



STATE RAIL ASSISTANCE PROJECT CONCEPT PROPOSALS

California Department of Transportation
Division of Rail and Mass Transportation

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Pilot Program: Services to Fill the Gaps

Project Description

BACKGROUND

The California State Rail Plan (Rail Plan) presents the State's goals for providing and connecting services in different regions. Service goals describe the desired train frequencies on the state passenger rail network; reflect the travel times needed to provide services that are competitive with automobile and air travel; and provide for timed connections at mobility hubs. These hubs will have co-located rail, transit, bicycle, and pedestrian facilities to connect people to the rail network through coordinated schedules and infrastructure. Many of the statewide hubs already exist and only need operational and minor capital improvements to achieve the statewide rail connectivity and service goals.

The Rail Plan provides a phased implementation strategy for achieving the 2040 service goals and associated environmental and mobility benefits. Projects identified in the short-term will intensify service on existing corridors and better manage schedules and transfers to enhance the capacity of existing services. Success of the rail network is contingent upon timed, coordinated services. One opportunity in the short- and mid-term time horizons is to fill service gaps in the system. Some of these gaps are due to infrastructure constraints, while others result from financial or governance constraints. Caltrans will take a leadership role to address the best delivery options for filling the service gaps and providing better, integrated, and easy to use services for users across the state.

The development of the Rail Plan vision involved significant stakeholder engagement and the 2040 vision represents a consensus vision between the state and state transit and rail partners. These relationships provide a foundation for ongoing coordination at the planning, project development and delivery stages and will improve the ability for the State to fill key service gaps in the rail network.

PROJECT DESCRIPTION

Caltrans is proposing to use State Rail Assistance (SRA) funding to implement pilot programs to assist the State in achieving the network integration goals established in the Rail Plan and facilitate the expansion and improvement of intercity rail service. To achieve these goals, Caltrans is requesting \$1,000,000 in SRA funding to develop pilot program services to demonstrate early connections in the state transit and rail network. Caltrans is closely coordinating with transit and regional planning partners to connect services and eliminate gaps in the system. Caltrans has already developed several working groups to begin identifying key gaps and will continue working closely with all state partners through this project to plan and deliver projects that meet short and long-term mobility goals for each region and the state at large. As a state department, we play an important role in oversight of the statewide transportation network and its expansion.

Task 1: Pilot Projects

Improve connectivity and integration of disconnected segments of the state rail network. Caltrans anticipates that these improvements will increase rail ridership once complete. As of today, attempting to make these connections with current transit infrastructure in place would take numerous hours and require transferring between multiple operators. Caltrans is proposing to support the following pilot projects through SRA:



- a. San Francisco Bay Area Connections
 - i. SMART Napa East-West Connection
 - Extend current rail service between Novato and the Solano County Hub.
 - Evaluate expansion of rail service from San Rafael, Sonoma, and Napa County to Solano County, considering rail service primarily on existing rail alignments, with potential connection to the statewide network at Fairfield-Suisun or near Vallejo.
 - ii. San Rafael-Richmond Service
 - The San Rafael-Richmond service is expected to be an on-demand microtransit service making connections between SMART and Capitol Corridor intercity rail service.
- b. South San Francisco Bay Area Connections
 - i. San Jose to Monterey
 - Timed bus connections from San Jose to Monterey
- c. Lake Tahoe Connections
 - i. Seasonal Integrated Express Bus Service
 - Service along the US-50 and I-80 corridors from Sacramento to Reno and South Lake Tahoe.
 - ii. Seasonal Rail Service
 - Study the potential for seasonal rail service to the Lake Tahoe region during congested travel period, such as peak-travel weekend, with potential termini in Truckee or Sparks, Nevada

Task 2: Creating connections to State Parks

To encourage the traveling public to utilize rail and transit for leisure trips, the State should coordinate with partner operators to make better connections between the State network and state parks. California is home to many beautiful state parks, forests, and beaches, but few are accessible by transit. Currently, service is provided to Yosemite National Park and Colonel Allensworth State Historic Park. Connections to other parks in the state will provide transportation options for park visitors, reduce congestion, support the economy, and expand the reach of the rail and transit network to underserved markets.

- a. Park Connections
 - i. Coordinate with Partner Agencies
 - Evaluate possible connections of parks with high tourism rates and their nearest transit hub.

Project Cost

Funding this entire project will support ongoing coordination and targeted training. However, each task serves its own purpose and provides necessary resources towards delivering the Rail Plan goals. Each task could be funded separately or phased over time.

TASK 1: \$800,000.00

TASK 2: \$200,000.00



Stockton Regional Rail Maintenance Facility Expansion

Project Description

BACKGROUND

The 157,000 square-foot, state-of-the-art Altamont Corridor Express (ACE) Rail Maintenance Facility (RMF) opened its doors on March 22, 2014. The facility is located on a 64-acre lot and is used for the repair, maintenance, cleaning, and overnight storage of the train sets used in the ACE service, with room for future rail service expansion. The facility houses maintenance operations, stores, employee common areas, and administrative offices. The primary maintenance area includes a service and inspection canopy, oil/water separator building, drop table, fuel and sanding facility, three overhead cranes, a wheel truing machine, and a train washer.

Centrally located in Stockton, the existing property is the ideal location to serve as a regional rail maintenance facility for San Joaquins intercity rail equipment. The scope of the project includes the expansion of the existing building or the construction of auxiliary infrastructure on the RMF property. Improvements for the proposed project include a storage building, new and tie-in track, and additional maintenance equipment. The Stockton Regional Rail Maintenance Facility Expansion would allow for the repair, maintenance, and storage of new Siemens equipment for the San Joaquins, anticipated for delivery in 2022.

PROJECT DESCRIPTION

Caltrans would work closely with the owner of the current facility, the San Joaquin Regional Rail Commission (SJRRRC), to ensure the project serves the needs of the State Rail Plan and other statewide rail efforts. The SJRRRC also serves as the managing agency for the San Joaquin Joint Powers Authority (SJJPA), allowing for a streamlined approach to implementing the project. To support the project, Caltrans is requesting \$2,000,000 in State Rail Assistance (SRA) funding for Preliminary Engineering and Final Design.

Construction of the project would result in several benefits to intercity rail service. The expanded facility would provide a cost-effective option for maintaining intercity rail equipment by utilizing an existing, centrally located maintenance facility. The project would also support the development of the Valley Rail Program, facilitating an increase in San Joaquins service between Sacramento and Bakersfield.

In addition to serving an expanded San Joaquins fleet train fleet, the project will allow greater flexibility for the long-term maintenance needs of rail equipment in California. Expanding the capabilities of the existing ACE Rail Maintenance Facility will help to promote Stockton as a transportation hub, serving the needs of California High-Speed Rail and other future service expansions.

Task 1: Preliminary Engineering (PE)

Caltrans is prepared to work with partner agencies to accomplish preliminary engineering for project.



Task 2: Final Design (PS&E)

Caltrans is prepared to work with partner agencies to accomplish final design for project.

Project Cost

Caltrans is requesting funds under the FY 2017-18 to FY 2019-20 State Rail Assistance intercity category be utilized for Preliminary Engineering and Final Design for the Stockton Regional Rail Maintenance Facility Expansion project. As mentioned above, the Siemens equipment is anticipated to be delivered in 2022 and beginning initial work on the project will allow the expanded facility to be operational upon equipment delivery. The environmental phase was cleared for the entire property during the construction of the ACE RMF and it is not anticipated that any additional environmental work will be needed.

The cost breakdown below highlights the various phases of the project and amount.

TASK 1: \$500,000.00

TASK 2: \$1,500,000.00



Supporting the Integrated Travel Project

Project Description

BACKGROUND

In addition to schedule, infrastructure, and fleet integration, the Rail Plan identifies the need for coordinated fares and integrated ticketing options across modes and service providers. To deliver a fully integrated and door-to-door rail system, coordinated fare collection necessarily streamlines the methods of payment across different services over the course of a journey. Additional features of an integrated fare collection system could include passes that work with combined ticket types, benefits to frequent travelers, and specialized fare packages for events and tourist attractions.

Some transit agencies already work together to eliminate transfer penalties between services, but the integration remains uncoordinated and not managed at a regional, much less state, level. The California State Transportation Agency (CalSTA), in conjunction with Caltrans and the Capitol Corridor Joint Powers Authority (CCJPA), and local, regional and state partners, has begun an integrated travel project (Cal-ITP) to research, plan and establish a statewide framework for multimodal transport interoperability.

The purpose of Cal-ITP is to deliver seamless travel across multiple modes, interconnecting rail, bus and private mobility providers using a single ticket, with an end goal of making public transportation easier, quicker, and more attractive to use. Cal-ITP promotes connectivity and integrates intercity rail service by allowing trip-planning and ticketing on a single platform. The expectation is that once the ITP planning and payment program is online, participating agencies will see significant benefits, including increase in ridership and reduction in fare collection costs. The benefits will be realized by all participating agencies and riders across the state, but there will be challenges to marketing the new program, organizing the governance structures to incentivize participation, and ensure there is information technology (IT) support to manage and maintain the platform.

PROJECT DESCRIPTION

To effectively implement and support the efforts of CalSTA and CCJPA in promoting Cal-ITP, Caltrans is requesting \$500,000 in State Rail Assistance (SRA) funding to support the efforts of this project. As a state agency, we play an important role in oversight of the statewide transportation network and its expansion. While Caltrans is supporting partner agencies with this effort, the SRA funding requested in this proposal will fund broader tasks compared to CCJPA. This funding would fund two primary goals:

Task 1: ITP Marketing and Branding

- a. Develop a consultant contract for marketing and branding services. Branding will be a key component of the ITP implementation as it will indicate to travelers where and when their tickets are valid. This branding and marketing will need to happen on a statewide scale and is beyond the current CCJPA ITP contract.



- i. Develop an umbrella brand for ITP
- ii. Promote ITP

Task 2: ITP Support

- a. Phased approach to supporting ITP
 - i. Phase 1
 - Initial ITP staff support
 - ii. Phase 2
 - Ongoing operations staff support to monitor and coordinate with individual operators, and Joint Powers Authority partners.

Project Cost

TASK 1: \$300,000.00

TASK 2: \$200,000.00



Northern California Megaregional Rail Working Group Support

Project Description

BACKGROUND

The California State Rail Plan (Rail Plan) was developed as part of the State's comprehensive network integration and strategic service planning process. This planning process consisted of a statewide market assessment and rail infrastructure review followed by network service refinement and development of a statewide rail vision. The overarching goal was to plan for a statewide rail network that maximizes the performance potential of existing intercity passenger rail as a time- and cost-competitive travel option. The ridership and mobility potential is realized by intensifying services on existing intercity rail lines and integrating infrastructure, fleet management, and schedules with commuter and high-speed trains to deliver a coordinated, easy-to-use transit network.

The Rail Plan presents the State's goals for providing and connecting services in different regions across California. The identified service goals describe train frequencies and travel times needed to be auto-competitive and provide for timed transfers at mobility hubs. By coordinating services, the Rail Plan identifies significant ridership gains over the next twenty years. For example, the 2040 Vision results in an additional 90 million passenger miles per day on the integrated rail system – exclusive of urban transit systems.

Rail ridership alone will increase more than ten-fold, with passenger miles growing more than twenty-fold, due to longer average journeys compared to today. Many of the rail journeys will connect to California's growing transit system as part of the beginning and/or end of the trip. Therefore, the integrated rail and transit network in California is expected to achieve a 15-20% of all passenger miles in California. These numbers are competitive with world-class systems; but can only be realized through coordinated planning and delivery. Improvements to each network or corridor alone cannot advance California's mobility and aggressive greenhouse gas emissions reduction goals. Investments need to enhance opportunities to deliver an integrated rail and transit network and Caltrans is uniquely poised to facilitate coordination and planning statewide and at the increasingly important megaregional scale.

The goals are intentionally operator neutral to prioritize frequency, connectivity, and reliability of the system at large. Because of this, however, short-term planning and project delivery requires significant coordination between rail operators, metropolitan planning organizations, counties, and the State to ensure each short-term planning study or construction project supports the long-term vision. Historically, each operator plans for improvements to their discrete network which often results in a rail network that is disjointed and confusing to the rider. Regionally, users are concerned with seamless transfers, direct connections, and short travel times and are uninterested in governance structures that create some of the reasons why those benefits are not delivered. This fragmentation between operators results in uncoordinated schedules that leave riders with long wait times



at transfers; physically disjointed services that may cause riders to make risky decisions while transferring on platforms or at intersections; or increased fares due to transfer penalties and competing fare structures.

PROJECT DESCRIPTION

The Northern California Megaregional Rail Working Group was formed by Caltrans Division of Rail and Mass Transportation (DRMT) and CalSTA to support and facilitate rail planning in the megaregion to: deliver the California Integrated Travel Program (Cal-ITP), integrate services and schedules, enhance multimodal connectivity, and coordinate planning. The purpose of this group is to improve efficiencies, decrease redundancies, and build the coordination and governance structures necessary for delivering many different projects that need to be strategically planned and funded as not to preclude future improvements on adjacent corridors throughout the megaregion.

The group convenes quarterly and is comprised of all the rail operators in the Northern California megaregion. To efficiently deliver transformative projects that will grow ridership and improve the user experience across the megaregion, Caltrans is requesting \$500,000 in State Rail Assistance (SRA) funding to support this group. Caltrans will provide leadership, staffing resources and expertise, and the big picture vision to motivate and manage this group and establish processes that will implement the State Rail vision in Northern California. This funding would fund three primary goals:

Task 1: Development of a work plan and governance process

- a. Develop a plan to establish how to acquire tools, servers and support
 - i. This is intended to preserve resources across the region by streamlining how various assistance is procured and implemented.
 - ii. Developing a work plan will map out the collective goals of the group so funding applications can be coordinated to eliminate duplications in scope or work.
- b. Establish an organizational framework with roles and responsibilities. This framework will increase transparency and efficiency. Funding for this task will flesh out the duties for each group:
 - i. Planners and analyst group
 - i. This group should be comprised of the expert level staff resources for completing technical service planning and ridership analysis.
 - ii. Stakeholder steering group
 - i. This group should be comprised of people with decision-making power at their organizations and an understanding of the various political priorities in the megaregion.
 - iii. Define joint planning scope
 - i. The groups must work in a supportive way and a scope should be developed to inform the best process.
- c. Initial ramp-up of coordinated planning efforts
 - i. Training
 - ii. Define planning approach and parameters
 - iii. Integrate available data
- d. Coordinate planning throughout the megaregion



- i. This will include station design, station area planning, bus and transit connections, schedule changes, fare integration, and other relevant elements that will provide expanded benefits through coordination in the planning process.

Task 2: Viriato software and service planning training

Viriato is a cloud-based software that will help the group develop optimal timetables, strengthen fleet and facility management, and improve capacity and operational planning. The software was used in the network integration analysis completed for the Rail Plan. Viriato's functionality includes creation of: graphic timetables, customer timetables, calendars, netgraphs, running time calculator, platform occupation, conflict detection, trip time analysis, vehicle rostering, and user rights management. The Viriato planning software is a highly specialized tool, requiring training for the individuals using it. An initial one or two-day basic overview training would be conducted, potentially with planners, analysts, and stakeholder representatives, to allow everyone to gain a basic understanding of the tool and its underlying planning approach.

- a. Since Viriato is a cloud-based subscription software, Caltrans has the ability to partner with other operators in California to access the Viriato service planning tool. Caltrans is working with our partner agencies to acquire software licenses. However, every master user of Viriato, regardless of ownership, will require specialized training.
- b. The basic training would be followed by an intensive one to two-week training for specific users.
 - i. Basic training will be provided to this entire group, so everyone has the basic understanding of how Viriato works and how to interpret results for the purposes of decision making and advocating for rail projects.
 - ii. The intensive training will be for a select group of expert users.
- c. The specific users will be identified and trained by Caltrans. The training is necessary for service planning staff to become fluent and efficient in utilizing the tool to serve the needs of Caltrans and the broader megaregional working group in implementing the Rail Plan.

Task 3: Megaregional rail ridership modeling support to produce a comprehensive megaregional rail ridership analysis.

- a. Expert support to determine or develop the best megaregional ridership model. This should inform the outputs of a comprehensive megaregional rail ridership analysis.
- b. The idea model for the purposes of this group should:
 - i. Reflect timetables for rail in the megaregion
 - ii. Reflect demand for transfers between systems
 - iii. Represent current and future modes
 - iv. Represent rail access and egress modes
 - v. Produce performance metrics that support infrastructure and operational decisions
 - vi. Provide a user-friendly, fast, and simple interface that supports scenario planning



Project Cost

Funding this entire project will support ongoing coordination and targeted training. However, each task serves its own purpose and provides necessary resources towards delivering the Rail Plan vision in the northern California megaregion. Each task could be funded separately or phased over time without sacrificing the larger goals of the working group.

TASK 1: \$200,000

TASK 2: \$150,000

TASK 3: \$150,000



Next Generation Statewide Fleet Planning and Support

Project Description

BACKGROUND

The California State Rail Plan (Rail Plan) provides a framework for investing in rail over the next twenty years to deliver an integrated system that meets the State's aggressive mobility and environmental goals. Key to this integrated rail network is delivering services operated largely on electrified or other near-zero and zero-emissions fleets. Technological advancements in rolling stock, batteries, and alternative fuel sources mean that overhead catenary electrification is no longer the only way to deliver a low or zero carbon system. This gives the State more options for providing a zero-emission rail network, but it can create challenges for interoperability of services.

Another key principle of the Rail Plan is interoperability and connectivity between services. The 2040 vision is operator neutral and therefore plans rail delivery in such a way that can accommodate shared fleets and maintenance facilities. Coordinated planning of services, schedules, and fleet maintenance will improve efficiencies on the existing capacity as well as for planned expansion.

In addition to improving connections between existing services, the Rail Plan identifies emerging corridors that currently do not have rail service but have the infrastructure and market potential to provide key connectivity for more transit-isolated parts of the state. For example, the northern Central Coast region suffers from traffic congestion at chokepoints into the Monterey Bay and has infrastructure amenities like a publicly owned rail right of way in Santa Cruz. While separate projects, this northern Central Coast emerging corridor represents but one opportunity to develop a new rail network that benefits from connections into the statewide system, as well as the latest technological developments in rolling stock. This corridor has specific challenges for providing coastal mobility and will require much analysis, including for equipment procurement requirements that address the unique operating and market characteristics of coastal service.

The opportunities to capitalize on advancements in rolling stock and fuel technology, the coordination of services and fleets, and to develop new corridors could be undermined by the availability of resources and disconnected analysis of the latest developments in the field. Creating a centralized forum or clearinghouse for rolling stock procurement can help the State deliver a state-of-the-art system that supports the Rail Plan goals, as well as the State mandated greenhouse gas emissions reductions targets. By organizing a coalition of agencies with similar goals and visions for rail, Caltrans can capitalize on the latest trends and provide support for partner states and agencies to do the same.

PROJECT DESCRIPTION

Caltrans vision for the future of rail interconnects government policy, state of the art technology, industry best practices, and experience of rail rolling stock procurement. Caltrans would lead as a rail procurement "clearinghouse" for Western States with similar goals and visions for mobility and rail improvements. Caltrans



would assist states and local transit agencies with their heavy rail rolling stock (locomotives and rail cars) specifications, scope of work, vendor relationships, bid and awards process, warranty and financing options. To support this effort, Caltrans is requesting \$200,000 in State Rail Assistance (SRA) funding to support this group.

Some key outcomes from this group would include: upfront financial savings from streamlined, joint procurement; improved fleet efficiencies resulting in environmental benefits and decreased maintenance costs; development of co-located maintenance facilities to service a statewide inventory of fleets, regardless of operator. To achieve these outcomes, the State Rail Assistance would fund the following primary goals:

Task 1: *Assist other Western State's with rolling stock procurement activities.*

- Develop technical specifications
- Produce standard scopes of work

Task 2: *Develop a two-day conference to facilitate discussion of best practices and challenges and institutionalize an ongoing commitment to this forum.*

- a. Conference agenda topics could include:
 - i. Newest technology, specifications of rolling stock, accommodating varying boarding heights.
 - ii. Shared needs, unique system requirements.
 - iii. Previous procurements' lessons learned.
 - iv. Best practices – specifically for specialty markets
 - v. Discussion of FRA's current laws/regulations, and safety rules.
 - vi. Vendors for competitive Request for Proposals (RFPs).
- b. Invitees could include:
 - i. Western State DOT's
 - ii. Federal Railroad Administration
 - iii. Regional Host Railroads
 - iv. Amtrak and Intercity Passenger Rail Joint Power Authorities
 - i. Capitol Corridor
 - ii. San Joaquin
 - iii. LOSSAN
 - v. Commuter Agencies
 - i. SMART
 - ii. PCJPB (Caltrain)
 - iii. Altamont Corridor Express
 - iv. SCRAA (Metrolink)
 - v. North County Transit District (Coaster)
 - vi. Rail Equipment Vendors
- c. Outcome of this effort would provide feedback from agencies on the concept of multi-state procurement options, next steps on how to assist Western State DOT's, and plans to hold similar conferences annually or bi-annually to continue implementing the vision of the Western States Buying Group.

Project Cost

TASK 1: \$50,000

TASK 2: \$150,000