

# Caltrain Short-Range Transit Plan: FY2023-2028

Adopted December 1, 2022



# ACKNOWLEDGEMENTS

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The preparation of this report has been funded in part by a grant from the U.S. Department of Transportation (DOT) through section 5303 of the Federal Transit Act. The contents of this SRTP reflect the views of the Peninsula Corridor Joint Powers Board, and not necessarily those of the Federal Transit Administration (FTA) or the Metropolitan Transportation Commission (MTC). Peninsula Corridor Joint Powers Board is solely responsible for the accuracy of the information presented in this SRTP.

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# 1 Introduction

The following Short Range Transit Plan (SRTP) provides a near-term service outlook for Caltrain during fiscal years (FY) 2023-2028. This SRTP is produced by the Peninsula Corridor Joint Powers Board (JPB), the entity that owns and operates the Caltrain commuter rail service. This chapter introduces Caltrain and the SRTP process.

## 1.1 Caltrain Overview

Caltrain provides inter- and intra-county commuter rail service on the San Francisco Peninsula, including San Francisco, San Mateo, and Santa Clara Counties. Caltrain serves 31 stations along the 77.2-mile route between San Francisco and Gilroy, as illustrated in the system map presented in **Figure 1-1**. Gilroy Extension service is provided on Union Pacific-owned track and is governed by a trackage rights agreement between Union Pacific and Caltrain.

The Peninsula Corridor Joint Powers Board (JPB) operates Caltrain 365 days a year with reduced schedules on major U.S. holidays and weekends. Most trains operate between San Francisco and San Jose, serving 24 stations full-time. On weekdays, northbound service from Gilroy is provided during the morning commute period, and southbound service to Gilroy is provided during the evening commute period. On weekends, trains operate exclusively between San Jose and San Francisco. Weekend-only service is provided to Broadway Station while the College Park Station is served by only four trains each weekday. Stanford Station receives service on athletic event gamedays only.

Caltrain has direct rail connections with each of the major transit operators along its route including Muni, BART, SamTrans, VTA, ACE, and Amtrak’s Capitol Corridor and Coast Starlight. Additionally, Caltrain connects to numerous first/last mile shuttle services operated by SamTrans, Commute.org, individual cities, and the private sector.

## 1.1 SRTP Policy Context

This SRTP adheres to a set of guidelines prescribed by the Metropolitan Transportation Commission (MTC) in Resolution No. 4512, the Commission’s most recently adopted (2022) resolution for SRTPs. These documents provide the Federal Transit Administration (FTA) and MTC with operators’ information necessary to meet regional fund programming and planning requirements. Federal statutes require MTC, in partnership with the State and with local agencies, to develop and periodically update a long-range Regional Transportation Plan (RTP), and a Transportation Improvement Program (TIP), which implements the RTP by programming federal funds to transportation projects contained in the RTP. To effectively execute these planning and fund programming responsibilities, MTC, in cooperation with Region IX of the FTA, requires each transit operator receiving federal funding through the TIP (federal grantees within the MTC region) to prepare, adopt, and submit an SRTP. Transit operators are required by MTC to prepare an SRTP every four years to remain eligible to receive federal funding.

Figure 1-1: Caltrain System Map



The COVID-19 pandemic has significantly impacted transit operations. A decrease in ridership, changes in travel patterns, and uncertainties in farebox revenues have created enormous planning and operational challenges for Bay Area transit operators. While federal relief funds provided a significant stop gap during the pandemic, it is anticipated that these funds will be exhausted within the next two fiscal years for most transit operators. In light of this crisis, MTC has required transit operators to reimagine and restructure their SRTPs to help plan for and navigate through the continued uncertainties.

In contrast to previous SRTPs that documented each agency's 10-year operating and capital plans, MTC's revised approach narrows the scope to a five-year planning horizon with a focus on operations planning. The revised approach also includes a new element, scenario planning, which requires operators to consider how service plans might be adapted under different revenue constrained scenarios. Accordingly, this SRTP cycle asked operators to consider and make projections of service levels within operating budgets provided by MTC under three scenarios, described below. For each of these SRTP scenarios, this document shows the operating budget prescribed by MTC for each scenario and describes the service Caltrain could afford to provide within that constrained budget each year. **Additionally, Caltrain has added one additional scenario – Caltrain Electrified Service – to show the railroad's anticipated operating costs and revenues for its planned service in the next five years.** It is important to note that none of the scenarios include information about the agency's capital needs, which are separate and significant.

The SRTP scenarios from MTC include the first three listed below, followed by Caltrain's own scenario as the fourth:

1. **Robust Recovery:** There is adequate funding to return overall revenue to 100 percent of pre-pandemic levels, with escalation. This would not assume proportionate recovery across all revenue sources.
2. **Revenue Recovery, with Fewer Riders:** Federal relief funds are eventually exhausted, although other funds recover to pre-pandemic levels. However, farebox revenue remains stagnant (20-50 percent below pre-pandemic levels, depending on current status) for the next five years.
3. **Some Progress:** Federal relief funds are eventually exhausted and total revenue available to the agency is 15 percent below pre-pandemic levels for the next five years.
4. **Caltrain Electrified Service:** Caltrain's operating plans for the next five years, with the railroad's anticipated operating costs and revenues expected to result in an operating deficit each year.

## 1.2 Relationship to Caltrain Electrification

The Caltrain Electrification project encompasses the delivery of a \$2.4 billion package of infrastructure projects to the Caltrain system by the third quarter of 2024 (FY25). The Caltrain Electrification project is codified and funded through a nine-party Memorandum of Understanding that was signed by the JPB, the California High-Speed Rail Authority (CHSRA), MTC, and other regional entities in 2012, as well as a seven-party supplement signed in 2016. This project is also included in the MTC Regional Transit Expansion Program (Resolution 3434) that was adopted in 2001 and amended in 2008.

In FY25, the project will electrify and upgrade the performance, operating efficiency, capacity, safety, and reliability of Caltrain's commuter rail service through the delivery of several key projects, including the electrification of the existing Caltrain corridor between San Francisco and San Jose (also known as PCEP, the Peninsula Corridor Electrification Project) and the replacement of a majority of Caltrain's diesel trains with high-performance electric trains called Electric Multiple Units (EMUs). Caltrain has committed to operating a minimum of 116 trains per day as specified by its Full Funding Grant Agreement (FFGA) with the FTA, including a mixed operation of EMU and diesel locomotive service.

The scenarios in this SRTP are consistent with the anticipated timing and fleet composition of the Caltrain Electrification project (mixed operation of EMU and diesel locomotive service starting in the third quarter of 2024, or the second quarter of FY25). For the amount of service provided in FY25, however, only two of MTC’s scenarios (Robust Recovery and Some Progress) provide Caltrain with operating budget amounts that would allow the agency to afford running train service that is consistent with its FFGA commitment to operate a minimum of 116 trains per day. In FY25, Caltrain’s own scenario shows the agency’s estimated operating cost of providing train service with 116 trains per day, as well as the anticipated revenue, which leads to a projected deficit.

### 1.3 Relationship to the Caltrain Business Plan

The railroad commenced the extensive planning process for the Caltrain Business Plan in 2018. The agency’s Long-Range Service Vision was adopted by the Caltrain Board of Directors in 2019, covering train service patterns, infrastructure needs, and estimated costs and outcomes. The Business Plan documented a broader range of choices, services, investments, and changes available to Caltrain, along with a business case for the Long-Range Service Vision and an implementation plan for achieving it. In 2020, Caltrain paused its Business Plan efforts to focus on pandemic recovery, initiating a scenario planning process (described in Chapter 4) that allowed exploration of potential different futures for the railroad. Staff developed full operating scenarios for each future, including service levels, operating costs, ridership, revenue, and capital investments that could be expected in each. The information from the railroad’s scenario planning process has been utilized in this SRTP to show how Caltrain could respond to the three operating budget scenarios provided by MTC.

As noted above, unlike previous SRTPs, this FY23-28 SRTP does not include the agency’s 10-year operating and capital plans. Instead, it presents information to demonstrate how Caltrain would respond to various operating budget scenarios requested by MTC, as well as Caltrain’s five year operating plan with anticipated costs and revenues. The Business Plan and the Long-Range Service Vision remain Caltrain’s guides for its long-term growth and future, and the scenarios in this SRTP would not preclude the agency’s ability to achieve this vision for growth in the long term.

### 1.4 Contents of the FY2023-28 SRTP

This SRTP presents information about Caltrain’s pre-pandemic service in Chapter 2, followed by information about current service (as of 2022) in Chapter 3. The last two chapters focus on presenting the information required by MTC for each of the scenarios, with Chapter 4 introducing the scenario planning concepts and Chapter 5 providing detailed information about operations for each of the three MTC scenarios and Caltrain’s own Electrified Service scenario.

## 2 Pre-Pandemic State of Service

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### 2.1 Service Overview

Caltrain's pre-pandemic service was composed of a mix of 92 express (Baby Bullet), limited, and local trains, serving communities from San Francisco to Gilroy. Scheduled headways varied by time of day, station, and service type. Overall, service was most frequent during the peak commute periods, with hourly trains in both directions during midday periods. Weekday northbound service began at 4:28 AM and ended at 12:05 AM the next day. Weekday southbound service began at 4:55 AM and ended at 1:38 AM the next day. Caltrain operated 28 trains on Saturday and 24 on Sunday, with service primarily composed of hourly local trains supplemented by two Baby Bullet trains in each direction per day. Saturday northbound service began at 7:08 AM and ended at 12:14 AM the next day, while southbound service began at 8:07 AM and ended at 1:45 AM the next day. Sunday's service span was more constrained, with northbound service beginning at 8:11 AM and ending at 11:52 PM, and southbound service running from 8:07 AM to 11:22 PM.

Caltrain operated three styles of commuter rail service in a highly customized schedule:

- **Express (Baby Bullet) Service** provided a ~60-minute trip between San Francisco and San Jose, with stops at six to eight stations, including terminal stations. Caltrain operated 22 Baby Bullet trains on weekdays (11 per direction) and four on weekend days (two per direction).
- **Limited Service** included trains operating a skip-stop or limited-local service, stopping at approximately half of the stations between San Francisco and San Jose. Some limited trains operated in an iterative skip-stop pattern while others provided local service within a geographic segment of the corridor while operating as express trains in other areas. Run times for limited trains were longer than those of Baby Bullets trains, averaging roughly 70 to 80 minutes. Caltrain operated a total of 42 limited trains on weekdays and none on weekends.
- **Local Service** trains stopped at all stations and operated outside the weekday peak period only. Travel times for local trains between San Francisco and San Jose were approximately 90 minutes. Caltrain operated 26 local trains per weekday, 22 local trains on Saturdays, and 20 local trains on Sundays. Weekend service frequency had been temporarily reduced in 2017 due to PCEP construction activity. Three local trains provided service between San Jose and Gilroy each direction each weekday (three northbound in the morning and three southbound in the afternoon).

Given Caltrain's blend of services, the level of train service at each individual station along the route was variable, especially during weekday peak periods. During the AM and PM peak periods, all stations receiving express service were served by at least one Baby Bullet per hour, with general headways ranging between 15 to 30 minutes. Some higher frequency "Bullet Stations" and terminals, including San Francisco, Palo Alto, and San Jose Diridon, were served by at least two Baby Bullet trains per hour. "Non-Bullet" stations were served by limited and local trains at headways ranging between 30 minutes to 60 minutes during peak periods. During off-peak periods (early morning, midday, and after 7:00 PM), headways at all stations were generally about 60 minutes. Overall, the weekday schedule included peak period service of five trains per hour per direction, off-peak service of one train per hour per direction, and reduced weekend service every 90 minutes due to construction activity in 2018 and 2019.



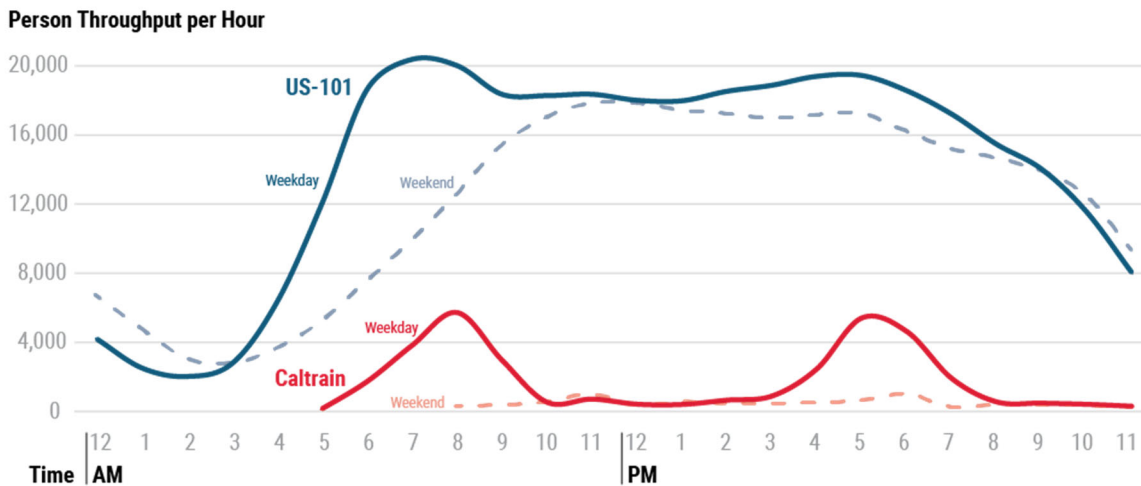
Caltrain provided supplemental service to large, special events along the corridor in the form of extra trains. Service to special events (such as extra trains serving San Francisco Caltrain Station during San Francisco Giants home baseball games) was monitored year-round and was periodically adjusted to meet passenger demand and operational conditions.

## 2.2 Ridership Patterns

### 2.2.1 Corridor Travel Patterns

As the primary north-south transit connection between San Francisco and San Jose, Caltrain plays a key role in commute and regional travel. Prior to the pandemic, about 80 percent of weekday ridership occurred during peak commuting periods when service levels were highest and regional traffic congestion was at its worst. While US 101 experienced high traffic volumes, varying levels of traffic congestion throughout the day, and increasingly longer peak hours, Caltrain experienced two distinct peak periods in the morning and evening. During peak periods, Caltrain carried around 10 percent of all regional travel between San Francisco and the Peninsula/South Bay, or the equivalent of about two-and-one-half lanes of freeway traffic in the peak direction. During off-peak and weekend periods, Caltrain’s share dropped to around 1-2 percent of regional travel due to lower service levels. **Figure 2-1** depicts pre-pandemic weekday and weekend travel volumes along the Caltrain corridor crossing the San Francisco County line for Caltrain and US 101.

**Figure 2-1: Pre-Pandemic Usage of Caltrain Compared with Highway 101, by Time of Day**



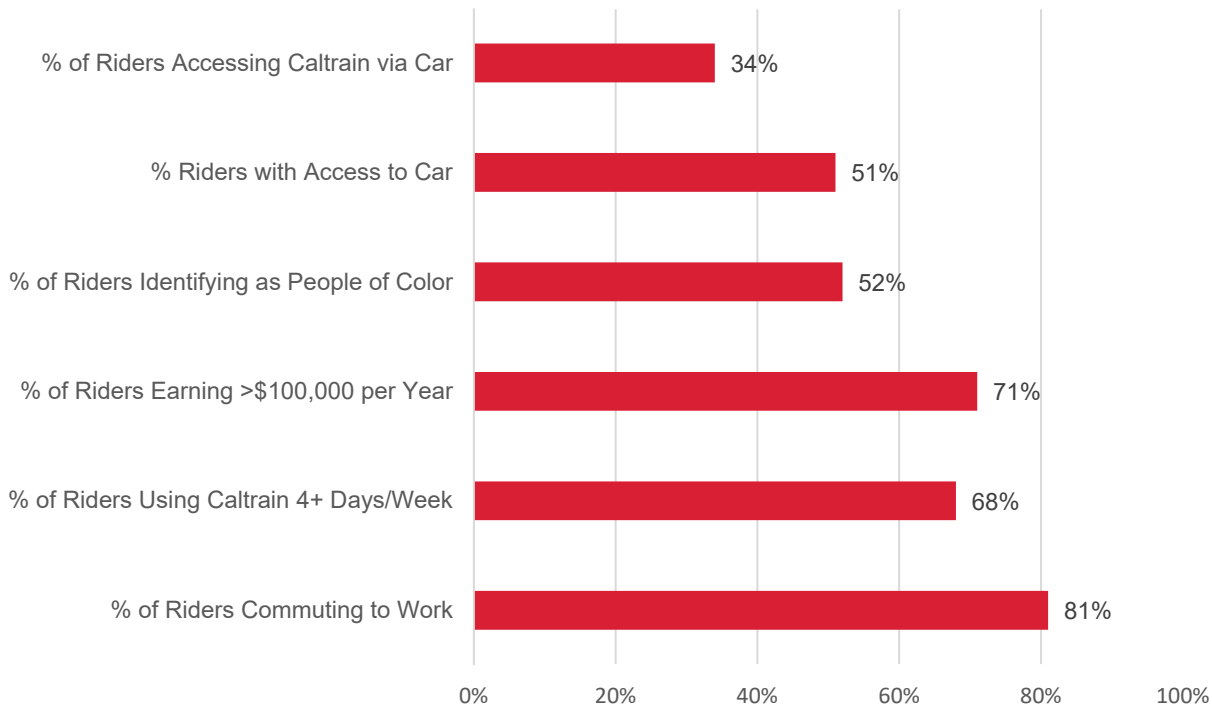
Although Caltrain served high ridership during peak periods, ridership patterns on parallel bus operators demonstrated that Caltrain was not fully capitalizing on off-peak markets: Muni, SamTrans, and VTA each operated a handful of long-haul routes along the Caltrain corridor, primarily along El Camino Real. These routes provided consistent service levels starting in the morning through the late evening without differentiating peak and off-peak service.

Caltrain experienced substantial ridership growth over the two decades leading up to the pandemic —nearly tripling its ridership since the mid-1990s and doubling since the Great Recession in 2010. In 2019, Caltrain served approximately 65,000 riders on weekdays and 12,000 riders on weekends, translating to approximately 18 million passengers per year. Caltrain’s ridership growth was fueled by a combination of service improvements (e.g., the introduction of Baby Bullet trains in 2004), access improvements (e.g., the BART to Millbrae connection in 2003), and regional economic growth (especially employment growth in the technology sector and transit-oriented development near stations).

### 2.2.2 Rider Characteristics

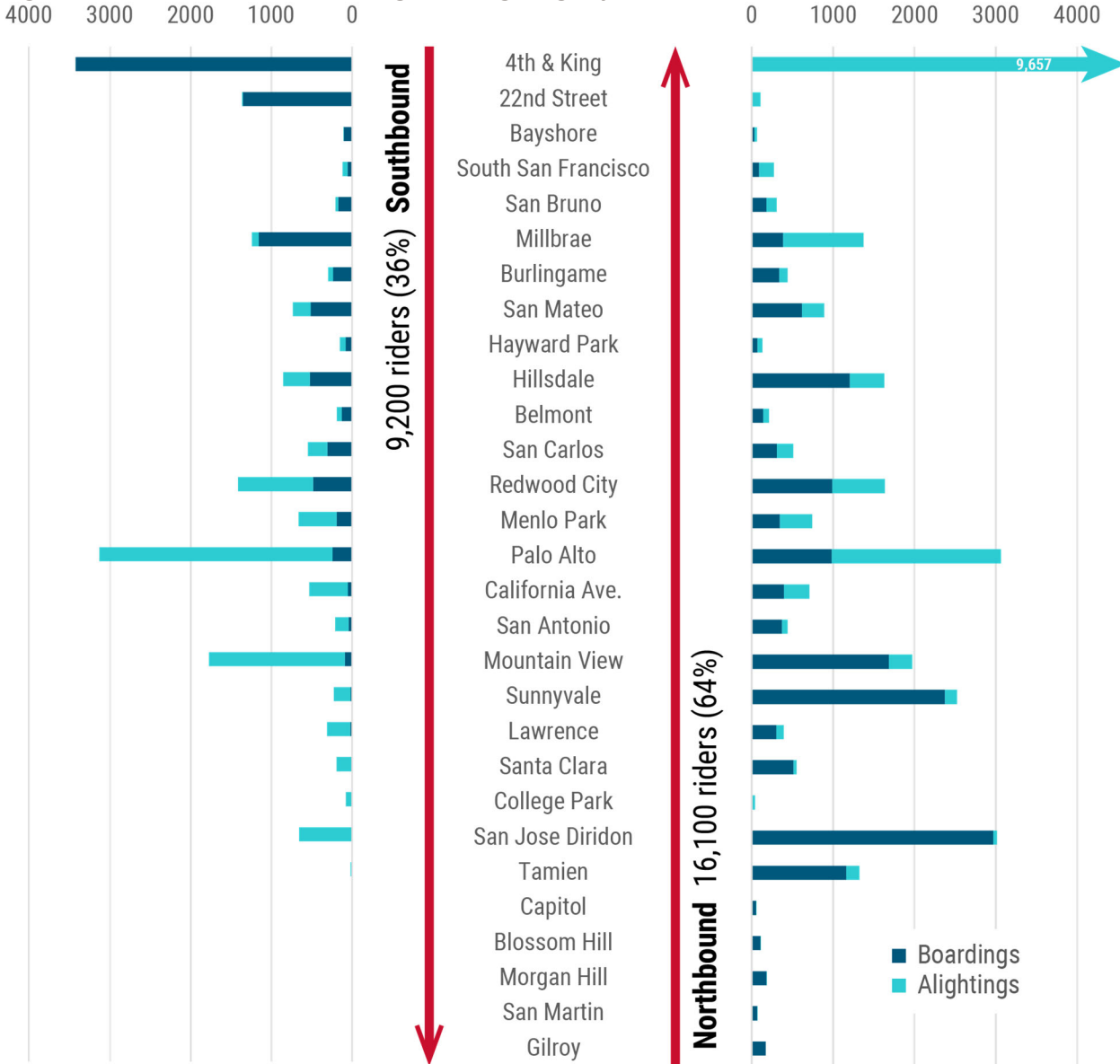
Caltrain’s pre-pandemic ridership was primarily oriented toward daily commuters. As illustrated in **Figure 2-2**, about 81 percent of all riders traveled to or from work, and 68 percent of riders traveled on Caltrain at least four days per week. With its focus on serving commuters, Caltrain’s ridership tended to be wealthier and less diverse than other transit operators. Nonetheless, riders depended on Caltrain for regional travel: 51 percent of riders lacked access to a car, and only 34 percent of riders used a car to access Caltrain stations.

**Figure 2-2: Summary of Pre-Pandemic Rider Characteristics (2019 Triennial Survey)**



Unlike traditional commuter railroads, Caltrain serves a polycentric corridor with strong travel markets in both directions. Pre-pandemic, during the AM peak period, 64 percent of riders traveled northbound to employment hubs primarily in San Francisco, San Mateo, Redwood City, and Palo Alto. In the southbound direction, 36 percent of riders travelled to employment hubs mostly in San Mateo, Redwood City, Palo Alto, Mountain View, and San Jose. **Figure 2-3** shows pre-pandemic AM peak boardings and direction of travel by station.

Figure 2-3: AM Peak Period Boardings and Alightings by Station, 2017



As ridership grew in the mid-2010s, Caltrain experienced crowding in both directions. Ridership typically exceeded the number of seats on about half of all trains during peak periods. Baby Bullet trains usually operated well beyond their seated capacity (up to 140 percent above seated capacity) while Limited trains were typically near capacity (80-100 percent occupancy). Pre-pandemic train crowding indicated latent demand for increased Caltrain service in the corridor if more comfortable conditions were provided.

### 2.3 Funding Operations

Caltrain relied heavily on farebox revenue to fund its train operations pre-pandemic. Farebox recovery was 70-74 percent between 2015 and 2019 and had been steadily increasing since 2009 due to ridership growth and fare increases. In December 2018, the JPB adopted a farebox recovery rate goal of 65 percent as part of the Caltrain Fare Policy (an increase from the previous 45 percent minimum goal). In addition to passenger fares, the JPB’s three member agencies (San

Francisco, San Mateo, and Santa Clara counties) provided nearly \$30 million each year to fund Caltrain operations. Parking, rental income, and other income largely rounded out Caltrain’s annual revenue in its operating budget.

## 2.4 Staffing

As managing agency for Caltrain, the San Mateo County Transit District employs the administrative staff to manage the Caltrain system. Most staff are based at the District’s administrative headquarters in San Carlos. The Rail Division is responsible for the day-to-day operation of Caltrain and provides direct oversight of the contract operator, TransitAmerica Services, Inc. (TASI). The TASI contract provides for Railroad management, dispatch, safety, operations and maintenance of track, signals, systems, and vehicles. The contract also provides for construction support. In total, Caltrain had 561 full-time equivalent staff under pre-pandemic conditions, including both administrative staff and TASI staff.

## 3 Current State of Service

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### 3.1 Priorities, Goals, and Processes

As a part of Caltrain's COVID recovery efforts, the agency has made several policy changes aimed at diversifying its ridership and improving access for underserved populations and essential workers.

#### 3.1.1 Equity, Recovery, Connectivity, & Growth Framework

Adopted in 2020 by the JPB, the Caltrain Framework for Equity, Connectivity, Recovery & Growth was developed to provide guidance to staff and transparency to the public as the railroad navigated a prolonged period of intensive challenges and transformation. The Framework for Equity, Connectivity, Recovery & Growth outlines principles and policies for how Caltrain will navigate near- and mid-term challenges while incrementally advancing toward the Long-Range Service Vision identified in the Business Plan.

Caltrain defines equity in terms of access to the opportunity provided by the system as well as the fair distribution of the railroad's impacts. The Peninsula Corridor has hosted rail service for nearly 160 years, and both historically and currently, railroads often lead to or exacerbate harmful disparities in access and impacts for poor and/or minority communities. Age, gender, disability, and English proficiency can also expand or constrain access opportunities. The Framework for Equity, Connectivity, Recovery & Growth outlines key steps toward reversing such disparities by focusing railroad resources and attention toward those most harmed by a lingering legacy of racism and discrimination in the community and along the rail corridor. The Framework includes the following guiding principles:

- Caltrain shall make a priority of enhancing equity in its system, focusing on the diverse constituency of riders who depend on transit for essential travel and addressing the historical inequities that have caused the rail service to be disproportionately underutilized by lower income riders and people of color.
- Caltrain recognizes its unique position as a critical link within the Bay Area's passenger rail network. The railroad will undertake policies and actions that improve its connectivity to other transit systems to strengthen its role as part of a regionally integrated network.
- Caltrain must address the needs of the present while simultaneously planning for and working toward a long-term future. The agency will endeavor to proceed on a path of recovery and growth that anticipates, advances and, where possible, accelerates the incremental delivery of the 2040 Long Range Service Vision.

#### 3.1.2 Blue Ribbon Task Force

In May 2020, the MTC released a framework that led to the creation of a 32-member Blue Ribbon Transit Recovery Task Force. The Task Force consists of local elected officials, business and labor groups, disability and social justice advocates, and representatives of various Bay Area transit operators, including Caltrain. In July 2021, the Task Force approved 27 near-term actions in the Bay Area Transit Transformation Action Plan to reshape the Bay Area's transit system into a more connected, efficient, and user-friendly network. Caltrain continues to work with other agencies in the region on implementation efforts, including schedule coordination improvements, fare coordination and integration, and wayfinding and hub signage.

### 3.1.3 Fare Changes

Caltrain made several fare changes aimed at increasing ridership during the pandemic. In 2020, the Caltrain Board of Directors voted to postpone planned fare increases. In April 2022, Caltrain provided a 50 percent fare discount to capitalize on return-to-work momentum. In May 2022, the Caltrain Board of Directors again voted to postpone planned fare increases. During the pandemic, Caltrain expanded its participation in Clipper START, a regional means-based fare pilot program that allows eligible, low-income adult Caltrain riders to receive a 50 percent fare discount off the adult single ride fare. Caltrain also created a program for employers to donate unused Go Passes to a network of qualified community-serving organizations.

## 3.2 Service Changes

This section summarizes the service changes that Caltrain has implemented during the pandemic.

### 3.2.1 Initial Service Changes

Starting in March 2020, the emergence of the COVID-19 pandemic resulted in a rapid and severe crisis for the railroad, with ridership plummeting by as much as 98 percent. Caltrain quickly implemented significant service cuts down to 42 weekday trains at the end of March 2020. In June 2020, Caltrain began incrementally restoring service levels to 70 weekday trains as shelter-in-place restrictions eased. The Equity, Connectivity, Recovery & Growth Policy was used to develop a 70 train per weekday service schedule that was implemented in December 2020 and adjusted in March 2021 to coincide with an update to BART's timetable and to improve service for essential workers and transit-dependent riders. This service focused on providing a simplified set of train patterns, improved half-hourly midday and hourly weekend service levels, and coordinated connections at the Millbrae BART station.

During the pandemic, Caltrain modified its weekday and/or weekend timetable seven times to meet changing conditions and needs. The number of weekday trains has fluctuated to adequately & equitably serve riders, manage costs and recover ridership. Weekend service also changed during the pandemic. In December 2020, the Atherton Station was permanently closed and Weekend Baby Bullet Express service was discontinued. The old Hillsdale Station closed in May 2020 and the new relocated Hillsdale station opened in April 2021.

### 3.2.2 Current Service Structure

As pandemic conditions continued to evolve, Caltrain increased service to 104 weekday trains in August 2021. This restoration provided a more competitive service offering as commute travel and in-person education resumed. The service change also provided a further opportunity to continue implementation of the Equity, Connectivity, Recovery & Growth Policy — with an emphasis on providing improved service at all times of day, a simplified set of stopping patterns, and coordinated connections with other transit operators at key regional transfer points. The current 104 weekday train schedule includes peak period service of four trains per hour per direction, off-peak service of two trains per hour per direction, and hourly weekend service. At the same time, Caltrain continues to balance constraints created by significant ongoing construction activities, staffing availability, and overall financial capacity. In particular, Caltrain implemented temporary construction schedules twice in Spring 2022 to accommodate single tracking needs, with 88 weekday trains instead of 104 trains, and will make further temporary schedule adjustments to accommodate construction until the conclusion of PCEP. During the pandemic, Caltrain reduced the number of passenger cars from a mixture of 5 and 6-car

sets (to meet pre-COVID ridership demand) to 5-car sets starting in December 2020 as an operations and maintenance cost saving measure with the significant ridership decrease.

### 3.3 Changes to Ridership and Travel Behavior

This section summarizes the changes to ridership and travel behavior that have affected Caltrain during the pandemic.

#### 3.3.1 Ridership

Caltrain, like other transit services in the region, experienced a large decrease in ridership during the pandemic. Prior to the pandemic, in FY 2019, Caltrain served an average monthly ridership of 1.4 to 1.6 million rides. As shown in **Figure 3-1**, Caltrain’s average monthly ridership from April 2020 to June 2021 was fewer than 100,000 rides, a 94 percent decrease from the pre-pandemic average. From July 2021 to June 2022, in FY 2022, Caltrain saw average monthly ridership partially recover to about 500,000 rides, a five-fold increase when compared to the early pandemic period. However, monthly average ridership remains well below pre-pandemic levels, though weekend recovery has approached pre-pandemic levels of ridership.

**Figure 3-1: Caltrain Monthly Ridership**



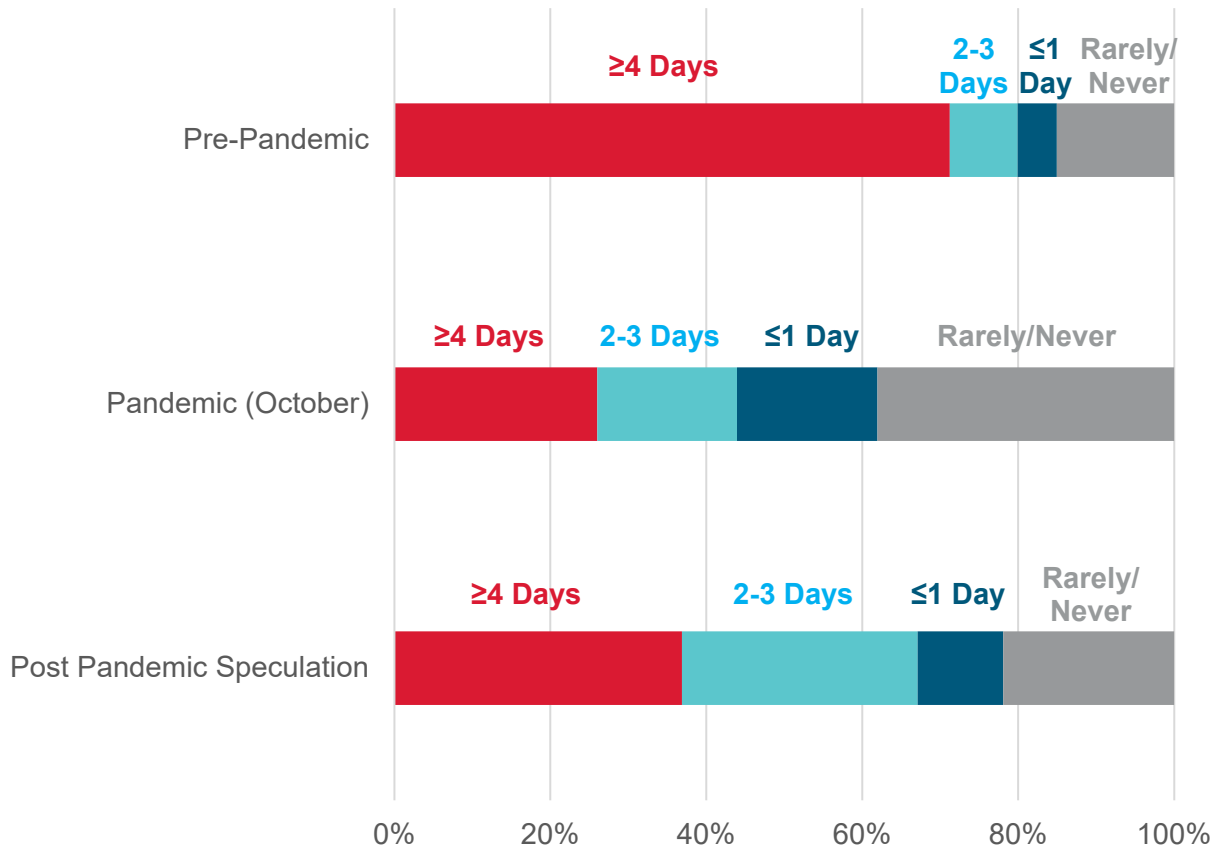
Source: Fare Media Sales Based Ridership Model.

#### 3.3.2 Travel Behavior

The multi-year pandemic coupled with enhancements to remote work technology has shifted most office workers to a fully remote or hybrid “in-person/remote” work schedule. In Fall 2021, Caltrain commissioned a survey of its three-county service area to understand how travel behavior had changed and what a post-pandemic “new normal” condition could look like. At the time of the survey, 61 percent of former riders stated they were not currently making any trips for which they would normally ride Caltrain, and 46 percent had substantial concerns about contracting COVID-19 while riding Caltrain. Although 70 percent of former riders expected to return to Caltrain once the pandemic was over, respondents

expected to continue hybrid and remote work schedules, contributing to an overall reduction in commute travel of about 30 percent (**Figure 3-2**). This survey mirrors results from other regional surveys by organizations like the Bay Area Council, suggesting that Caltrain can no longer depend on riders commuting everyday into the office. As of Summer 2022, average office occupancies along the corridor remain 60 percent below pre-pandemic levels according to Kastle, a building security company.

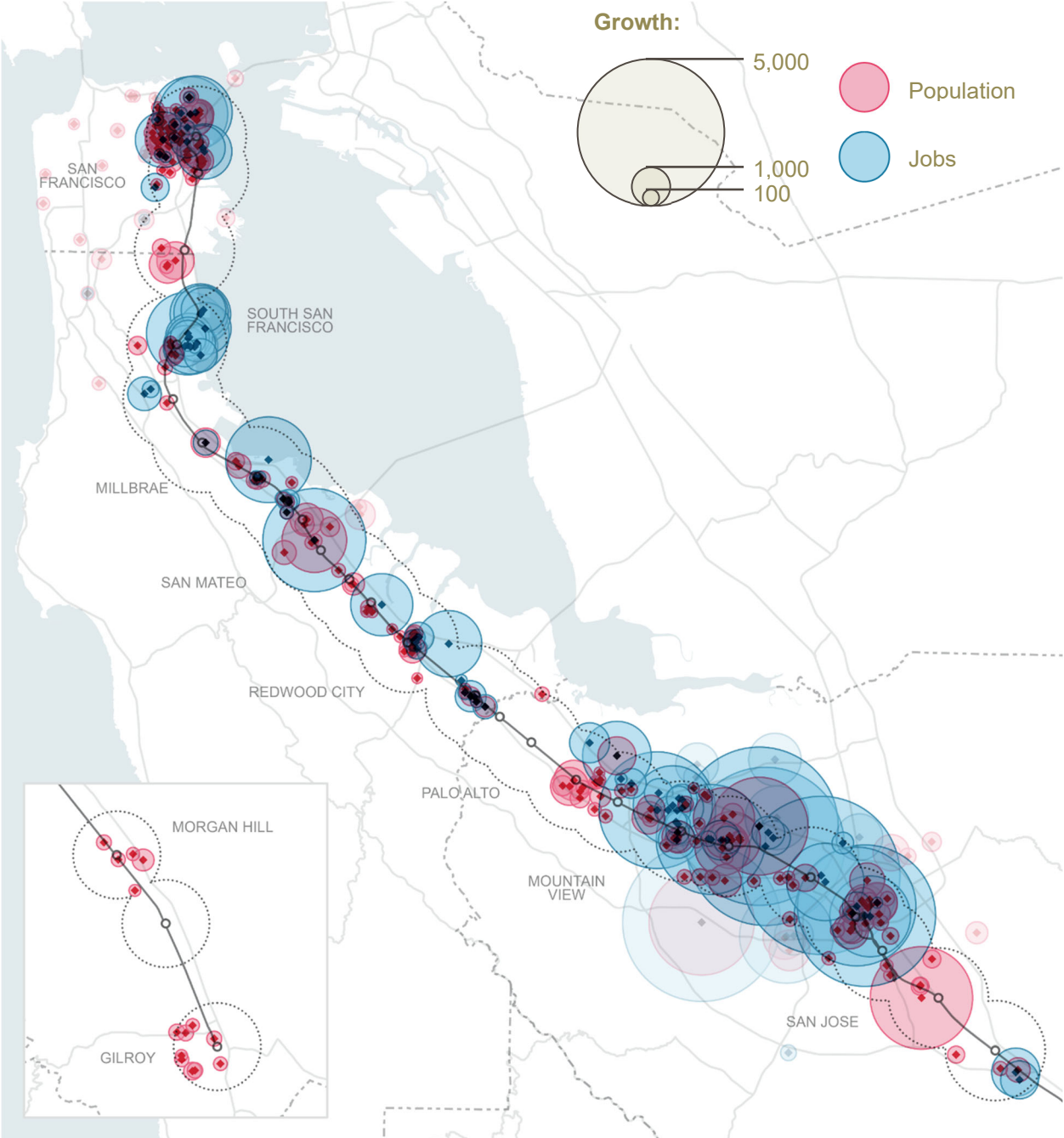
Figure 3-2: Frequency of Commuting - Fall 2021 Survey Results



While the pandemic continues to have lasting effects on travel behavior, a development boom is reshaping the Caltrain corridor, especially near Caltrain stations. Since 2019, the total number of residents and jobs located within one-half mile of Caltrain stations has increased by about 16 percent (**Figure 3-3**). Development activity in the residential and life science sectors present opportunities for Caltrain to serve new markets and partially backfill reductions in office commute travel.



Figure 3-3: Development Projects Under Construction and Completed Since 2019



Source: Fehr & Peers, Fall 2021. Based on a review of city planning websites.

## 3.4 Changes to Farebox Revenue and Operating Budget

This section summarizes the changes in farebox revenue and operating budget during the pandemic.

### 3.4.1 Farebox Revenue

The COVID-19 pandemic had a large effect on Caltrain's farebox revenue and its farebox recovery ratio, which is the fraction of operating expenses covered by passenger fares. Prior to the pandemic, in FY 2019, Caltrain received an average of \$8.6M in monthly fare revenue, with an average monthly farebox recovery ratio of 73 percent. Caltrain's monthly average fare revenue from April 2020 to June 2021 was \$2.1M, a 75 percent decrease from the pre-pandemic average. Caltrain's monthly farebox recovery ratio was 20 percent during this period, a 72 percent decrease from the pre-pandemic average.

From July 2021 to May 2022, in FY 2022, Caltrain experienced ridership growth, and monthly average fare revenue was \$2.7M, a 27 percent increase from the early pandemic period but 68 percent below pre-pandemic monthly fare revenues. Caltrain's monthly farebox recovery ratio was 23 percent during this period, a 14 percent increase from the peak pandemic period but 69 percent below the pre-pandemic average.

### 3.4.2 Operating Costs

Despite substantial changes in service levels over the past few years, Caltrain's operating costs have remained stable. Like other rail agencies in the United States, Caltrain has a high fixed-cost operation, meaning that its costs are not highly variable with the level of train service provided. As the owner and manager of the Peninsula rail corridor, the agency is responsible for maintaining its fixed guideway system comprised of extensive infrastructure, and as the provider of passenger rail service on the corridor, the agency is responsible for operating and maintaining its fleet of trains. Regardless of the level of service provided, Caltrain incurs these infrastructure and fleet operating and maintenance costs each year, and they are relatively "fixed" because they do not vary substantially if the service levels change. With the completion of Caltrain Electrification, Caltrain will have additional infrastructure and fleet associated with electrified service to operate and maintain; as a result, Caltrain's fixed costs are expected to increase after its electrification project is completed. Other costs, such as crew costs, are more marginal and can see some variation depending on the levels of service. Fuel and electricity are the only costs that vary directly with service levels, but these costs are also subject to price volatility (especially with rising fuel costs occurring in 2022).

As noted previously, the agency's forecasted operating costs are not the same as the operating budgets prescribed by MTC for the SRTP scenarios. Caltrain's forecasted operating costs for future years are shared in the fourth scenario for Caltrain Electrified Service in Chapter 5.

### 3.4.3 Operating Revenue

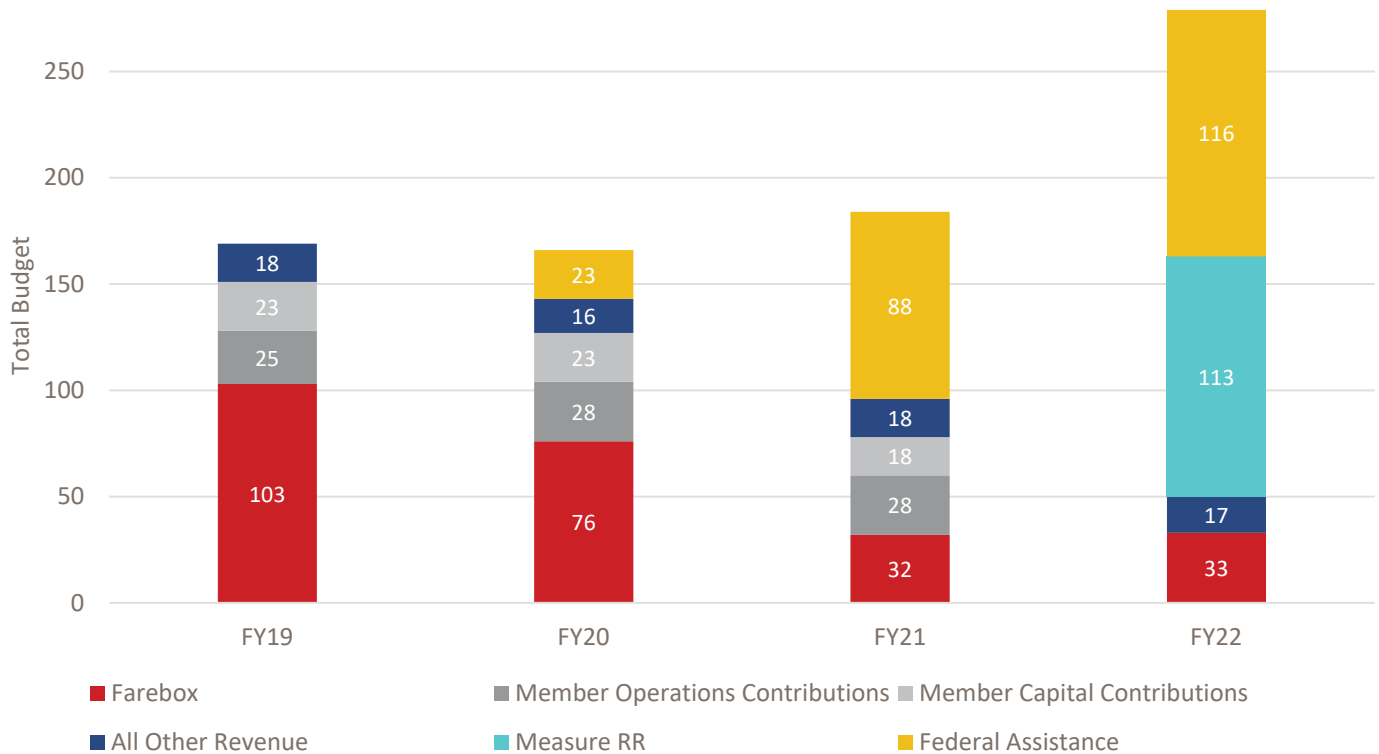
Caltrain's operating and capital funding sources have changed substantially during the past four years, as demonstrated in **Figure 3-4**, which shows the total amounts of funding the agency received from different sources each year (combining both operating and capital).

Focusing just on operating revenue, prior to the COVID-19 pandemic, Caltrain relied on farebox revenues to fund the majority of its operating budget, with member agencies also contributing significantly to support the railroad's operations.

Starting in FY20 with the pandemic, farebox revenues declined substantially, and member agency obligations were eliminated in the FY22 operating budget. The agency avoided a looming fiscal cliff through temporary federal assistance via three measures: the Coronavirus Aid, Relief, and Economic Security (CARES) Act (2020); the American Rescue Plan Act (2021); and the Coronavirus Response and Relief Supplemental Appropriations (CRRSAA) Act (2021), which together accounted for nearly half of Caltrain’s revenue in FY21 and FY22. Additionally, voters in San Francisco, San Mateo, and Santa Clara counties passed Measure RR in November 2020, which provides Caltrain with a dedicated funding source via a 1/8-cent sales tax, anticipated to generate over \$100M in revenue per year. In FY22, because of the amount of temporary federal funding received during the pandemic, Caltrain used Measure RR revenue to cover only 40 percent of Caltrain’s FY22 budget.

Looking down the tracks, Caltrain is expected to face significant financial challenges in the years ahead and has shared extensive information with the Caltrain Board about these future challenges. After federal assistance funds run out, Caltrain will rely heavily on fares and Measure RR revenue to fund its operations; however, revenue forecasts anticipate that existing revenue sources will *not* fully fund the agency’s operating costs. In fact, Caltrain expects to face a significant operating deficit in future years and has not yet identified funding sources to fully cover the forecasted gap between operating expenses and revenues. This is demonstrated in Caltrain’s scenario for Electrified Service that is presented in Chapter 5. The railroad is actively working with its partners to identify funding opportunities to help address Caltrain’s anticipated future financial challenges. As noted previously, the agency’s forecasted revenues do not align with the operating budgets prescribed by MTC for the other three SRTP scenarios.

Figure 3-4: Change in Operating and Capital Funding Sources, FY19-FY22



## 4 Scenario Planning Concepts

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This chapter presents high-level information about how Caltrain would respond to each of the scenario planning concepts developed by MTC for this SRTP, while Chapter 5 presents the required details about Caltrain operations for each of the scenarios. Both of these chapters also present information about the fourth scenario that Caltrain has elected to include, which reflects the agency's plans (as of September 2022) for future operations, the Caltrain Electrified Service Scenario.

It is critical to note that for this SRTP, MTC provided Caltrain with an operating budget for each of its scenario planning concepts for FY24-28 and asked the agency to describe the service it would provide in that scenario within those operating budget maximums; therefore, these scenarios do *not* present Caltrain's anticipated costs and revenue for the levels of service in each scenario for FY24-28. These three MTC scenarios will *not* show Caltrain's anticipated deficits and future financial challenges in FY24-28, however, because the exercise from MTC asked the agency to share how much train service could be provided within the operating budgets it prescribed Caltrain for each scenario. The FY24-28 information for the first three MTC scenarios presented in this document should therefore only be understood and used within the context of this SRTP exercise and *not* extrapolated to reflect Caltrain's operating plans for the future and its financial situation.

Importantly, through separate planning and budget efforts that have been shared with the Caltrain Board, the railroad has determined that revenues from existing available sources are anticipated to be significantly lower than operating costs, leading to forecasted operating deficits in the years to come. In other words, Caltrain's future reality is anticipated to present significant financial challenges for the agency. This forecasted operating deficit is demonstrated in the fourth scenario included in this SRTP, Caltrain Electrified Service.

It is also important to note that these scenarios do not address the railroad's capital needs, which are separate and significant. This is the case even in Scenario 4 – Caltrain Electrified Service, which sets aside \$25 million of Measure RR revenue (approximately 20 percent of the total amount of Measure RR annual revenue) for Caltrain's capital budget each year while acknowledging that this contribution is not sufficient to fully fund the railroad's significant annual and long-term capital program needs.

### 4.1 Priorities and Goals

The COVID-19 pandemic substantially impacted Caltrain's business and provoked larger, long-term shifts in the railroad's surrounding environment. As Caltrain shifted its Business Plan efforts toward recovery planning in 2020, it became clear that previous trends and assumptions were not necessarily a reliable guide to what may happen next. Through a collaborative process with staff, national experts, stakeholders, and agency leadership, Caltrain conducted a scenario planning process to reflect a more uncertain and volatile outlook for the railroad and surrounding environment. The agency then "financialized" these scenarios by developing service, operating cost, ridership, revenue, and capital investment profiles for each scenario, which was shared with the Caltrain Board in spring 2021. These scenarios align closely with the regional scenarios identified by MTC's SRTP scenario planning guidance.

The following scenarios are analyzed in this SRTP (Caltrain's corresponding scenarios from the scenario planning effort are noted in parentheses where applicable):

- **Robust Recovery (“Back on Track”) Scenario:** Funding returns to pre-pandemic levels with escalation to reflect growth in service identified in the Caltrain Business Plan. Caltrain would provide 168 trains per weekday starting in FY25 with mixed diesel and electric operations. All Measure RR revenues are assumed to support Caltrain operations each year in this scenario.
- **Revenue Recovery with Fewer Riders (“Downward Spiral”) Scenario:** Farebox revenues remain substantially below pre-pandemic levels due to a lagging ridership recovery, and federal relief funds are exhausted. Caltrain would reduce service to pre-pandemic levels of 92 trains per weekday starting in FY25 with mixed diesel and electric operations. All Measure RR revenues are assumed to support Caltrain operations each year in this scenario.
- **Some Progress (“Shark Tank”) Scenario:** Revenues recover to 85 percent of pre-pandemic levels as ridership returns. Caltrain would operate 116 trains per weekday starting in FY25 with mixed diesel and electric operations. All Measure RR revenues are assumed to support Caltrain operations each year in this scenario.
- **Caltrain Electrified Service Scenario:** Caltrain plans to operate 116 trains per weekday starting in FY25 with mixed diesel and electric operations. This scenario presents the agency’s forecasted operating costs and revenues for future years, drawing on the agency’s best estimates as of September 2022. In this scenario, \$25 million of Measure RR revenue (approximately 20 percent of the total Measure RR revenue) is expected to contribute towards but not fully fund the railroad’s separate long-term capital program each year, and the remaining Measure RR revenue is available to support operations each year.

Each scenario shares similar priorities in providing service across Caltrain’s 31 stations: maximizing ridership, preserving service coverage, supporting more equitable transportation outcomes, and maintaining a fiscally balanced operation. The three scenarios from MTC reflect levels of service that align with operating budget inputs provided by MTC for this exercise for FY24-28; however, as noted above, Caltrain’s actual revenues are anticipated to be much lower than these operating budgets, resulting in funding shortfalls and forecasted deficits in the years to come, which are demonstrated in the fourth scenario for Caltrain Electrified Service.

## 4.2 Service Assumptions

Caltrain would provide the following service under each scenario:

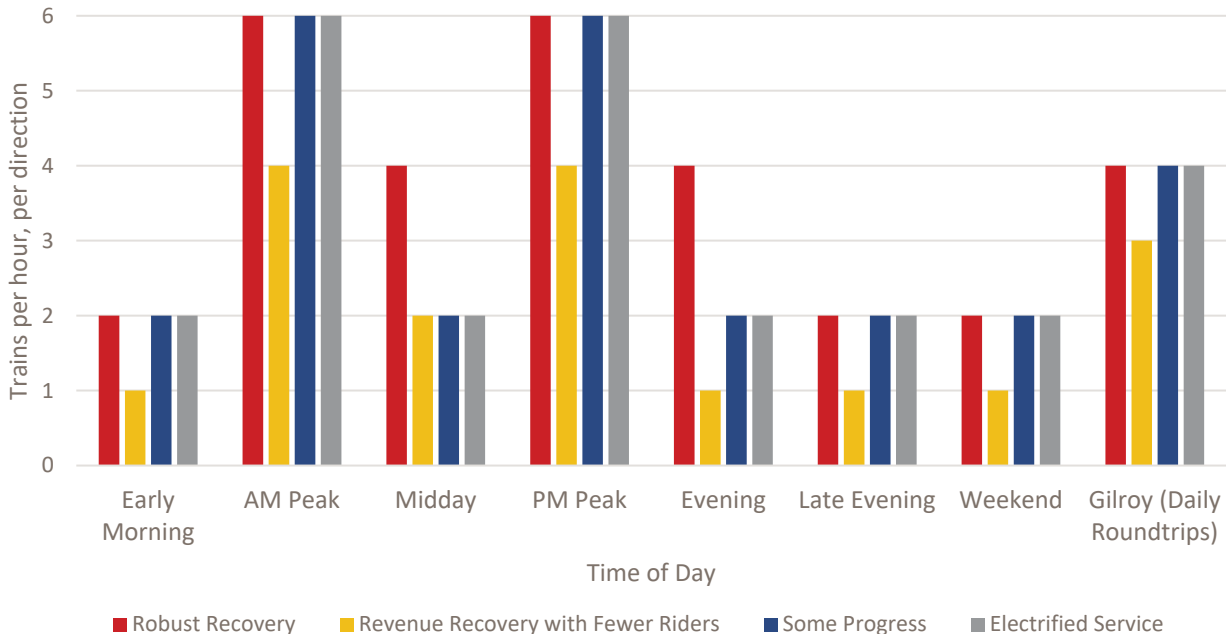
- **Robust Recovery:** After continuing to run 104 diesel trains per weekday through FY24, with the electrification project complete in FY25, Caltrain could afford to provide 168 trains per weekday (mixed diesel and electric operations), consistent with its FFGA commitment to provide at least 116 trains per weekday. Peak period service would include six trains per hour per direction with a mix of “Baby Bullet” and Limited trains. Caltrain would also operate longer peak periods of four hours each instead of 2.5 hours. Off-peak service would include four trains per hour per direction during the midday and evening periods, and two trains per hour per direction during the early morning and late evening periods. Four weekday roundtrips to Gilroy would be provided. Weekend service would include half-hourly trains between San Francisco and San Jose. Stations would generally receive two, four, or six trains per hour per direction during peak periods depending on demand and operational constraints.
- **Revenue Recovery with Fewer Riders:** After continuing to run 104 diesel trains per weekday through FY24, with the electrification project complete in FY25, Caltrain could only afford to reduce service to pre-pandemic levels of 92 trains per weekday (mixed diesel and electric operations), violating its FFGA commitment to provide at least

116 trains per weekday. Peak period service would include four trains per hour per direction with a mix of Baby Bullet and Limited trains. Off-peak service would include two trains per hour per direction during the midday period, and one train per hour per direction during the early morning, evening, and late evening periods. Three daily roundtrips to Gilroy and hourly weekend service would be provided. Stations would generally receive one, two, or four trains per hour per direction during peak periods depending on demand and operational constraints.

- Some Progress:** After continuing to run 104 diesel trains per weekday through FY24, in FY25 Caltrain could afford to operate 116 trains per weekday (mixed diesel and electric operations), consistent with its FFGA commitment. Peak period service would include six trains per hour per direction with a mix of “Baby Bullet” and Limited trains. Off-peak service would include two trains per hour per direction during the early morning, midday, evening, and late evening periods. Four daily roundtrips to Gilroy and half-hourly weekend service would be provided. Stations would generally receive two, four, or six trains per hour per direction during peak periods depending on demand and operational constraints.
- Caltrain Electrified Service:** After continuing to run 104 diesel trains per weekday through FY24, in FY25 Caltrain would operate 116 trains per weekday (mixed diesel and electric operations) to meet its FFGA commitment. Peak period service would include six trains per hour per direction with a mix of “Baby Bullet” and Limited trains. Off-peak service would include two trains per hour per direction during the early morning, midday, evening, and late evening periods. Four daily roundtrips to Gilroy and half-hourly weekend service would be provided. Stations would generally receive two, four, or six trains per hour per direction during peak periods depending on demand and operational constraints.

Figure 4-1 compares the service levels by scenario, demonstrating the differences in peak and off-peak service frequency.

Figure 4-1: Service Comparison by Scenario, FY25-28



### 4.3 Equity Considerations

As described in Caltrain’s Equity, Connectivity, Recovery, and Growth Framework, Caltrain would undertake the following actions to ensure that equity priority communities are incorporated into each scenario:

1. Undertake service changes and system improvements in a manner that enhances equity and access for historically disadvantaged and underserved groups and communities.
2. Take steps to ensure the Caltrain system is affordable to all, and that fare policies are equitable.
3. Manage the corridor, including railroad facilities, lands, and projects, in a manner that addresses equity and the historical impacts that the rail line and its operation have had on lower-income and minority communities.
4. Ensure that Caltrain communicates and interacts with customers in a manner that is equitable and welcoming to all.
5. Sustain and deepen Caltrain's commitment to equity through an ongoing program of organizational development, learning and accountability.

### 4.4 Fleet Impacts

All scenarios would have comparable effects on Caltrain’s fleet. Caltrain would continue operating as a diesel railroad through FY24. In FY25, Caltrain would begin operating a mixed fleet of electric multiple units (EMU) and diesel locomotive service, with diesel locomotive service primarily focused on peak period trips to and from Gilroy. Each scenario is feasible to operate with Caltrain’s fleet and does not consider capital planning or fleet expansion needs to fulfill the Long-Range Service Vision.

### 4.5 Staffing Impacts

Caltrain will require a significant increase in staffing to operate a mixed diesel/electric railroad in FY25. The increase in staffing is needed across all aspects of the railroad’s operations and maintenance, such as train conductors, dispatch staff, power directors, electrician linemen, overhead catenary system managers, and administrative staff. While Caltrain had 561 full-time equivalent staff pre-pandemic, this total would increase to 991 staff in the “Robust Recovery” scenario, 700 staff in the “Revenue Recovery with Fewer Riders” scenario, and 795 staff in the “Some Progress” and “Caltrain Electrified Service” scenarios. A large variation in staffing is expected between the scenarios due to different crewing requirements for each service plan, as well as some additional wayside staff needed to support operations and maintenance. Across all scenarios, Caltrain would working toward hiring, training, and on-boarding new staff in anticipation for its increased staffing needs.



## 5 Scenario Data Request Tables

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This chapter presents the detailed information about Caltrain operations in each scenario as required by MTC. The tables show the agency's FY19 actuals and FY23 and FY24 forecasts, consistent with the agency's adopted FY23 budget; for years FY25-28, the information is sourced from Caltrain's scenario planning exercises for the purposes of responding to MTC's required scenarios for this SRTP. The Caltrain Electrified Service Scenario shows the agency's operating plans with anticipated costs and revenues based on the Caltrain's forecasts as of September 2022; however, it is important to note that these estimates are draft only as the railroad continues to refine and update its financial forecasts.

### 5.1 Total Operating Budget

As noted previously, for FY24-28, MTC provided Caltrain with an operating budget for each SRTP scenario and asked the agency to provide information about the service it could provide within that operating budget. The FY24-28 operating budgets from MTC can be found in **Table 5-1**. Importantly, the first three scenarios FY24-28 operating budgets do not reflect Caltrain's actual forecasted costs and revenues for the levels of service described in each scenario; they only show the annual operating budget that MTC prescribed to Caltrain for each scenario and include all annual Measure RR revenues supporting operations. The annual operating budgets for the first three FY24-28 scenarios should only be used for this SRTP exercise and not interpreted as indicative of the agency's forecasted operating costs and revenues, which differ from the numbers presented here.

The fourth scenario, Caltrain Electrified Service, is also shown and presents the railroad's anticipated costs and revenues for its operating plans as of September 2022. Of the agency's annual Measure RR revenue, this scenario assumes that \$25 million (approximately 20 percent of the total annual Measure RR revenue) is reserved as a contribution that can help fund a portion – but not all – of the railroad's separate and significant long-term capital program needs each year, and the remaining Measure RR revenue is expected to support annual operations. This scenario demonstrates the agency's projection of a significant operating deficit for the years to come – ranging from \$45-55M each year – and it is important to note that it does not address the agency's separate, unmet funding needs for the capital program.



Table 5-1: Total Operating Budgets

SCENARIO	FY19	FY23	FY24	FY25	FY26	FY27	FY28
<b>MTC Scenarios – Total Operating Budget Provided by MTC</b>							
<b>Scenario 1: Robust Recovery</b>	\$147.30M	\$179.20M	\$273.90M	\$281.40M	\$288.00M	\$294.10M	\$300.35M
<b>Scenario 2: Revenue Recovery with Fewer Riders</b>	\$147.30M	\$179.20M	\$216.60M	\$222.90M	\$228.20M	\$233.00M	\$237.85M
<b>Scenario 3: Some Progress</b>	\$147.30M	\$179.20M	\$232.75M	\$239.23M	\$244.77M	\$249.99M	\$255.25M
<b>Caltrain’s Scenario – Electrified Service</b>							
<b>Scenario 4: Caltrain Electrified Service Forecasted Operating Costs</b>	\$147.30M	\$179.20M	\$195.50M	\$229.00M	\$240.50M	\$252.60M	\$265.40M
<b>Scenario 4: Caltrain Electrified Service Forecasted Operating Revenue</b>	\$147.30M	\$179.20M	\$170.50M	\$180.40M	\$193.90M	\$201.90M	\$210.00M
<b>Scenario 4: Caltrain Electrified Service Net Operating Deficit</b>	\$0	\$0	(\$25.10M)	(\$48.50M)	(\$46.60M)	(\$50.60M)	(\$55.40M)

Sources: FY19 Caltrain expenditures, FY23 Caltrain budget, Scenarios 1-3: FY24-28 MTC projections, Scenario 4: FY24-28 Caltrain forecasts

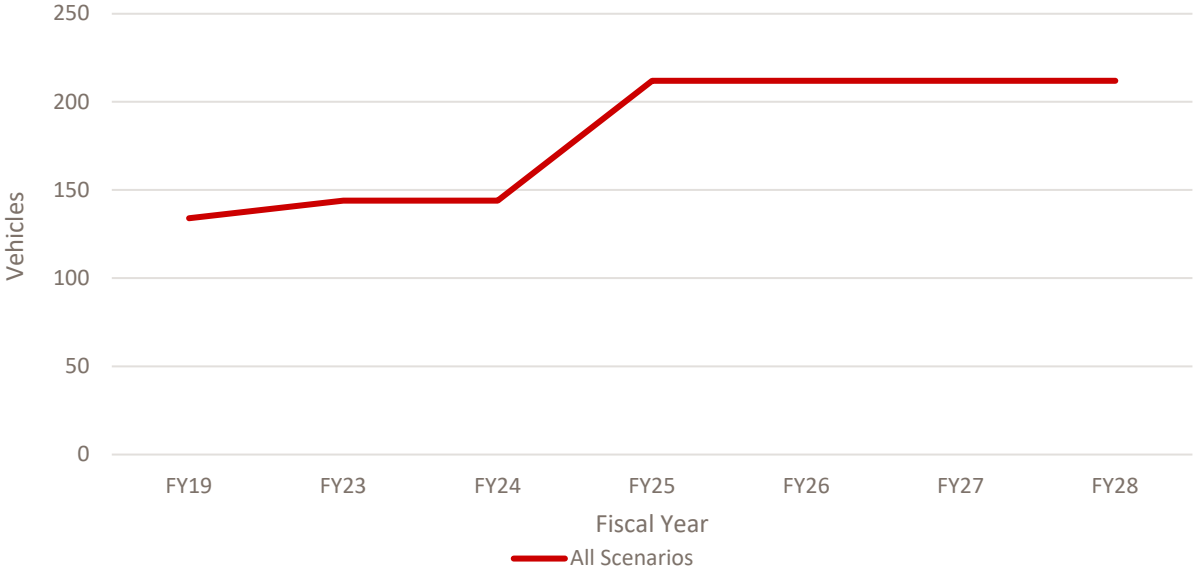
## 5.2 Total Revenue Vehicles

Total revenue vehicles (including diesel cars and EMUs and excluding diesel locomotives) available for service in FY23 increased to 144 from a pre-pandemic total of 134 in FY19. In each of the outlined scenarios, Caltrain will have 144 total revenue vehicles through FY24, then increasing to 212 total revenue vehicles beginning in FY25. More details can be found in **Table 5-2** and **Figure 5-1**.

Table 5-2: Total Revenue Vehicles

SCENARIO	FY19	FY23	FY24	FY25	FY26	FY27	FY28
All Scenarios	134	144	144	212	212	212	212

Figure 5-1: Total Revenue Vehicles, FY19-28



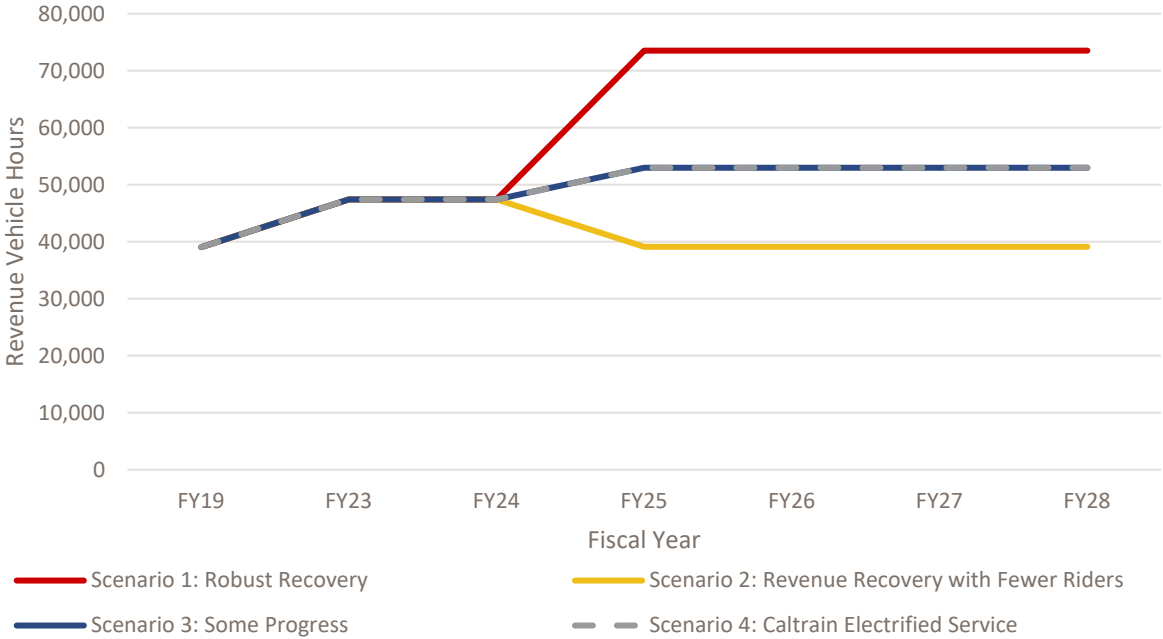
### 5.3 Revenue Vehicle Hours

Train revenue vehicle hours in FY23 are expected to increase to 47,412 from pre-pandemic revenue vehicle hours of 39,061 in FY19. FY23 revenue vehicle miles are expected to remain constant through FY24. By FY25, revenue vehicle miles are expected to increase to 73,530 under Scenario 1: Robust Recovery, decrease to 39,100 under Scenario 2: Revenue Recovery with Fewer Riders, or increase to 52,970 under Scenario 3: Some Progress and Scenario 4: Caltrain Electrified Service. More details can be found in **Table 5-3** and **Figure 5-2**.

Table 5-3: Revenue Vehicle Hours, FY19-28

SCENARIO	FY19	FY23	FY24	FY25	FY26	FY27	FY28
<b>Scenario 1: Robust Recovery</b>	39,061	47,412	47,412	73,530	73,530	73,530	73,530
<b>Scenario 2: Revenue Recovery with Fewer Riders</b>	39,061	47,412	47,412	39,100	39,100	39,100	39,100
<b>Scenario 3: Some Progress</b>	39,061	47,412	47,412	52,970	52,970	52,970	52,970
<b>Scenario 4: Caltrain Electrified Service</b>	39,061	47,412	47,412	52,970	52,970	52,970	52,970

Figure 5-2: Revenue Vehicle Hours, FY19-28



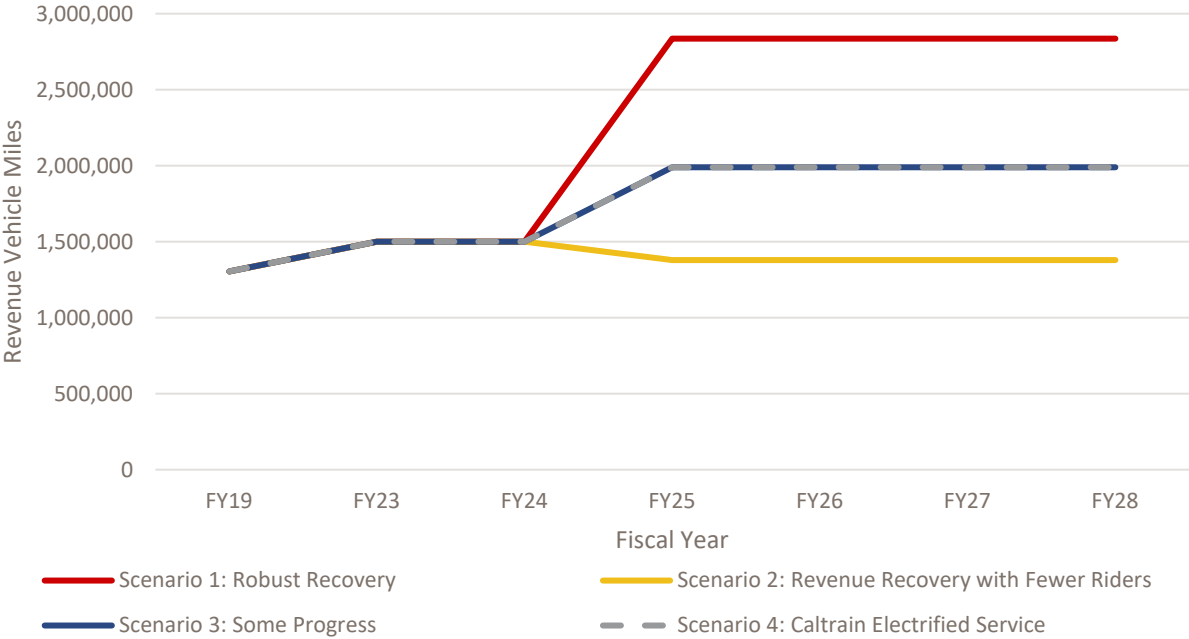
### 5.4 Revenue Vehicle Miles

Train revenue vehicle miles in FY23 are anticipated to increase to 1.5 million from a pre-pandemic value of 1.3 million in FY19. FY23 revenue vehicle miles are expected to remain constant through FY24. By FY25, revenue vehicle miles are expected to increase to 2.84 million under Scenario 1: Robust Recovery, decrease to 1.38 million under Scenario 2: Revenue Recovery with Fewer Riders, or increase to 1.99 million under Scenario 3: Some Progress and Scenario 4: Caltrain Electrified Service. More details can be found in **Table 5-5** and **Figure 5-3**.

Table 5-5: Revenue Vehicle Miles, FY19 and FY28

SCENARIO	FY19	FY23	FY24	FY25	FY26	FY27	FY28
<b>Scenario 1: Robust Recovery</b>	1,304,319	1,500,089	1,500,089	2,836,000	2,836,000	2,836,000	2,836,000
<b>Scenario 2: Revenue Recovery with Fewer Riders</b>	1,304,319	1,500,089	1,500,089	1,379,000	1,379,000	1,379,000	1,379,000
<b>Scenario 3: Some Progress</b>	1,304,319	1,500,089	1,500,089	1,990,000	1,990,000	1,990,000	1,990,000
<b>Scenario 4: Caltrain Electrified Service</b>	1,304,319	1,500,089	1,500,089	1,990,000	1,990,000	1,990,000	1,990,000

Figure 5-3: Revenue Vehicle Miles, FY19-28



### 5.5 Number of Routes Operated

In each of the outlined scenarios, Caltrain will continue operating one route each fiscal year through FY28.

### 5.6 Total Route Miles

In each of the outlined scenarios, Caltrain will continue operating 77 route miles each fiscal year through FY28.

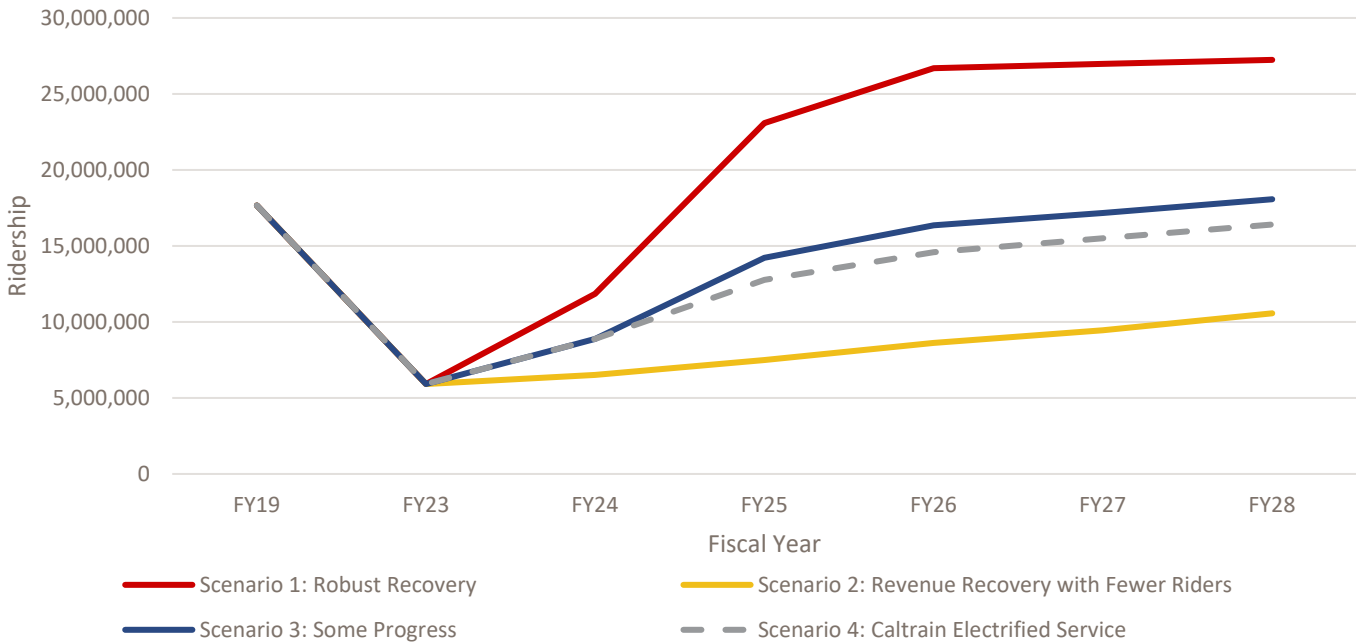
### 5.7 Ridership

Annual ridership in FY23 is anticipated to fall to 5.9 million riders from a pre-pandemic value of 17.7 million in FY19. Annual ridership is expected to increase each year under each outlined scenario, starting with FY24. By FY28, annual ridership is expected to reach 27.3 million under Scenario 1: Robust Recovery, 10.6 million under Scenario 2: Revenue Recovery with Fewer Riders, 18.1 million under Scenario 3: Some Progress, and 16.4 million under Scenario 4: Caltrain Electrified Service. More details can be found in **Table 5-6** and **Figure 5-4**.

Table 5-6: Ridership, FY19-28

SCENARIO	FY19	FY23	FY24	FY25	FY26	FY27	FY28
Scenario 1: Robust Recovery	17,662,773	5,925,180	11,850,360	23,080,924	26,696,009	26,974,092	27,252,175
Scenario 2: Revenue Recovery with Fewer Riders	17,662,773	5,925,180	6,517,698	7,495,353	8,619,656	9,454,836	10,567,170
Scenario 3: Some Progress	17,662,773	5,925,180	8,887,770	14,220,432	16,353,497	17,171,172	18,075,422
Scenario 4: Caltrain Electrified Service	17,662,773	5,925,180	8,887,770	12,765,188	14,588,786	15,500,585	16,412,384

Figure 5-4: Ridership, FY19-28



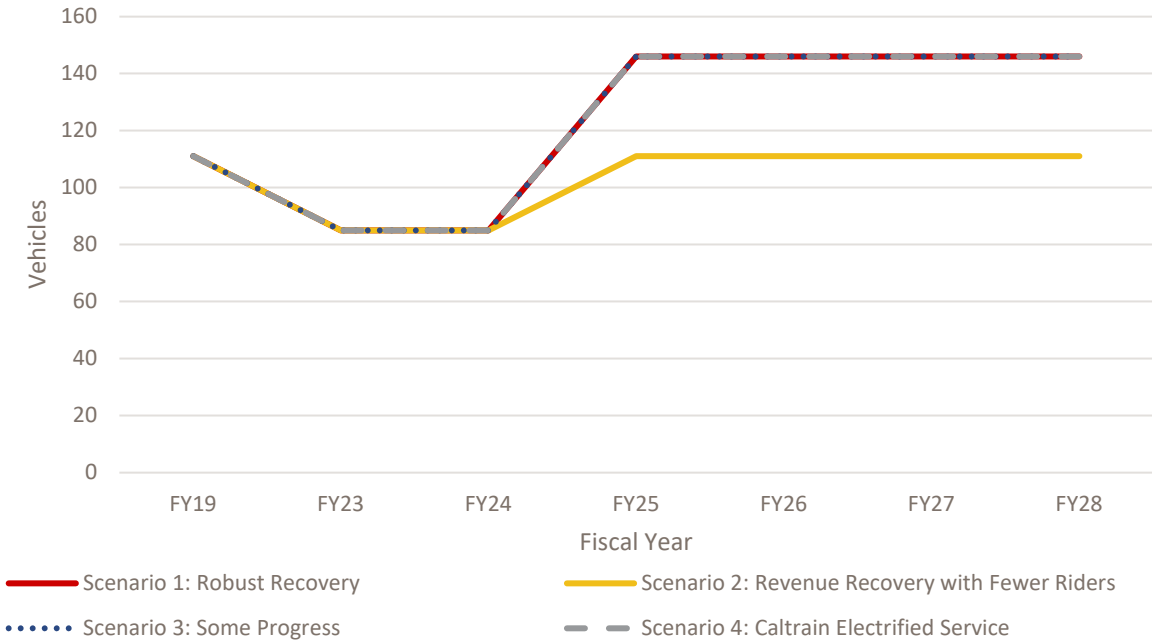
## 5.8 Vehicles Required for Maximum Service

Vehicles required for maximum service in FY23 are expected to decrease to 85 from a pre-pandemic value of 111 in FY19. The number of vehicles required for maximum service is expected to remain constant at 85 through FY24. By FY25, the number of vehicles required for maximum service are expected to increase to 146 under “Scenario 1: Robust Recovery,” “Scenario 3: Some Progress,” and “Scenario 4: Caltrain Electrified Service,” and decrease to 111 under “Scenario 2: Revenue Recovery with Fewer Riders.” More details can be found in **Table 5-7** and **Figure 5-5**.

Table 5-7: Vehicles Required for Maximum Service, FY19-28

SCENARIO	FY19	FY23	FY24	FY25	FY26	FY27	FY28
Scenario 1: Robust Recovery	111	85	85	146	146	146	146
Scenario 2: Revenue Recovery with Fewer Riders	111	85	85	111	111	111	111
Scenario 3: Some Progress	111	85	85	146	146	146	146
Scenario 4: Caltrain Electrified Service	111	85	85	146	146	146	146

Figure 5-5: Vehicles Required for Maximum Service, FY19-28



### 5.9 Employees

Employees in FY23 increased to 640 from a pre-pandemic total of 561 in FY19. The number of employees, including both administrative staff employed by the San Mateo County Transit District and employees of Caltrain’s contract operator, TASI, is expected to increase to 659 in FY24 for each outlined scenario. By FY25, the number of employees is expected to increase to 991 under Scenario 1: Robust Recovery, 700 under Scenario 2: Revenue Recovery with Fewer Riders, and 795 under Scenario 3: Some Progress and Scenario 4: Caltrain Electrified Service. More details can be found in **Table 5-8** and **Figure 5-6**.

Table 5-8: Employees, FY19-28

SCENARIO	FY19	FY23	FY24	FY25	FY26	FY27	FY28
Scenario 1: Robust Recovery	561	640	659	991	991	991	991
Scenario 2: Revenue Recovery with Fewer Riders	561	640	659	700	700	700	700
Scenario 3: Some Progress	561	640	659	795	795	795	795
Scenario 4: Caltrain Electrified Service	561	640	659	795	795	795	795

Figure 5-6: Employees, FY19-28

