EXECUTIVE SUMMARY

Monterey Bay Area Network Integration Study

April 27, 2021

TAMC

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This Network Integration Study for the Monterey Bay Area represents the next step in project development work aimed toward robust passenger rail service connecting San Jose to the Central Coast and Monterey Bay communities. The Study presents a vision for a future integrated network that will support regional growth and protect the region's natural beauty while serving the transportation and economic needs of residents and local businesses. The Study connects the regional vision and infrastructure assets to the statewide strategy articulated in the 2018 California State Rail Plan (CSRP) and embodies the technical work necessary to move forward to implementation and project delivery.

This Study covers the service goals outlined in the 2018 CSRP which envisions a network of high-speed, intercity corridor and commuter trains integrated with local transit at hubs across the state. For the Monterey Bay Area and Central Coast regions, this Study meets and exceeds the goals outlined in the CSRP, shown in **Figure 1**, as determined through the network modeling and stakeholder engagement conducted as part of the Study.

Figure 1: California State Rail Plan Vision Service Goals

Source: 2018 California State Rail Plan

A Stakeholder Engagement Plan was developed for the Study, describing stakeholder and public involvement strategies used to obtain input throughout its development. These include a Network Advisory Committee consisting of representatives from agency peers and major rail stakeholders that have met quarterly during the Study to cross-pollinate regional activities, findings, and recommendations. Public involvement focused on a bilingual survey conducted in summer 2020, to which 800 community members responded. Sentiment was overwhelmingly positive, with 87 percent of respondents indicating that access to passenger rail service would have a positive effect on their lives.

This Study builds off an inventory of existing rail lines and transit services and future conditions as set forth in a review of recent studies and plans. Opportunities to address underserved communities and threats to existing and planned service by climate change impacts are considered in the Study. Contemporaneous efforts, notably the Santa Cruz County Regional Transportation Commission's (SCCRTC) Transit Corridor Alternatives Analysis & Rail Network Integration Study and the San Luis Obispo Council of Government's Service Implementation Plan, have informed the Study.

The service vision developed in the Study has been designed through strategic analysis and operations modelling using guidelines and goals set by TAMC and regional stakeholders. The service vision seeks to maximize rider benefit, minimize capital and operations costs, shorten implementation timelines, and create a scalable service network. Implementation of the service vision is organized in three time horizons: Initial Service (short-term), Phased Service (mid-term), and Vision Service (long-term).

For each time horizon, the Study outlines service characteristics; defines infrastructure and train equipment requirements; provides cost and ridership estimates; assesses potential benefits; and provides recommendations regarding governance and funding and financing strategies.

Initial Service

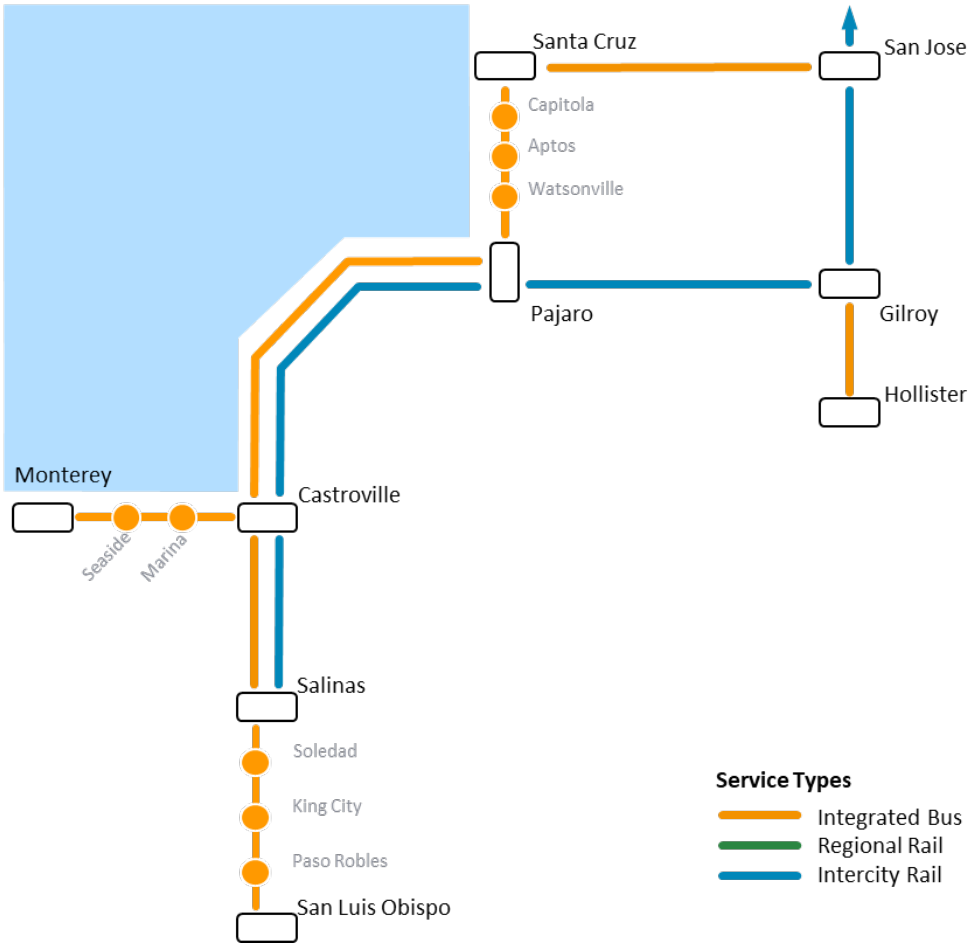
The goal of the Initial Service concept, shown in **Figure 2**, is to create a regular passenger rail connection between the Monterey Bay Area and San Francisco Bay Area and lay the foundation for future expansion, as described in the 2018 CSRP.

In the near-term, the Initial Service involves extending rail service on the Union Pacific Railroad (UPRR) Coast Subdivision to Salinas to connect Monterey County with San Jose. Prior to the COVID-19 pandemic, Caltrain operated three commute-oriented round trips to and from Gilroy each weekday. The Initial Service concept is achieved by extending these round trips to Salinas.

In the Initial Service, connecting bus service would be coordinated between Hollister and Gilroy to meet each train. Additionally, a bus service would be implemented between Salinas and San Luis Obispo to connect with the last northbound train in the morning and the first southbound train in the evening. Monterey-Salinas Transit's SURF! Busway and Bus Rapid Transit (BRT) line from Marina to Sand City and Seaside will provide transit connectivity and build ridership to justify further investment in the corridor. Similarly, the SCCRTC's Highway 1 Bus-on-Shoulder Project represents an interim congestion mitigation

improvement in the Initial Service that paves the way for Phased Concept Santa Cruz-Monterey bus service.

Figure 2: Initial Service Concept



Infrastructure

To implement Initial Service, the following infrastructure improvements will be needed:

- Construction of Pajaro Station with grade-separated access structure, island platform, and large parking area (400 spaces); and
- Construction of Castroville Station with grade-separated access structure, island platform, and small parking area (200 spaces).

Additionally, overnight storage tracks would be required to facilitate the extension of rail service to Salinas. The storage tracks would need to accommodate three trainsets akin to the storage tracks currently at Gilroy. The six-train storage facility included in the TAMC Monterey County Rail Extension Phase 1: Kick Start Project would be more than adequate for the Initial Service Concept and thus is not included in the costs or infrastructure needs in this Study's analysis.

Fleet Strategies

Initial Service rail would be operated with conventional diesel-hauled trains. It is recommended that TAMC pursue an agreement with Caltrain for contracted operations, allowing service to be implemented relatively quickly and with minimal infrastructure investment. General maintenance would be performed by Caltrain at its existing facilities, such as the Centralized Equipment, Maintenance and Operations Facility immediately north of San Jose Diridon Station. Operations would need to comply with FRA requirements.

Benefits Assessment

The Initial Service would have numerous transportation benefits. The extension of rail to Salinas would serve a population of over 300,000, about 60 percent of which would be residents of low-income communities. With Initial Service, San Jose and Gilroy would be accessible from Pajaro, Castroville and Salinas within a two-hour rail trip. Extending rail to Salinas would reduce travel times by 15 minutes to nearly an hour by replacing trips that currently require a transfer with one-seat rides. By attracting trips away from driving, the expanded rail service would avoid two traffic injuries annually.

The Initial Service would attract 190,000 annual rail trips and 5,000 annual bus trips in the corridor between San Francisco and San Luis Obispo. With growth in ridership, VMT would be reduced by 9.5 million miles and GHG emissions would be reduced by up to 1,700 metric tons of carbon dioxide equivalent.

Employment access would increase with Initial Service; jobs in Gilroy, Salinas and communities in between would be accessible within a 90-minute commute from any of the extension stations. Implementing the Initial Service is estimated to result in over 1,000 person years of employment and generate an economic output of $195 million and tax revenues of $18 million.

Governance and Operations Recommendations

For the Initial Service concept, no new governance structure is recommended. TAMC would continue to serve as the project lead and would pursue contracted operations with Caltrain, negotiate a track access agreement with UPRR, and coordinate with local bus agencies to provide connections at rail stations. TAMC's Rail Policy Committee may need to provide additional support for TAMC Board decisions regarding financing, contracting, and other responsibilities involved with implementation.

Funding, Financing and Grants Strategy Recommendations

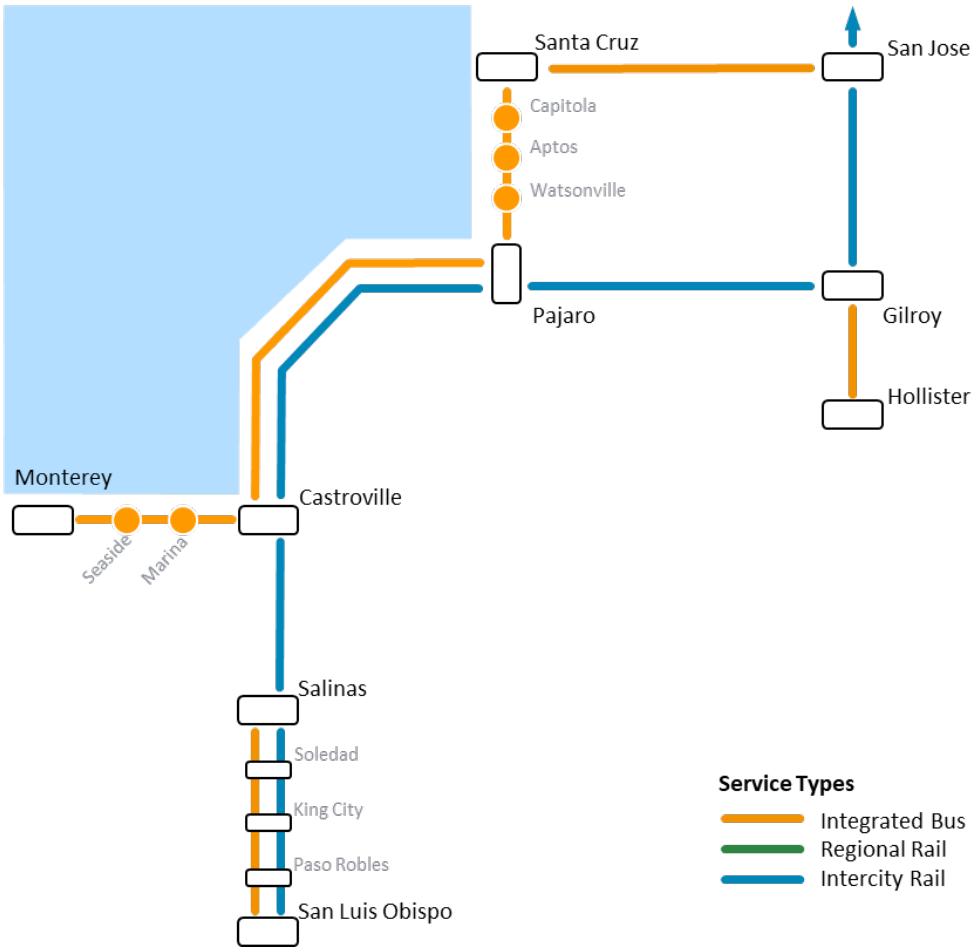
The Initial Service concept capital costs are estimated at $102 million. Annual rail operations and maintenance costs are estimated at $4.7 million and annual rail ticket revenues are estimated at $2.7 million – a farebox recovery rate of 58 percent. Annual bus operations and maintenance costs are estimated at $529,000 and annual bus ticket revenues are estimated at $186,000 – a farebox recovery rate of 35 percent.

Potential capital revenue sources for the Initial Service are estimated to provide a total ranging between $62 and $235 million for one-time awards and $3 to $7 million in annual awards through state formula programs. Major sources of this potential funding are California's Solutions for Congested Corridors Program and Transit and Intercity Rail Capital Program, and the Federal Transit Administration's (FTA) Capital Investment 5309 Small Starts Grants program. These are all highly competitive grant programs, and will require thoughtful preparation of grant submission requirements, as well as a well-coordinated advocacy campaign that demonstrates the unique value added by this service.

Phased Service

In the mid-term time horizon, the Phased Service concept shown in **Figure 3** builds off the service levels established by Initial Service and lays the groundwork for the Vision Service concept. Phased Service increases rail service from peak period oriented only to regular all-day bi-directional service between Gilroy and Salinas, with four daily round trips extending from Salinas to San Luis Obispo.

Figure 3: Phased Service Concept



Bus service would be expanded in the Phased Service Concept to operate between Santa Cruz and Monterey connecting with hourly train services at Pajaro and Castroville. Bus service to and from Hollister would be coordinated to connect with hourly train service at Gilroy as well. The bus connection between Salinas and San Luis Obispo would be expanded to operate every four hours, such that combined rail and bus schedules would provide service every other hour.

Infrastructure

To implement Phased Service, the following infrastructure improvements will be needed:

- Construction of a passing siding on the UPRR Coast Subdivision south of King City;
- Construction of stations in Soledad and King City; and
- Procurement of eight bi-modal hybrid trainsets.

Fleet Strategies

The Phased Service concept would require the procurement of new or leased equipment, from an operator or from the State, which would require a new or expanded maintenance facility. To achieve policy goals while not forcing transfers at Gilroy, it is recommended that Phased Service be operated with bi-modal, hybrid train equipment. This would allow through operations on the planned high-speed infrastructure between Gilroy and San Jose as well as on the unelectrified UPRR Coast Subdivision south of Gilroy. Six trainsets and an additional two trainsets as spares would be required, as well as overnight storage capacity for one train in San Luis Obispo.

Benefits Assessment

The Phased Service concept would expand the transportation benefits of the Initial Service concept. The extension of rail to San Luis Obispo would serve a population of over 460,000, about 60 percent of which would be residents of low-income communities. Regional mobility would increase, with many more destinations accessible within a two-hour rail trip. Paso Robles and San Luis Obispo would become accessible to each other within 120 minutes. The Phased Service would take advantage of high-speed rail infrastructure north of Gilroy, making travel times considerably faster for trips to and from Santa Clara County. Phased Concept bus service would speed many trips in the corridor between Santa Cruz and Monterey. By attracting trips away from driving, the expanded Phased rail service would avoid eight traffic injuries annually.

Phased Service would attract 500,000 annual rail trips and 13,000 annual bus trips in the corridor between San Francisco and San Luis Obispo, with bus service between Monterey and Santa Cruz attracting an additional 500,000 riders. With growth in rail ridership, VMT would be reduced by 31.2 million miles and bus service between Monterey and Santa Cruz would reduce VMT by an additional 9.4 million miles. Phased Service concept rail would reduce GHG emissions by up to 1,700 metric tons of carbon dioxide equivalent and bus service between Monterey and Santa Cruz would reduce GHG emissions by up to 3,100 metric tons of carbon dioxide equivalent.

Employment access would increase with Phased Service; jobs in Paso Robles and San Luis Obispo would become accessible to each other within a 90-minute commute. Implementing Phased Service is estimated to result in 4,500 person years of employment and generate an economic output of $765 million and tax revenues of $72 million.

Governance and Operations Recommendations

Compared to the Initial Service concept, Phased Service includes substantially expanded service south of Gilroy. Each of the three Phased concept services – rail service to/from Salinas, rail service to/from San Luis Obispo, and BRT service between Monterey and Santa Cruz – may require a different governance approach.

To support these service expansions, the governing body will need to procure train equipment and fund several major capital projects, including two new stations; signal and track improvements and potentially a new siding south of Salinas; and infrastructure, fleet, and facility requirements for the regional BRT service. The governing body would need to negotiate and pay access fees for use of the new high-speed rail infrastructure between Gilroy and San Jose at such time that it becomes available for service to/from the Central Coast.

Several potential options for operating these extended services are identified: Caltrain, as in the Initial Service; Capitol Corridor, as an extension of their existing service; another existing public or private operator; or a new operating entity formed expressly to operate one or more of the rail services. In the case of contract operations, the governing body could issue separate contracts for Gilroy-Salinas service and for Gilroy-San Luis Obispo service, or could bundle both services under a single contract. Implementing the new BRT service between Monterey and Santa Cruz spanning two counties would likely require an evolution in governance capability.

The larger scope of duties and responsibilities for the governing body under the Phased Service concept would likely require more robust oversight to protect the public interest and ensure fiscal responsibility and ethical integrity. TAMC may be able to evolve to address these additional governance needs through interagency agreements, but a Joint Powers Authority (JPA) or other new entity may eventually be necessary, particularly to facilitate cost sharing between the multiple counties involved.

Funding, Financing and Grants Strategy Recommendations

The Phased Service concept capital costs are estimated at $403 million. Annual rail operations and maintenance costs are estimated at $35.4 million and annual rail ticket revenues are estimated at $11.4 million – a farebox recovery rate of 32 percent. Annual bus operations and maintenance costs are estimated at $5,771,000 and annual bus ticket revenues are estimated at $1,588,000 – a farebox recovery rate of 28 percent.

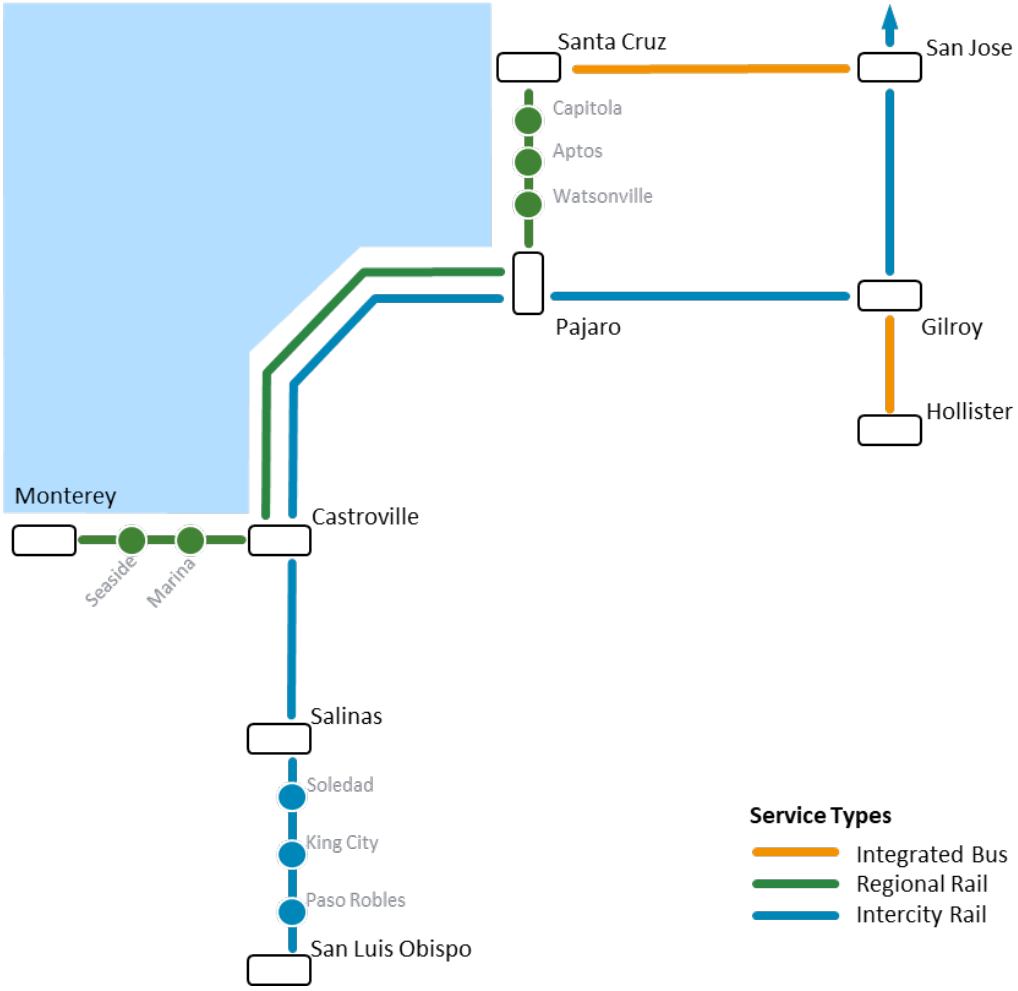
Available funding sources for the Phased Service concept, which would be implemented about 10 years in the future, are not known at this time. The Federal and State funding and financing landscape could

look very different then. Nonetheless, TAMC and its project partners would benefit from laying the groundwork now for future revenue generation.

Vision Service

The Vision Service concept shown in **Figure 4** represents a long-term vision for rail service in the Monterey Bay Area and Central Coast. Trains would continue to operate hourly service between Salinas and San Jose, but through service to/from San Luis Obispo would be increased to bi-hourly service, replacing the bus connections. Bus service between Monterey and Santa Cruz would be replaced by the implementation of hourly, bi-directional regional rail service operated with multiple unit trains, providing timed, cross-platform connections to/from mainline service at Castroville and Pajaro.

Figure 4: Vision Service Concept



Infrastructure

To implement Vision Service, the following infrastructure improvements will be needed:

- Construction of two additional mainline passing sidings on the UPRR Coast Subdivision;
- Track improvements and renovations from Pajaro to Santa Cruz and Castroville to Monterey;
- Construction of regional rail stations at Santa Cruz, Capitola, Aptos, Marina, Seaside, and Monterey, and expansion of Pajaro Station;
- Procurement of an additional trainset for intercity service and five trainsets for regional service; and
- A regional rail service maintenance facility, and a storage track at Monterey for three trainsets.

Fleet Strategies

For mainline intercity service, the Vision Service concept requires an additional trainset (for a total of seven) for day-to-day operations, plus an additional two trainsets to provide spares. For the regional service between Santa Cruz and Monterey, four trainsets are required for day-to-day operations, plus one spare. Single-level, multiple-unit trainsets—whether diesel multiple unit (DMU), hydrogen fuel cell, battery-powered multiple units, or some other variant—would be best suited for the "around the bay" service on the Monterey and Santa Cruz Branch Lines. Their smaller size and flexibility would allow them to operate on both the UPRR Coast Subdivision mainline between Pajaro and Castroville, as well as through existing communities along the branch lines, without the need for overhead catenary systems.

Benefits Assessment

The Vision Service concept would achieve the transportation benefits of a mature multimodal network, which would serve a population of 750,000 with the implementation of regional rail service between Monterey and Santa Cruz. Rail would connect these communities with destinations as far north as San Jose and as far south as King City within two hours. With Vision Service rail replacing bus between Monterey and Santa Cruz, additional travel time would be saved, benefiting trips throughout the network. By attracting trips away from driving, the expanded Vision rail service would avoid two fatalities and 29 traffic injuries annually.

With all-rail Vision Service, annual ridership between San Francisco and San Luis Obispo would increase to 617,000 and between Monterey and Santa Cruz to 925,000; VMT would be reduced by 42.7 million miles in the corridor between Gilroy and San Luis Obispo and by 83.4 million miles between Monterey and Santa Cruz. Vision Service between Gilroy and Salinas would reduce GHG emissions by up to 3,200 metric tons of carbon dioxide equivalent, and between Monterey and Santa Cruz by 17,400 metric tons of carbon dioxide equivalent.

Employment access would increase with Vision Service; rail would connect Monterey, Santa Cruz, and communities in between as far north as Gilroy and as far south as Soledad within a 90-minute commute. Implementing Vision Service is estimated to result in 10,000 person years of employment and generate an economic output of $1.6 billion and tax revenues of $152 million.

Governance and Operations Recommendations

Under the Vision Service concept, administrative responsibilities would have additional complexity, with more service and two types of service to coordinate and administer. Train operations could be provided through a combination of contract operations and/or a new self-operating entity. In the case of contract operations, the governing body could issue separate contracts for the mainline service and for the regional service, or could bundle the two services under a single contract.

Governance needs for implementing and operating the Vision Service concept include acquiring new multiple unit trains, executing an agreement with an operator or obtaining operating capability for the new regional rail service, and negotiating agreements with UPRR for track access between Castroville and Pajaro for the regional trains. A JPA established to deliver the Phased Service concept could be expanded to include operation of the regional service.

Funding, Financing and Grants Strategy Recommendations

The Vision Service concept capital costs are estimated at $79 million for intercity rail and $767 million for regional rail between Monterey and Santa Cruz. Annual rail operations and maintenance costs are estimated at $56.9 million and annual rail ticket revenues are estimated at $20.8 million – a farebox recovery rate of 37 percent. Annual bus operations and maintenance costs are estimated at $995,000 and annual bus ticket revenues are estimated at $227,000 – a farebox recovery rate of 23 percent.

Available funding sources for the Vision Service concept, which would be implemented about 25 years in the future, are not known at this time. That said, TAMC and its project partners can start considering future revenue generating sources early on, such as tax increment financing districts, assessment districts, and local taxes. These local and regional revenue sources can be in place for several decades, providing capital for the projects and making them more competitive for grants.

Next Steps

To extend rail service from Gilroy to Salinas, the immediate next step to achieve the Study's service vision, TAMC would pursue an agreement with Caltrain for contracted operations, allowing relatively quick implementation and with minimal investment in infrastructure. Modeling efforts and track access agreements will have to be coordinated with UPRR. Major next steps for securing funding for the extension include initiating conversations with priority granting agencies, initiating environmental review, and progressing transportation and economic impact analyses.

As a key stakeholder, Caltrans has provided valuable guidance and coordination for this Study. In turn, the Study's findings and recommendations have informed and are being incorporated into the next iteration of statewide rail network integration, the 2022 CSRP. Ongoing engagement with other stakeholders and the public will be needed to maintain and build support for the service vision as it advances into the three stages of implementation.