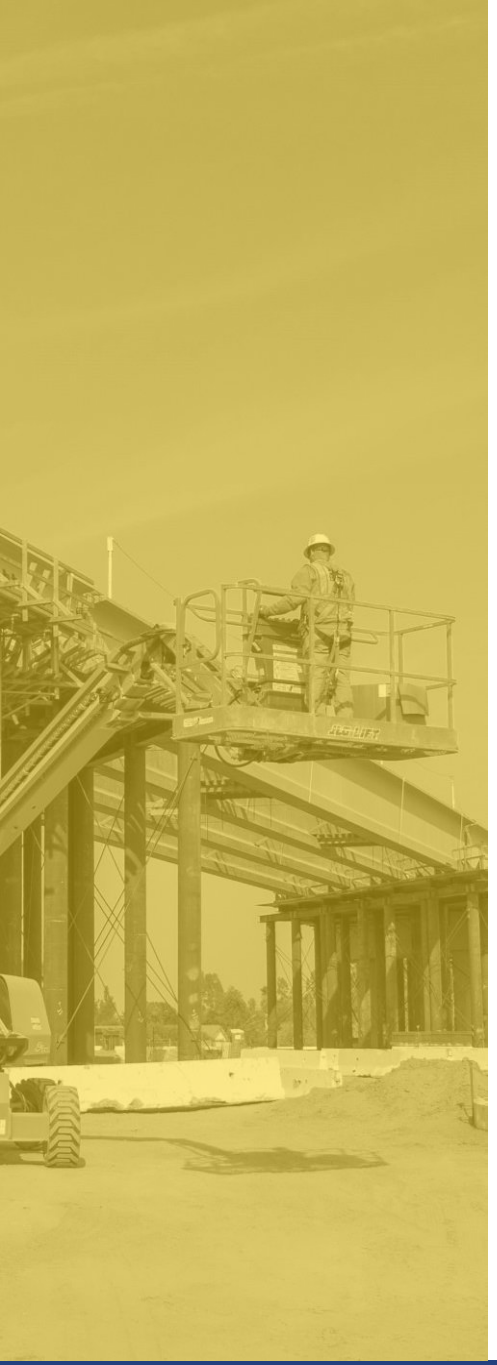
CALIFORNIA
High-Speed Rail Authority

2023 Economic Impact Analysis

Derek Boughton
Reporting Branch Chief
Authority Financial Official



2023 ECONOMIC IMPACT ANALYSIS

- The High-Speed Rail Authority (the Authority) annually produces the Economic Impact Analysis that estimates the economic impacts of expenditures tied to planning and constructing a high-speed rail system. The estimates include Authority expenditures from July 2006 through the end of the most recently-completed fiscal year. The scope of this presentation covers the 2023 Economic Impact Analysis, which adds the 2022-23 fiscal year expenditure analyses to the project totals. Forecasts for future economic impacts are based on the Draft 2024 Business Plan data.

2023 ECONOMIC IMPACT ANALYSIS

Economic Indicators:

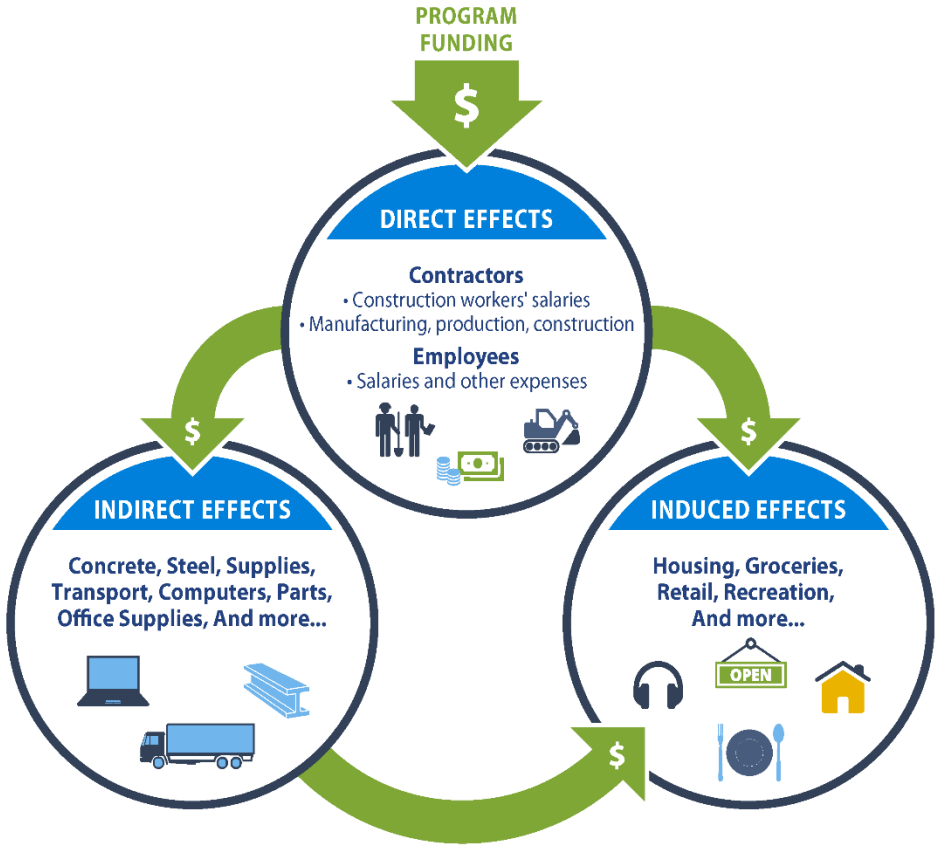
- **Job-Years -** Job-Years are the equivalent of one-year-long full-time jobs supported by the project.
  For example:
  - 1 Employee working for 5 years = 5 Job-Years
  - 5 Employees working for 1 year = 5 Job-Years

- **Labor Income -** Labor income includes all forms of employment income, including compensation (wages, benefits, and payroll taxes) firms paid to employees, and income earned by self-employed workers or unincorporated sole proprietorships.
- **Economic Output -** Economic output is an estimate of the value of all economic activity taking place as a result of high-speed rail expenditure. A dollar invested in high-speed rail sparks several activities in addition to labor income, such as the purchases of goods and services and value created from these activities. For example, the materials purchased for the viaducts over the Fresno river constructed by Authority Contractors as well as the labor that went into constructing and placing the viaducts all contribute toward the Economic Output.

2023 ECONOMIC IMPACT ANALYSIS

Economic Effects:

How the Indicators are determined is a combination of Indirect, Direct, and Induced Effects

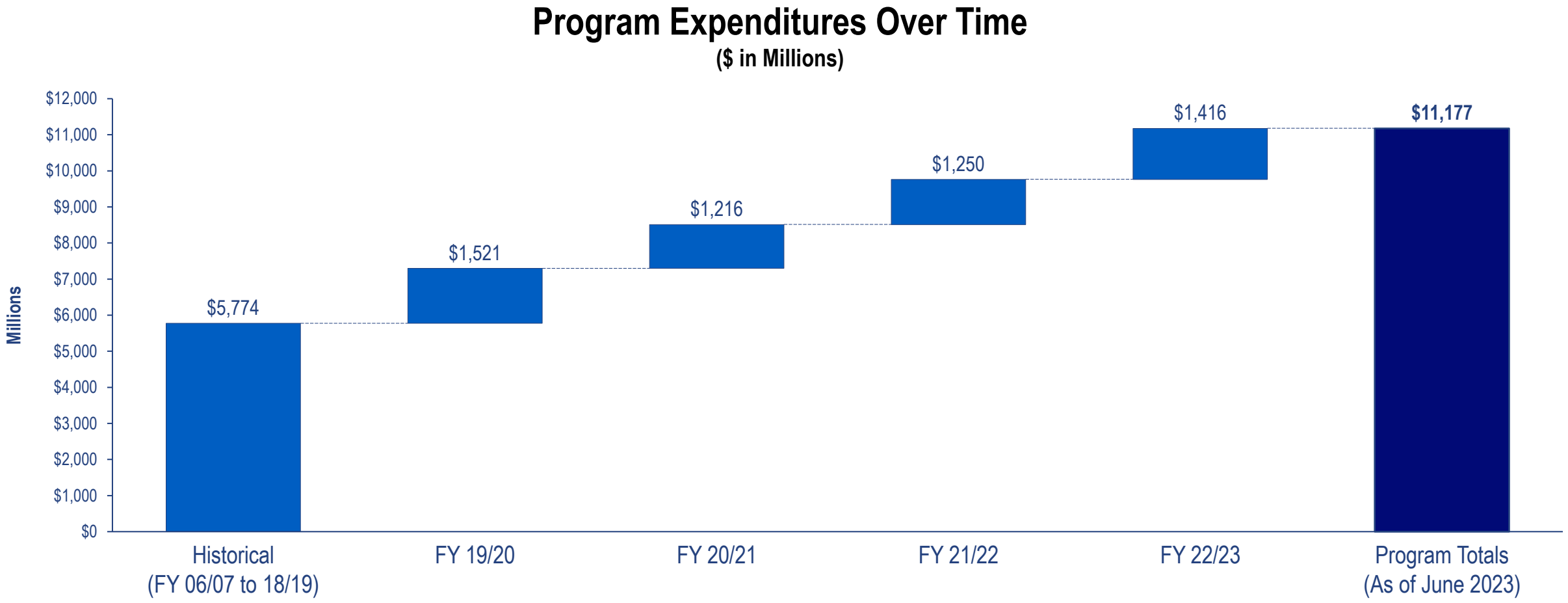


2023 ECONOMIC IMPACT ANALYSIS

- **Research Methods:**
  - Reviewed contract-level historical invoice cost data from three prior fiscal years to determine spending by project activity and geographic location.
  - Utilized industry-standard economic models to apply economic multipliers to spending in order to determine direct, indirect, and induced benefits to the local, regional, state-wide, and national economy.
  - As of FY 2022-23, the economic model utilizes multi-regional input-output functionality, which allows economic activity in one region that has indirect impacts in other regions to be fully tracked. The effect of the new approach is mild for the state-level results, but regional results are expected to be more accurate.
- **Review and Validation:**
  - In the original 2017 Analysis (Historical Analysis) the Authority requested review and validation from several industry experts who reviewed inputs, assumptions, methodology, and outputs. The reviewers included: University of the Pacific, Department of Finance, Department of Labor, Peer Review Group.
  - The 2023 Analysis continues to follow similar methods and approaches as the Historical Analysis.

2023 ECONOMIC IMPACT ANALYSIS

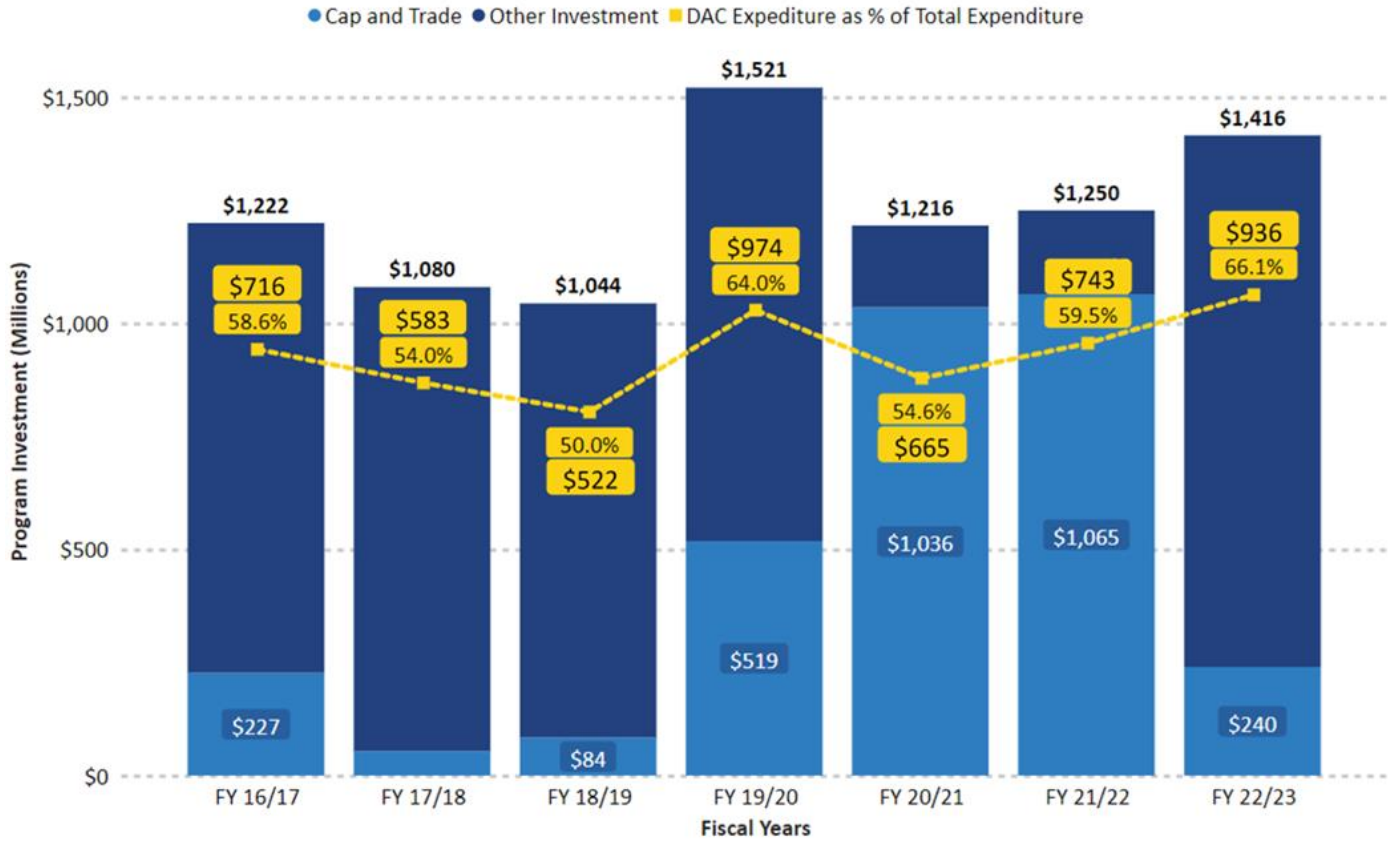
Program Expenditures ($ in millions)
2006-07 through 2022-23



2023 ECONOMIC IMPACT ANALYSIS

Disadvantaged Communities Investments
2016-17 through 2022-23

California recognizes specific geographic areas as disadvantaged communities based on series of indices that include pollution burden, sensitive populations, and socioeconomic factors. Disadvantaged communities are defined as those that score in the top 25% of the most impacted by pollution and socioeconomic conditions.



** Other investment sources include Proposition 1A funds and federal trust funds*
*** FY2017-2018 Cap and Trade funding was approximately $54M*

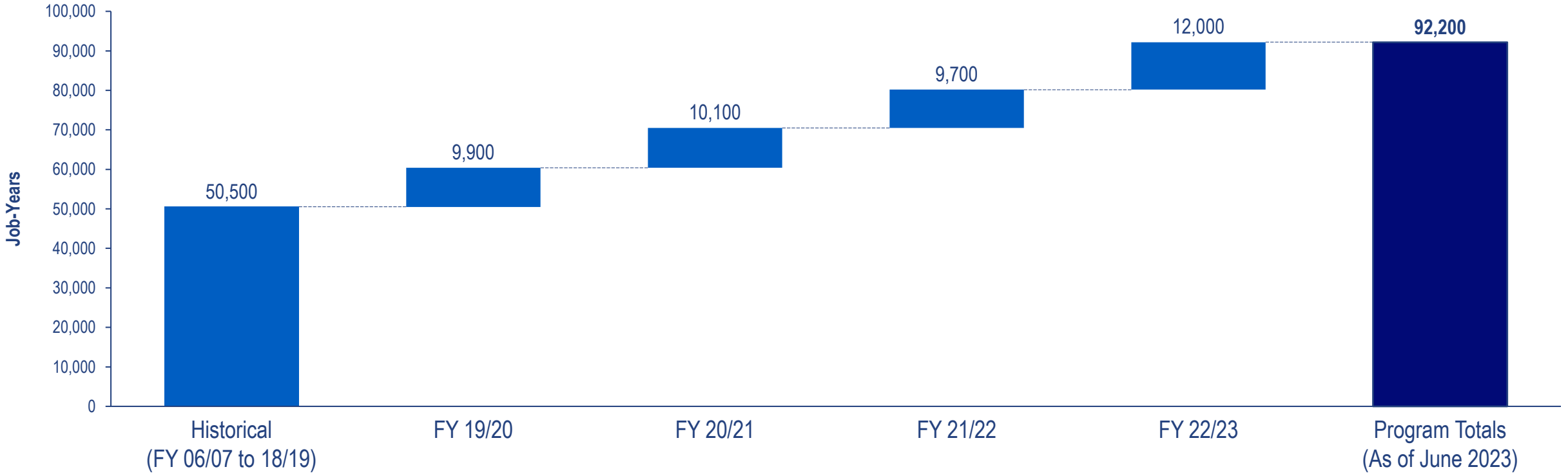
An average of $730 million/year, ranging from 50-66 percent of annual expenditures, has occurred in disadvantaged communities since FY 2016/2017.

2023 ECONOMIC IMPACT ANALYSIS

California Statewide Economic Impacts
2006-07 through 2022-23

California Economic Impacts Over Time
(Including Direct, Indirect, and Induced)

Employment in Job-Years

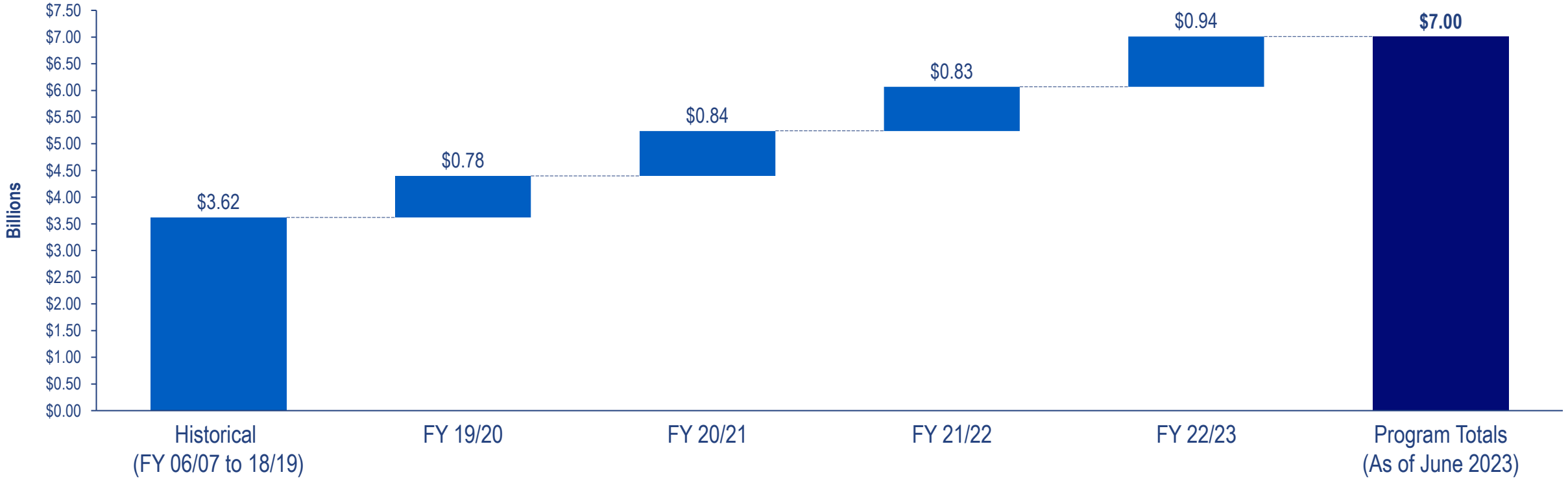


2023 ECONOMIC IMPACT ANALYSIS

California Statewide Economic Impacts
2006-07 through 2022-23

California Economic Impacts Over Time
(Including Direct, Indirect, and Induced)

Labor Income ($ in billions)

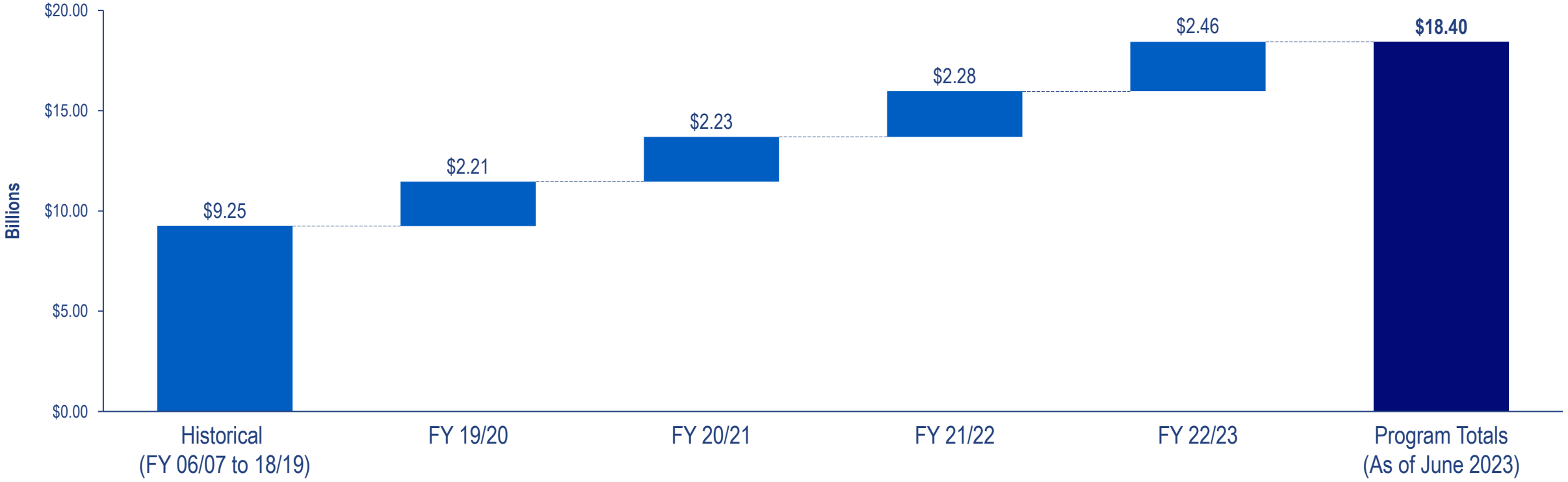


2023 ECONOMIC IMPACT ANALYSIS

California Statewide Economic Impacts
2006-07 through 2022-23

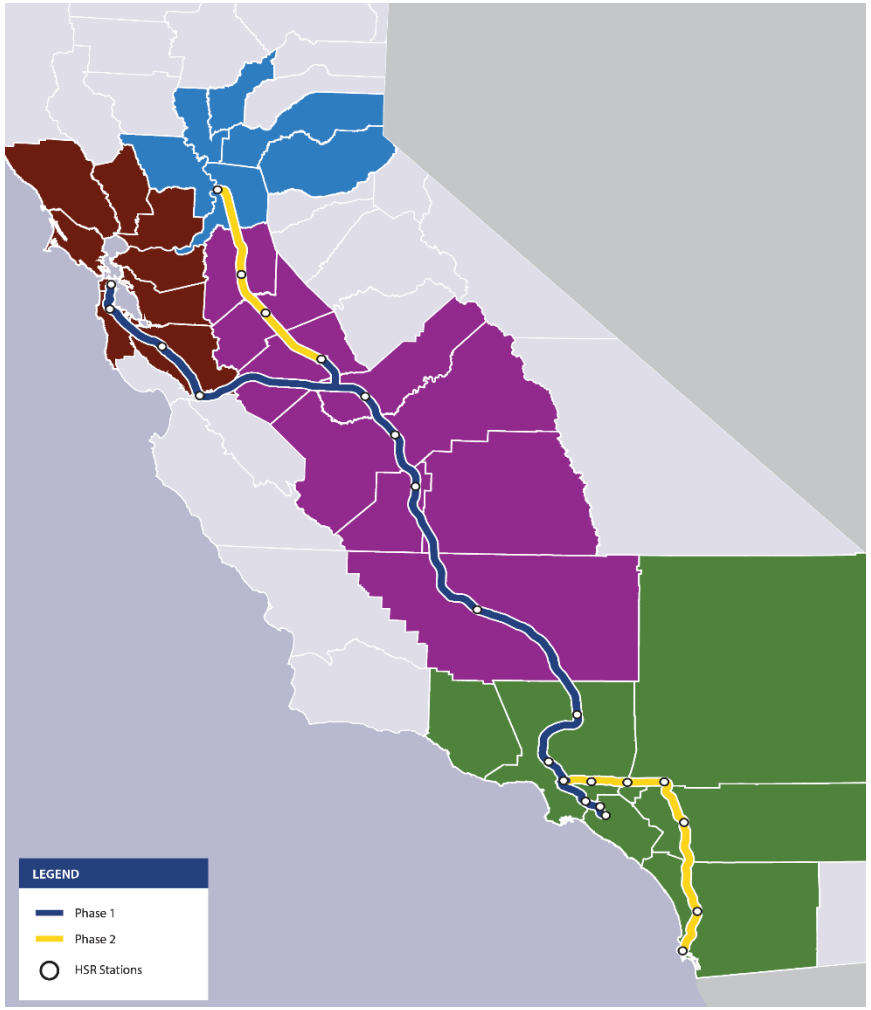
California Economic Impacts Over Time
(Including Direct, Indirect, and Induced)

Economic Output ($ in billions)



2023 ECONOMIC IMPACT ANALYSIS

Direct Investment and Economic Impacts By Region
2006-07 through 2022-23



$11.2 Billion Direct Investment in the Project from July 2006 through June 2023

SACRAMENTO	FY 2022/23	PROGRAM TOTAL
Job-Years of Employment	1,280	15,170
Labor Income	$110 M	$1,110 M
Economic Output	$260 M	$2,610 M

BAY AREA	FY 2022/23	PROGRAM TOTAL
Job-Years of Employment	1,360	9,110
Labor Income	$150 M	$910 M
Economic Output	$380 M	$2,140 M

CENTRAL VALLEY	FY 2022/23	PROGRAM TOTAL
Job-Years of Employment	6,980	41,510
Labor Income	$490 M	$2,520 M
Economic Output	$1,310 M	$7,740 M

SOUTHERN CALIFORNIA	FY 2022/23	PROGRAM TOTAL
Job-Years of Employment	2,170	12,860
Labor Income	$180 M	$980 M
Economic Output	$480 M	$2,590 M

REST OF CALIFORNIA	FY 2022/23	PROGRAM TOTAL
Job-Years of Employment	190	13,510
Labor Income	$12 M	$1,490 M
Economic Output	$40 M	$3,330 M

2023 ECONOMIC IMPACT ANALYSIS

Projected Economic Impacts of Total Project by Segment

2023 ECONOMIC IMPACT ANALYSIS

California Projected Economic Impacts by Project Segment Through Construction*
Central Valley

The 119-mile Central Valley Segment will initially serve as the testing and certification track for the nation's first electrified high-speed rail system. We will extend the 119 miles to a nearly 175-mile line from Merced to Bakersfield for initial passenger rail operations. This is the first step toward completion of the full 500-mile statewide system.

Project Segment	Job-Years	Labor Income	Economic Output
Merced to Fresno	155,000	$13.2 B	$32.9 B
Fresno to Bakersfield	175,000	$14.8 B	$37.0 B
Central Valley Total	**330,000**	**$28.0 B**	**$69.9 B**

*See the 2023 Economic Impact Technical Supporting Documentation for an explanation of the modeling and methodology to produce estimates through construction completion

2023 ECONOMIC IMPACT ANALYSIS

California Projected Economic Impacts by Project Segment Through Construction*
Northern California

Work is well underway on bringing high-speed rail to Northern California. Similar to the rest of the statewide system, there are components of the system at all stages of project development in Northern California. Together, these building blocks are forming the components that will become the high-speed rail system in the region.

Project Segment	Job-Years	Labor Income	Economic Output
San Francisco to San Jose	59,000	$4.9 B	$12.8 B
San Jose to Merced	188,000	$15.5 B	$40.6 B
Northern California Total	**247,000**	**$20.4 B**	**$53.4 B**

*See the 2023 Economic Impact Technical Supporting Documentation for an explanation of the modeling and methodology to produce estimates through construction completion

2023 ECONOMIC IMPACT ANALYSIS

California Projected Economic Impacts by Project Segment Through Construction*
Southern California

The Southern California megaregion is home to the southern terminus of the high-speed rail system. Activities are already underway that will provide improved transportation choices for the more than 23 million people that call Southern California home.

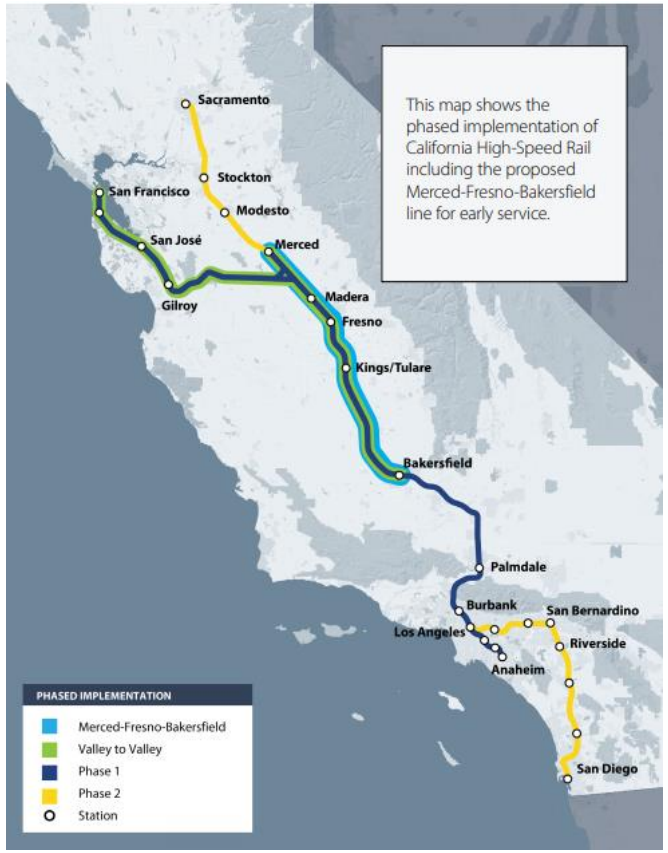
Project Segment	Job-Years	Labor Income	Economic Output
Bakersfield to Palmdale	164,000	$13.5 B	$35.8 B
Palmdale to Burbank	159,000	$13.2 B	$34.9 B
Burbank to LA Union Station	18,000	$1.5 B	$3.8 B
LA Union Station to Anaheim	27,000	$2.3 B	$5.8 B
Southern California Total	**368,000**	**$30.5 B**	**$80.3 B**

*See the 2023 Economic Impact Technical Supporting Documentation for an explanation of the modeling and methodology to produce estimates through construction completion

2023 ECONOMIC IMPACT ANALYSIS

California Projected Economic Impacts by Project Section Through Construction*
Merced to Bakersfield, Valley to Valley Expansion, and Phase I Buildout

The Phase I of the High-Speed Rail Project stretches nearly 500 miles from San Francisco to Anaheim. The Valley to Valley portion of the High-Speed Rail Project comprises San Francisco to Bakersfield and includes the Merced to Bakersfield and Valley to Valley Expansion Segments.



Project	Job-Years	Labor Income	Economic Output
Merced to Bakersfield**	333,000	$28.2 B	$70.3 B
Valley to Valley Expansion	201,000	$16.8 B	$43.9 B
Phase I Buildout	411,000	$33.9 B	$89.4 B
Phase I Total	**945,000**	**$78.9 B**	**$203.6 B**

*See the 2023 Economic Impact Technical Supporting Documentation for an explanation of the modeling and methodology to produce estimates through construction completion

**Merced to Bakersfield includes Phase 1 balance Environmental Clearance and Bookends costs.

2023 ECONOMIC IMPACT ANALYSIS

Wrap Up

- The benefits of High-Speed Rail investment continue to ripple through the California economy.
- The Authority supports thousands of jobs across all functions from planning and environmental clearance to engineering and construction.
- Over half of the project's investment occurred in designated disadvantaged communities and the Authority further supports equity through job training programs.
- In the Central Valley region alone about $7.7 billion in economic activity has benefited the region and its workers.

2023 ECONOMIC IMPACT ANALYSIS

Resources:

- Technical Supporting Document
  - » [To insert after upload]
- Fact Sheet
  - » [To insert after upload]
- Investing in California's Economy website
  - » https://hsr.ca.gov/programs/economic-investment/