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

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**Service Categories**
- Rail Service - Operating Speed Over 125 Miles Per Hour
- Rail Service - Operating Speed Up To 125 Miles Per Hour
- Express Bus / Urban Rail Transit Network
- Amtrak Long Distance Trains
- Ferry Long Distance Trains
Results show moderate increase in rail ridership demand due to population growth.

However, market potential for networked services is **unrealized**.

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Rail Plan Vision: Ridership
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

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>$60</td>
<td>$35</td>
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</table>

Cost per Seat Mile

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>$0.20</td>
<td>$0.07</td>
</tr>
</tbody>
</table>

All costs are in 2015$
2022 Vision: Northern California

[Map of Northern California with various cities and rail services indicated.]
2027 Vision:
Northern California
2040 Vision:
Northern California
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

**CO₂ per Passenger Mile (in grams)**

**Rail Mode Share**

- Current: 0.34%
- 2040 No Build: 0.52%

- 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
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
### TIRCP Funding Sources and Award History

<table>
<thead>
<tr>
<th>Award Year</th>
<th>TIRCP Funds Awarded</th>
<th>Estimated CO2 Emission Reductions</th>
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</thead>
<tbody>
<tr>
<td>2015</td>
<td>$224,278,000</td>
<td>865,000 tons</td>
</tr>
<tr>
<td>2016</td>
<td>$390,893,000</td>
<td>4,129,500 tons</td>
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<tr>
<td>2018</td>
<td>$2,650,000,000</td>
<td>31,492,000 tons</td>
</tr>
<tr>
<td>2018</td>
<td>$1,675,000,000</td>
<td>Multi-Year Funding</td>
</tr>
</tbody>
</table>

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)
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”
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?

- 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:

<table>
<thead>
<tr>
<th>Date</th>
<th>Passengers</th>
<th>Bikes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug 30</td>
<td>2,733</td>
<td>220</td>
</tr>
<tr>
<td>Aug 31</td>
<td>2,860</td>
<td>259</td>
</tr>
<tr>
<td>Sep 1</td>
<td>2,651</td>
<td>252</td>
</tr>
<tr>
<td>Sep 2</td>
<td>1,926</td>
<td>40</td>
</tr>
<tr>
<td>Sep 3</td>
<td>2,416</td>
<td>37</td>
</tr>
<tr>
<td>Sep 4</td>
<td>2,566</td>
<td>105</td>
</tr>
<tr>
<td>Sep 5</td>
<td>1,853</td>
<td>261</td>
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</tbody>
</table>
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
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 Gradinger
Assistant Division Chief
Caltrans Division of Rail and Mass Transportation

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