TRANSPORTATION SYSTEM

TRANSPORTATION FINANCE

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

CONNECT SoCal

TECHNICAL REPORT

ADOPTED ON SEPTEMBER 3, 2020

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connectsocal.org

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INTRODUCTION

The financial plan summarizes federal, state, and local sources of revenues used to pay for transportation, system preservation and improvements over the next 25 years. SCAG highlights the importance of finding new and innovative ways to pay for transportation, including an ever-expanding backlog of projects to preserve our existing transportation system. Nationally, we continue to face an insolvency crisis with the Federal Highway Trust Fund (HTF), which is funded by excise taxes on fuel. The federal gas tax remains unchanged since 1993, and fuel tax receipts have declined precipitously as fuel efficiency has increased. California's passage of the Road Repair and Accountability Act of 2017 (Senate Bill [SB] 1) provides a significant influx of new state revenue through a gas tax increase and other transportation fees, yet only a fraction of our needs is funded through state sources.

Our region continues to rely heavily on local sources of tax revenue. Eight sales tax measures in the region are the key reason that local sources generate 61 percent of core revenues for transportation improvements. Our region's success in providing local sources of transportation funding also increases our ability to secure federal and state funding that requires local contribution.

It is vital that we find new ways to make transportation funding more sustainable in the long-term, and efforts are underway to explore how we can transition from our current system based on fuel taxes to be replaced by a more direct system of user fees. User fees are linked directly to how people travel, and can support our infrastructure needs and promote a balanced transportation system by encouraging residents and visitors to consider

their travel choices. These innovative funding mechanisms can be structured and implemented so as to be a critical tool used to advance environmental, economic, and equity goals, including reducing congestion and vehicle miles traveled (VMT) while encouraging active transportation and transit ridership.

In our region, numerous policy and technical studies have been conducted on the subject, and more work is planned to examine and demonstrate the viability of user fee systems, including toll networks, mileage-based user fees to replace fuel taxes, and congestion pricing zones that levy fees based on time-of-day and congestion levels. Our region has successfully implemented toll systems in the past, with the Transportation Corridor Agencies' network of privately financed toll roads and express lanes along Interstate 10, Interstate 110 and State Route 91, including the most recent extension into Riverside County. Additionally, the findings from feasibility studies and the completion of the California Road Charge Pilot Program will help decision-makers identify the next steps in this transition to user fees.

In accordance with federal fiscal constraint requirements (23 U.S.C. § 134(i)(2)(E)), the Transportation Finance Technical Report for the 2020 Regional Transportation Plan and Sustainable Communities Strategies (RTP/SCS), also referred to as Connect SoCal, identifies how much money the Southern California Association of Governments (SCAG) reasonably expects will be available to support our region's surface transportation investments. The financial plan includes both a "traditional" core revenue forecast comprising existing local, state and federal sources, and more innovative but reasonably available sources of revenue to implement a program of improvements to keep freight and people moving. The financial plan further documents progress made since past RTPs and describes steps we can take to obtain needed revenues to implement the region's transportation vision.

The SCAG region has secured the necessary resources to support transportation investments detailed in past RTPs, and our current financial plan will continue to meet the necessary milestones to implement Connect SoCal. The following sections describe the financial assumptions and methodologies used for forecasting revenues and expenditures for transportation investments.

FINANCIAL ASSUMPTIONS

The region's revenue forecast timeframe for Connect SoCal is FY2020-21 through FY2044-45. Consistent with federal guidelines, the financial plan takes into account inflation and reports statistics in nominal (year-of-expenditure) dollars. The underlying data are based on financial planning documents developed by the local county transportation commissions and transit operators. The revenue model also uses information from the California Department of Transportation (Caltrans) and the California Transportation Commission (CTC). The regional forecasts incorporate the county forecasts where available. This ensures consistency between the SCAG forecast and the planning documents of the county transportation commissions. When there are temporal gaps in the financial projections in the outer years between the county forecasts and the Connect SoCal time horizon, growth assumptions are extrapolated from historical trends based on published data.

The basic process for developing the revenue forecast is to:

- Incorporate financial planning documents developed by local county transportation commissions and transit operators in the region, where available;
- Ensure consistency with both local and state planning documents;
- Utilize published data sources to evaluate historical trends; and
- Conduct sensitivity testing of assumptions to augment local forecasts, as needed.

Overall economic conditions play a large role in determining the level of revenues available for transportation through 2045 because of the significance of multiple tax revenue streams. SCAG's financial model reflects historical growth trends and reasonable future expectations for key revenue sources. Despite recent state fuel tax increases, the inability of existing excise taxes to keep pace with increasing transportation costs and the impacts of increasing fuel efficiency on traditional revenue sources are key considerations in the financial plan.

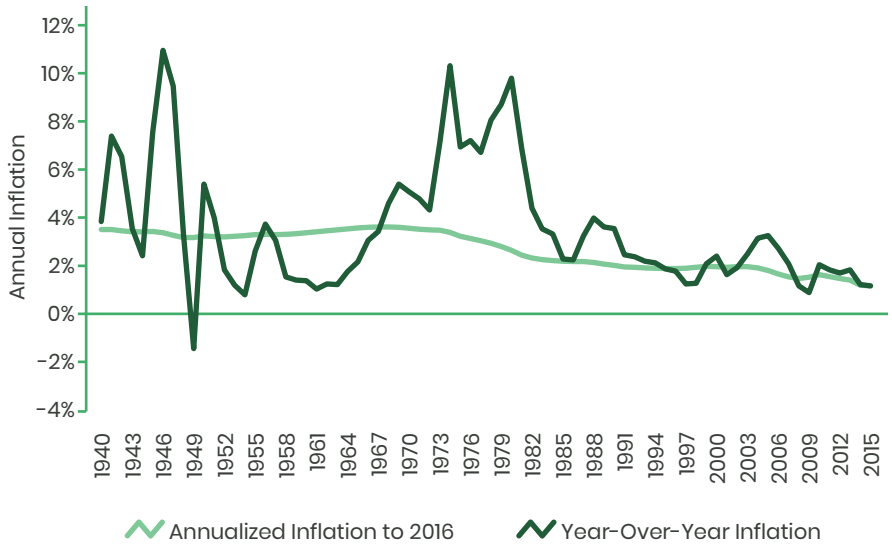
The next few sections describe specific economic assumptions and challenges in developing the regional revenue forecasts.

INFLATION

Inflation can have a profound impact over the long-term time horizon of our Plan by increasing costs to operate and maintain the transportation system. SCAG's revenue model accounts for historical inflation trends as measured by the Gross Domestic Product (GDP) Price Deflator.

FIGURE 1 shows the trends in inflation by the GDP Price Deflator. Although inflation rates have varied considerably over time, they have generally trended between 2 and 4 percent. Accordingly, a 2.2 percent inflation rate is used to adjust constant dollar (revenue) forecasts into nominal (or year-of-expenditure) dollars.

FIGURE 1 Historical Inflation Trends



Source: Office of Management and Budget, Budget of the United States Government, Fiscal Year 2019 Budget (FY2019)

RETAIL SALES GROWTH

Changes in personal consumption patterns and the overall population are main contributors to the growth in retail sales. Over the 30-year period from FY1985-86 to FY2015-16, statewide retail sales grew by 1.5 percent in real terms (when the effects of inflation are eliminated). The financial plan assumes retail sales growth ranging from -0.1 percent to 3.2 percent in real terms.

FUEL CONSUMPTION

Excise taxes on gasoline and diesel fuels are the basis of most federal and state transportation funding sources. Since these taxes are based on cents-per-gallon purchased, they depend on fuel consumption. Though changes in regional VMT will continue to play a role during the Plan period, increases in conventional fuel efficiency and the adoption of alternative fuel vehicles will reduce overall fuel consumption. The financial plan assumes that increases in vehicle fuel efficiency will reduce fuel consumption by 1 percent per year during the Plan period. Recently passed state legislation, SB 1, has increased the level of state-imposed excise taxes and will index these taxes to inflation in future years using the statewide value of the Consumer Price Index. The combination of assumptions about declining fuel consumption and increasing excise tax rates leads to modest growth in the revenue sources funded by state fuel taxes in real terms.

STATUS OF THE FEDERAL HIGHWAY TRUST FUND

The Federal Highway Trust Fund provides federal highway and transit funding from a nationally imposed 18.3 cent-per-gallon gasoline excise tax. Since 2008, the Trust Fund has failed to meet its obligations and has required the United States Congress to make transfers from the General Fund to keep it solvent. The negative balances shown on **FIGURE 2** illustrate the projected inability of the Trust Fund to pay its obligations into the highway account.

At the time of the 2020 RTP/SCS, nearly a decade has passed without substantive Congressional agreement on a long-term solution to provide adequate funding for the Trust Fund. The Fixing America's Surface

Transportation (FAST) Act, passed in 2015, relies on a one-time $70 billion deposit of general funds to keep the Trust Fund solvent through 2020. It does not address the present, long-term structural deficiency that exists in funding the Trust Fund. Although the financial plan assumes that Congress will reach agreement on reauthorizing federal spending for transportation programs over the Plan horizon, the core revenues available from the Trust Fund are expected to decline due to increasing fuel efficiency and other factors.

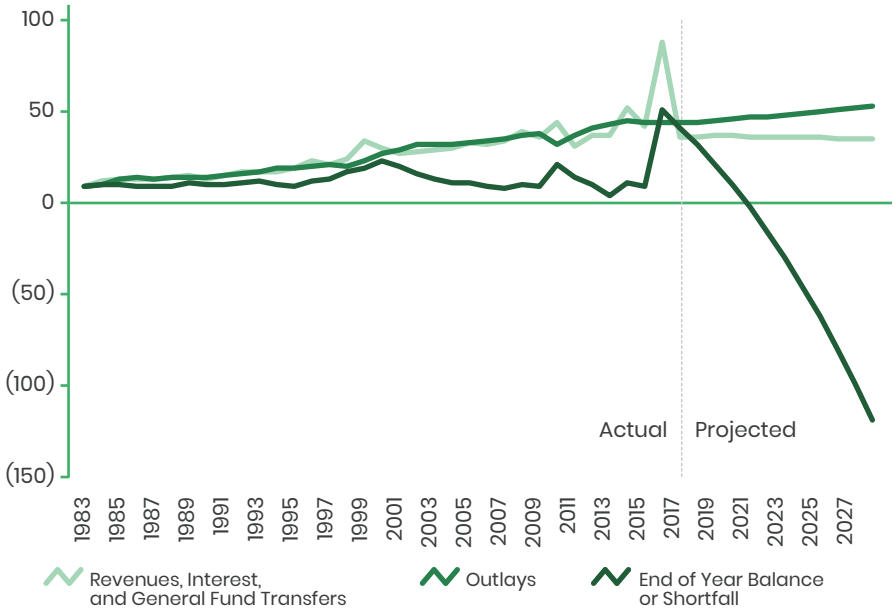
STATUS OF THE STATE HIGHWAY ACCOUNT

SB 1 increased the state gas excise tax from 18 cents per gallon to 47.3 cents per gallon (as of July 1, 2019), and further indexed the gas tax to inflation going forward. Prior to passage of SB 1, the state gas excise tax rate of 18 cents per gallon remained unadjusted for more than 20 years. Gas tax revenues remain the primary source of funding for the State Highway Operation and Protection Program (SHOPP), which funds projects to maintain the state highway system. As shown in **FIGURE 3**, previous levels of funding have been considerably less than actual needs. Statewide, the 2018 Ten-Year SHOPP Plan identifies $85.8 billion in statewide needs, while available funding is only $44.9 billion. While SB 1 provides a key down payment, continued underinvestment in the maintenance needs of the state highway system will only increase the cost of bringing our highway assets back to a state of good repair.

LOCAL SALES TAX MEASURES

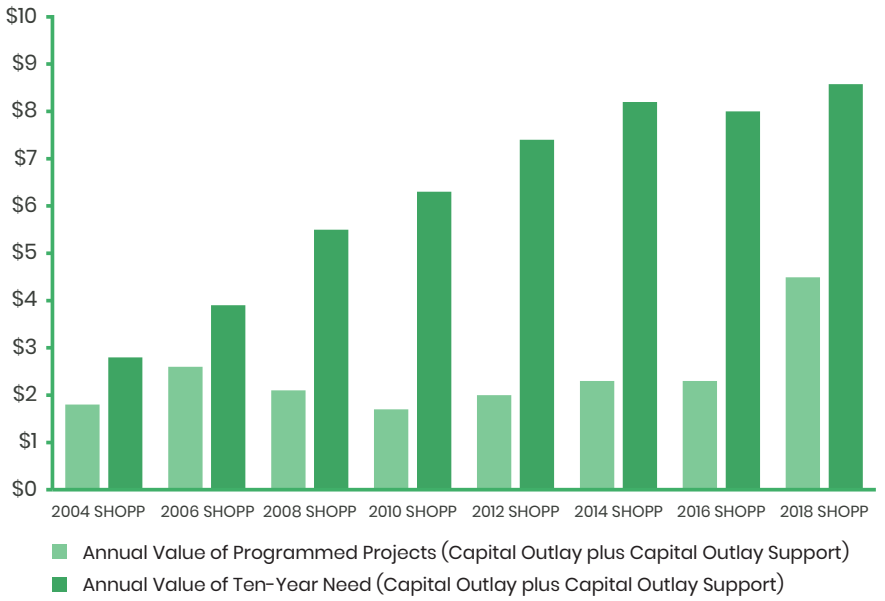
Most local sales tax measures impose a 0.5 percent sales tax for a limited term. Imperial County Measure D imposes a 0.5 percent sales tax through 2050. Orange County Measure M imposes a 0.5 percent sales tax through 2041.

FIGURE 2 Status of the Federal Highway Trust Fund ($ Billions)



Source: Congressional Budget Office and Federal Highway Administration

FIGURE 3 Status of the State Highway Operation and Protection Program (SHOPP) ($ Billions)



Source: California Department of Transportation

Riverside County Measure A imposes a 0.5 percent sales tax through 2039. San Bernardino County Measure I imposes a 0.5 percent sales tax through 2040. Although Measure R expires in 2039, Los Angeles County effectively imposes a permanent 2.0 percent sales tax (a combination of four 0.5 percent sales taxes—Proposition A, Proposition C, Measure R, and Measure M) as Measure M increases from 0.5 to 1.0 percent upon the expiration of Measure R. Ventura County is the only county in the SCAG region without a sales tax. Sales tax revenue included in the plan are based on retail sales forecasts and growth rates in these counties range between -0.1 to 3.2 percent in real terms.

CORE AND REASONABLY AVAILABLE REVENUES

The financial plan for Connect SoCal includes two types of revenue forecasts. Both are included in the financially constrained plan:

- Core revenues
- Reasonably available revenues

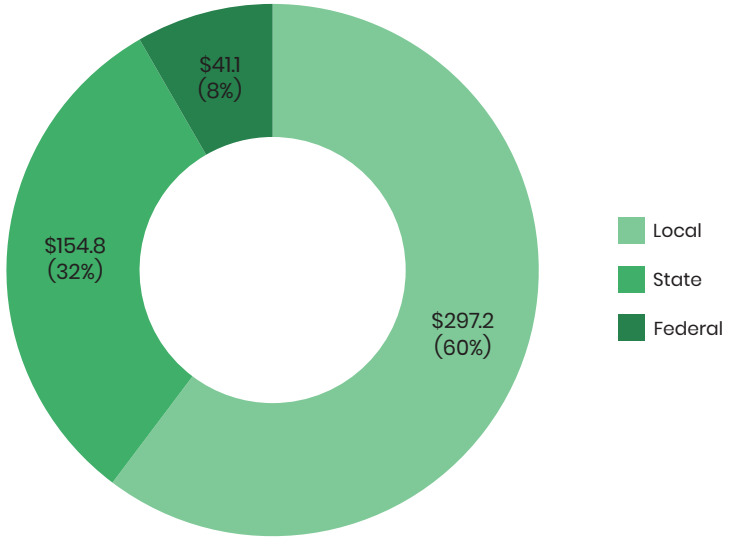
The core revenues identified are existing transportation funding sources projected to FY2044-45. The core revenue forecast does not include any future increases in state or federal gas excise tax rates (other than those described above related to SB 1) or adoptions of regional gasoline taxes, mileage-based user fees and new tax measures. These revenues provide a benchmark from which additional funding can be identified.

The region's reasonably available revenues include new sources of transportation funding likely to materialize within the Connect SoCal timeframe. These sources include adjustments to existing federal gas tax rates; the eventual replacement of existing state and federal gas excise taxes with a more direct mileage-based user fee; federal credit assistance and bond proceeds; private investment; a localized road charge option; value capture strategies; and a per-mile charge for Transportation Network Companies (e.g. Uber and Lyft). Federal guidelines on fiscal constraint permits the inclusion of revenues that are reasonably available. Further, the plan includes strategies for ensuring the availability of these sources.

CORE REVENUES

As shown in **FIGURE 4**, the majority of revenues in the SCAG region come from local sources. The share of state sources (32 percent) has increased since the last RTP/SCS as a result of SB 1.

FIGURE 4 Core Revenues (in Nominal Dollars) $493.1 Billion Total



Source: SCAG Revenue Model 2020

Note: Numbers may not sum to total due to rounding

TABLE 1 shows the core revenues in five-year increments by county.

FIGURE 5 shows the breakdown of revenues by county. With four local sales tax measures, Los Angeles County accounts for 65 percent of the funding available in the SCAG region.

Local sales taxes provide the largest single source of local funding, as shown in **FIGURE 6**. These taxes account for more than half (57 percent) of local sources.

As shown in **FIGURE 7**, the State Highway Operations and Protection Program (SHOPP) is the single largest source of state funding (41 percent), followed by the two other sources most influenced by SB 1, Highway User Tax Account (HUTA) (24 percent) and the new Road Maintenance and Rehabilitation Account (RMRA) (16 percent). Together these three sources account for more than three quarters of the state funding available.

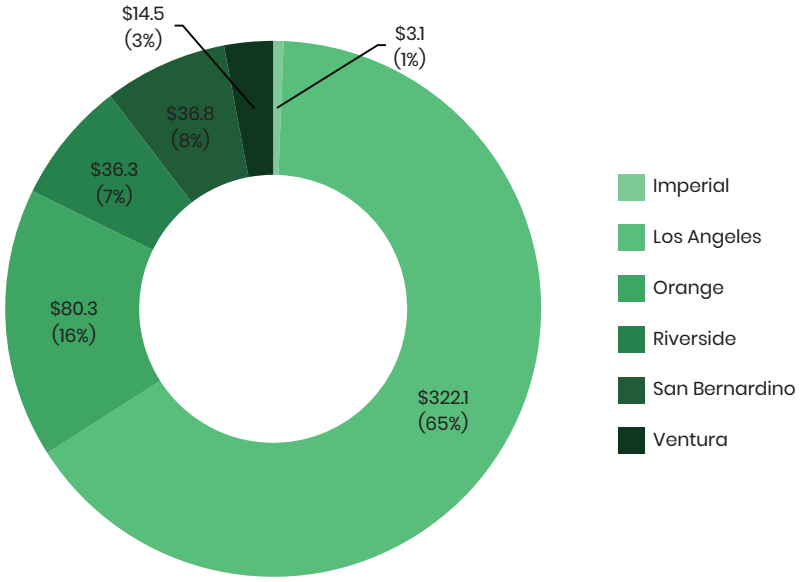
Federal sources are anticipated to represent a small portion of overall transportation funds ($41.1 billion, or 8 percent of core revenues). **FIGURE 8** shows the breakdown of federal revenue sources. The Federal Highway Trust Fund is expected to remain solvent but will decline due to increases in fuel efficiency. Federal Transit Administration (FTA) funds account for 61 percent of federal funding in the SCAG region. The financial plan also assumes that funding from the Congestion and Air Quality (CMAQ) Improvement Program will decline over the life of the Plan due to the region achieving attainment for a number of pollutants and reducing the severity level of other pollutants.

TABLE 1 Core Revenue Forecast FY2021–FY2045 (in Nominal Dollars, Billions)

County	FY2021–FY2025	FY2026–FY2030	FY2031–FY2035	FY2036–FY2040	FY2041–FY2045	Total
Imperial	$0.4	$0.5	$0.6	$0.7	$0.9	$3.1
Los Angeles	$47.3	$53.8	$63.9	$73.7	$83.6	$322.1
Orange	$11.4	$13.2	$15.9	$19.3	$20.4	$80.3
Riverside	$5.9	$6.4	$7.4	$8.2	$8.4	$36.3
San Bernardino	$5.6	$6.5	$7.5	$8.7	$8.4	$36.8
Ventura	$2.1	$2.4	$2.8	$3.3	$3.9	$14.5
Total	$72.6	$82.9	$98.1	$114.0	$125.5	$493.1

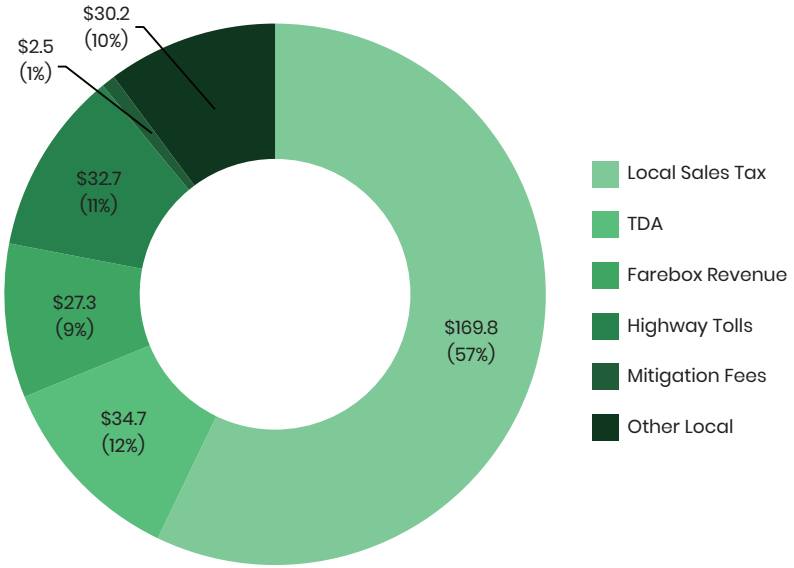
Note: Numbers may not sum to total due to rounding

FIGURE 5 Core Revenues by County (in Nominal Dollars) $493.1 Billion Total



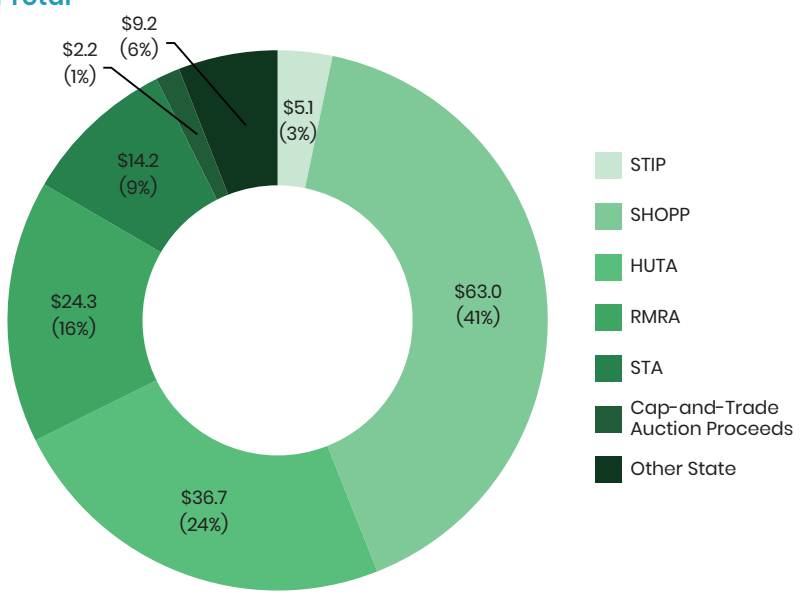
Source: SCAG Revenue Model 2020 *Note: Numbers may not sum to total due to rounding*

FIGURE 6 Core Revenues, Local Sources (in Nominal Dollars) $297.2 Billion Total



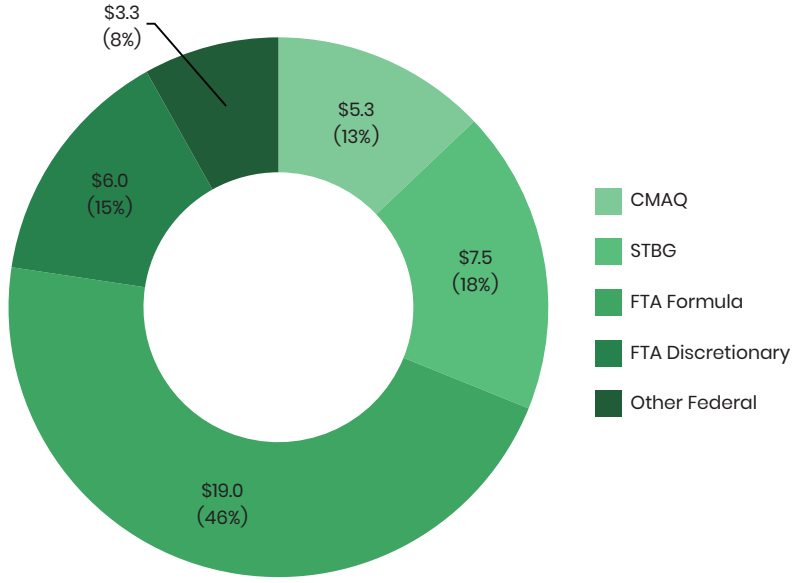
Source: SCAG Revenue Model 2020 *Note: Numbers may not sum to total due to rounding*

FIGURE 7 Core Revenues, State Sources (in Nominal Dollars) $154.8 Billion Total



Source: SCAG Revenue Model 2020 *Note: Numbers may not sum to total due to rounding*

FIGURE 8 Core Revenues, Federal Sources (in Nominal Dollars) $41.1 Billion Total



Source: SCAG Revenue Model 2020 *Note: Numbers may not sum to total due to rounding*

REASONABLY AVAILABLE REVENUES

There are several new funding sources that are reasonably expected to be available during the time horizon of Connect SoCal. The following guiding principles were used for identifying reasonably available revenues:

- Establish a user fee-based system that better reflects the true cost of transportation, provides firewall protection for new and existing transportation funds, and ensures an equitable distribution of costs and benefits.
- Promote national and state programs that include return-to-source guarantees while maintaining flexibility to reward regions that continue to commit substantial local resources.
- Leverage locally available funding with innovative financing tools (e.g., tax credits and expansion of the Transportation Infrastructure Finance and Innovation Act [TIFIA]) to attract private capital and accelerate project delivery.
- Promote local funding strategies that maximize the value of public assets while improving mobility, sustainability, and resilience.

TABLE 2 identifies categories of funding sources that are considered to be reasonably available and are included in the financially constrained plan. These sources were identified on the basis of their potential for revenue generation, historical precedence and the likelihood of their implementation within the timeframe of Connect SoCal. For each funding source, SCAG has examined the policy and legal context of implementation and has prepared an estimate of the potential revenues generated.

ASSUMPTIONS BY REVENUE SOURCE

TABLE 3 describes the specific revenue assumptions used for the financially constrained 2020 Connect SoCal. A more detailed discussion of revenue sources is included in Appendix 1.

TABLE 2 New Revenue Sources and Innovative Financing Strategies (in Nominal Dollars, Billions)

Revenue Source	Description	Amount	Actions to Ensure Availability	Responsible Party(ies)
Federal Gas Excise Tax Adjustment to Maintain Historical Purchasing Power	Additional $0.10 per gallon gasoline tax imposed at the federal level starting in 2025 to 2029—indexed to maintain purchasing power.	$2.7	Requires action of Congress. Strategy is consistent with recommendations from two national commissions to move immediately with augmenting fuel tax resources through conventional Highway Trust Fund mechanisms.	Congress
Mileage-Based User Fee (Replacement)	Mileage-based user fees would be implemented to replace gas taxes—estimated at about $0.025 (in 2019 dollars) per mile starting in 2030 and indexed to maintain purchasing power.	$42.7 (est. increment only)	Requires state enabling legislation and action of Congress. In 2017, California succesfully conducted a legislatively-mandated pilot program to study the feasibility of a road charge as a replacement to the gas tax, and is currently pursuing next-step studies. The FAST Act establishes the Surface Transportation System Funding Alternatives program, which provides grants to states to demonstrate alternative user-based revenue mechanisms that could maintain the long-term solvency of the Trust Fund.	State Legislature, Congress

TABLE 2 New Revenue Sources and Innovative Financing Strategies (in Nominal Dollars, Billions) - Continued

Revenue Source	Description	Amount	Actions to Ensure Availability	Responsible Party(ies)
Federal Credit Assistance; Other Bond Proceeds	TIFIA/RRIF credit assistance and other bond financing , pledging new local funding (e.g., mileage-based road charge program funding) to help finance specific initiatives including SCORE.	$2.2	Issuance of debt and TIFIA/RRIF credit agreement terms subject to County Transportation Commissions' respective board policies, and potentially the Southern California Regional Rail Authority (SCRRA).	County Transportation Commissions and USDOT Build America Bureau; other potential parties include SCRRA.
Private Investment	XpressWest, to construct and operate high-speed rail service from the Victor Valley to Las Vegas along the I-15 corridor. Revenue estimate would cover construction costs for the San Bernardino County portion only. This category of funding also assumes private funding for SCAG-region portion of California High-Speed Rail Phase 1; various freight related initiatives.	$12.7	Contingent upon financing efforts by XpressWest and necessary approvals. Similarly, contingent upon private financing for California High-Speed Rail. For freight investments, contigent upon private entities in the region, including freight railroads.	XpressWest; private partners; freight railroads as may be applicable.
Local Road Charge Program	Local road charge program assumes a $0.015 (in 2019 dollars) per mile charge throughout the region that can be implemented on a county basis. This can be adjusted by time-of-day and location with congestion pricing and/or parking pricing at major activity centers. For analysis, also assumed congestion pricing (peak period charges) in parts of Los Angeles County, along with increases in parking pricing at major job centers as a part of the regional job centers strategy.	$77.8	Requires state enabling legislation for at least two components--mileage-based user fees and congestion pricing. Parking pricing would be subject to local policies.	MPO, CTCs, Caltrans, and FHWA as may be applicable; local jurisdictions.
Value Capture Strategies	Assumed the use of EIFDs and tax increment financing (TIF) to support investment in transit supportive housing related infrastructure needs.	$3.0	Pursue necessary approvals for district formation and TIF.	Local jurisdictions
Transportation Network Company (TNC) Mileage-Based Fee	User fees on TNC mileage —estimated at about $0.05 (in 2019 dollars) per mile starting in 2021.	$4.7	Requires state enabling legislation to implement at local level. Currently being explored by LA Metro and a similar measure was approved by voters in San Francisco in 2019.	MPO, CTCs, California Public Utilities Commission, State Legislature

TABLE 3 Summary of Revenue Sources

3.1 Core and Reasonably Available Revenue Projections—Local Core Revenue Sources (in Nominal Dollars, Billions)		
Revenue Source	**Revenue Projection Assumptions**	**Revenue Estimate**
Local Option Sales Tax Measures	**Description:** Locally imposed ½ percent sales tax in four counties (Imperial, Orange, Riverside, and San Bernardino). Permanent 2 percent sales tax in Los Angeles County (combination of two permanent ½ percent sales taxes, Measure R through 2039, and Measure M, which will increase from 1/2 percent to 1 percent upon the expiration of Measure R). Measure D in Imperial County expires in 2050; Measure M in Orange County expires in 2041; Measure A in Riverside County expires in 2039; and Measure D in San Bernardino County expires in 2040. **Assumptions:** Sales taxes grow consistent with county transportation commission forecasts and historical trends.	$169.8
Transportation Development Act (TDA)—Local Transportation Fund	**Description:** The Local Transportation Fund (LTF) is derived from a ¼ cent sales tax on retail sales statewide. Funds are returned to the county of generation and used mostly for transit operations and transit capital expenses. **Assumptions:** Same sales tax growth rate as used for local option sales tax measures.	$34.7
Transit Farebox Revenue	**Description:** Transit fares collected by transit operators in the SCAG region. **Assumptions:** Farebox revenues increase consistent with historic trends, planned system expansions, and operator forecasts.	$27.3
Highway Tolls	**Description:** Revenues generated from toll roads operated by the Transportation Corridor Agencies (TCA), from the SR-91 Express Lanes operated by the Orange County Transportation Authority (OCTA) and Riverside County Transportation Commission (RCTC), and from the MetroExpress Lanes along I-10 and I-110 in Los Angeles County. **Assumptions:** Toll revenues grow consistent with county transportation commission forecasts and historical trends.	$32.7
Mitigation Fees	**Description:** Revenues generated from development impact fees. The revenue forecast includes fees from the Transportation Corridor Agencies (TCA) development impact fee program, San Bernardino County's development impact fee program and Riverside County's Transportation Uniform Mitigation Fee (TUMF) for both the Coachella Valley and Western Riverside County. **Assumptions:** The financial forecast is consistent with revenue forecasts from TCA, Coachella Valley Council of Governments, Western Riverside Council of Governments, and the San Bernardino County Transportation Commission (SBCTA).	$2.5
Other Local Sources	**Description:** Includes local revenue sources such as general funds, transit advertising and auxiliary revenues, lease revenues and interest and investment earnings from reserve funds. For Los Angeles County, interest income from Propositions A and C and Measure R are included under this source. Income from financing is also included, while principal and interest payments are included as part of debt service. **Assumptions:** Revenues are based on financial data from transit operators and local county transportation commissions.	$30.2
	Local Subtotal	$297.2

Note: Numbers may not sum to total due to rounding

TABLE 3 Summary of Revenue Sources - Continued

3.2 Core and Reasonably Available Revenue Projections—State Revenue Sources (in Nominal Dollars, Billions)		
Revenue Source	**Revenue Projection Assumptions**	**Revenue Estimate**
State Transportation Improvement Program (STIP)	**Description:** The STIP is a five-year capital improvement program that provides funding from the State Highway Account (SHA) for projects that increase the capacity of the transportation system. The SHA is funded through a combination of the state gas excise tax, the Federal Highway Trust Fund, and truck weight fees. The STIP may include projects on state highways, local roads, intercity rail, or public transit systems. The Regional Transportation Planning Agencies (RTPAs) propose 75 percent of STIP funding for regional transportation projects in Regional Transportation Improvement Programs (RTIPs). Caltrans proposes 25 percent of STIP funding for interregional transportation projects in the Interregional Transportation Improvement Program (ITIP). **Assumptions:** Funds are based upon the 2020 STIP Fund Estimate, 2020 STIP Commission Staff Recommendations, February 28, 2020. Fuel consumption declines in real terms by 1 percent due to increasing fuel efficiency.	$5.1
State Highway Operation and Protection Plan (SHOPP)	**Description:** Funds state highway maintenance and operations projects. **Assumptions:** Short-term revenues are based on overlapping 2016 and 2018 SHOPP programs. Long-term forecasts are consistent with STIP forecasts and assume decline in fuel consumption. As with the HUTA and STA, a portion of SHOPP revenues are indexed due to passage of SB 1, which offsets the effect of the increase in fuel efficiency.	$63.0
Highway Users Tax Account (HUTA)	**Description:** Gas tax revenue apportionments distributed via the HUTA to counties and cities in the region. **Assumptions:** The forecast is based on current funding levels reported by the State Controller. Future funding declines with fuel consumption using assumptions consistent with other sources.	$36.7
Road Maintenance and Rehabilitation Account (RMRA)	**Description:** The RMRA was established by SB 1 and is funded by new diesel and gas excise taxes, a transportation improvement fee, and electric vehicle fee. Although the RMRA also provides SHOPP funding, for purposes of the 2020 RTP/SCS financial plan, it only reflects the portion directed to counties and cities. **Assumptions:** SB 1 indexes the sources for RMRA, offsetting the decline due to fuel efficiency.	$24.3
State Transit Assistance Fund (STA)	**Description:** The STA is funded by diesel sales taxes and the transportation improvement fee established under SB 1. SB 1 also created a State of Good Repair Program associated with the STA, which for purposes of this financial plan are included in the STA figures. **Assumptions:** The forecast is based on current funding levels reported by the State Controller. Future funding declines with fuel consumption but is offset by SB 1 indexing using assumptions consistent with other sources.	$14.2
Cap-and-Trade Auction Proceeds	**Description:** The Global Warming Solutions Act of 2006 (AB 32) established the goal of reducing greenhouse gas (GHG) emissions statewide to 1990 levels by 2020. In order to help achieve this goal, the California Air Resources Board (ARB) adopted a regulation to establish a cap-and-trade program that places a "cap" on the aggregate GHG emissions from entities responsible for roughly 85 percent of the state's GHG emissions. As part of the cap-and-trade program, ARB conducts quarterly auctions where it sells emission allowances. Revenues from the sale of these allowances fund projects that support the goals of AB 32, including transit and rail investments. Funds associated with non-transportation and High-Speed Rail are not included in this amount. **Assumptions:** The forecast is based on current funding levels reported by the State Controller for the Low Carbon Transit Operations Program and award lists as reported by Caltrans. Given the uncertainty about future allowance prices, annual growth is assumed to be flat and is assumed to end after 2030.	$2.2
Other State Sources	**Description:** Other state sources include remaining SB 1 competitive program awards; the Active Transportation Program (ATP); and other miscellaneous state grant apportionments for the SCAG region. **Assumptions:** Short-term revenues are based on actual apportionments. Future Active Transportation Program funding declines with fuel consumption using assumptions consistent with other sources.	$9.2
	State Subtotal	$154.8

Note: Numbers may not sum to total due to rounding

TABLE 3 Summary of Revenue Sources - Continued

3.3 Core and Reasonably Available Revenue Projections—Federal Core Revenue Sources (in Nominal Dollars, Billions)		
Revenue Source	**Revenue Projection Assumptions**	**Revenue Estimate**
FHWA Non-Discretionary Congestion Mitigation and Air Quality (CMAQ) Program	**Description:** Program to reduce traffic congestion and improve air quality in non-attainment areas. **Assumptions:** Short-term revenues are based upon the Caltrans apportionment estimates. Long-term revenues assume that fuel consumption declines by 1 percent (in real terms) annually. CMAQ funding is assumed to be reduced by 25 percent in 2027, an additional 25 percent in 2032, and an additional 25 percent in 2037 due to improved air quality.	$5.3
FHWA Non-Discretionary Surface Transportation Block Grant (STBG)	**Description:** Projects eligible for STBG funds include rehabilitation and new construction on any highways included in the National Highway System (NHS) and Interstate Highways (including bridges). Also, transit capital projects, as well as intracity and intercity bus terminals and facilities, are eligible. **Assumptions:** Short-term revenues are based upon the Caltrans apportionment estimates. Long-term revenues assume that fuel consumption declines by 1 percent (in real terms) annually.	$7.5
FTA Formula Programs 5307 Urbanized Area Formula, 5310 Enhanced Mobility of Seniors and Individuals with Disabilities Formula, 5311 Rural Formula, 5337 State of Good Repair Formula, and 5339 Bus and Bus Facilities Formula	**Description:** This includes a number of FTA programs distributed by formula. 5307 is distributed to state urbanized areas with a formula based upon population, population density, number of low-income individuals, and transit revenue and passenger miles of service. Program funds capital projects, planning, job access and reverse commute projects, and operations costs under certain circumstances. 5310 funds are allocated by formula to states for projects providing enhanced mobility to seniors and persons with disabilities. 5311 provides capital, planning, and operating assistance to states to support public transportation in rural areas with populations less than 50,000. 5337 is distributed based on revenue and route miles and provides funds for repairing and upgrading rail transit systems, high-intensity bus systems that use High-Occupancy Vehicle (HOV) lanes, including bus rapid transit (BRT). 5339 provides capital funding to replace, rehabilitate, and purchase buses and related equipment and to construct bus-related facilities. **Assumptions:** Formula funds are assumed to decline in proportion with the Federal Highway Trust Fund. As with the FHWA sources, fuel consumption declines by 1 percent (in real terms) annually.	$19.0
FTA Non-Formula Program 5309 Fixed Guideway Capital Investment Grants ("New Starts")	**Description:** Provides grants for new fixed-guideways or extensions to fixed guideways (projects that operate on a separate right-of-way exclusively for public transportation, or that include a rail or a catenary system), bus rapid transit projects operating in mixed traffic that represent a substantial investment in the corridor, and projects that improve capacity on an existing fixed-guideway system. **Assumptions:** Operators are assumed to receive FTA discretionary funds in rough proportion to what they have received historically. As with the FHWA sources, fuel consumption declines by 1 percent (in real terms) annually.	$6.0
Other Federal Sources	**Description:** Includes other federal programs, such as Transportation Investment Generating Economic Recovery (TIGER) competitive grant program, Highway Safety Improvement Program, Federal Safe Routes to School, Highway Bridge Program, and earmarks. **Assumptions:** Short-term revenues are based on actual apportionments. Long-term revenues assumes a 1 percent (in real terms) annual decline in fuel consumption as used for other federal funding sources.	$3.3
	Federal Subtotal	$41.1

Note: Numbers may not sum to total due to rounding

TABLE 3 Summary of Revenue Sources - Continued

3.4 Core and Reasonably Available Revenue Projections—Innovative Financing and New Revenue Sources (in Nominal Dollars, Billions)		
Revenue Source	**Revenue Projection Assumptions**	**Revenue Estimate**
Federal Gas Excise Tax Adjustment	**Description:** Additional 10-cents-per-gallon gasoline tax imposed by the federal government starting in 2025 through 2029. **Assumptions:** Forecast consistent with historical tax rate adjustments for federal gas taxes.	$2.7
Mileage-Based User Fee (Replacement)	**Description:** Mileage-based user fees would be implemented to replace existing gas taxes (state and federal) by 2030. **Assumptions:** It is assumed that a national mileage-based user fee system would be established during the latter years of the RTP/SCS. An estimated $0.025 per mile (in 2019 dollars) is assumed starting in 2030 to replace existing gas tax revenues, indexed to maintain purchasing power.	$42.7 (est. increment only)
Federal Credit Assistance; Other Bond Proceeds	**Description:** Credit assistance/debt financing is assumed to facilitate construction of regional initiatives, pledging new regional/local funding via road charge program. **Assumptions:** It is assumed that some credit assistance in the form of TIFIA/RRIF will be needed to facilitate implementation of key regional initiatives. Assumed aggregate level debt service using an interest rate of 2.2 percent over 35 years.	$2.2
Private Investment	**Description:** XpressWest, to construct and operate high-speed rail service from Victor Valley to Las Vegas along the I-15 corridor; assumes private sector investment for California High-Speed Rail Phase 1; also includes freight initiatives. **Assumptions:** Revenue estimate reflects only the San Bernardino County segment costs for XpressWest; SCAG-region segment for California-High Speed Rail Phase 1.	$12.7
Local Road Charge Program	**Description:** Local road charge program assumes a per mile charge across the region that can be implemented on a county basis. This can be adjusted by time-of-day and location with congestion pricing and parking pricing at major activity centers. For analysis, also assumed congestion pricing in parts of Los Angeles County, along with increases in parking pricing at major job centers throughout the region as a part of the regional job centers strategy. **Assumptions:** Assumes a charge of $0.015 per mile (in 2019 dollars) starting in 2030; peak period congestion charges in parts of Los Angeles County; some increases in parking costs assumed starting in 2025 at regional job centers.	$77.8
Value Capture Strategies	**Description:** Formation of EIFDs and use of tax increment financing for transit supportive housing related infrastructure. **Assumptions:** Based on recent EIFD/tax increment financing studies to fund improved water and sewer infrastructure in Transit Priority Areas	$3.0
Transportation Network Company (TNC) Mileage-Based Fee	**Description:** User fees on TNC mileage **Assumptions:** Estimated at about $0.05 (in 2019 dollars) per mile starting in 2021	$4.7
	New Revenue Source Subtotal	**$145.7**

Note: Numbers may not sum to total due to rounding

REVENUE SOURCE AVAILABILITY AND RISK ASSESSMENT

TABLE 4 describes the assumptions made about the continued availability of the sources of funding. We provide a risk assessment of these assumptions, and describe proposed risk mitigation measures SCAG would take if these revenue streams decreased.

TABLE 4 Availability Assumptions and Risk Assessment

Revenue Source	New or Existing	Availability Assumption	Potential Risk	Risk Mitigation
Federal Non-Discretionary Funds (apportioned) (FTA/FHWA)	Existing	Continued federal funding at current apportionment levels but declines with increasing fuel efficiency.	Lack of federal authorization bill upon immediate expiration of current legislation.	Funds continue on incremental basis, at historic levels (continuing resolution).
Federal Funds Discretionary (FTA/FHWA)	Existing	Reasonably available based on historical allocations to the region or state.	Lack of authorization or award.	Alternative funding sources substituted; RTP/SCS amended if needed.
Local Option Sales Taxes	Existing	All local sales tax measures will continue through the majority of the 2020 Connect SoCal timeframe. Los Angeles County effectively levies a permanent 2.0 percent tax. Riverside County's Measure A expires in 2039. Measure I in San Bernardino County expires in 2040, followed by Orange County's Measure M in 2041. Measure D in Imperial County expires in 2050.	Sales tax generation substantially less than anticipated.	Alternative funding sources substituted; RTP amended if needed.
State Funds (STIP; SHOPP; HUTA; RMRA; STA; Cap-and-Trade Auction Proceeds)	Existing	Continued state funding at current apportionment levels but declines with increasing fuel efficiency for applicable source categories. Sources per SB 1 are assumed to be indexed. Cap-and-Trade Auction Proceeds revenue source assumed to end after 2030.	Transfer of state transportation funds to General Fund for non-transportation purposes and/or potential changes to Cap-and-Trade Auction Proceeds impacting transportation sources.	Alternative funding sources substituted; RTP amended if needed.
Federal Gas Excise Tax Adjustment	New	Reasonably available based on historical precedence—estimate in line with historical revenues.	Fails to garner congressional action.	Alternative funding sources substituted; RTP amended if needed.
Mileage-Based User Fee (Replacement)	New	Reasonably available based upon recommendations from two national commissions (National Surface Transportation Policy and Revenue Study Commission and National Surface Transportation Infrastructure Financing Commission) created by Congress. In 2017, California conducted a pilot program to study the feasibility of a road charge as a replacement to the gas tax.	Fails to garner congressional and state legislative actions.	Alternative funding sources substituted; RTP amendment if needed.

TABLE 4 Availability Assumptions and Risk Assessment - Continued

Revenue Source	New or Existing	Availability Assumption	Potential Risk	Risk Mitigation
Federal Credit Assistance; Other Bond Proceeds	New	Reasonable to assume some levels of credit assistance/debt financing to facilitate transportation investments, pledging new regional/local funding via road charge program.	Regional/local sources not realized; credit assistance not approved.	Alternative funding sources substituted; RTP amended if needed.
Private Investment	New	Assumes XpressWest will finance, construct and operate high-speed rail service from Victor Valley to Las Vegas along the I-15 corridor. Similarly, assumes private sector investment in California High Speed Rail Phase 1. Further, Class I railroads are assumed to fund private freight rail facilities.	XpressWest fails to assemble financing and necessary authorization for tax exempt private activity bonds. Fails to garner sufficient valuation of future cash flows for incremental phases of the HSR system to warrant private sector interest. Potential for reassessment of rail facility investment by Class I railroads.	RTP amended.
Local Road Charge Program	New	With recent initiatives by major metro regions evaluating mileage-based user fees and congestion pricing mechanisms, including anticipated near-term implementation in New York City, a local strategy is reasonable to assume. Further, studies have been conducted by SCAG in recent years and LA Metro studies are underway.	Fails to garner state enabling legislation and/or local support.	Alternative funding sources substituted; RTP amendment if needed.
Value Capture Strategies	New	Reasonably available based on recent establishment of Enhanced Infrastructure Financing Districts (EIFDs), Community Revitalization and Investment Authorities (CRIAs), Neighborhood Infill Finance and Transit Improvements Districts (NIFTIs/ NIFTI-2s), and Affordable Housing Authorities (AHAs)--providing new tools for local jurisdictions and public agencies to collaborate on achieving the State's sustainability and housing goals by streamlining review of projects and combining funding streams, including tax increment financing (TIF). These TIF districts can only draw tax increment from agencies that voluntarily participate in the administration of the district, and school and community college districts are specifically precluded from involvement. TIF districts can pull from a number of funding sources, including property taxes.	Fails to garner the necessary approvals.	Alternative funding sources substituted; RTP amended if needed.
Transportation Network Company (TNC) Mileage-Based Fee	New	With recent initiatives by major cities implementing TNC fees (e.g., NYC, Chicago, and anticipated near-term implementation in San Francisco), a local strategy is reasonable to assume. Further, LA Metro is initiating a study.	Fails to garner local support or state preempts local regulation.	Alternative funding sources/financing substituted; RTP amended if needed.

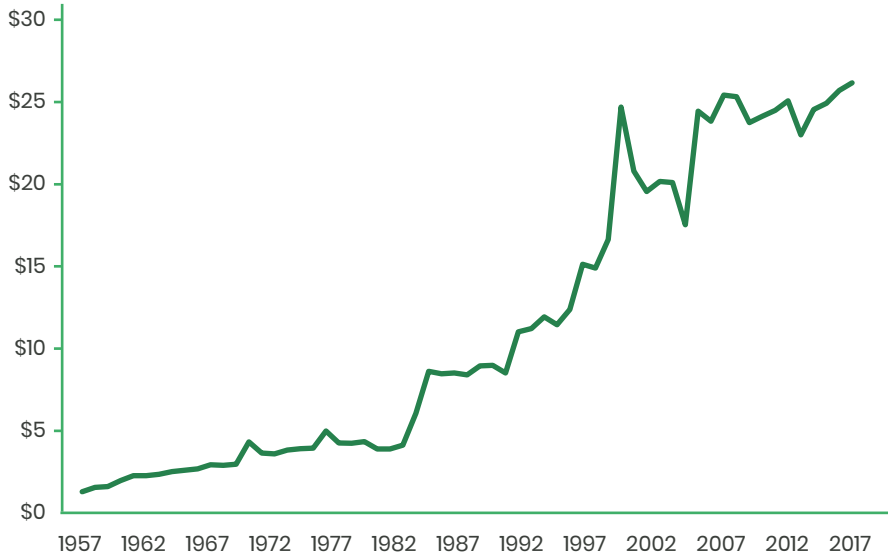
HISTORICAL TRENDS

Despite declines in recent years, the Federal Highway Trust Fund has historically grown by about 5 percent annually (in nominal dollars). The historic growth is due to periodic adjustments in the gas tax and growth in VMT. The historic growth of the Trust Fund from gas tax revenues is shown in **FIGURE 9**. Future VMT is projected to grow at a slower rate than the historical average.

COMPARISON TO HISTORICAL TRENDS

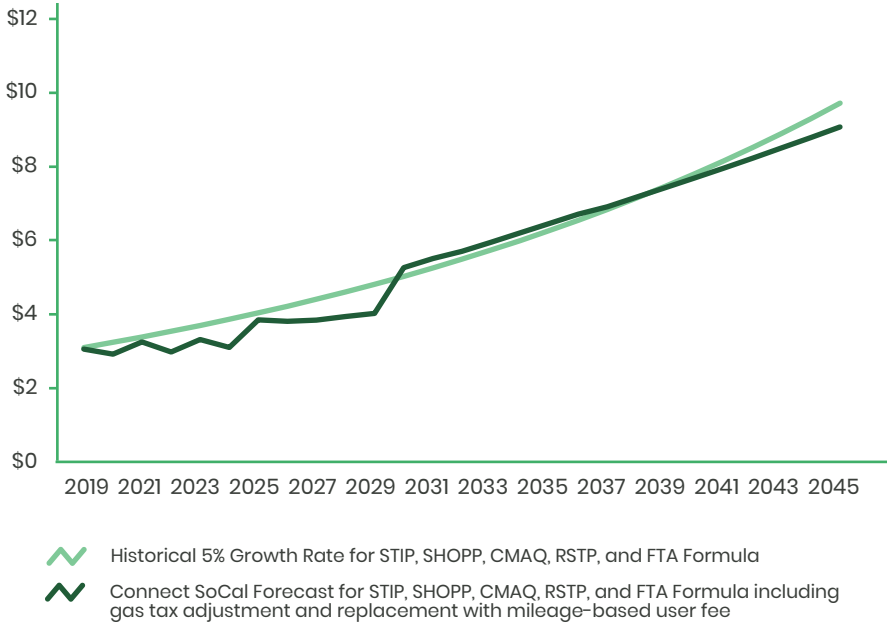
The projected revenue from the mileage-based user fee and adjustments to the federal gas excise tax, when combined with the core revenue forecast for state and federal sources, generate revenue roughly consistent with the historic average increase in state and federal transportation revenue sources of 5 percent annually. **FIGURE 10** shows a comparison of the revenues.

FIGURE 9 Historical Highway Trust Fund Revenue from Gasoline Excise Tax ($ Billions)



Source: Federal Highway Administration

FIGURE 10 Growth of Fuel Tax Generated Sources ($ Billions)



Source: SCAG Revenue Model 2020

EXPENDITURE CATEGORIES AND METHODOLOGY

Transportation expenditures in the SCAG region are summarized into three main categories:

- Capital costs for transit, state highways and local streets and roads (including regionally significant arterials)
- Operating and maintenance costs for transit, state highways and local streets and roads (including regionally significant arterials)
- Debt service payments (for current and anticipated bond issuances)

In preparing Connect SoCal, each of the county transportation commission submit detailed capital costs for proposed highway and transit projects. Expenditure estimates also include capital costs for regionally significant arterials, active transportation, goods movement, transit, passenger rail, transportation system management, intelligent transportation systems and transportation demand management investments. **FIGURE 11** shows an example of the standardized template that the county transportation commission used to submit cost information for capital projects.

CAPITAL PROJECT COSTS

The rise in construction costs can further erode the purchasing power of transportation revenues. **FIGURE 12** shows changes in California highway construction costs since the early 1970s, which is well above general inflation. The financial plan uses a 4.5 percent annual escalation factor to estimate future and nominal (or year-of-expenditure) costs.

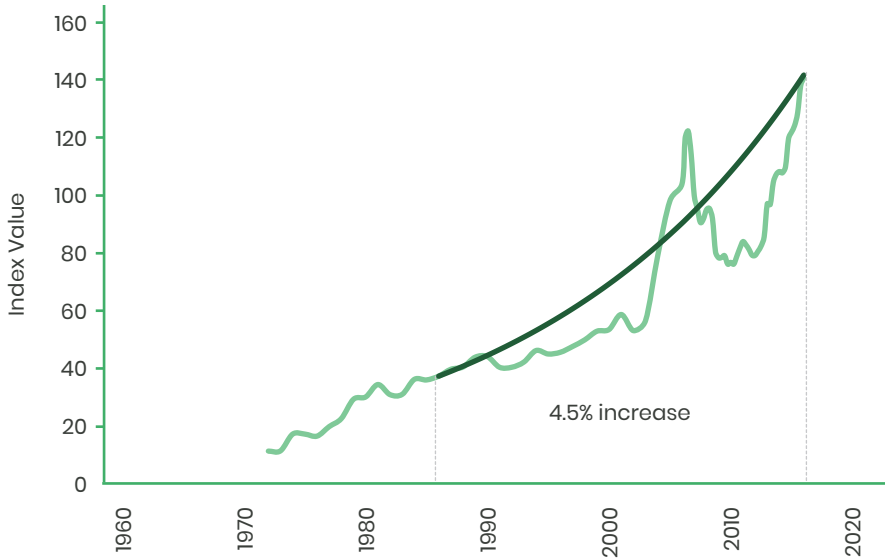
TABLE 5 describes the multimodal capital investments included in Connect SoCal.

FIGURE 11 Example of Capital Project Inputs

Project Costs by Category			
Engineering ($1,000's)	Right-of-Way ($1,000's)	Construction ($1,000's)	Total Costs ($1,000's)
$2,000	$4,000	$49,000	$55,000

Project Expenditures by Funding Source							
Federal Funding ($1,000's)	Federal Funding Source	State Funding ($1,000's)	State Funding Source	Local Funding ($1,000's)	Local Funding Source	Private Funding ($1,000's)	Total Funding ($1,000's)
$45,000	CMAQ	$7,000	STIP	$3,000	Agency	$0	$55,000

FIGURE 12 Growth in Highway Capital Costs



Source: California Department of Transportation

TABLE 5 Capital Investments and Other Programs (Nominal Dollars, Billions)

Component	Description	Cost
Transit		$66.8
Bus and Bus Rapid Transit (BRT)	New and expanded bus service in Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura Counties. New BRT routes, extensions, and/or service enhancements in Los Angeles, Orange, Riverside, and San Bernardino Counties.	$28.4
Light Rail Transit (LRT) and Heavy Rail	New LRT routes, extensions and/or service enhancements in Los Angeles, Orange, and San Bernardino Counties. Heavy Rail extension and service enhancements in Los Angeles County.	$38.4
Passenger and High-Speed Rail		$53.3
Commuter Rail	Metrolink systemwide enhancements to improve service.	$18.6
High-Speed Rail (HSR)	Improvements to the Los Angeles to San Diego (LOSSAN) Rail Corridor with an ultimate goal of providing San Diego-Los Angeles express service in under two hours. Phase I of the California High-Speed Rail (HSR) project that would provide high-speed service from Los Angeles and Anaheim to the San Francisco Bay Area and the Central Valley.	$34.6
Active Transportation		$17.7
Various Active Transportation Strategies	Increase our bikeways, bring significant amount of sidewalks into compliance with the Americans with Disabilities Act (ADA), safety improvement and various other strategies.	$17.7
Transportation Demand Management (TDM)		$7.3
Various TDM Strategies	Strategies to incentivize drivers to reduce solo driving: • Increase carpooling and vanpooling, • Increase the use of transit, bicycling and walking, • Redistribute vehicle trips from peak periods to non-peak periods by shifting work times/days/locations, • Encourage greater use of telecommuting, and • Other "first mile/last mile" strategies to allow travelers to easily connect to and from transit service at their origin and destination. These strategies include the development of mobility hubs around major transit stations, the integration of bicycling and transit through folding-bikes-on-buses programs, triple bike racks on buses, and dedicated racks on light and heavy rail vehicles.	$7.3

TABLE 5 Capital Investments and Other Programs (Nominal Dollars, Billions) - Continued

Component	Description	Cost
Transportation Systems Management (TSM) (includes Intelligent Transportation Systems (ITS))		$13.7
Various TSM Strategies	Deploy active traffic management strategies, enhanced incident management, advanced ramp metering, traffic signal synchronization, advanced traveler information, improved data collection, universal transit fare cards (Smart Cards), and Transit Automatic Vehicle Location (AVL) to increase traffic flow and reduce congestion.	$13.7
Highways		$23.7
Mixed-Flow and Interchange Improvements	Interchange improvements to and closures of critical gaps in the highway network to provide access to all parts of the region.	$10.3
High-Occupancy Vehicle (HOV)/ Express Lanes	Closure of gaps in the high-occupancy vehicle (HOV) lane network and the addition of freeway-to-freeway direct HOV connectors to complete Southern California's HOV network. A connected network of express lanes.	$13.4
Arterials		$20.7
Various Arterial Improvements	Spot widenings, signal prioritization, driveway consolidations and relocations, grade separations at high-volume intersections, new bicycle lanes, and other design features such as lighting, landscaping, and modified roadway, parking, and sidewalk widths.	$20.7
Goods Movement (includes Grade Separations)		$66.0
Various Goods Movement Strategies	Port access improvements, freight rail enhancements, grade separations, truck mobility improvements, intermodal facilities, and emission-reduction strategies.	$66.0
Aviation and Airport Ground Access		Included in modal investments
Various Airport Ground Access Improvements	Rail extensions and improvements to provide easier access to airports, and new express bus service from remote terminals to airports.	Included in modal investments

Note: Numbers may not sum to total due to rounding

TRANSIT OPERATING AND MAINTENANCE (O&M) COSTS

Future transit O&M costs depend on a variety of factors, such as future revenue-miles of service, labor contracts and the age of rolling stock. Over the last decade, these O&M costs generally grew by up to 5 percent annually, depending on the transit operator.

For Connect SoCal, transit O&M costs are estimated based upon historical increases:

- The regional average increase (3.3 percent) is used for most operators.
- For Los Angeles County, the financial plan relies on detailed forecasts from the county transportation commission. These forecasts are consistent with historical data.

MULTIMODAL SYSTEM PRESERVATION AND MAINTENANCE

TABLE 6 summarizes the total system preservation and maintenance needs assumed in Connect SoCal to bring transit, passenger rail, regionally significant local streets and roads, and the state highway system to a state of good repair.

DEBT SERVICE

Local agencies in the SCAG region continue to rely on debt financing to ensure that revenues are available to meet the cash flow requirements of future expenditures. The Los Angeles County Metropolitan Transportation Authority develops a detailed county financial model that includes debt service. Other county transportation commissions prepare debt service forecasts for rating agencies and report current debt service in their comprehensive annual financial reports (CAFRs). The Connect SoCal financial plan includes all outstanding commitments and interest payments on future bonds and commercial paper consistent with the county transportation commissions' forecasts.

TABLE 6 Multimodal System Preservation and Maintenance Needs (in Nominal Dollars, Billions)

System	State of Good Repair Needs Included in Estimate	Estimated State of Good Repair Cost
Transit	O&M Existing Service; O&M Service Expansion; O&M Major New Service; Preservation	$173.9
Passenger Rail	O&M Existing Service; O&M Service Expansion; O&M Major New Service; Preservation	$26.6
Regionally Significant Local Streets and Roads*	Pavement; Essential Components; Bridges; Goods Movement Corridors; Active Transportation Safety Improvements	$47.5
State Highways	Bridges, Pavement, Roadside; Mobility, Collision Reduction; Mandates, Facilities; Emergency Response	$68.0
	Total	$316.0

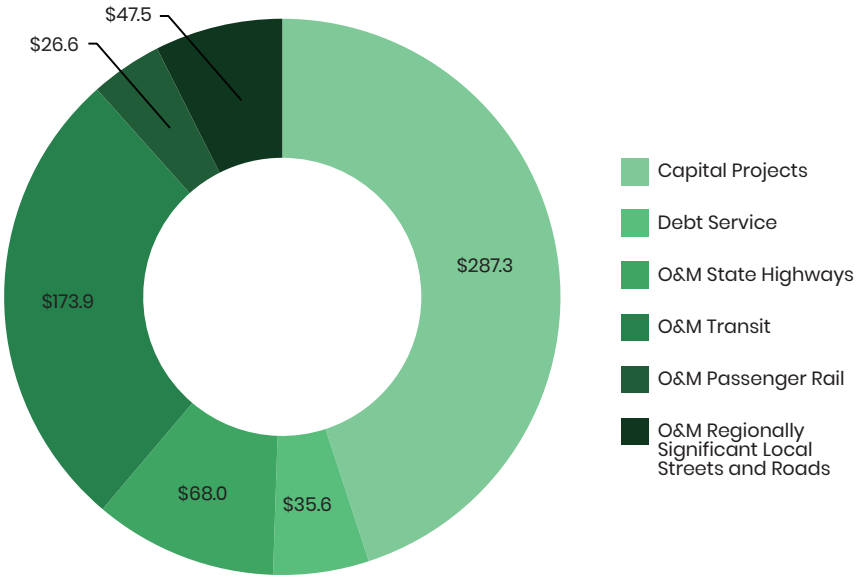
Note: Numbers may not sum to total due to rounding
** Includes $4.8 billion for active transportation & $5 billion GM arterial*

SUMMARY OF REVENUE SOURCES AND EXPENDITURES

As shown in **FIGURE 13**, capital projects total $287.3 billion in nominal dollars. O&M costs total $316 billion, while debt service obligations total $35.6 billion. Transit-related costs compose the largest share of O&M costs for the region, totaling $173.9 billion. This expenditure summary meets a total regional budget of $638.9 billion over the Connect SoCal time horizon, as shown in **FIGURE 14**.

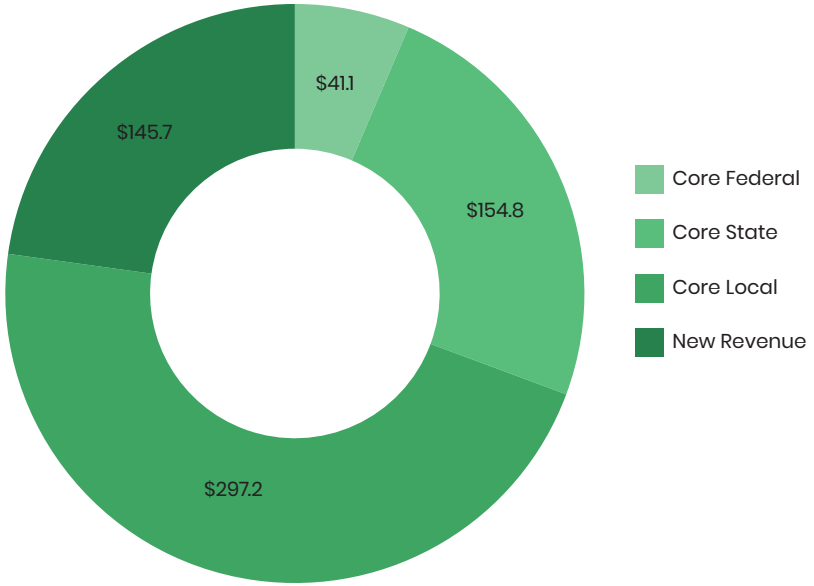
TABLE 7 provides details of the SCAG region's financial plan revenue forecast by source in five-year increments from FY2020-21 through FY2044-45. This is followed by **TABLE 8**, which provides details of the region's expenditures by category in five-year increments.

FIGURE 13 FY2021–FY2045 RTP/SCS Expenditures (in Nominal Dollars, Billions) $638.9 Billion Total



Source: SCAG Revenue Model 2020
Note: Numbers may not sum to total due to rounding

FIGURE 14 FY2021–FY2045 RTP/SCS Revenues (in Nominal Dollars, Billions) $638.9 Billion Total



Source: SCAG Revenue Model 2020
Note: Numbers may not sum to total due to rounding

TABLE 7 FY2021–FY2045 RTP/SCS Revenues (in Nominal Dollars, Billions)

Revenue Sources		FY2021–FY2025	FY2026–FY2030	FY2031–FY2035	FY2036–FY2040	FY2041–FY2045	Total
Local	Sales Tax	$28.4	$34.3	$41.4	$48.9	$51.5	$204.5
	– Local Option Sales Tax Measures	$23.6	$28.7	$34.7	$40.9	$42.0	$169.8
	– Transportation Development Act (TDA)—Local Transportation Fund	$4.8	$5.7	$6.7	$8.0	$9.5	$34.7
	Transit Farebox Revenue	$3.5	$4.4	$5.2	$6.4	$7.8	$27.3
	Highway Tolls (in core revenue forecast)	$3.4	$4.5	$6.0	$8.0	$10.7	$32.7
	Mitigation Fees	$0.4	$0.4	$0.5	$0.5	$0.6	$2.5
	Other Local Sources	$6.5	$5.4	$7.3	$6.6	$4.3	$30.2
	Local Total	$42.2	$49.1	$60.5	$70.6	$74.9	$297.2
State	State Transportation Improvement Program (STIP)	$1.3	$0.7	$0.9	$1.0	$1.2	$5.1
	– Regional Transportation Improvement Program (RTIP)	$1.1	$0.5	$0.6	$0.7	$0.9	$3.8
	– Interregional Transportation Improvement Program (ITIP)	$0.1	$0.2	$0.2	$0.3	$0.3	$1.2
	State Highway Operation and Protection Plan (SHOPP)	$8.5	$10.2	$12.2	$14.6	$17.5	$63.0
	Highway Users Tax Account (HUTA)	$5.1	$6.0	$7.1	$8.4	$10.0	$36.7
	Road Maintenance and Rehabilitation Account (RMRA)	$3.1	$3.8	$4.7	$5.7	$7.0	$24.3
	State Transit Assistance Fund (STA)	$1.9	$2.3	$2.8	$3.3	$3.9	$14.2
	Cap-and-Trade Auction Proceeds	$1.1	$1.1	$0.0	$0.0	$0.0	$2.2
	Other State Sources	$1.6	$1.6	$1.8	$2.0	$2.2	$9.2
	State Total	$22.6	$25.8	$29.5	$35.1	$41.9	$154.8

TABLE 7 FY2021–FY2045 RTP/SCS Revenues (in Nominal Dollars, Billions) - Continued

Revenue Sources		FY2021–FY2025	FY2026–FY2030	FY2031–FY2035	FY2036–FY2040	FY2041–FY2045	Total
Federal	Federal Transit	$4.4	$4.7	$5.0	$5.3	$5.6	$25.0
	– Federal Transit Formula	$3.4	$3.6	$3.8	$4.0	$4.2	$19.0
	– Federal Transit Non-Formula	$1.1	$1.1	$1.2	$1.3	$1.3	$6.0
	Federal Highway & Other	$3.4	$3.3	$3.2	$3.1	$3.2	$16.1
	– Congestion Mitigation and Air Quality (CMAQ)	$1.5	$1.3	$1.0	$0.8	$0.8	$5.3
	– Surface Transportation Block Grant (STBG)	$1.3	$1.4	$1.5	$1.6	$1.7	$7.5
	– Other Federal Sources	$0.5	$0.6	$0.7	$0.7	$0.8	$3.3
	Federal Total	$7.8	$8.0	$8.1	$8.4	$8.8	$41.1
New	Federal Gas Excise Tax Adjustment	$0.6	$2.1	$0.0	$0.0	$0.0	$2.7
	Mileage-Based User Fee (Replacement)	$0.0	$1.6	$10.4	$13.7	$16.9	$42.7
	Federal Credit Assistance; Other Bond Proceeds	$0.0	$2.2	$0.0	$0.0	$0.0	$2.2
	Private Equity Participation	$3.2	$0.0	$2.1	$4.2	$3.2	$12.7
	Local Road Charge Program	$0.2	$5.8	$21.0	$23.8	$26.9	$77.8
	Enhanced Infrastructure Financing District	$0.0	$0.8	$0.8	$0.8	$0.8	$3.0
	TNC Fee	$0.7	$0.8	$0.9	$1.1	$1.2	$4.7
	New Revenue Total	$4.7	$13.3	$35.1	$43.5	$49.1	$145.7
Revenue Total		$77.3	$96.2	$133.2	$157.6	$174.6	$638.9

Note: Numbers may not sum to total due to rounding

TABLE 8 FY2021–FY2045 RTP/SCS Expenditures (in Nominal Dollars, Billions)

RTP Costs	FY2021–FY2025	FY2026–FY2030	FY2031–FY2035	FY2036–FY2040	FY2041–FY2045	Total
Capital Projects and Other Programs	$36.2	$44.6	$68.0	$70.9	$67.6	$287.3
Arterials	$7.1	$4.7	$4.2	$4.1	$0.7	$20.7
Goods Movement (including Grade Separations)	$4.8	$9.3	$9.6	$22.7	$19.6	$66.0
High-Occupancy Vehicle/Express Lanes	$0.9	$3.2	$3.3	$3.4	$2.6	$13.4
Mixed-Flow and Interchange Improvements	$2.7	$1.7	$1.7	$1.4	$2.8	$10.3
Transportation System Management (including ITS)	$1.4	$1.4	$3.3	$3.9	$3.7	$13.7
Transit	$10.9	$13.9	$20.4	$13.5	$8.1	$66.8
Passenger Rail	$4.6	$6.5	$14.5	$9.3	$18.4	$53.3
Active Transportation	$1.6	$2.3	$4.2	$4.9	$4.6	$17.7
Transportation Demand Management	$0.7	$0.2	$2.4	$2.4	$1.7	$7.3
Other**	$1.5	$1.5	$4.3	$5.4	$5.4	$18.1
Operations and Maintenance	$35.9	$44.9	$57.4	$77.8	$100.0	$316.0
State Highways	$8.5	$10.2	$12.2	$17.1	$20.0	$68.0
Transit	$20.5	$24.9	$31.8	$41.2	$55.4	$173.9
Passenger Rail	$2.0	$2.7	$4.3	$7.5	$10.1	$26.6
Regionally Significant Local Streets and Roads*	$4.8	$7.1	$9.1	$12.0	$14.4	$47.5
Debt Service	$5.2	$6.6	$7.8	$8.9	$7.0	$35.6
Cost Total	$77.3	$96.2	$133.2	$157.6	$174.6	$638.9

Note: Numbers may not sum to total due to rounding
** Includes $4.8 billion for active transportation in addition to capital project investment level of $17.7 billion for a total of $22.5 billion for active transportation improvements*
*** Includes Safety, Pooled Incentives, Mobility Equity Fund, Regional PEV Charger Program, and Others*

APPENDIX 1 OF 4

Details About Revenue Sources

LOCAL CORE REVENUE SOURCES

LOCAL OPTION SALES TAX MEASURES

Description: Revenues are derived from locally imposed 0.5 to 1 percent sales taxes for select counties. Five counties in the SCAG region currently have sales tax measures dedicated to transportation expenditures.

Most local sales tax measures impose a 0.5 percent sales tax for a limited term. Imperial County Measure D imposes a 0.5 percent sales tax through 2050. Orange County Measure M imposes a 0.5 percent sales tax through 2041. Riverside County Measure A imposes a 0.5 percent sales tax through 2039. San Bernardino County Measure I imposes a 0.5 percent sales tax through 2040. Although Measure R expires in 2039, Los Angeles County effectively imposes a permanent 2.0 percent sales tax (a combination of four 0.5 percent sales taxes—Proposition A, Proposition C, Measure R, and Measure M) as Measure M increases from 0.5 to 1 percent with the expiration of Measure R. Ventura County is currently the only county in the SCAG region without a local option sales tax measure.

Base Year: FY2017-18.

Data Sources: Sales tax forecast data provided by the local transportation commissions; UCLA Anderson Forecast; historical data on revenues reported by State Board of Equalization (SBOE) in FY1985-86 through FY2013-14 Annual Reports, Table 21C; and allocations by the California State Controller (Controller) as reported in Payments to Special Districts from the Transactions (Sales) and

Use Taxes for FY2014-15 through FY2017-18.

Real Growth Rate:

- Imperial County: 3.2 percent
- Los Angeles County: 1.6 percent
- Orange County: 1.3 percent
- Riverside County: -0.1 percent
- San Bernardino County: 1.3 percent

Revenue Total: $169.8 billion (nominal dollars).

TRANSPORTATION DEVELOPMENT ACT (LOCAL TRANSPORTATION FUND)

Description: The Transportation Development Act (TDA) provides two major sources of funding for public transportation—the Local Transportation Fund (LTF) and the State Transit Assistance (STA) fund. LTF funds are derived from a 0.25 percent sales tax on retail sales statewide. Funds are returned to the county of tax generation. This category includes Article 3, 4, 4.5 and 8 of the TDA. In the SCAG region, TDA funds are used mostly for transit operations and transit capital expenses. Article 3 funds support bicycle and pedestrian facilities. Where county transportation commissions have provided a county-specific forecast of anticipated revenues derived from their local option sales tax measures, the same annualized growth rates are used to project the trend in LTF funding for the county; otherwise, future LTF revenues are extrapolated from historical trends in taxable sales.

Base Year: FY2017-18.

Data Sources: Sales tax forecast data provided by the local transportation commissions; UCLA Anderson Forecast; historical data on revenues reported by the SBOE in FY1985-86 through FY2013-14 Annual Reports, Table 21B; and allocations by the Controller as reported in Payments to County Transportation Funds from the 0.25 percent Local Sales and Use Tax for FY2014-15 through FY2017-18.

Real Growth Rate:

- Imperial County: 3.2 percent
- Los Angeles County: 1.6 percent
- Orange County: 1.3 percent
- Riverside County: -0.1 percent
- San Bernardino County: 1.1 percent
- Ventura County: 1.8 percent

Revenue Total: $34.7 billion (nominal dollars).

TRANSIT FAREBOX REVENUE

Description: Transit fares collected by transit operators in the SCAG region.

Base Year: FY2016-17.

Data Sources: Historical fare revenue data were collected from the Controller, Transit Operators and Non-Transit Claimants Annual Report, FY1978–79 through FY2016–17, Table 1—Statement of Revenues and Expenses. Additional fare revenue projections were derived from financial forecasts from the Los Angeles County Metropolitan Transportation Authority (LA Metro). Revenues in the forecast account for fixed-route services (e.g., bus, urban rail and light rail), smart shuttles, paratransit and dial-a-ride services. Revenues were forecasted separately for major regional operators in addition to other operators in the region.

Fare revenue forecasts were also collected from the Southern California Regional Rail Authority (SCRRA) for the Metrolink commuter rail system. The commuter rail revenues are distributed among the counties that support the rail service, based on data provided by SCRRA.

Real Growth Rate: Historically, the region as a whole has experienced a real growth rate in fare revenues of about 1.8 percent. The following rates were used in the forecast: Los Angeles County—1.9 percent (consistent with the

LA Metro financial forecast); Metrolink and Other Transit Operators in the region—1.8 percent. These rates result in fare revenue growth below historical averages for many operators.

Revenue Total: $27.3 billion (nominal dollars).

HIGHWAY TOLLS

Description: This category includes revenues generated from toll roads operated by the Transportation Corridor Agencies (TCA) and express lanes operated by LA Metro, Orange County Transportation Authority (OCTA), and Riverside County Transportation Commission (RCTC). TCA consists of two separate government entities—the San Joaquin Hills Transportation Corridor Agencies (SJHTCA), which oversees the San Joaquin Hills (State Route 73) Toll Road, and the Foothill/Eastern Transportation Corridor Agencies (F/ETCA), which oversees the Foothill (State Route 241) and Eastern (State Route 241, State Route 261, and State Route 133) Toll Roads. LA Metro operates express lanes along Interstate 10 and Interstate 110. OCTA operates the 91 Express Lanes within Orange County and RCTC operates the 91 Express Lanes within Riverside County.

Base Year: Various.

Data Sources: TCA for annual transaction tables from FY1996-97 to FY2017-18; OCTA's 91 Express Lanes Fund, transaction tables from FY2001-02 to FY2002-03 and financial statements, FY2003-04 to FY2017-18; LACMTA financial statements FY2012-13 to FY2017-18; RCTC financial statements FY2016-17 to FY2017-18.

Real Growth Rate: Various.

Revenue Total: $32.7 billion (nominal dollars).

MITIGATION FEES

Description: This category includes revenues generated from development impact fees. These fees are based on the general principle that future development within a specified area or jurisdiction will benefit from the construction of transportation improvements. Fees are assessed on new residential and non-residential (e.g., commercial and industrial) development. Within the region, a number of programs fund regionally significant transportation investments—TCA development impact fee program; Riverside County's Transportation Uniform Mitigation Fee (TUMF for both the Coachella Valley and Western Riverside County); and San Bernardino County's Development Impact Fee (DIF) program.

Base Year: Various.

Data Sources: Controller, Transportation Planning Agencies Annual Report, FY1987-88 through FY2016-17, Table 1—Statement of Revenues for All Fund Types.

Real Growth Rate: 0.0%

Revenue Total: $2.5 billion (nominal dollars).

OTHER LOCAL FUNDS

Description: Includes local revenue sources such as general funds, transit advertising and auxiliary revenues, lease revenues and interest and investment earnings from reserve funds. For Los Angeles County, interest income from Propositions A and C and Measure R are included under this source. Income from financing is also included, while principal and interest payments are included as part of debt service.

Base Year: FY2016-17.

Data Source: Revenues are based on financial data from transit operators and local county transportation commissions.

Real Growth Rate: Not applicable.

Revenue Total: $30.2 billion (nominal dollars).

STATE CORE REVENUE SOURCES

The passage of California's SB 1 created a significant source of ongoing state transportation funding. As described in **TABLE 9**, SB 1 increased the gas excise tax from 18 cents per gallon to 47.3 cents per gallon (as of July 1, 2019), and further indexed the gas tax to inflation going forward. Prior to passage of SB 1, the effective state gas excise tax rate of 18 cents per gallon remained unadjusted for more than 20 years. SB 1 additionally instituted per vehicle fees pegged to vehicle value to raise revenue for various transportation system improvements. It also enacted an annual fee on zero emission vehicles (ZEVs). Most of these fees are indexed to the California inflation rate to counter the historical erosion of purchasing power of transportation revenues.

STATE TRANSPORTATION IMPROVEMENT PROGRAM (STIP)

Description: The State Highway Account (SHA) is funded through a combination of state fuel excise taxes, the Federal Highway Trust Fund (HTF), and other miscellaneous revenues (e.g., interest and sale of property). Due to changes to state fuel excise taxes implemented under SB 1, the SHA will receive additional funds relative to historical trends, some of which could flow to the STIP.

The STIP is a five-year capital improvement program that provides funding from the SHA for capital projects that increase the capacity of the transportation system. The STIP may include projects on state highways, local roads, intercity rail or public transit systems. The STIP is renewed every two years and consists of separate projects. The Regional Transportation Planning Agencies propose 75 percent of STIP funding for regional transportation projects in Regional Transportation Improvement Programs (RTIPs). Caltrans proposes 25 percent of STIP funding for interregional transportation projects in the Interregional Transportation Improvement Program (ITIP). Connect SoCal projects are

TABLE 9 California SB 1 Fees and Funding Programs

Fee	Description	Amount	Uses
Gas Tax	A per gallon excise tax on gasoline purchases	47.3 cents, indexed to the California CPI	Road Maintenance and Rehabilitation
Diesel Tax	A per gallon excise tax on diesel purchases	41.75 cents, indexed to the California CPI	Trade Corridor Enhancement Road Maintenance and Rehabilitation
Diesel Sales Tax	Percentage sales tax on diesel purchases	5.75%	Transit Improvements
Transportation Improvement Fee	An annual per-vehicle fee that varies according to the vehicle value	$25-$175 per vehicle, per year. Not adjusted for inflation	Road Maintenance and Rehabilitation Congested Corridors Program Transit Improvements
Zero Emissions Vehicle (ZEV) Registration Fee	An annual per-vehicle fee on all ZEVs	$100 per year, indexed to the California CPI	Road Maintenance and Rehabilitation

consistent with both the RTIP and ITIP.

At the time that the 2018 STIP was prepared, the California Transportation Commission (CTC) approved a significant increase in funding for FY2018-19 through FY2022-23 based on an expectation of sharp increases in future excise tax revenues that did materialized as planned. As a result, programming capacity for STIP is highly constrained in the near-term, and CTC has advised stakeholders that there will be limited additional funding programming to the region for the next several years. Within a few STIP cycles, funding levels are expected to recover to a slow upward growth trajectory in the later years of the plan.

STIP funds shown in the revenue forecast are based on the staff recommendations for the 2020 STIP program for the five years covering FY2020-21 through 2024-25, plus an estimate of revenues that could flow to the region from FY2025-26 through FY2027-28, based on a preliminary STIP fund estimate released by the CTC in July, 2019. Starting in FY2028-29, the prior year amount is grown by forecasted changes in fuel consumption, as well as excise tax inflation adjustments called for in SB 1. As with other revenue sources, Connect SoCal adopts a conservative assumption that fuel consumption declines by 1 percent annually due to changes in CAFE standards and the adoption of hybrid and electric vehicles, but this is more than offset in real terms by the indexing of future fuel excise taxes.

Base Year: FY2028-29.

Data Sources: California Transportation Commission, 2010 through 2018 Reports of STIP Balances County and Interregional Shares; California Transportation Commission, 2020 STIP Staff Recommendations, prepared February 28, 2020;; California Environmental Protection Agency, Air Resources Board, 2017 EMFAC Motor Vehicle Emissions Inventory; California Department of Finance, Fiscal Year average values of Consumer Price Index for All Urban Consumers from 1955-56 (includes forecast values through 2021-22).

Real Growth Rate: -2.4 percent annually.

Revenue Total: $5.1 billion (nominal dollars).

STATE HIGHWAYS OPERATION AND PROTECTION PLAN (SHOPP)

Description: The SHOPP is a four-year program that provides funding from the State Highway Account and the Road Maintenance and Rehabilitation Account to be used for projects that reduce collisions and hazards to motorists, preserve and rehabilitate bridges and roadways, enhance and protect roadsides, and improve the operation of the State Highway System. It does not include projects that increase the capacity of the transportation system. SHOPP revenues are taken “off the top” before allocations are made for the STIP.

Short-term SHOPP revenues are based on the 2018 SHOPP program provided by Caltrans, which covers FY2018-19 to FY2021-22. The 2018 SHOPP was approved by the CTC before the final passage of SB 1, and the approved funding amounts in the years after FY2018-19 are not consistent with increased revenues expected to be available to this program in future years, so the FY2018-19 amount was used as a baseline to estimate FY2019-20, adjusted to account for changes in fuel consumption. In addition, the FY2019-20 estimate includes a one-time step up based on the restoration of the full amount of the “swap” excise tax, a portion of which is allocated to the SHOPP. Starting in FY2020-21, SHOPP revenues are estimated by adjusting annual revenues using both changes in fuel consumption and inflation each year.

Consistent with other revenue sources, Connect SoCal adopts a conservative assumption that fuel consumption declines by 1 percent annually due to changes in CAFE standards and the adoption of hybrid and electric vehicles. SHOPP revenues are indexed to inflation due to passage of SB 1, which offsets the effect of the increase in fuel efficiency.

Base Year: FY2018-19.

Data Sources: Caltrans, 2010 through 2018 SHOPP programs; California Environmental Protection Agency, Air Resources Board, 2017 EMFAC Motor Vehicle Emissions Inventory; California Department of Finance, Fiscal Year average values of Consumer Price Index for All Urban Consumers from 1955-56 (includes forecast values through 2021-22).

Real Growth Rate: 1.7 percent annually.

Revenue Total: $63.0 billion (nominal dollars).

HIGHWAY USERS TAX ACCOUNT (HUTA)

Description: Gas tax revenue apportionments distributed via the HUTA to counties and cities in the region.

Base Year: FY2017-18.

Data Sources: HUTA revenue comprise two sources that were separately listed in prior RTP financial plans: Gas Excise Tax Subvention and State Gasoline Sales Tax Swap. Passage of SB 1 has sufficiently changed the State Gasoline Sales Tax Swap to justify reporting these sources together but with some caveats.

SB 1 made two changes that affect HUTA. In FY2019-20, there will be a one-time step up in the former State Gasoline Sales Tax Swap portion of HUTA because of the restoration of the full amount of the excise tax that was in place before the swap. Beginning in FY2020-21, the excise tax rate for both portions of the HUTA will be indexed to inflation using the statewide Consumer Price Index.

HUTA revenue data was collected for each city and county in the SCAG region from the Controller, FY1999-00 through FY2009-10 Street and Roads Annual Reports (Tables 3 and 9). HUTA allocations for FY2010-11 through FY2017-18 are provided by the Controller reports of Monthly Highway Users Tax. Growth in HUTA revenues is based on expected changes in gasoline consumption as forecasted by SCAG together with adjustments to gas excise tax rates called for under SB 1.

Increasing fuel efficiency in conventional vehicles due to adopted CAFE standards as well as greater use of hybrid and electric vehicles are expected to reduce fuel consumption in California and the SCAG region. The financial plan uses a 1.2 percent annual decline (in real terms) in gasoline consumption (estimated from the 2017 version of the EMFAC model) to produce a conservative estimate of changes in revenues associated with gas taxes.

After accounting for both the decline in fuel consumption and the SB1 changes to gas tax rates, the HUTA is forecasted to grow by 1.5 percent annually (in real terms).

Real Growth Rate: 1.5 percent.

Revenue Total: $36.7 billion (nominal dollars).

ROAD MAINTENANCE AND REHABILITATION ACCOUNT (RMRA)

Description: Gas tax revenue apportionments distributed to counties and cities in the region.

Base Year: FY2017–18.

Data Sources: The RMRA was established by SB 1 and is funded by new diesel and gas excise taxes, a transportation improvement fee, and EV fee. Although the RMRA also provides funding for SHOPP as noted above, for purposes of the Connect SoCal financial plan, this item only reflects the portion of RMRA that is directed to counties and cities.

RMRA revenue distribution to each city and county in the SCAG region is based on data from Controller allocations for the six months the funding was in effect during FY2017–18 and the first ten months of allocations for FY2018-19. A portion of the growth in RMRA revenue is based on expected changes in vehicle fuel consumption according to the 2017 version of the EMFAC model. SB 1 indexes to inflation both the fuel tax sources and the fee sources for RMRA, more than offsetting the decline due to fuel efficiency.

Real Growth Rate: 2.1 percent annually.

Revenue Total: $24.3 billion (nominal dollars).

STATE TRANSIT ASSISTANCE FUND (STA)

Description: The STA distributes funding to transit operators based on a formula. The funds can be used for either operational support or to fund capital

projects based on local priorities.

The STA is funded by diesel sales taxes and the transportation improvement fee established under SB 1. SB 1 also created a State of Good Repair Program associated with the STA, which for purposes of this financial plan are included in the STA figures. Funding figures are reported by the Controller for FY2010-11 through FY2018-19. Future funding is estimated for the financial plan using the growth in diesel consumption as estimated from the 2017 version of the EMFAC model. The financial plan assumes that diesel consumption will decline by less than 0.1 percent annually. The decline in fuel consumption is offset by the increase in fuel price.

Base Year: FY2018-19.

Data Sources: Controller, Quarterly State Transit Assistance reports; California Environmental Protection Agency, Air Resources Board, 2017 EMFAC Motor Vehicle Emissions Inventory; U.S. Energy Information Administration, Weekly Retail Gasoline and Diesel Prices, California, Annual.

Real Growth Rate: 1.4 percent annually.

Revenue Total: $14.2 billion (nominal dollars).

CAP-AND-TRADE AUCTION PROCEEDS

Description: The Global Warming Solutions Act of 2006 (AB 32) established the goal of reducing greenhouse gas (GHG) emissions statewide to 1990 levels by 2020. In order to help achieve this goal, the California Air Resources Board (ARB) adopted a regulation to establish a Cap-and-Trade program that places a "cap" on the aggregate greenhouse gas emissions from entities responsible for roughly 85 percent of the state's greenhouse gas emissions. As part of the Cap-and-Trade program, ARB conducts quarterly auctions where it sells emission allowances. Revenues from the sale of these allowances fund projects that support the goals of AB 32, including transit and rail investments. Cap-and-Trade Auction proceeds associated with non-transportation elements and the state High-Speed Rail program are not included here.

The forecast is based on Low Carbon Transit Operations Program allocations as reported by the Controller for FY2014-15 through FY2018-19 and Transit and Intercity Rail Capital Program award lists as reported by the California Department of Transportation (Caltrans) for FY2014-15 through FY2027-28. Given the uncertainty about future allowance prices, annual growth is assumed to be flat beyond FY2027-28 and is assumed to end after FY2029-30.

Base Year: Not applicable.

Data Sources: Controller, Low Carbon Transit Operations Program Allocations; Caltrans, Transit and Intercity Rail Capital Program Award Lists; SCAG estimates of fuel consumption.

Real Growth Rate: Not applicable.

Revenue Total: $2.3 billion (nominal dollars).

OTHER STATE SOURCES

Description: Other state sources include remaining SB 1 competitive program awards; the Active Transportation Program (ATP); and other miscellaneous state grant apportionments for the SCAG region.

The financial plan includes allocations included in the 2019 Federal Transportation Improvement Program (2019 FTIP). All ATP and SB 1 competitive program award allocations included in the 2019 FTIP are included in the financial plan, and future allocations are assumed to be consistent.

Base Year: Various.

Data Source: SCAG, 2019 FTIP.

Real Growth Rate: Various.

Revenue Total: $9.2 billion (nominal dollars).

FEDERAL CORE REVENUE SOURCES

Over the 25-year period from 1991 to 2016, Highway Trust Fund (HTF) income grew by 1.3 percent (1.5 percent in the Highway Account) in real terms, while HTF expenditures grew by 3.1 percent (2.6 percent in the Highway Account) in real terms. The Congressional Research Service projects a $100 billion shortfall over FY2021-2025. Since the 2015 authorization of the FAST Act, the HTF has failed to meet its obligations and has required Congress to authorize $70 billion in transfers from the General Fund over five years to keep it solvent.

The financial plan assumes that Congress will reach agreement on maintaining solvency of the HTF over the Connect SoCal planning period. However, the core revenues available from the HTF are expected to decline due to increasing fuel efficiency. Consistent with other revenue sources, the financial plan uses a conservative assumption that fuel consumption declines by 1 percent annually due to changes in CAFE standards and the adoption of hybrid and electric vehicles.

CONGESTION MITIGATION AND AIR QUALITY (CMAQ)

Description: The CMAQ program is a federal funding program to reduce traffic congestion and improve air quality in federally designated air quality non-attainment areas.

Short-term revenues through FY2021-22 are based upon apportionment estimates provided by Caltrans for each county. Starting in FY2022-23, revenues are expected to decline along with the Federal Highway Trust Fund (HTF).

Reflecting improvements in air quality, Connect SoCal assumes that the SCAG region will reach attainment in stages for a number of pollutants and that the severity level for other pollutants will lessen over the planning period. To reflect these conditions, CMAQ funding is expected to decline by 25 percent in 2027, an additional 25 percent in 2032 and an additional 25 percent in 2037.

Base Year: FY2021-22.

Data Sources: Caltrans, CMAQ Apportionments for FY2010-11 through FY2021-22; Federal Highway Administration (FHWA), Federal Highway Statistics 2017, Table FE-210: Status of the Federal Highway Trust Fund 1957–2017; California Environmental Protection Agency, Air Resources Board, 2017 EMFAC Motor Vehicle Emissions Inventory.

Real Growth Rate: Negative 1.0 percent annually (nominal growth rate is 1.2 percent)—not accounting for step-down due to attainment assumptions.

Revenue Total: $5.3 billion (nominal dollars).

SURFACE TRANSPORTATION BLOCK GRANT (STBG)

Description: Projects eligible for STBG funds include projects to preserve and improve the conditions and performance on any Federal-aid highway, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects, including intercity bus terminals.

Short-term revenues through FY2021-22 are based upon apportionment estimates provided for each county by Caltrans. Starting in FY2022-23, revenues are estimated to decline with the HTF. As with CMAQ funding, the financial plan uses the assumption that the core revenues available from the HTF will decline due to increasing fuel efficiency. Consistent with other revenue sources, fuel consumption is expected to decline by 1.0 percent annually due to changes in CAFE standards and the adoption of hybrid and electric vehicles.

Base Year: FY2021-22.

Data Sources: Caltrans, STBG Apportionments for FY2010-11 through FY2021-22; Caltrans, FHWA, Federal Highway Statistics 2017, Table FE-210: Status of the Federal Highway Trust Fund 1957–2017; California Environmental Protection Agency, Air Resources Board, 2017 EMFAC Motor Vehicle Emissions Inventory.

Real Growth Rate: Negative 1.1 percent annually (nominal growth rate is 1.1 percent).

Revenue Total: $7.5 billion (nominal dollars).

FTA FORMULA—SECTIONS 5307, 5310, 5311, 5337, AND 5339

Description: This includes a number of FTA programs distributed by formula. FTA Section 5307 is distributed to state urbanized areas with a formula based upon population, population density, number of low-income individuals, and transit revenue and passenger miles of service. Section 5307 funds capital projects, planning, job access and reverse commute projects, and operations costs under certain circumstances. FTA Section 5310 funds are allocated by formula to states for projects providing enhanced mobility to seniors and persons with disabilities. FTA Section 5311 provides capital, planning, and operating assistance to states to support public transportation in rural areas with populations less than 50,000. FTA Section 5337 is distributed based on revenue and route miles and provides funds for repairing and upgrading rail transit systems, high-intensity bus systems that use High-Occupancy Vehicle (HOV) lanes, including bus rapid transit (BRT). FTA Section 5339 provides capital funding to replace, rehabilitate, and purchase buses and related equipment and to construct bus-related facilities.

Starting in FY2018-19, the financial plan uses the assumption that FTA formula revenues will decline in proportion with the HTF. Over the 25-year period from 1992 to 2016, HTF income grew by 1.3 percent (0.1 percent in the Mass Transit Account) in real terms, while HTF expenditures grew by 3.1 percent (7.1 percent in the Mass Transit Account) in real terms. As with CMAQ and STBGP funding, the financial plan uses the assumption that the core revenues available from the HTF will decline due to increasing fuel efficiency. Consistent with other revenue sources, fuel consumption is expected to decline by 1.0 percent annually due to changes in CAFE standards and the adoption of hybrid and electric vehicles.

Base Year: FY2017-18.

Data Sources: FTA, FTA FY2010-11 to FY2017-18 Apportionments and Allocations; FHWA, Federal Highway Statistics 2017, Table FE-210: Status of the Federal Highway Trust Fund 1957–2017; California Environmental Protection Agency, Air Resources Board, 2017 EMFAC Motor Vehicle Emissions Inventory.

Real Growth Rate: Negative 1.0 percent annually (nominal growth rate is 1.2 percent).

Revenue Total: $19 billion (nominal dollars).

FTA DISCRETIONARY—SECTION 5309 FIXED GUIDEWAY CAPITAL INVESTMENT GRANTS

Description: FTA Section 5309 provides funding for new fixed guideways or extensions to fixed guideways (projects that operate on a separate right-of-way exclusively for public transportation, or that include a rail or a catenary system), bus rapid transit projects operating in mixed traffic that represent a substantial investment in the corridor, and projects that improve capacity on an existing fixed guideway system.

The 2020 RTP/SCS uses the assumption that, on average, operators will continue to receive discretionary funding in rough proportion to what they have received historically. Consistent with other federal sources from the HTF, it is assumed that revenues will decline with fuel consumption by 1.0 percent per year.

Actual apportionments are used through FY2018-19. Starting in FY2019-20, future allocations are estimated by the average apportionment from FY2010-11 to FY2018-19 and a 1.0 percent decline in fuel consumption.

Base Year: FY2018-19.

Data Source: FTA, FTA FY2010-11 to FY2018-19 Apportionments and Allocations; SCAG, 2019 FTIP; FHWA, Federal Highway Statistics 2017, Table FE-210: Status of the Federal Highway Trust Fund 1957–2017; California Environmental Protection Agency, Air Resources Board, 2017 EMFAC Motor Vehicle Emissions Inventory.

Real Growth Rate: Negative 1.0 percent annually (nominal growth rate is 1.2 percent).

Revenue Total: $6.0 billion (nominal dollars).

OTHER FEDERAL FUNDS

Description: Includes other federal programs, such as Federal Highway Safety Improvement Program, Federal Safe Routes to School, Highway Bridge Program, and earmarks.

The financial plan uses actual programmed amounts in 2019 FTIP for discretionary sources and earmarks. These amounts continue only through FY2019-20. Federal Highway Safety Improvement Program, Federal Safe Routes to School, and Highway Bridge Program revenues are estimated in the short-term using program allocations provided by Caltrans. Longer-term estimates for Federal Highway Safety Improvement Program and Highway Bridge Program are based upon the average of allocations from FY2010-11 to FY2021-22 and the 1.0 percent decline in fuel consumption assumption used for other federal funding sources. Federal Safe Routes to School are based upon the average of allocations from FY2010-11 to FY2020-21 and the 1.0 percent decline in fuel consumption assumption used for other federal funding sources.

Base Year: Various.

Data Sources: Caltrans, Division of Local Assistance, FY2010-11 to FY2021-22 for Federal Highway Safety Improvement Program and Highway Bridge Program; Caltrans, Division of Local Assistance, FY2010-11 to FY2020-21 for Federal Safe Routes to School; SCAG, 2019 FTIP.

Real Growth Rate: Negative 1.0 percent annually (nominal growth rate is 1.2 percent).

Revenue Total: $3.3 billion (nominal dollars).

NEW REVENUE SOURCES/INNOVATIVE FINANCING

FEDERAL GAS EXCISE TAX ADJUSTMENT TO MAINTAIN HISTORICAL PURCHASING POWER

Description: Historical extrapolation of gas tax revenues equivalent to additional 10 cents-per-gallon gasoline tax imposed by the federal government starting in 2025. Forecast based on historical trends in adjustments

Base Year: FY2024-25.

Data Source: Not applicable.

Real Growth Rate: 0.0 percent annually.

Revenue Total: $2.7 billion (nominal dollars).

MILEAGE-BASED USER FEE (REPLACEMENT)

Description: Mileage-based user fees would be implemented to replace existing federal and state gas taxes. Analysis assumed an estimated 2.5 cents (2019 dollars) per mile starting in 2030 and indexed at a rate of 2.4 percent.

Advancements in technologies enabling greater use of electric or alternative fuel vehicles will continue to impact gas tax revenues. The California Air Resources Board (ARB), in the 2016 Mobile Source Strategy, estimates that fuel efficiency for all light-duty vehicles in California will steadily increase, from an average weighted MPG of 24 in 2016 to 49 in 2030. The fuel efficiency of freight trucks also is expected to improve, although at a slower rate. However, U.S. Environmental Protection Agency and National Highway Safety Administration standards for medium- and heavy-duty vehicles would lower fuel consumption by an estimated 25 percent by 2027. This projection conservatively assumes there is not a major paradigm shift in vehicle fuel technology, such as affordable electric cars or hybrid heavy-duty trucks. It also assumes no shift will occur in public policy or public attitudes that encourage people to reduce their long-term travel habits or shift to more efficient vehicles more quickly. Given the

growing concern about climate protection and fuel price volatility, however, such changes are likely, which would lead to a more rapid deterioration in the long-term viability of the current fuel tax.

In 2014, the California Legislature passed Senate Bill (SB) 1077 (DeSaulnier) directing California to conduct a pilot program to study the feasibility of a road charge as a replacement to the gas tax. The Pilot began in 2016, and over 5000 participants drove over 37 million miles during the nine month program. The initial pilot explored multiple mileage reporting methods and found that 86 percent of participants were satisfied by their chosen method, and 85 percent were satisfied with the pilot overall. The next pilot will focus on reducing administrative costs through pay-at-the-pump technologies.

For the SCAG region, analysis assumes that mileage-based fees would replace existing state and federal gas taxes. As such, the incremental increase in revenue resulting from the transition to a more direct mileage-based charge system would generate $42.7 billion, from FY2029-30 to FY2044-45.

Base Year: FY2029-30.

Data Source: SCAG travel demand forecast for Connect SoCal.

Real Growth Rate: 0.4 percent annually.

Revenue Total: $42.7 billion (nominal dollars)—estimated incremental revenue only.

FEDERAL CREDIT ASSISTANCE; OTHER BOND PROCEEDS

Description: The financial plan for Connect SoCal assumes the issuance of tax-exempt revenue bonds, secured by new regional revenue sources via a local road charge program. Federal credit assistance in the form of loan proceeds from the Transportation Infrastructure Innovation and Finance Act (TIFIA) and/or the Railroad Rehabilitation and Improvement Financing (RRIF) programs also are anticipated to facilitate enhancement of SCRRA's commuter rail program.

Base Year: FY2024-25.

Data Source: Not applicable.

Real Growth Rate: Not applicable.

Revenue Total: $2.2 billion (nominal dollars).

PRIVATE INVESTMENT

Description: The financial plan for the 2020 RTP/SCS assumes that XpressWest will secure the necessary financing, including approval for the issuance of tax-exempt private activity bonds, to facilitate the construction of high speed rail service from Victor Valley to Las Vegas along the I-15 corridor. Revenue estimates reflect coverage for construction costs for the San Bernardino County portion only.

Similarly, it is assumed that the California High-Speed Rail Phase 1 will generate sufficient revenues to create an opportunity for private investment to support system expansion in the SCAG region. Additionally, the financial plan for Connect SoCal assumes that the two Class I freight railroads—Burlington Northern Santa Fe (BNSF) Railway and the Union Pacific Railroad (UP)—will fund their respective capacity and operational initiatives. It is assumed, for example, that the UP will invest an estimated $500 million in a modernization project that will increase container throughput at the Intermodal Container Transfer Facility (ICTF). Additionally, it is assumed that the BNSF will invest approximately $500 million to construct the Southern California International Gateway (SCIG), a new near-dock facility adjacent to the San Pedro Bay Ports with direct access to the Alameda Corridor. Analysis also includes a freight rail investment package including main line rail improvements (rail-to-rail grade separations, double or triple tracking, new signal systems, universal crossovers, new sidings, etc.). The railroads are assumed to fund their respective shares of capital improvement costs.

Base Year: Not applicable.

Data Source: Draft business plans as available.

Real Growth Rate: Not applicable.

Revenue Total: $12.7 billion (nominal dollars).

LOCAL ROAD CHARGE PROGRAM

Description: As technology to administer mileage based user fees improves, we assume the implementation of a regional road charge on a county basis. This road charge would provide a choice among multiple pricing options tailored to local needs, similar to the diverse expenditures in current local sales tax initiatives. This would allow the ability for local agencies to better manage their transportation systems, especially as VMT increases with the introduction of connected and autonomous vehicles. For the SCAG region, analysis assumes a regional road charge of 1.5 cents (2019 dollars) per mile.

Complementary measures including congestion pricing and parking pricing can be integrated into a local road charge program as may be applicable for regional job centers. Job centers are places in the region with generally higher existing employment density than the areas around them. Based on SCAG research, 21 job centers covering roughly 0.5 percent of the region's land area but about 22 percent of the region's employment are identified to take advantage of existing density and infrastructure. These centers were evaluated for parking pricing, assessing base rates and adjusting to grow starting in FY2024-25. Analysis also assumes congestion pricing (peak period charges) in parts of Los Angeles County—starting in FY2024-25.

The design of any local road charge program would need to carefully consider policies to mitigate some of the increased financial burden on low-income groups. Equity impacts differ significantly across different pricing programs, and any mitigation would be tailored to reduce equity impacts specific to the program. One way to address equity concerns include enhanced transportation alternatives for transit dependent populations. Further, discounts could be applied through reduced pricing, establishment of a rebate, or credit program. Connect SoCal assumes the establishment of a Mobility Equity Fund to cover the cost of rebates, credits, or discounts for general mobility expenses including user fees/tolls, parking charges, transit fares, and new mobility options.

Base Year: FY2024-25.

Data Source: SCAG travel demand forecast for Connect SoCal.

Real Growth Rate: Various

Revenue Total: $77.8 billion (nominal dollars).

VALUE CAPTURE STRATEGIES

Description: Revenue estimates reflect opportunities for value capture financing including tax increment financing. Cities and counties have had the authority since 1990 to create infrastructure financing districts (IFDs) to fund local infrastructure. IFDs divert incremental property tax revenues for 30 years to fund, among other things, highways and transit projects. Revenue generation can vary significantly by area due to associated economic development potential.

Senate Bill 628 (SB 628) was signed by the Governor on September 29, 2014 and authorizes the legislative body of a city or county to establish an enhanced infrastructure financing district (EIFD), adopt an infrastructure financing plan, and issue bonds to finance public capital projects and other specific projects of communitywide significance. Unlike IFDs, a two-thirds vote is not required to form an EIFD. The legislative body is required to hold a public hearing before passing a resolution that adopts the infrastructure financing plan, and in turn, a resolution of formation creating the EIFD. Bonds may be issued upon approval of 55 percent of the qualified electors of the EIFD. Tax increment financing would fund infrastructure projects such as highways, interchanges, transit facilities, sewage treatment and water reclamation plants, brownfield restoration and other environmental mitigation, low and moderate income housing, and transit priority projects, in accordance with the infrastructure financing plan and the agreement of affected taxing entities.

To date, SCAG has conducted twenty pilot tax increment financing studies to evaluate the usefulness of these tools in support of local economic development and transit supportive infrastructure (including housing). As of 2019, there are two EIFDs in the SCAG region – one supporting the upcoming Foothill Gold Line station in the City of La Verne, and one supporting the future Placentia Metrolink Station in the City of Placentia (a SCAG funded project).

Base Year: Various.

Data Source: SCAG tax increment financing studies

Real Growth Rate: Not Applicable.

Revenue Total: $3.0 billion (nominal dollars).

TRANSPORTATION NETWORK COMPANY (TNC) MILEAGE BASED FEE

Description: Studies find that TNCs contribute a significant portion of VMT. This is most pronounced in dense urban centers, in which TNCs account for between 6 to 7 percent of all VMT in dense urban centers on average. Recent research conducted by Fehr & Peers (2019) on behalf of Uber and Lyft, estimates that TNC trips are 2.6 percent of VMT in Los Angeles County, and 1.5 percent of VMT across the SCAG region. Thus, we estimate that TNCs account for 1.5 percent of VMT region-wide.

California Public Utilities Commission currently assesses a 10 cent per trip fee on TNC's to fund wheelchair-accessible vehicle (WAV) services. In other cities higher fees are increasingly used to provide revenues for transit and mitigate for the contribution of TNCs to increased VMT and congestion. Example cities include Chicago (15 cents per trip), Portland (50 cents per trip) and New York (50 cents per trip plus TNC-specific cordon pricing fee when applicable). Note that New York City additionally levies a percentage fee, and San Francisco voters approved a percentage fee in 2019, but the primary pricing mechanism is a per-trip fee. Thus we assume the equivalent of a 50 cent per trip fee. The average TNC trip is 10.1 miles: 6.1 miles per passenger trip and an additional 4 miles of "deadheading" – driving without a passenger between fares. Therefore, an estimated 5 cents per mile user fee is the equivalent of a 50 cent flat fee for an average trip.

Base Year: FY2020-2021

Data Sources: SCAG travel demand forecast for 2020 RTP/SCS.

Real Growth Rate: 0.4 percent annually.

Revenue Total: $4.7 billion (nominal dollars).

APPENDIX 2 OF 4

SCAG Regional Financial Model

The SCAG regional financial model consists of two Excel workbooks. The first workbook helps SCAG estimate revenues available for transportation investments over the timeframe of Connect SoCal (FY2020-21 to FY2044-45). The second workbook allows SCAG to compare the revenues to expenditures.

The revenue model workbook begins with a compilation of historical data from published sources. SCAG relies on published data because it can be collected and verified easily. The model focuses on using revenue data at collection and disbursement levels and includes data tables from a variety of local, state, and federal sources. All tables and their sources are listed in **TABLE 10**.

The revenue model uses these tables to estimate long-term historical trends. SCAG tries to use as much publically available data as possible, but definitions and data availability can vary over time.

TABLE 10 Published Historical Data

Table	Source(s)
1: State Sales and Use Tax Statistics by County, FY1933-34 to FY2016-17	SBOE, FY1933-34 through FY2011-12 Annual Reports, Table 20 (or equivalent tables in earlier reports); California Department of Tax and Fee Administration (CDTFA), Taxable Sales in California, FY2012-13 through FY2016-17.
2: Revenues Distributed to Counties from County Transportation Tax (i.e., TDA Funding), FY1972-73 to FY2017-18	SBOE, FY1972-73 through FY2013-14 Annual Reports, Table 21B; SBOE, FY2014-15 through FY2017-18 Payments to County Transportation Funds from the 1/4% Local Sales and Use Tax.
3: Revenues Distributed to Special Districts from Transaction and Use Tax, FY1981-82 to FY2017-18	SBOE, FY1972-73 through FY2013-14 Annual Reports, Table 21C; SBOE, FY2014-15 through FY2017-18 Payments to Special Districts from the Transactions (Sales) and Use Taxes.
4: Total Gas Tax Apportionments to Counties and Constituent Cities, FY1999-00 to FY2017-18	1) Controller, Streets and Roads Annual Report, FY1999-00 through FY2009–10, Tables 3 and 9—Detailed Statement of Monies Made Available for Street Purposes. 2) Controller, Monthly Highway Users Tax, FY2010-11 through FY2017-18, HUT 2104, HUT 2105, HUT 2016, HUT 2107, HUT 2107.5.
5: Highway Users Tax 2103 (i.e., formerly Gas Tax Swap), FY2010-11 to FY2017-18	Controller, Monthly Highway Users Tax, FY2010-11 through FY2017-18, HUT 2103.
6: Road Maintenance and Rehabilitation Account, FY2017-18	Controller, Monthly Road Maintenance and Rehabilitation Account, FY2017-18
7: Taxable Distributions of Diesel Fuel and Gasoline, FY1923-24 to FY2017-18	SBOE, FY2016-17 Annual Report, Tables 24 and 25a.
8: 2017 EMFAC SCAG Region Fuel Consumption, 2016 to 2045	ARB, 2017 EMFAC Motor Vehicle Emission Inventory
9: Transportation Energy Use by Fuel Type, 2016 to 2050	U.S. Energy Information Administration (EIA), Annual Energy Outlook 2017 & 2018, Transportation Sector Energy Use by Fuel Type Within a Mode.
10: California Gasoline and Diesel Retail Prices, 1995 to 2017	EIA, Weekly Retail Gasoline and Diesel Prices, California, Annual
11: Transportation Fuel Price, 2016 to 2050	EIA, Annual Energy Outlook 2017 & 2018, Energy Prices.
12A-12B: Programmed 2008 STIP, FY2008-09 to FY2012-13	California Transportation Commission (CTC), 2009 Report of STIP Balances County and Interregional Shares, July 31, 2009.
12C–12D: Programmed 2010 STIP, FY2010-11 to FY2014-15	CTC, 2011 Report of STIP Balances County and Interregional Shares, August 4, 2011
12E–12F: Programmed 2012 STIP, FY2012-13 to FY2016-17	CTC, 2013 Report of STIP Balances County and Interregional Shares, July 26, 2013.
12G–12H: Programmed 2014 STIP, FY2014-15 to FY2018-19	CTC, 2014 Report of STIP Balances County and Interregional Shares, August 1, 2014.
12I–12J: Programmed 2016 STIP, FY2016-17 to FY2020-21	CTC, 2017 Report of STIP Balances County and Interregional Shares, August 4, 2017.
12K–12L: Programmed 2018 STIP, FY2018-19 to FY2022-23	CTC, 2018 Report of STIP Balances County and Interregional Shares, August 1, 2018.

TABLE 10 Published Historical Data - Continued

Table	Source(s)
12M-12N: Programmed 2020 STIP, FY2020-21 to FY2024-25	CTC, Staff Recommendations, February 28, 2020
13A: 2008 SHOPP Program and GARVEE Financed Projects, FY2008-09 to FY2011-12	1) Caltrans, 2008 SHOPP, Approved March 13, 2008. 2) Caltrans, 2008 SHOPP GARVEE List, May 26, 2010.
13B: 2010 SHOPP Program, FY2010-11 to FY2013-14	Caltrans, 2011 Report of STIP Balances County and Interregional Shares, August 4, 2011.
13C: 2012 SHOPP Program, FY2012-13 to FY2015-16	Caltrans, 2012 SHOPP, Approved March 28, 2012.
13D: 2014 SHOPP Program, FY2014-15 to FY2017-18	Caltrans, 2014 SHOPP, Approved March 20, 2014.
13E: 2016 SHOPP Program, FY2016-17 to FY2019-20	Caltrans, 2016 SHOPP, Approved March 16, 2016.
13F: 2018 SHOPP Program, FY2018-19 to FY2021-22	Caltrans, 2018 SHOPP, Approved March 22, 2018.
14: Other State (Prop 1A, Prop 1B, AB 2766, SB 132, etc.), FY2008-09 to FY2023-24	1) SCAG, 2008 Regional Transportation Improvement Program (RTIP), Amendment #08-53. 2) SCAG, 2011 Federal Transportation Improvement Program (FTIP), Amendment #11-34. 3) SCAG, 2013 FTIP, Amendment #13-19. 4) SCAG, 2015 FTIP, Amendment #15-07. 5) SCAG, 2017 FTIP, Amendment #17-00. 6) SCAG, 2019 FTIP, Amendment #19-00.
15: Low Carbon Transit Operations Program, FY2014-15 to FY2017-18	Controller, Low Carbon Transit Operations Program Allocations, FY2014-15 through FY2017-18.
16: Transit and Intercity Rail Capital Program, FY2014-15 to FY2027-28	Caltrans, Transit and Intercity Rail Capital Program, 2015, 2016 and 2018 Award Lists.
17: Solutions for Congested Corridors Program, FY2018-19 to FY2020-21	CTC, Adoption of the 2018 Solutions for Congested Corridors Program.
18: Trade Corridor Enhancement Program, FY2017-18 to FY2019-20	CTC, Adoption of the 2018 Trade Corridors Enhancement Program.
19A: Local Partnership Competitive Program, FY2018-19 to FY2019-20	CTC, Adoption of the 2018 Local Partnership Competitive Program
19B: Local Partnership Formulaic Program, FY2017-18 to FY2019-20	CTC, 2018 and 2019 Local Partnership Formulaic Program Share Distribution.
20: Active Transportation Program, FY2014-15 to FY2020-21	SCAG, 2015 FTIP, 2017 FTIP and 2019 FTIP.
21: Transit Passenger Fares, FY1978-79 to FY2016-17	Controller, Transit Operators and Non-Transit Claimants Annual Report, FY1978-79 through FY2016-17, Table 1.

TABLE 10 Published Historical Data - Continued

Table	Source(s)
22: SCRRA (Metrolink) Budgeted Passenger Fares, FY2012-13 to FY2018-19	Southern California Regional Rail Authority, FY2012-13 through FY2018-19 Annual Budgets.
23: FTA Section 5307, FY1987-88 to FY2016-17	Controller, Transit Operators and Non-Transit Claimants Annual Report, FY1978-79 through FY2016-17, Table 1.
24: Special Demonstration Project, FY1987-88 to FY2016-17	Controller, Transit Operators and Non-Transit Claimants Annual Report, FY1978-79 through FY2016-17, Table 1.
25: Other Financial Assistance, FY1987-88 to FY2016-17	Controller, Transit Operators and Non-Transit Claimants Annual Report, FY1978-79 through FY2016-17, Table 1.
26: FTA Section 5310 and 5311, FY1987-88 to FY2016-17	Controller, Transit Operators and Non-Transit Claimants Annual Report, FY1978-79 through FY2016-17, Table 1.
27: Federal Section 5307 (Urbanized Area) Funding Allocations, FY2005-06 to FY2017-18	FTA, FTA Fiscal Year Apportionments and Allocations, multiple years.
28: Federal Section 5310 (Enhanced Mobility of Seniors and Individuals with Disabilities) Funding Allocations, FY2012-13 to FY2017-18	FTA, FTA Fiscal Year Apportionments and Allocations, multiple years.
29: Federal Section 5337 (State of Good Repair Formula) Funding Allocations, FY2012-13 to FY2017-18	FTA, FTA Fiscal Year Apportionments and Allocations, multiple years.
30: Federal Section 5339 (Bus and Bus Facilities Formula) Funding Allocations, FY2012-13 to FY2017-18	FTA, FTA Fiscal Year Apportionments and Allocations, multiple years.
31: Federal Section 5309 (Capital Investment Grants) Funding Allocations, FY2005-06 to FY2018-19	FTA, FTA Fiscal Year Apportionments and Allocations, multiple years.
32: Other Federal Transit (ARRA, TIGER, TIGGER, etc.), FY2008-09 to FY2019-20	1) SCAG, 2008 Regional Transportation Improvement Program (RTIP), Amendment #08-53. 2) SCAG, 2011 Federal Transportation Improvement Program (FTIP), Amendment #11-34. 3) SCAG, 2013 FTIP, Amendment #13-19. 4) SCAG, 2015 FTIP, Amendment #15-07. 5) SCAG, 2017 FTIP, Amendment #17-00. 6) SCAG, 2019 FTIP, Amendment #19-00.
33: Other Federal Highway, FY2008-09 to FY2021-22	1) SCAG, 2008 Regional Transportation Improvement Program (RTIP), Amendment #08-53. 2) SCAG, 2011 Federal Transportation Improvement Program (FTIP), Amendment #11-34. 3) SCAG, 2013 FTIP, Amendment #13-19. 4) SCAG, 2015 FTIP, Amendment #15-07. 5) SCAG, 2017 FTIP, Amendment #17-00. 6) SCAG, 2019 FTIP, Amendment #19-00.
34: Highway Toll Revenues, FY1997-97 to FY2017-18	1) TCA Website for annual Transaction Tables from FY1996-97 through FY2017-18. 2) OCTA, 91 Express Lanes Fund, Financial Statements, FY2003-04 through FY2017-18. 3) LACMTA Financial Statements, FY2012-13 though FY2016-17. 4) RCTC Financial Statements, FY2016-17 through FY2017-18.
35: Developer Fees, FY1987-88 to FY2016-17	Controller, Transportation Planning Agencies Annual Report, FY1987-88 through FY2016-17, Table 1.

TABLE 10 Published Historical Data - Continued

Table	Source(s)
36: Interest Earned by Transportation Planning Agencies, FY1987-88 to FY2016-17	Controller, Transportation Planning Agencies Annual Report, FY1987-88 through FY2016-17, Table 1.
37: General Fund Monies Used for Street Purposes, FY2010-11 to FY2016-17	Controller, Streets and Roads Annual Report, FY2010-11 through FY2016-17, Tables 3 and 9.
38A: State Transit Assistance Funds, FY1987-88 to FY2018-19	1) Controller, Transportation Planning Agencies Annual Report, FY1987-88 through FY1996-97, Table 1. 2) Controller, State Transit Assistance Fund Allocation FY1997-98 through FY2007-08. 3) Controller, Quarterly State Transit Assistance, FY2008-09 through FY2016-17. 4) Controller, State Transit Assistance Fund Allocation Estimate for FY2017-18 and FY2018-19.
38B: State of Good Repair Program, FY2017-18 to FY2018-19	Controller, State Transit Assistance Fund Allocation Estimate for FY2017-18 and FY2018-19.
39: Federal CMAQ Apportionments, FY1997-98 to FY2021-22	Caltrans, CMAQ Apportionments, multiple years.
40: Federal STBG Apportionments, FY1997-98 to FY2021-22	Caltrans, STBG Apportionments, multiple years.
41: Federal Highway Safety Improvement Program, FY2012-13 to FY2021-22	Caltrans, Project Lists for 2011 FTIPs, 2013 FTIPs, 2015 FTIPs, 2017 FTIPs and 2019 FTIPs.
42: Federal Safe Route to School Program, FY2014-15 to FY2020-21	Caltrans, Project Lists for 2011 FTIPs, 2013 FTIPs, 2015 FTIPs, 2017 FTIPs and 2019 FTIPs.
43: Highway Bridge Program Federal Funds, FY2006-07 to FY2021-22	Caltrans, Division of Local Assistance, Highway Bridge Program, multiple years.
44: Status of the Federal Highway Trust Fund, 1957 to 2017	FHWA, Federal Highway Statistics 2016, Table FE-210, Status of the Federal Highway Trust Fund 1957-2015; Status of the Federal Highway Trust Fund - FY2016-17.
45: GDP (Chained) Price Index, FY1939-40 to FY2022-23	Office of Management and Budget, Budget of the United States Government, FY2018-19 Budget Transmitted to Congress on February 2018, Table 10.1.
46: California County Population Estimates, 2000 to 2017	1) California Department of Finance (DOF), E-2. California County Population Estimates and Components of Change by Year—July 1, 2000–2010, February 2012. 2) DOF, E-2. California County Population Estimates and Components of Change by Year—July 1, 2010–2017, December 2017.
47: California County Population Projections, 2010 to 2060	DOF, P-1. California State and County Population Projections — July 1, 2010-2060, February 2017.

The next section of the model collects information from the county transportation commissions' forecasts as may be available. The SCAG revenue model takes the county transportation commissions' most recent financial forecasts available and places them into standardized revenue categories. The SCAG model includes the following revenue categories:

Local Sources

1. Local Option Sales Tax Measures
2. Transportation Development Act (TDA)—Local Transportation Fund
3. Farebox Revenue
4. Highway Tolls (in core revenue forecast)
5. Mitigation Fees
6. Other Local Sources

State Sources

1. State Transportation Improvement Program (STIP)
   - Regional Improvement Program (RIP)
   - Interregional Improvement Program (IIP)
2. State Highway Operation and Protection Program (SHOPP)
3. Highway Users Tax Account (HUTA)
4. Road Maintenance and Rehabilitation Account (RMRA)
5. State Transit Assistance Fund
6. Cap-and-Trade Auction Proceeds
7. Other State Sources

Federal Sources

1. Congestion Mitigation Air Quality (CMAQ) Program
2. Surface Transportation Block Grant Program (STBGP)
3. FTA Formula (5307, 5310, 5311, 5337, 5339)
4. FTA Discretionary (5309 "New Starts")
5. Other Federal Sources

In addition to grouping the revenue sources by standard category, the SCAG model also ensures that costs are estimated in the same "dollars" and inflation rates are consistently applied. The SCAG revenue model is capable of estimating revenues in any set of constant dollars or nominal dollars (year-of-expenditure). The default is 2016 constant dollars, although Connect SoCal reports revenue estimates in nominal dollars, consistent with federal guidelines.

The SCAG model uses several economic assumptions to forecast future revenues. The most important assumptions are:

- Growth in retail sales for each county
- Changes in fuel consumption
- Changes in inflation used for indexing of SB 1 fuel taxes and fees
- Increases in farebox revenues for major operators and transit agencies in general
- Changes in toll revenues
- Status of the HTF
- Changes in CMAQ funding due to air quality attainment
- Annual inflation for converting revenues to nominal dollars

The assumptions are based on the published historical data. Values are adjusted to ensure consistency with the county transportation commission forecasts and across the region. As an example, **TABLE 11** shows a subset of the model assumptions for retail sales growth and fuel consumption. The county transportation commissions provided retail sales forecasts, which are used in the regional model.

TABLE 11 also shows the expected growth in fuel consumption. SCAG expects that fuel consumption will be impacted by a number of changes anticipated over the next several decades, including changes in vehicle miles traveled, changes in vehicle fuel efficiency (due to CAFE standards), and the adoption of alternative fuel vehicles. The SCAG revenue model assumes that these changes cause fuel consumption to drop by 1 percent annually for combined fuels and 1.1 percent annually for gasoline alone over the period of Connect SoCal—a more conservative assumption than historical trends would suggest.

The regional model generates forecasts of annual revenues by source for each of the counties in the SCAG region through FY2044-45.

TABLE 11 Revenue Model Assumptions

Assumption	Used in Model	Source/Other Information
Annual Growth Rates		
Retail Sales		
Imperial County	3.2%	Table 1 (State Sales and Use Tax by County)
Los Angeles County	1.6%	Table 1; Percentage to match Metro Financial Forecast
Orange County	1.3%	Table 1; Percentage to match OCTA Financial Forecast
Riverside County	-0.1%	Table 1; Percentage to match RCTC Financial Forecast
San Bernardino County	1.1%	Table 1; Percentage to match 2017 Measure I 2010-2040 Ten-Year Delivery Plan
Ventura County	1.8%	Table 1
Statewide	1.5%	Table 1
Fuel Consumption		
Gasoline	-1.2%	Table 7 (Taxable Distribution of Diesel Fuel and Gasoline); Table 8 (2017 EMFAC SCAG Region Fuel Consumption)
Diesel	0.0%	Table 7; Table 8
Combined Fuels	-1.0%	Table 7; Table 8

APPENDIX 3 OF 4

Implementation Plan for Reasonably Available Revenue Sources

The following adopted set of key guiding principles form the basis for Connect SoCal financial strategies:

- Establish a user-based system that better reflects the true cost of transportation, provides firewall protection for new and existing transportation funds, and ensures an equitable distribution of costs and benefits.
- Promote national and state programs that include return-to-source guarantees while maintaining flexibility to reward regions that continue to commit substantial local resources.
- Leverage locally available funding with innovative financing tools (e.g., tax credits and expansion of TIFIA) to attract private capital and to accelerate project delivery.
- Promote local funding strategies that maximize the value of public assets while improving mobility, sustainability, and resilience.

Further, recognizing that many of the financial strategies identified require additional planning and legislative steps toward implementation, the following section highlights some requisite actions and key milestones for implementing new funding sources identified as a part of the financially constrained Connect SoCal.

FEDERAL GASOLINE EXCISE TAX ADJUSTMENT

A critical component of the Connect SoCal financial plan includes an adjustment to the federal gasoline excise tax to maintain historical purchasing power. The adjustment is equivalent to an additional 10 cents-per-gallon excise tax beginning in 2025. Historical tax rate adjustments provide the basis for this assumption. The current federal gasoline excise tax was last adjusted from 9 to 18.4 cents-per-gallon over a five-year period as well (see **TABLE 12**). Historical extrapolation provides the basis for adjustments within the time horizon of the 2020 Connect SoCal.

TABLE 12 Revenue Model Assumptions

Effective Date	Tax Rate (cents-per-gallon)
June 21, 1932	1.0
June 17, 1933	1.5
January 1, 1934	1.0
July 1, 1940	1.5
November 1, 1951	2.0
July 1, 1956	3.0
October 1, 1959	4.0
April 1, 1983	9.0
January 1, 1987	9.1
September 1, 1990	9.0
December 1, 1990	14.1
October 1, 1993	18.4
January 1, 1996	18.3
October 1, 1997	18.4

Source: Federal Highway Administration

Given the state of transportation funding today, it is critical to consider increases in fuel taxes to ensure the integrity of the system. Some key requisite actions over the next few years to realize this revenue strategy in the 2025 to 2029 timeframe are as follows:

- The Connect SoCal fuel tax and/or transportation funding stabilization recommendations are already key components of SCAG's legislative program. Accordingly, continue to communicate recommendations and coordinate as appropriate with the Congressional Delegation.
- Advance legislative proposals that would address stabilizing the HTF.

MILEAGE-BASED USER FEE (REPLACEMENT)

The Connect SoCal financial plan strategies assume the transition from the current transportation funding model based on fuel taxes to a new mileage-based user fee system. Mileage-based user fees would be implemented to replace existing fuel taxes and applicable to all roads and types of vehicles. SCAG's analysis assumes an estimated 2.5 cents (in 2019 dollars) per mile starting in 2030 and indexed at a rate of 2.4 percent through the plan horizon year of FY2044-45. In recognizing the importance of establishing critical pathways to implementation, SCAG identifies the following requisite actions related to demonstrations and eventual full deployment of a mileage-based user fee system—to replace the current fuel tax mechanisms at both the state and federal levels.

- Continue to collaborate with the California State Transportation Agency, the California Transportation Commission, business, and other key parties on the California Road Charge Pilot Program to address key implementation factors such as:
  - Technology and associated privacy issues
  - Cost of implementation and administrative methods for fee collection/revenue allocation
  - Equity concerns and exemptions/credits, as applicable
  - Rate structures and associated impacts including evaluation of flat rates, differential pricing by type of vehicle including size

and weight, time-of-day, and potentially emissions, including greenhouse gas emissions

- Economic assessment

- Apply lessons-learned from pilot program and other demonstration and evaluation efforts of mileage-based fees to inform the State Legislature and Congress about the unique characteristics of Southern California and help tailor state and federal programs to meet the needs of the SCAG region.
- Evaluate the impacts of the mileage-based user fee system on existing local transportation funding mechanisms, including toll facilities and sales tax measures—and consider how best to integrate the various transportation funding mechanisms.
- Consider how best to develop mileage-based user fee systems to address system preservation needs.
- Work with state, federal, and local partners to include provisions in upcoming reauthorization(s) to develop a national roadmap for transitioning to a mileage-based user fee system.
- Work with other MPOs and transportation stakeholders in California to develop a statewide initiative to stabilize and secure transportation funding.

PRIVATE INVESTMENT

Numerous legislative initiatives over the past several years, have allowed the region to more proactively consider private investment strategies as a part of Connect SoCal. Additional work related to approval for the issuance of tax-exempt private activity bonds are currently underway. As of the publication of Connect SoCal, the California Debt Limit Allocation Committee approved $300 million in private activity tax exempt bonds for XpressWest. As specific projects progress, further work would entail continued refinement of project specific business plans and coordination with the California Infrastructure and Economic Development Bank as may be applicable. Private investment interest is assumed for the California High-Speed Rail Phase 1 expansion in the SCAG region as well. Additionally, SCAG is currently undertaking an integrated freight and passenger rail study to better identify strategic opportunities that would help leverage public funding with private investment. Other financing studies specific to freight facilities are in progress.

FEDERAL CREDIT ASSISTANCE; OTHER BOND PROCEEDS

The US DOT's Build America Bureau Credit Programs offers credit assistance in the form of secured (direct) loans, loan guarantees, and standby lines of credit, offering more flexible repayment terms and interest rates compared to other lenders. In addition, the potential for master credit agreements offer predictability and efficiency for planning purposes for projects with an identified source of revenue. For TIFIA or RRIF, a direct loan is a debt obligation involving the US DOT as the lender and the actual terms and conditions would need to be negotiated between the US DOT and the borrower. For Connect SoCal, it is assumed that SCRRA would jointly work with partner county transportation commissions to apply for federal credit assistance and issue debt secured by new regional revenue sources (e.g., local road charge program).

LOCAL ROAD CHARGE PROGRAM

The Connect SoCal financial plan strategies assume a multi-county Local Road Charge Program would be enacted across the SCAG region. Analysis assumes a charge of 1.5 cents (in 2019 dollars) per mile starting in 2030, indexed at a rate of 2.4 percent through FY2044-45. Complementary measures including congestion pricing and parking pricing can be integrated with the growth of regional job centers. Implementation guidelines mirror those described above in regards to federal and state mileage-based user fees, but oriented to local implementation and present steps to incorporate complementary pricing strategies. Implementation of a regional road charge strategy may require supermajority voter approval.

- Continue to collaborate with the California State Transportation Agency, the California Transportation Commission, business, and other key parties on the California Road Charge Pilot Program to address key

implementation factors such as:

- Technology and associated privacy issues
- Cost of implementation and administrative methods for fee collection/revenue allocation
- Equity concerns and exemptions/credits, as applicable
- Rate structures and associated impacts including evaluation of flat rates, differential pricing by type of vehicle including size and weight, time-of-day, and potentially emissions, including greenhouse gas emissions
- Economic assessment

- Collaborate with regional and local stakeholders to explore the feasibility of various pricing mechanisms to meet local congestion management and system preservation needs. Institutional considerations also will need to be addressed.
- Evaluate the impacts of the mileage-based user fee system on existing local transportation funding mechanisms, including toll facilities and sales tax measures—and consider how best to integrate the various transportation funding mechanisms.
- Consider how best to develop mileage-based user fee systems to address system preservation needs.
- Apply lessons-learned from road charge pilot program and other demonstrations and evaluation efforts of pricing programs to help tailor programs to meet the needs of the SCAG region.
- Provide technical assistance to apply lessons-learned and best practices from cities that currently implement pricing programs to assess how best to customize to the needs of the SCAG region.
- Promote return-to-source guarantees while maintaining flexibility to reward jurisdictions that continue to commit substantial local resources.

VALUE CAPTURE STRATEGIES

Often utilized by redevelopment agencies for community improvement projects, tax increment financing can be a critical financing tool to support transportation investment strategies as well. Tax increment establishes a base-year tax level for a project area. Taxes generated above this base-year amount through increases in property values are targeted for improvements/services within the project area. Outside of redevelopment areas, local jurisdictions can establish infrastructure financing districts to use property tax increment financing to pay for public works (Government Code §53395, et seq). With the recent passage of SB 628, enhanced infrastructure financing districts (EIFDs) have a less cumbersome formation process and SCAG and its local jurisdiction partners would need to adhere to the following requisite procedures by FY2024-25:

- Establish a Public Financing Authority
- Adopt a resolution of intention to establish district
- Continue to develop Infrastructure financing plan (IFP)
- Hold public hearing before adoption of IFP and formation of the EIFD
- Formation of district elections
  - Tax increment bonds—EIFDs are able to divert property tax from any participating tax entity, with the exception of a school district, within the EIFD.
  - 55 percent vote needed for bond issuance

TNC MILEAGE BASED FEE

The Connect SoCal financial plan strategies assumes a user fee of 5 cents (in 2019 dollars) per mile on TNCs starting in 2021, indexed at 2.4 percent through FY2044-2045. TNCs account for 1.5 percent of regional VMT. In recognizing that TNCs contribute a significant portion of VMT, these revenues can be used to support mitigation of TNC travel to reduce congestion and emissions.

- Collaborate with the California State Transportation Agency, the California Transportation Commission, the California Public Utilities

Commission, business, and other regional and local stakeholders to address key implementation factors such as:

  - Cost of implementation and administrative methods for fee collection/revenue allocation
  - Equity concerns and exemptions/credits, as applicable, including accessibility for disabled through wheelchair accessible vehicle provisions
  - Rate structures and associated impacts including evaluation of flat rates, VMT, sales tax, congestion impacts by time-of-day and potentially emissions
  - Economic assessment
- Apply lessons-learned and best practices from cities that currently implement TNC fees to help tailor programs to meet the needs of the SCAG region.
- Consider how best to develop mileage-based user fee systems to address system preservation needs and reduce congestion.

APPENDIX 4 OF 4

Financial Plan Assessment Checklist

SCAG used the following checklist to ensure that revenues and expenditures in the financial plan were reasonable:

- Does the RTP contain a financial plan that summarizes current and future revenue sources?
- Is the financial plan and supporting information presented and explained in a format that can be clearly understood?
- Is the financial plan made available to the public as part of the public involvement process?
- Has the financial information in the financial plan been coordinated with all of the affected agencies (MPOs, state DOT, transit operators, local jurisdictions)?
- Are the assumptions and data sources for each revenue source (federal, state, local, other) clearly documented in the financial plan?
- Are the projects included in the financial plan financially constrained?
- Are the RTP projects consistent with STIP estimates?
- Does the financial plan include a forecast of costs and revenues for transportation system operation and maintenance?
- Are the approaches for forecasting future revenues documented and defined?
- Are all revenue figures over consistent timeframes and fiscal years?
- Are consistent dollar values used and defined?
- Are the assumptions used for inflation of costs to future nominal dollars clearly documented and applied consistently?

- Does the RTP clearly indicate which revenue sources currently exist and which are new?
- Are the assumptions about the availability of current revenue sources clearly identified by revenue source?
- Are new revenue sources clearly identified?
- For new revenue sources, are the strategies to achieve these clearly documented? Are the responsible parties for these strategies identified?
- If new revenue sources are not implemented, are the strategies or risk mitigation approaches for how to meet funding shortfalls identified?
- If innovative financing tools and techniques are used as revenue sources, are these clearly identified and documented in the RTP?
- Are the current and future federal funds included in the financial plan based on known or reasonably expected authorization levels?
- Are anticipated discretionary funds consistent with recent levels of discretionary funds actually allocated to the pertinent agencies/jurisdictions?
- If the RTP includes "illustrative" or "vision elements," are the revenue sources for these clearly separate from the fiscally constrained portion of the plan?

SCAG™
INNOVATING FOR A BETTER TOMORROW

MAIN OFFICE

900 Wilshire Blvd., Ste. 1700
Los Angeles, CA 90017
Tel: (213) 236-1800

REGIONAL OFFICES

IMPERIAL COUNTY
1405 North Imperial Ave., Ste.104
El Centro, CA 92243
Tel: (213) 236-1967

ORANGE COUNTY
OCTA Building
600 South Main St., Ste. 741
Orange, CA 92868
Tel: (213) 236-1997

RIVERSIDE COUNTY
3403 10th St., Ste. 805
Riverside, CA 92501
Tel: (951) 784-1513

SAN BERNARDINO COUNTY
1170 West 3rd St., Ste. 140
San Bernardino, CA 92410
Tel: (213) 236-1925

VENTURA COUNTY
4001 Mission Oaks Blvd., Ste. L
Camarillo, CA 93012
Tel: (213) 236-1960

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