



# Challenges, Progress, and Opportunities for Increasing Sustainability in California's Transportation Sector

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# Organization of this Presentation

Part I: Transportation Overview

Part II: Challenges

Part III: Progress

Part IV: Opportunities

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# Part 1: Transportation Overview

- California operates a complex multimodal transportation system, with significant infrastructure investments in all modes.



# Largest and Most-Complex Transportation System in the Country

- **State Highway System:** 50,000 lane-miles of pavement (55% of VMT) and 12,559 bridges.
- **Local roads:** 141,235 miles of local streets and roads (45% of VMT).
- **Local / Regional Transit:** More than 200 public agencies provide some kind of public transit service.
- **Intercity Rail:** Caltrans funds three intercity rail corridors via contracts with Amtrak.

- **Bicycle and Pedestrian:** 660 million bicycle trips occur annually on California state and local roads and stand-alone bike trails.
- **Freight Railroads:** California freight railroads operate over 6,842 miles of track – more than any other state.
- **Seaports:** California has 3 of the 5 busiest seaports in the nation (Los Angeles, Long Beach, and Oakland).
- **Airports:** Almost 250 general aviation and commercial airports.

# Part II: Challenges

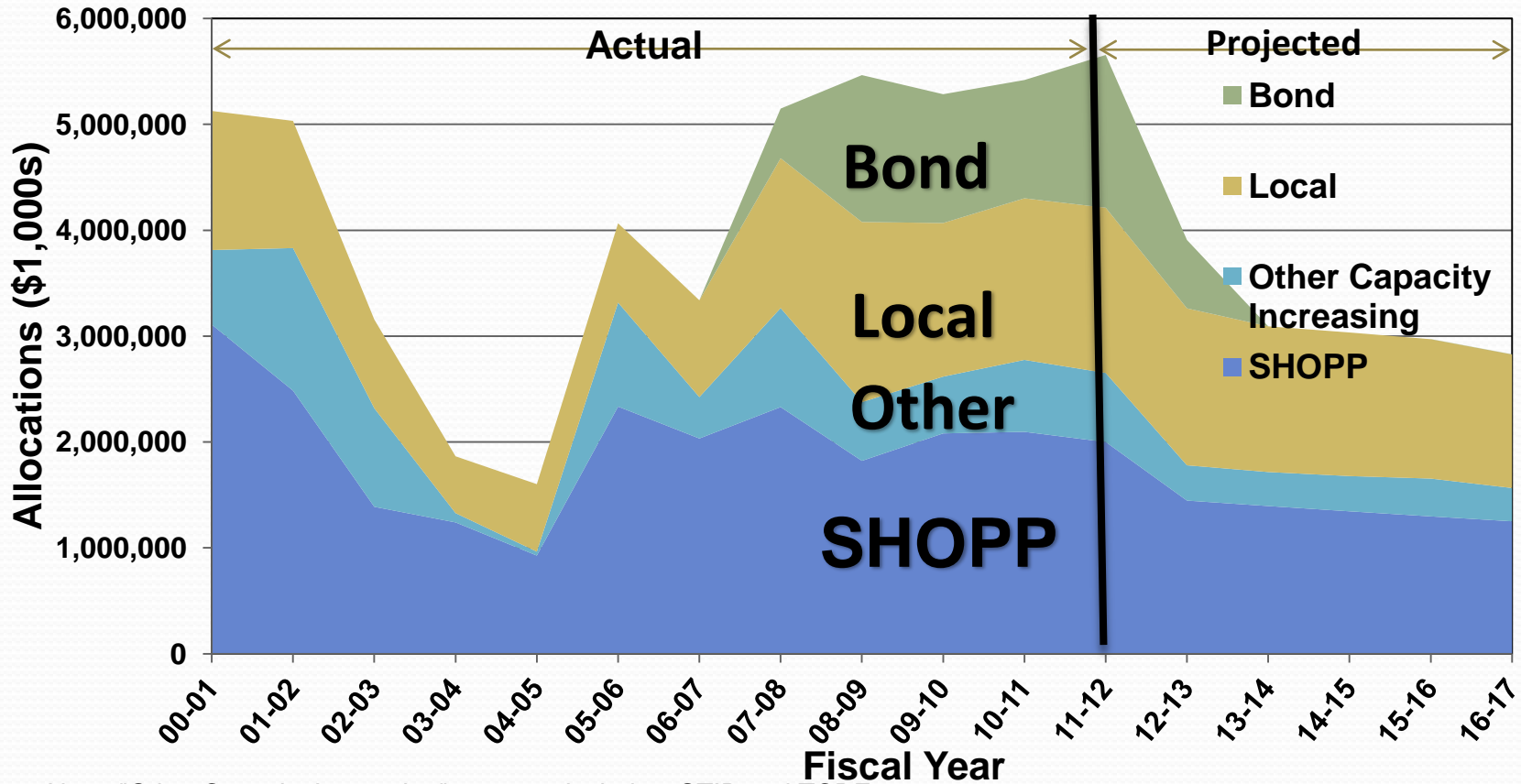
- Current funding is insufficient:
  - The State Highway Operations and Protection Program (SHOPP) Plan has an annual need of \$7.2 billion but base revenue of only \$2.0 billion.
  - The baseline State Transportation Improvement Program (STIP) capacity program is limited to about \$700 million annually.
  - Local transit operators and cities and counties report similar shortfalls on local systems, with the majority of county roads being rated “at risk” or “poor.”

# California Transportation Commission Needs Assessment – 10 year

Mode	Preservation (billions of \$)	Capacity Expansion (billions of \$)
Highways	\$80	\$86
Local Roads	\$103	\$26
Transit, including passenger rail, multimodal stations	\$143	\$44
Freight rail, seaports, airports, land ports	\$16	\$35
Bike / Pedestrian	\$0	\$5
<b>TOTAL</b>	<b>\$341</b>	<b>\$197</b>
<i>Base Funding</i>	<i>\$148</i>	<i>\$95</i>
<b>Shortfall</b>	<b>\$193</b>	<b>\$102</b>

# Caltrans Revenue over Time

**Declining Highway Funding**  
 (Adjusted for Construction Cost Index, in 11/12 dollars)



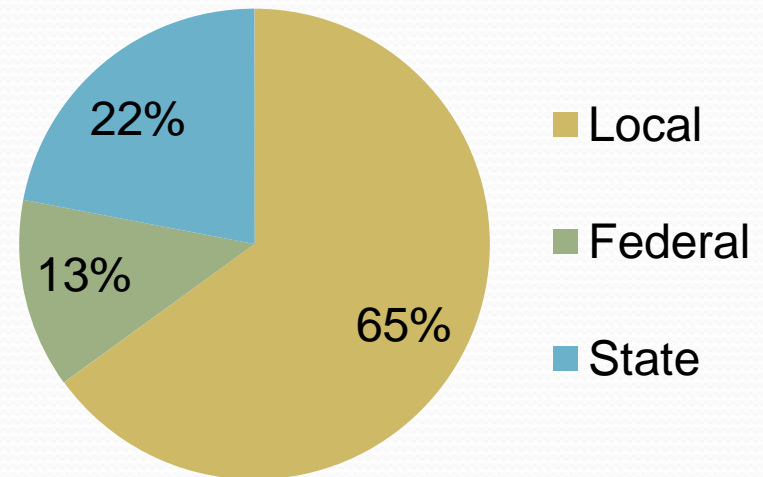
Note: "Other Capacity Increasing" category includes: STIP and TCRF



# The State Transportation System is Decentralized

- Neither the federal government, nor the state, is the primary funder of transportation projects in California.
- Local governments are the drivers of funding and project selection.

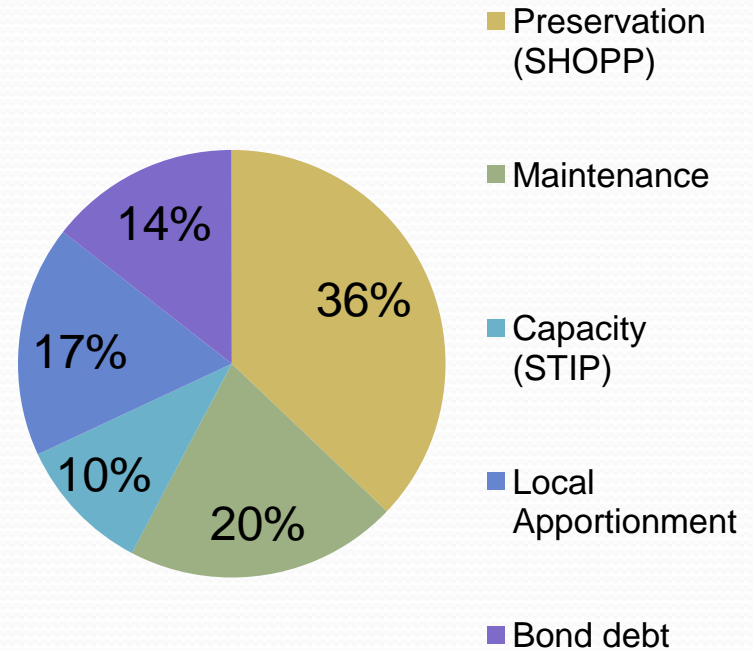
**Revenue by Source  
(all modes)**



# Caltrans Expenditures

- Most Caltrans expenditures support preservation and maintenance (about 56 percent) – only about 10 percent of the baseline program is for capacity.

## Caltrans Expenditures



# Restriction on Gas Tax Revenue

- Article XIX of the State Constitution restricts the use of gasoline excise taxes to:
  - Improvement, maintenance, and operation of public streets and highways, including the mitigation of their environmental effects.
  - Improvement of exclusive public mass transit guideways. (Prohibits expenditure on bus purchases and transit operations).

# Key Challenges

- Key challenges to accomplishing greenhouse gas reduction goals:
  - Limited revenues for needed investments.
  - Constraints on existing revenue (the California Constitution).

# Part III: Progress

- Despite challenges mentioned in previous slides, the state has made great progress toward sustainability goals in the transportation sector. Among these:
  - The Rail Modernization Plan incorporated into the High-Speed Rail Plan.
  - Caltrans initiatives in many areas.

# High-Speed Rail

- The rail funding program approved in SB 1029, provides for a total rail investment of \$12.5 billion when federal and local matching funds are included.
- Key rail projects include Caltrain electrification; rail car upgrade or replacement in the Bay Area, Los Angeles, and San Diego; and a new light rail extension to Union Station in Los Angeles.
- The High-Speed Rail System itself will boost both local transit and intercity rail and reduce California's greenhouse gas emissions.

# Caltrans

- Solar Rooftops
- LED Lights
- Tire Recycling
- Rail Ridership
- Vehicle Fleet
- Coordinated Planning

# Solar Rooftops

- Caltrans used a federal financing program to obtain \$20 million to install rooftop solar systems on 70 Caltrans facilities.
- These sites can produce 2.4 megawatts of power, which is equivalent to the amount needed to serve 500 homes.
- The project is expected to save the department \$5.5 million in energy costs over 25 years.
- The project reduces carbon-based sources for energy.



# LED Lights

- Caltrans is purchasing 40,000 LED street lights to replace currently installed lights over a two-year period.
- Once installed, the lights will save 4.5 megawatts, and save the department \$2 million in annual energy costs.
- Between 1998 and 2004, Caltrans installed red, green, and yellow LED modules on all 4,500 Caltrans-owned traffic signals. This resulted in an 85 percent reduction in energy usage on these lights.

# Tire Recycling

- In 2011, Caltrans used 7.4 million waste tires in pavement and other recycling applications— this represents a significant portion of the annual total waste stream of about 41 million tires.
- In addition to using recycled tires as a pavement additive, Caltrans used the material for light fill in retaining walls and for weed abatement.

# Rail Ridership

- Caltrans subsidizes and manages three of the top five Amtrak corridors in the nation.
- Ridership on these three lines increased 31 percent between 2004 and 2011.
- Just this month, Caltrans will introduce the first of several retrofitted railcars that will nearly double bicycle rack carrying capacity on the San Joaquin and Capitol Corridor rail routes.

# Vehicle Fleet

- Caltrans is implementing an extensive program of heavy construction equipment retrofit or replacement to comply with all Air Board requirements.
- Caltrans is managing its flexible fuel fleet to increase the usage of “E85” fuel.

# Coordinated Planning

- Caltrans is developing the California Interregional Blueprint (CIB) that incorporates regional SB 375 plans, and adds state initiatives to achieve greenhouse gas goals.
- The CIB is an input for the 2015 State Transportation Plan, which is a multimodal plan for transportation through 2040. Other inputs to the State Transportation Plan include the Statewide Transit Plan, the State Rail Plan, and the State Freight Plan.

# Part IV: Opportunities

- What more can be done to ensure the success of SB 375 plans and more broadly to improve mobility and achieve sustainability goals in the transportation sector?

# Strategies to Reduce GHG Emissions

- **Fuels / Vehicle Technology:** Fuel formulation standards, and vehicle fuel efficiency standards, are two tools the California Air Resources Board is utilizing.
- **Smarter Highways / Road Operations:** Improvement to highways and roads that reduce emissions through reduced congestion from managed lanes, intelligent transportation systems, pricing, and pavement maintenance.
- **Reducing VMT:** Regions can promote compact land use development to reduce VMT. The state's SB 1029 rail modernization plan will promote rail and transit to reduce VMT.

# Re-evaluating Current Programs

- Review STIP guidelines and practices to see where updates are warranted to facilitate sustainability goals.
- Continue to work with regions as SB 375 plans are implemented to ensure state funds are supporting best practices for sustainability.
- Evaluate new flexibilities for federal funds and existing state funds that support “active transportation” such as bicycle grants and the Safe Routes to Schools Program. Look for ways to expand and streamline these multiple programs to accelerate projects.



# 10-Year Transportation Financing Program

- As part of the California Transportation Commission's (CTC) 10-year Needs Assessment, continue to prioritize investments with an emphasis on preservation.
- Focus on streamlining and efficiencies, which reduce costs to allow more projects to move forward.
- Layout performance measures for projects that include sustainability and air quality.
- Align revenue with the level of government that can best deliver various types of projects.

# Cap and Trade Program

- Mobile sources contribute significant GHG emissions – about 38 percent in 2009.
- Cap and trade funds from vehicle fuels may be considered for the transportation sector.
- Regional investments could support qualified projects in cities and counties where programmatic SB 375 strategies are being effectively implemented.
- Statewide investments could support intercity rail – including high-speed rail – as well as qualified highway projects.

# Part V: Discussion

- Questions and comments