods to calculate benefits, costs, and risk.

## ***Conclusions***

For the first time in MAP-21, Federal surface transportation legislation calls for the development of a national freight network and a national freight policy and plan. This is an important step forward and one that can benefit goods movement in the SCAG region. However MAP-21 leaves many issues unresolved. It does not provide significant new sources of Federal funding to help close the gap in funding for nationally significant and strategic freight projects. It does not go far enough in creating credit mechanisms within the TIFIA program and other credit support programs to leverage the substantial local contributions that Southern California is already making to improving its infrastructure and it does not address funding issues, such as cargo fees and other user fees, that would be more effectively implemented within a national planning and policy context. As provisions of MAP-21 are implemented over the next several years, there will be opportunities to shape federal goods movement policy and fill the gaps in the existing program. The SCAG region's stakeholders must actively engage in this process.

There are also a number of funding and financing issues that must be addressed at the state and local level. Caltrans is working on a Freight Mobility Plan Update that will be based largely on regional goods movement plans. The Comprehensive Regional Goods Movement Plan and Implementation Strategy identifies state and regional funding needs that should be in the statewide plan. The State made a major down payment on its goods movement future with the TCIF program. But the difficult financial environment facing Sacramento suggests that such a bold funding and financing approach is unlikely to be repeated anytime soon. But, there are a number of other funding sources and fee systems identified in this chapter that could be used to fund freight projects. Many of these funding and financing options will require state action. SCAG regional stakeholders should work with Caltrans to develop appropriate policy statements and actions at the state level to support these local funding initiatives.

The Comprehensive Regional Goods Movement Plan and Implementation Strategy establishes an approach to financing projects that allocates cost responsibility in rough proportion to the distribution of benefits – between public and private stakeholders and between national and state/local stakeholders. The region's stakeholders should work with their Federal and State partners to ensure that these policy principles are incorporated into any new funding initiatives that are developed in the future.