1990’s: Prop 116/108
Electrified, very frequent passenger rail service plateau
CCJPA Board Vision Plan Actions

- Vision Plan Update (Feb 2013) – high-level, conceptual, that retained several alignment alternatives
- Vision Implementation Plan:
  - Process: Develop engineering path toward 15-minute peak-hour electrified intercity passenger rail along the Capitol Corridor route
  - Work backwards from that future aspiration toward a phasing plan from today’s conditions
- Adopted Vision Implementation Plan November 2016 by the CCJPA Board but…
  - Board members wanted CCJPA staff to do VIP equivalent for:
    - Transbay: Conventional rail (in a tube) between SF and Oakland
    - Dumbarton Corridor
Nested Rail Plans – Where Is the Megaregional Governance Authority?

- State Rail Plan
- CAHSR Plan
- Regional Rail Plan
- Core Capacity Study
- CCJPA Vision Plan
- Local Plans
- Dumbarton Corridor Study
- Governance
  - For now…a starting point
  - Future Nor Cal Megaregional Rail governance??? TBD

- Framework
  - Networked Hubs
  - Connecting Markets
  - Incremental
  - Invest strategically

- The draft State Rail Plan requires a different scale of thinking and possibly organizing than minding after one particular corridor
Learning to work Megaregionally in Nor Cal

- Getting By: Adaptation of existing responsibility, authority, and interest
- How to be inclusive across a 250 mile x 250 mile swath of Nor Cal?
- Logistics of physically meeting together and calendar alignment a challenge at a staff level
- Convening elected officials across megaregional policy bodies have Brown Act complications
CCJPA View

The CCJPA VIP is a high-level engineering and phasing blueprint for CCJPA’s corridor.

State Rail Plan View

The CCJPA’s VIP is a high-level engineering and phasing blueprint for a key corridor in the Northern CA Megaregion.
What Should Replace the Previous Vision?

- In Western Europe and East Asia, similar corridors are often HSR, with top speeds of 300 km/hr (185 mph) or more
- But HSR curves and grades require massive investment
- True HSR along Capitol Corridor unlikely given current State priorities
What Should Replace the Previous Vision?

- But can be “2nd tier” link in statewide network, like Regional-Express in Central Europe or Main Lines in UK
- Semi-high speed (European peers 125 mph, Acela 150 mph, Midwest Amtrak lines 110 mph) would require less new ROW
2014 Vision Plan Update Objectives

- Seamless integration: Enhanced connectivity to BART, Caltrain, VTA, RT, ACE, future HSR
- Modern, international railroad standards: Dedicated right-of-way, level boarding, electrification
- Incremental speed upgrades: Meet FRA requirements for 90, 110, 125 mph top speeds where feasible
- Customer service: more frequent and reliable, quieter and cleaner, “clockface” headways and pulses
- Protect against sea-level rise
Steps in the Vision Process

Should we change the direction of the Capitol Corridor?

Yes – we have reached the end of our current path, and conditions are changing

What should the Capitol Corridor of the future look like?

A high-speed feeder railroad built to modern global standards

Confirm that we should proceed → Confirm that this is achievable → Confirm that we should pursue this

Pursue the Vision of a capital and service improvement plan phased in over 30-40 years
Vision Update Plan:
Where We Were Before VIP – The Possible
Vision Plan Update Alternatives

Based on assessment of cost/engineering and ridership potential, Vision Plan Update screened range of concepts down to up to 3 alternatives per segment.
Vision Implementation Plan:
What is Worthwhile Pursuing?
VIP Evaluation

- Same factors – cost/engineering feasibility and ridership potential – but based on more detailed engineering
- For Jack London, additional research into Posey/Webster Tubes, workshop with City staff
- Need dedicated right-of-way to improve capacity/frequency
- Freight will have to be “made whole” (to agree to sell ROW, as well as maintain goods movement capacity in/out of Port of Oakland)
- Must align with BART/HSR/State Rail plans
San Jose-Oakland

- Coast alignment recommended
  - More direct and faster than existing
  - Unlike Warm Springs, maintains access to Santa Clara/Golden Triangle core of Silicon Valley
  - Hayward, Fremont stations to be replaced by Dumbarton Bridge station with BRT or rail connection to Palo Alto
San Jose-Oakland

- Capacity improvements needed in shared Caltrain/HSR ROW, at Diridon, potential Tamien terminal facility
- Double-track through Alviso Wetlands – raised to reduce impacts
- Elevated parallel to BART in Oakland
- Would serve as “express alternative” to BART in corridor, providing more direct access to center of Silicon Valley
- In Jack London, new alternative developed, recommended: passenger and freight tunnels under 2nd Street, Embarcadero
- Possible to modify Posey/Webster tubes (tunnel top would be ~5’ above grade near existing station)
- New station, potentially with connection to new BART station (part of 2nd Transbay BART Tube)
- All trains removed from street in Central Oakland
Oakland-Richmond

- Four-tracking existing ROW Oakland-Richmond will require some property takings, station reconstruction
- Opportunity to provide additional service between Richmond and San Jose
A conventional rail tube SF-East Bay puts the precise solution in this area in doubt. Market study and high-level design analysis is required to determine how service would be accommodated and function for passenger rail operations.
Richmond-Benicia

- Franklin Canyon tunnel recommended
  - Would save several minutes per trip
  - Shoreline alignment would have to be raised, reconstructed anyway to protect from sea level rise
- Elevated station at Martinez
- New high-level crossing of Carquinez Strait
Benicia-Sacramento

- Relocate freight to new Sacramento Northern ROW to allow exclusive passenger use of existing alignment
- If HSR, shared tunnel in central Sacramento or other options depending on freight and HSR actions
Sacramento-Auburn

- Eventual electrification and capacity improvements to enable more service to Auburn
Freight Improvements

- Passenger conflicts eliminated
- New and improved ROW:
  - Niles Canyon-Oakland: Double-track Niles Sub, new Niles connector
  - Nile Canyon-Stockton: Capacity improvements
  - Oakland: Jack London tunnel
  - Martinez-Sacramento: New Sacramento Northern ROW with new Carquinez Strait crossing
Other Improvements

- Connectivity
  - BART connection in central Oakland/ across bay from San Francisco, new HSR connections
- Electrification
  - Cleaner, quieter, and faster acceleration/deceleration
- Level platforms
  - Reduce loading and unloading time, ensure reliability
- Clockface headways
  - Four trains per hour = departures every 15 minutes
Other Improvements

- Grade separations
  - Corridor approach in partnership with communities
- Modern ticketing
  - Integrated with other agencies and modes, on mobile and other platforms
- Station access/area planning
  - Including transition strategy for maintaining service while converting to different rolling stock/higher platforms
Travel Time and Frequency

- Top speeds of 125 mph Sacramento-Benecia, 110 mph in Bay Area
- Capacity improvements allow for limited-stop service
- Result: 30-45% travel time reductions

<table>
<thead>
<tr>
<th>Travel Time</th>
<th>Sacramento-San Jose</th>
<th>Sacramento-Oakland</th>
</tr>
</thead>
<tbody>
<tr>
<td>With Travel Time Savings Project</td>
<td>2:58</td>
<td>1:48</td>
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<tr>
<td>Future Local</td>
<td>2:00</td>
<td>1:20</td>
</tr>
<tr>
<td>Future Limited-Stop</td>
<td>1:41</td>
<td>1:07</td>
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</table>

- Assumed frequency of 15 mins peak (two local, two limited trains per hour)
- 30 minutes mid-day
Priorities

<table>
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<tr>
<th>Priority</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projects</td>
<td>Already have funding &amp; approvals</td>
<td>Could greatly improve speed and frequency on part of line</td>
<td>Enable further improvements</td>
<td>Major projects that provide immediate benefits</td>
<td>Enable dedicated right-of-way, electrification</td>
<td>Extend dedicated right-of-way, electrification</td>
</tr>
<tr>
<td>Status/Reason for Timing</td>
<td>&lt; 10 years</td>
<td>10-15 years</td>
<td>15-20 years</td>
<td>20-25 years</td>
<td>25-30 years</td>
<td>TBD</td>
</tr>
<tr>
<td>Passenger Projects</td>
<td>Sacramento-Roseville 3rd track</td>
<td>San Jose-Oakland improvements</td>
<td>Oakland-Richmond improvements</td>
<td>Oakland Jack London tunnel</td>
<td>Richmond-Sacramento improvements</td>
<td>Sacramento-Auburn improvements</td>
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<tr>
<td>Freight Projects</td>
<td>Oakland/Niles Connections</td>
<td>Oakland/Niles Double-track</td>
<td>Oakland Jack London tunnel</td>
<td>New Martinez-Sacramento right-of-way</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Priorities can be re-ordered based on market analysis and/or political momentum
Costs

- Should be understood in context of:
  - Packaging:
    - Includes large number of individual projects
    - Also includes “core” projects (e.g. double-tracking ROW) as well as “related” projects (e.g. grade separations)
  - Corridor length – 168 miles
  - Length of time: ~35 years assumed; could be longer
  - Ongoing phased value proposition
  - Cost for alternatives (e.g. widening I-80)
  - Costs for other major infrastructure projects
Capitol Corridor and UPRR existing routing

Capitol Corridor’s existing route

UPRR’s existing southern freight route to/from Port

Directional capacity conflict area
Capitol Corridor and UPRR proposed routing

Capitol Corridor’s proposed route

UPRR’s future southern freight route to/from Port

Legend
- Green: Coast Sub
- Black: Niles Sub
- Orange: Oakland Sub
Oakland to San Jose Phase 2A (Design/Env'l/Construct)

- New Newark/Fremont Station (Ardenwood Park n’ Ride with AC Transit SR 84/Dumbarton connection)
- Coast Subdivision track and signal upgrades
- Industrial Parkway connection with possible second track additions

Legend:
- Green: Coast Sub
- Black: Niles Sub
- Orange: Oakland Sub
What about that Second BART tube and the Conventional Rail Tube?

- Identified in the Core Capacity Study - 😊
- Disruptive in a good way to VIP - 😐
- Included in draft State Rail Plan - 😊
- Most extensive and transformative of the megaregional-regional discussions
  - How to organize, be inclusive without being impractical, and govern just the various studies/steps – aka, planning 🤔