



2018 California State Rail Plan

Considerations for a Santa Cruz Rail Program

August 16, 2018



2040 Vision for Passenger Rail

» Integrated Statewide Network

- » High Speed Rail
- » Intercity and Regional Services
- » Integrated Express Bus

» Coordinated Schedules

- » Regular pulsed service
- » Key transfer hubs
- » Public Transit Connections

» Customer Focus

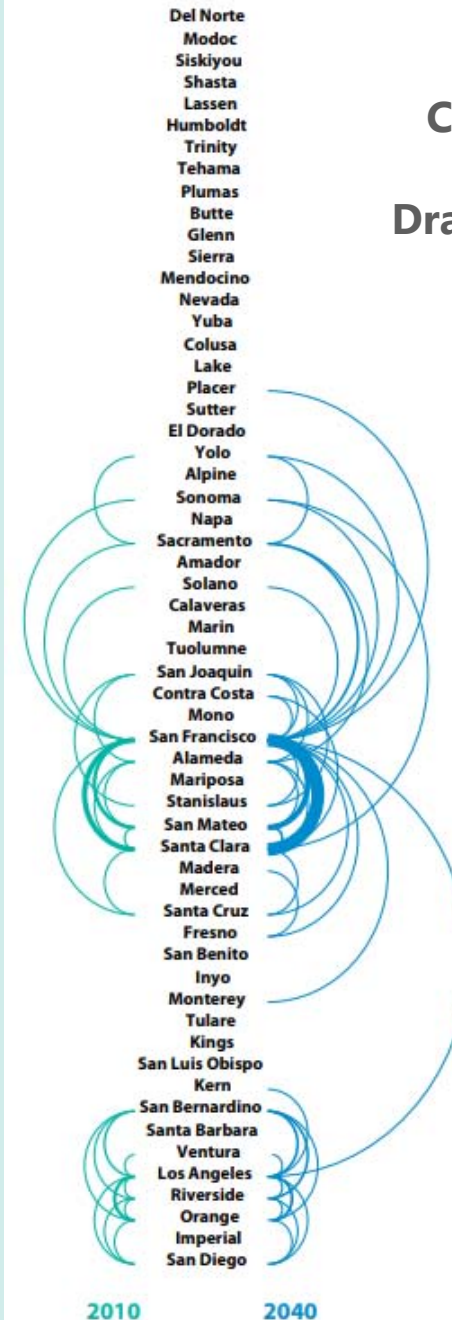
- » Seamless First/Last-Mile Access
- » Integrated Ticketing
- » Auto and air competitive



Rail Plan Vision: Ridership

- » Results show moderate increase in rail ridership demand due to **population growth**
- » However, market potential for networked services is **unrealized**

No Build Scenario



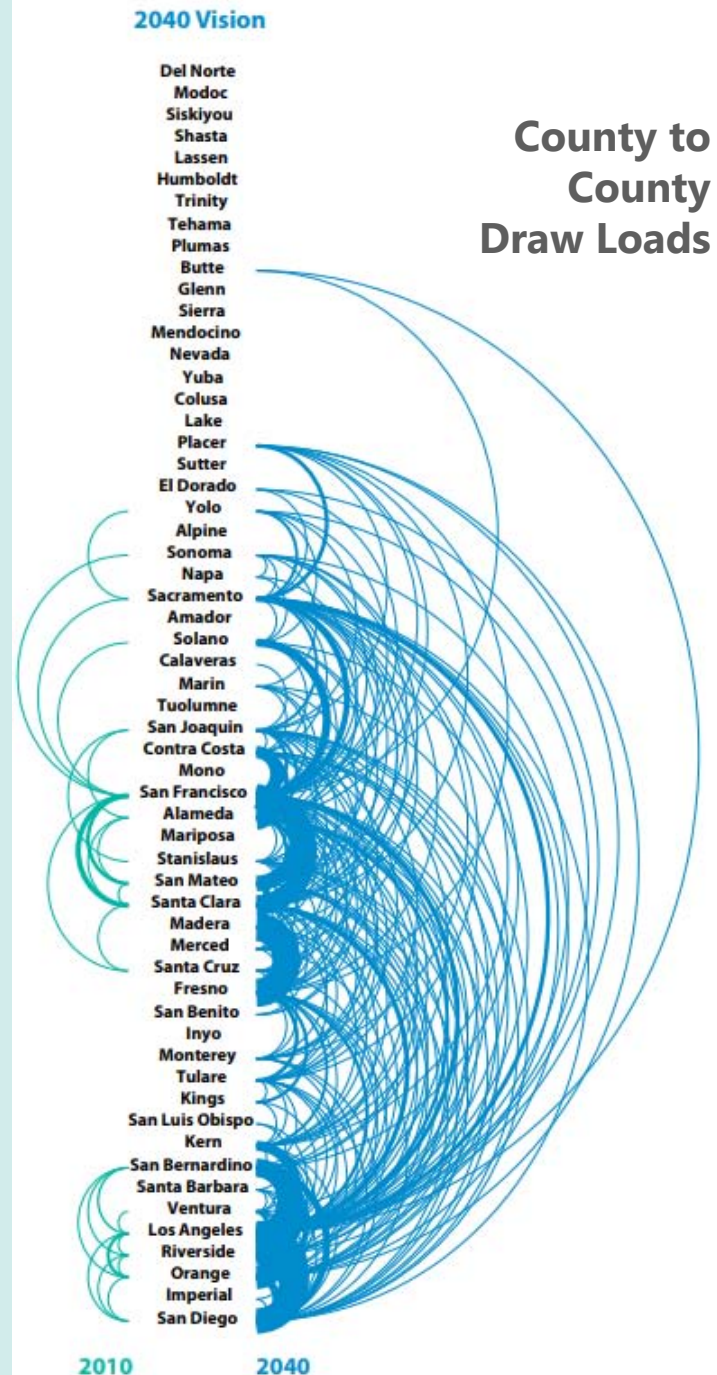
County to
County
Draw Loads

2010

2040

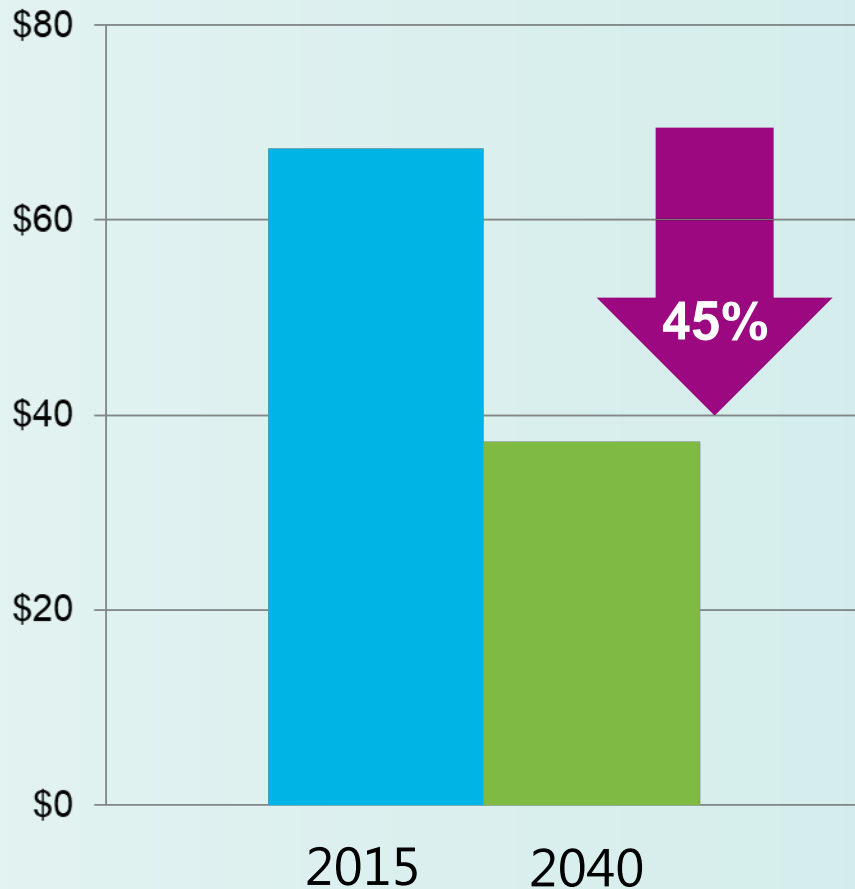
Rail Plan Vision: Ridership – Market Potential

- » Result of integration and HSR shows **huge increase** in rail ridership demand
- » Satisfies a **large market potential for networked services**

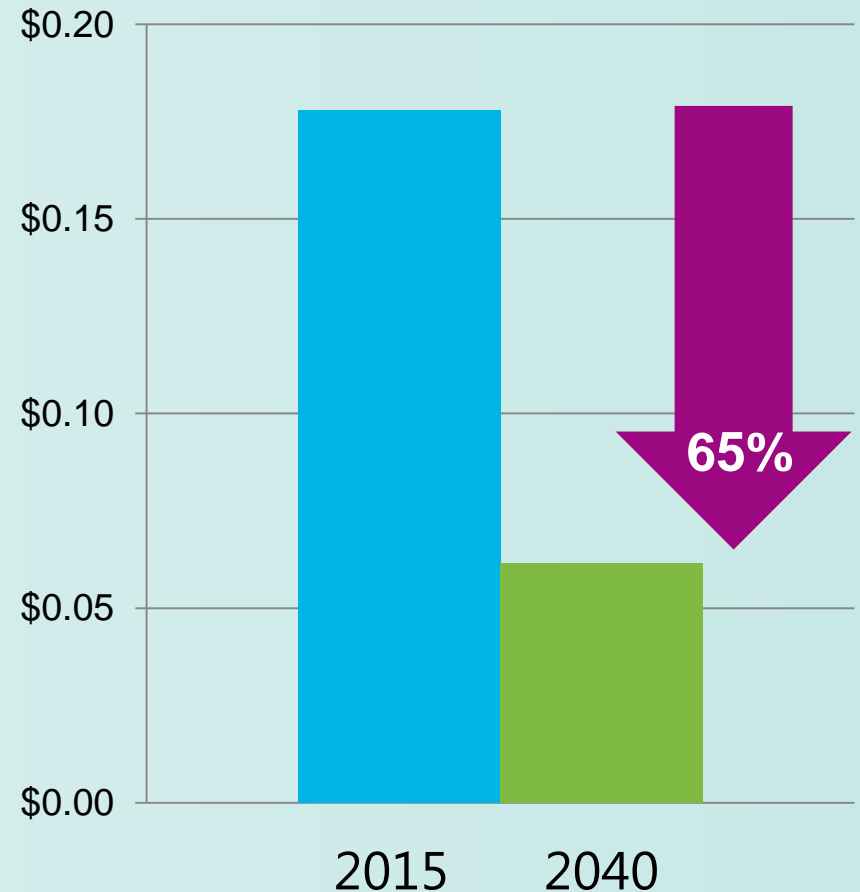


Comparing Metrics – Existing v. 2040

Cost per Train Mile

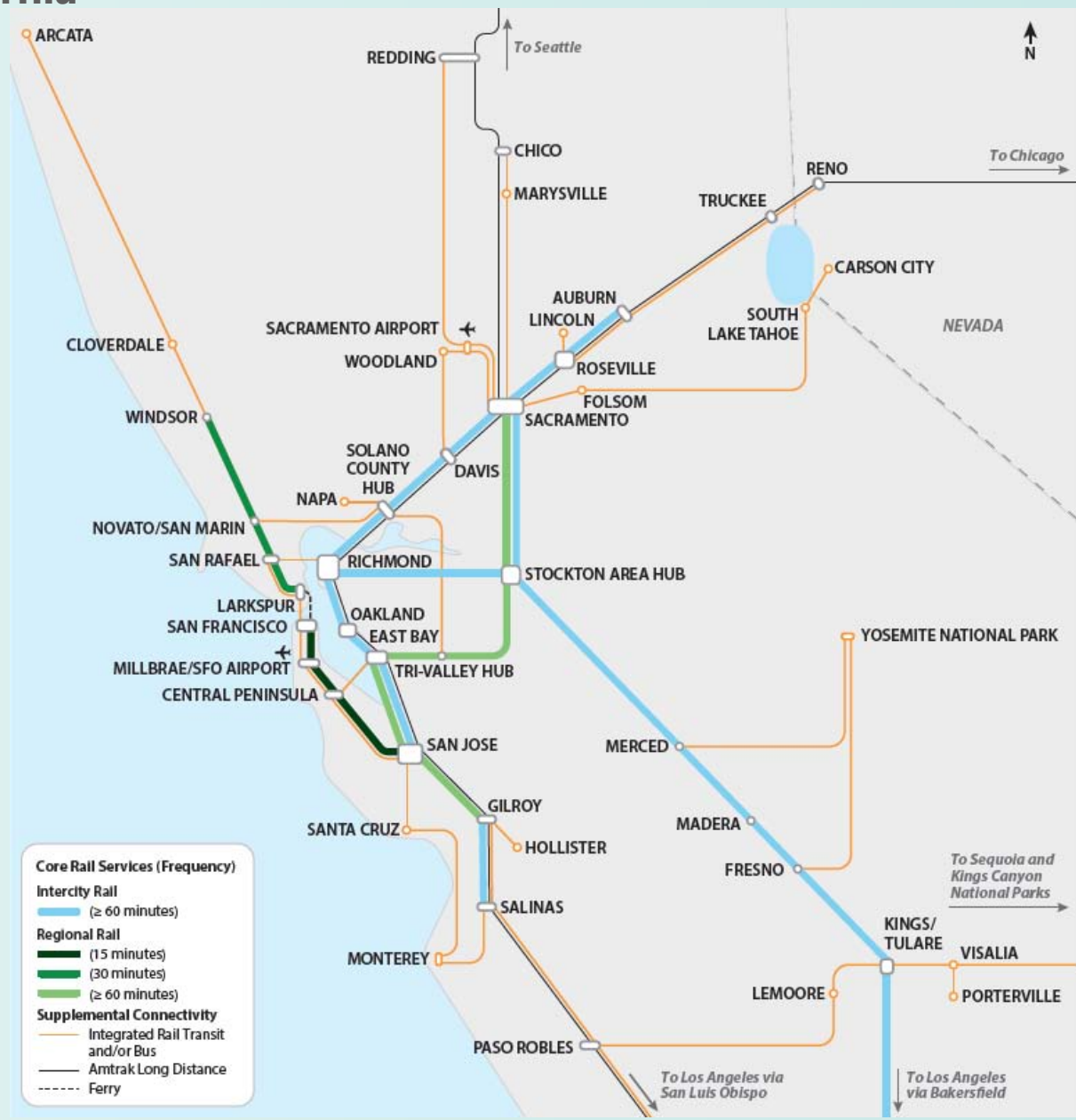


Cost per Seat Mile

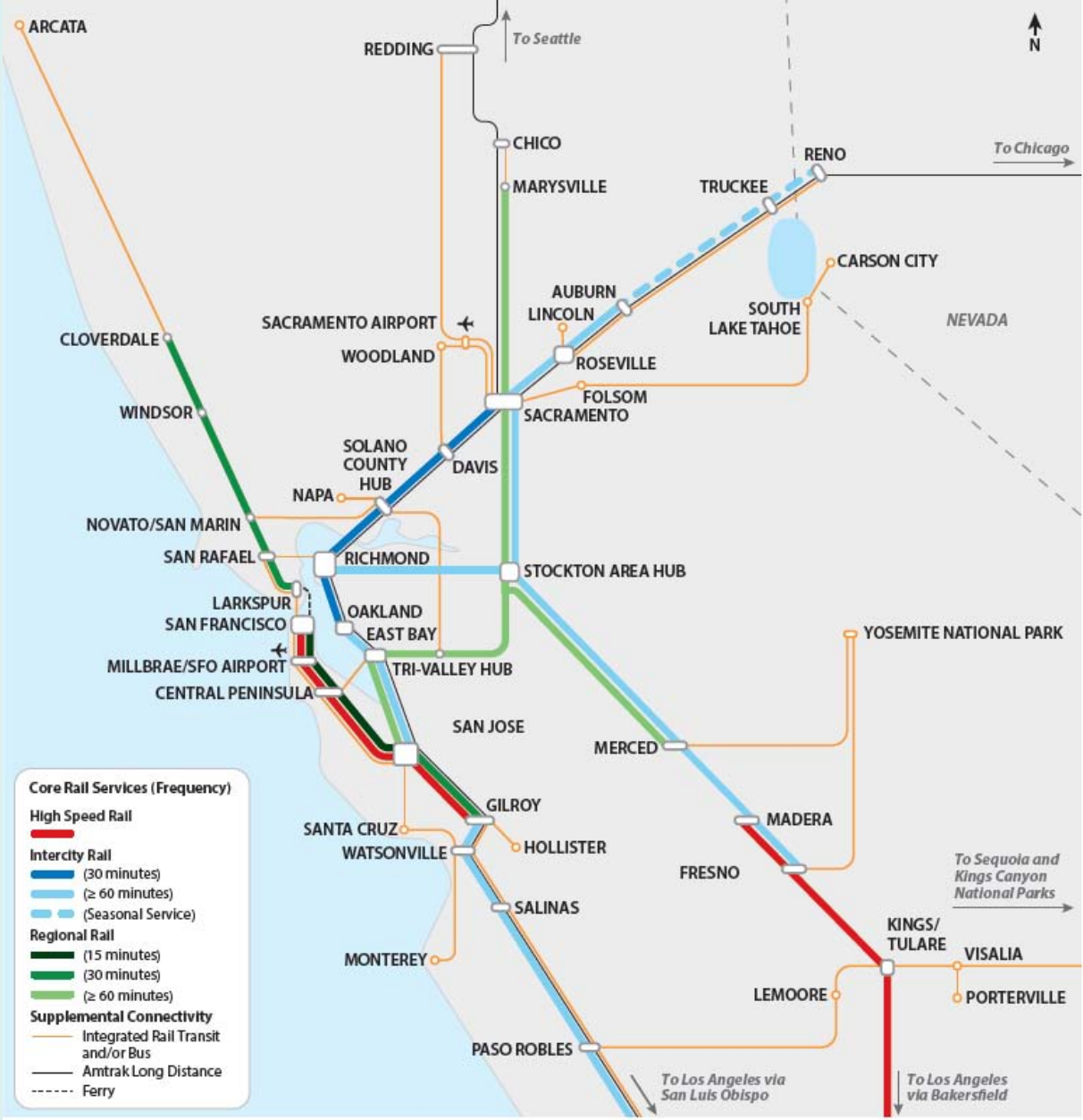


All costs are in 2015\$

2022 Vision: Northern California



2027 Vision: Northern California



2040 Vision: Northern California



Example of an integrated Network - Wetzinkon

Visit this link to see a video demonstrating network integration in Zurich, Switzerland:

<https://youtu.be/QcQSiN8iPHg>

Rail Plan Vision: Outcomes



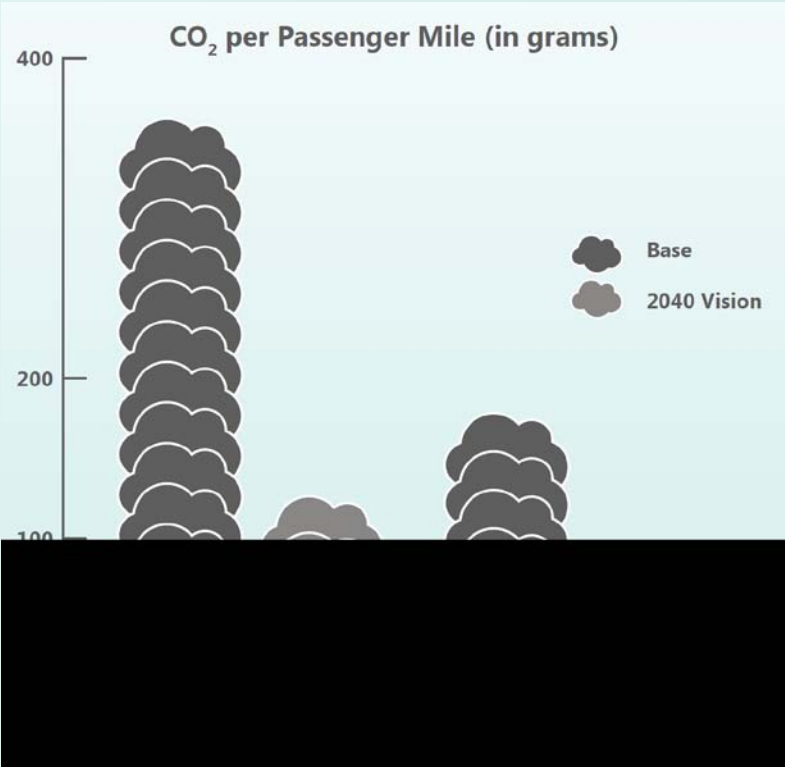
Reduce greenhouse gas emissions



Mitigate roadway congestion



Reduce vehicle emissions





Current Ridership
110,000 Daily Trips



Business as Usual (2040)
161,000 Daily Trips



Offer a convenient and reliable alternative to private vehicle




Increase electric and zero emission trains




Provide alternative to truck transport of containerized cargo

Rail Mode Share

Current: 0.34%



2040 No Build: 0.52%





Implementation Goals: A Phased Approach

*The 2022 Short-Term represents **funded and committed improvements** now enhanced by SB 1 funding programs.*

2022 Northern California Highlights

- » **Caltrain electrification**
- » **Expanding service** to Salinas and Larkspur
- » **Increased service** Sacramento-Stockton, Stockton-Ceres-Merced
- » Early **integrated ticketing investments**



Implementation Goals: A Phased Approach

*The 2027 Mid-Term Plan - **Phasing of the Long Term Vision** to fully utilize existing corridors, supported by the funding capacity in SB 1*

2027 Northern California Highlights

- » **High speed rail** Central Valley and SF-Gilroy Segments
- » **Integrating** regional & intercity rail with HSR
- » **Full implementation of integrated ticketing**



Implementation Goals: A Phased Approach

*The 2040 Vision represents the **full build-out** of the long-term planning goals for the integrated statewide rail network.*

2040 Northern California Highlights

- » **High Speed Rail** from San Francisco to Anaheim
- » **High Speed Rail** Connections: Sacramento, Inland Empire, San Diego
- » New **Transbay Crossing**: Sacramento - San Francisco - San Jose
- » **New regional networks** - Central Valley, Central Coast, & North Bay



Funding Sources and Programs

Primary Sources:

- » California Climate Investments ("Cap and Trade")
- » Public Transportation Account
- » SB1 Revenues (Diesel excise tax and vehicle license fee)

Major Rail Capital Programs

- » Transit and Intercity Rail Capital Program (TIRCP)
- » State Rail Assistance (SRA)
- » State Transportation Improvement Program (STIP)
- » Public Transportation Account (PTA)
- » Solutions for Congested Corridors Program
- » Trade Corridor Enhancement Program
- » Sustainable Communities Planning Grants

Transit and Intercity Rail Capital Program

TIRCP Program Objectives

Competitive grants for transformative capital investments that will improve the statewide network and reduce GHG emissions.

Primary objectives:

- » Reduce GHG emissions
- » Increase transit/rail ridership
- » Improve system integration
- » Improved transit safety

Secondary objectives:

- » Benefits to disadvantaged communities and low-income communities
- » Geographic equity
- » Benefits to freight movement





2018 TIRCP Awards

TIRCP Funding Sources and Award History

Award Year	TIRCP Funds Awarded	Estimated CO2 Emission Reductions
2015	\$224,278,000	865,000 tons
2016	\$390,893,000	4,129,500 tons
2018	\$2,650,000,000	31,492,000 tons
2018	\$1,675,000,000	Multi-Year Funding

Additional 5-year program of projects approved every 2-years.



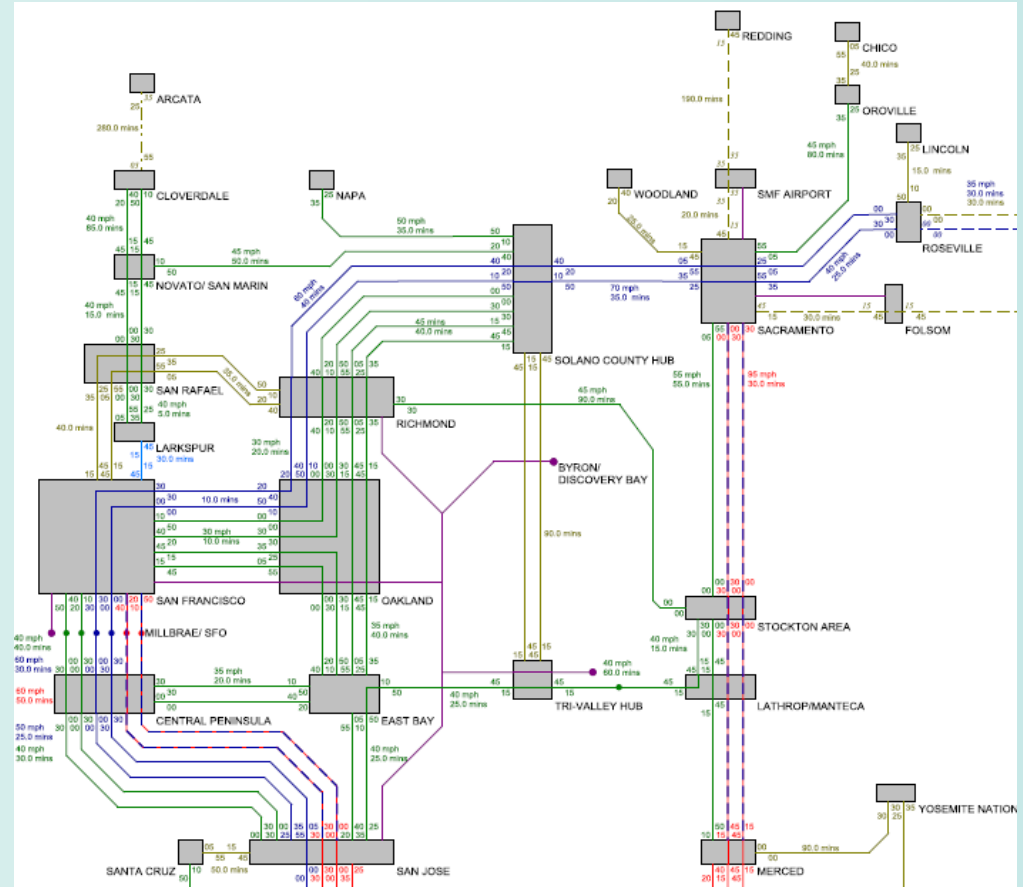
2018 TIRCP Awards

Bay Area and Northern California Megaregion Awards

- » BART to San Jose (VTA)
- » BART Transbay Corridor Core Capacity
- » Caltrain EMUs
- » SamTrans 101 express bus pilot
- » AC Transit ZEV buses
- » Muni LRVs
- » SMART extensions to Larkspur Ferry and Windsor
 - » Additional funds for East-West Study
- » San Joaquin JPA “Valley Rail” and ACE Merced/Ceres Extension
- » Solano Transportation Authority I-80/680 ZEV Express Buses
- » Capitol Corridor Alameda County re-route and “Integrated Travel Program”
- » Most awards include a “Network Integration” component.

2018 TIRCP Awards

SMART Extensions and East-West Connection



2018 TIRCP Awards

Salinas Rail Extension (TAMC)



2018 TIRCP Awards

Salinas Rail Extension (TAMC)

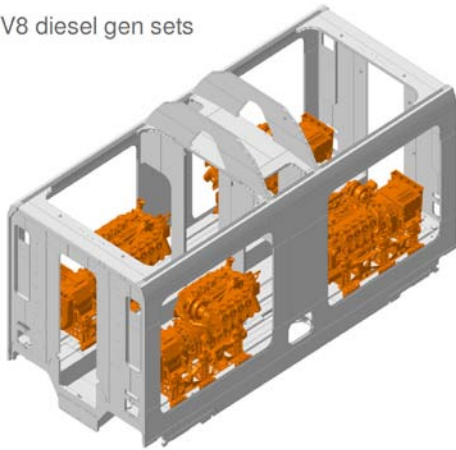
- Initially two round trips per day growing to six.
- Service will connect to HSR at Gilroy when SF-Gilroy service opens by 2027.
- Future Monterey Bay regional network will connect to the rest of the state (SF/Sacramento, Bakersfield, LA, etc.) via a cross-platform transfer at Gilroy.



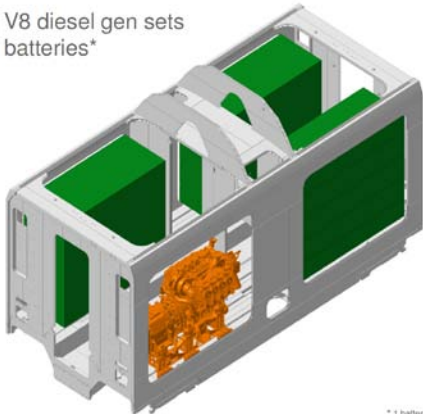
2018 TIRCP Awards

Redlands Rail "ZEMU"

ts V8 diesel gen sets



units of V8 diesel gen sets
units of batteries*



* 1 battery pack / h



Modern Trains

- New FRA Safety Standards
 - Alternative compliance standards agreed to in 2011.
 - NPRM published 2016, awaiting final rule.
 - FRA has promised a waiver to any agency following standards
- Smaller, lighter, quieter
- More comfortable
 - Spacious interiors
 - Large windows
 - Passenger amenities
 - Cafes
 - Bike storage
 - ADA accessibility



Narrow ROWs



Bikes and Trains Working Together

Bikes: What are they good for?

- Commuting, Exploring, Recreating, Saving the Planet, etc.



Trains: What are they good for?

Trains: What are they good for?

- Commuting, Exploring, Bringing us to Recreation, Saving the Planet, etc.



What's needed to bring bikes and trains together?

A few key things:

- A secure and sheltered place to store our bikes (*including cruisers and family bikes*)
 - On-board and at the station
- First/Last-Mile Access
 - Safe, welcoming infrastructure
 - Bikesharing
- Rails WITH Trails



Where can we look for inspiration?

The Netherlands:

- 1.2 million rail trips per day.
- 40% of passengers reach the station by bike.
- 15% reach their final destination by bike.
- 520,000 managed bike parking spaces growing to 600,000 by 2030.
- Nationwide bikeshare (OV-fiets)

If we applied those rates to California, we'd have 715,000 bike trips to and from rail PER DAY by 2040.



Great things are happening here in California

- Caltrain's explosive growth fueled by bike access
- Capitol Corridor pulling out all the stops to make sure biking to the train is an easy decision
- SMART's Rail AND Trail concept is a model for other rail systems
- SB1 will infuse \$100 million/year into the Active Transportation Program
- Bike Link lockers and secure parking facilities are rolling out across the state
- Bike share systems are expanding weekly

SMART's First Week:

Date	Passengers	Bikes
Aug 30	2,733	220
Aug 31	2,860	259
Sep 1	2,651	252
Sep 2	1,926	40
Sep 3	2,416	37
Sep 4	2,566	105
Sep 5	1,853	261





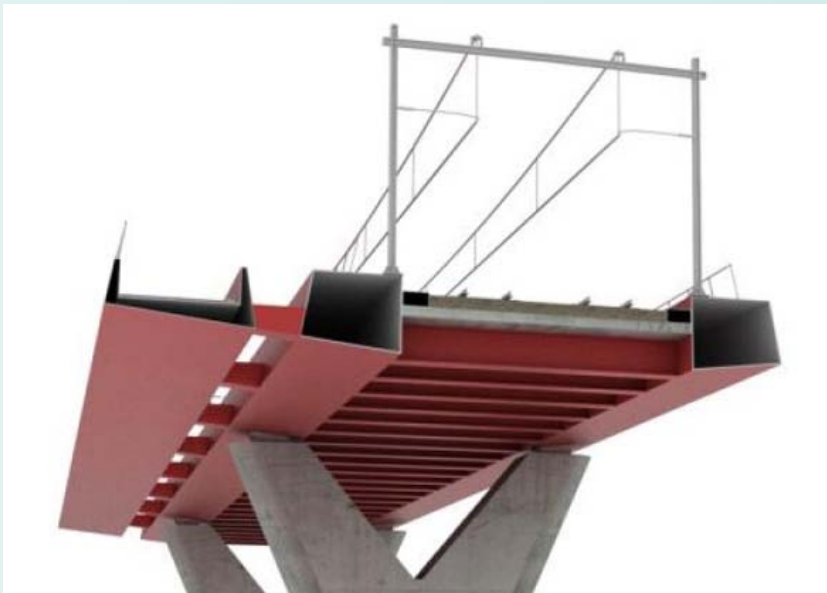
Bikes and Trains: Moving Forward

- Caltrans Strategic Management Plan's "Triple-Double-Double (*nondecuple?*)"
- First mile/last mile planning for bike/ped access to rail and transit systems
- Support opportunities to share linear RR ROWs
- Support bike parking needs at stations and define appropriate bicycle accommodation policies
- Support seamless integration of bike share and public transit fare systems on a regional or statewide scale
- Provide technical assistance and grants for station area plans and 8-80 networks around rail and transit to ensure that all users have safe and convenient access to passenger rail.

Bike Parking/Shared ROW In NL



Rail/Bike Bridges





Statewide Integrated Mobility

Seamless User Experience

- 20% → 4% → 1%
- The State Rail Plan and the Statewide Transit Strategic Plan emphasize coordination of rail and transit services to create a fast, frequent, and reliable mobility network across California.
- All will be more successful when we can sell tickets to places beyond where our services go.
- We can provide comprehensive, dynamic travel planning information, coordinated fares, and a single payment mechanism across all rail and transit services in California.
- To draw more riders to our system, we can partner with TNCs, bike share, and other mobility providers, thereby extending the reach of public transportation with simple and attractive first/last-mile solutions.
- We can do all of this AND save money in the process.

Statewide Integrated Mobility

Seamless User Experience

Caltrans, CalSTA and CCJPA seek to facilitate a process to integrate travel across multiple modes throughout the state.

This involves governance, coordinating routes and schedules, creating seamless transfers among and across modes, improving the availability of travel data in an open and accessible format, sharing costs and resources between providers, and facilitating easier trip planning and payment for travelers.





Thank You!

Kyle Grading

Assistant Division Chief

Caltrans Division of Rail and Mass Transportation

Kyle.Grading@dot.ca.gov