

**PUBLIC UTILITIES COMMISSION**

505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3298



March 15, 2023

The Honorable Gavin Newsom  
Governor of California  
State Capitol, Suite 1173  
Sacramento, CA 95814

SUBJECT: Calendar Year 2022 Report of State Safety Oversight Activities for Rail Fixed  
Guideway Public Transportation Systems in California

Dear Governor Newsom:

As required by Title 49 of the Code of Federal Regulations, Part 674.13(a)(7), attached is the *Calendar Year 2022 Report of State Safety Oversight Activities for Rail Fixed Guideway Public Transportation Systems in California*. The Report will also be posted to the Commission's web site on Wednesday, March 15, 2023.

The California Public Utilities Commission is the designated State Safety Oversight Agency for rail fixed guideway public transportation systems in California. Federal regulation requires us to annually provide this report to your office, the board of directors (or equivalent entity) of the rail fixed guideway public transportation systems in California that receive federal funding, and the Federal Transit Administration.

Sincerely Yours,

*Rachel Peterson*

Rachel Peterson  
Executive Director

Enclosure

Cc:

Nuria Fernandez, Associate Administrator, Federal Transit Administration  
Janice Li, President of Board of Directors, Bay Area Rapid Transit District  
Ara J. Najarian, Chair of Board of Directors, Los Angeles County Metro Trans. Authority  
Jewel Edson, Chair of Board of Directors, North County Transit District  
Gene Hernandez, Chair of Board of Directors, Orange County Transportation Authority  
Patrick Kennedy, Chair of Board of Directors, Sacramento Regional Transit District  
Nathan Fletcher, Chair of Board of Directors, San Diego Metropolitan Transit System  
Amanda Eaken, Chair of Board of Directors, San Francisco Municipal Trans. Agency  
Pat Burt, Chair of Board of Directors, Santa Clara Valley Transportation Authority



CALENDAR YEAR 2022  
REPORT OF  
STATE SAFETY OVERSIGHT ACTIVITIES  
FOR  
RAIL FIXED GUIDEWAY PUBLIC TRANSPORTATION SYSTEMS  
IN CALIFORNIA



*California Public Utilities Commission*

*Rail Safety Division*

*Roger Clugston, Director*

**March 15, 2023**

## TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY</b> .....	<b>1</b>
<b>BACKGROUND</b> .....	<b>3</b>
<b>OVERVIEW OF CPUC’S RAIL TRANSIT SAFETY OVERSIGHT PROGRAM</b> .....	<b>5</b>
<b>COVID-19 PANDEMIC IMPACTS</b> .....	<b>9</b>
<b>RESPONDING TO “FLEX ALERTS”</b> .....	<b>9</b>
<b>DATABASE SYSTEM UPDATES</b> .....	<b>10</b>
<b>SUMMARY OF OVERSIGHT ACTIVITIES OF ALL RAIL TRANSIT AGENCIES IN CALENDAR YEAR 2022</b> .....	<b>11</b>
<i>ENFORCEMENT ACTIONS</i> .....	<i>25</i>
<b>SUMMARY OF ACTIVITIES FOR ALL FTA REGULATED RAIL TRANSIT AGENCIES IN CALENDAR YEAR 2022</b> .....	<b>26</b>
<i>BAY AREA RAPID TRANSIT DISTRICT</i> .....	<i>26</i>
<i>LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY</i> .....	<i>34</i>
<i>NORTH [SAN DIEGO] COUNTY TRANSIT DISTRICT</i> .....	<i>44</i>
<i>ORANGE COUNTY TRANSPORTATION AUTHORITY</i> .....	<i>48</i>
<i>SAN FRANCISCO MUNICIPAL TRANSPORTATION AGENCY</i> .....	<i>50</i>
<i>SACRAMENTO REGIONAL TRANSIT DISTRICT</i> .....	<i>55</i>
<i>SAN DIEGO TROLLEY, INC.</i> .....	<i>58</i>
<i>THE SANTA CLARA VALLEY TRANSPORTATION AUTHORITY</i> .....	<i>63</i>
<b>SUMMARY OF ACTIVITIES FOR NON-FTA REGULATED RAIL TRANSIT AGENCIES FOR CALENDAR YEAR 2022</b> .....	<b>70</b>
<i>AMERICANA AT BRAND TROLLEY</i> .....	<i>70</i>
<i>ANGELS FLIGHT RAILWAY COMPANY FUNICULAR</i> .....	<i>71</i>
<i>THE GETTY CENTER MUSEUM AUTOMATED PEOPLE MOVER</i> .....	<i>73</i>

---

CALENDAR YEAR 2022 ANNUAL REPORT – STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

*THE GROVE TROLLEY* ..... 75

*LOS ANGELES WORLD AIRPORTS AUTOMATED PEOPLE MOVER*..... 76

*SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED PEOPLE MOVER*..... 77

*SAN FRANCISCO INTERNATIONAL AIRPORT AIRTRAIN AUTOMATED PEOPLE MOVER*.... 78

**SYSTEMS IN DEVELOPMENT OR FUNDING STAGES** ..... **81**

*LOS ANGELES STREETCAR*..... 81

*DOWNTOWN [SACRAMENTO] RIVERFRONT STREETCAR*..... 82

*INGLEWOOD TRANSIT CONNECTOR PROJECT*..... 82

**ANNUAL REPORT FINDINGS**..... **84**



## EXECUTIVE SUMMARY

The California Public Utilities Commission (CPUC) regulates the safety and security of 15 rail transit agencies (RTAs) in California. Eight of these RTAs are jurisdictional to and funded in part by the Federal Transit Administration (FTA). The Rail Safety Division's (RSD) Rail Transit Safety Branch (RTSB) is responsible for the CPUC's rail transit safety oversight program.

This report is part of the CPUC's annual reporting requirements regarding its rail transit safety program. There are two elements of annual reporting to FTA that the CPUC must meet. In order to comply with the regulations established by the FTA, all State Safety Oversight Agencies (SSOA) must upload certain required documents and data regarding their oversight activities each calendar year (CY) into an FTA online reporting system. The CPUC must submit these documents and data by March 15 of each year that include the following information:

- Summary of its oversight activities for the previous year.
- Description of the causal factors of accidents identified through investigation and identifies the status of corrective actions.
- Any changes to the Public Transportation Agency Safety Plans of each FTA-regulated RTA; and
- The level of effort by the SSOA in carrying out its oversight activities.

In addition, FTA regulations require that at least once a year, the SSOA report the status of the safety of each RTA under their jurisdiction which receives federal funding from the FTA to their Governor, the FTA, and the board of directors, or equivalent entity, of RTAs.

This report summarizes the data and information submitted to the FTA's online reporting system, outlining CPUC's rail transit safety program and RTSB's activities for CY 2022. Specifically, this report summarizes the CPUC staff hours and core activities that comprise the safety oversight effort of the program and the audit, inspection, investigation, and capital project oversight activities conducted in carrying out the program in CY 2022. In addition, data and information for all RTAs, information regarding the types of accidents each RTA has reported, and the primary causal factors for those accidents are discussed.

### **Impacts of COVID-19 Pandemic**

CPUC continued conducting its safety oversight activities on RTAs in CY 2022, but it took several steps to do so in compliance with U.S. Department of Health and Human Services' Centers for Disease Control and Prevention (CDC), state, and local health department safety requirements. These steps limited contact to the extent possible between CPUC staff and RTA personnel. Routine field work was typically conducted by one or more inspectors making inspections and observations of the operations and infrastructure, and subsequently transmitting the inspection report and any findings to the RTA.

CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

RTA personnel and participating CPUC staff reviewed accident videos remotely, or by in-person meetings following social distancing and mask protocols. CPUC staff also participated in capital project meetings that were conducted virtually by RTAs and their contractors. CPUC staff did however conduct some field activities associated with capital projects and two triennial safety and security audits during the second half of CY 2022.

**CPUC Staff Resources Devoted to Rail Transit Safety Oversight**

In CY 2022, RTSB and other CPUC staff (including staff from other RSD branches, and the Legal and Administrative Law Judges Divisions) performed approximately 62,868 hours of safety and security oversight activities during the reporting period, for both non-FTA funded, and FTA funded RTA's, this was a 4% increase over the previous year. Due to the recent expansion of rail transit systems and the projects approved and in construction or final engineering, as well as new FTA requirements for risk-based inspections, additional RTSB staff resources will be needed in the near term.

**Comprehensive Triennial Audits**

In response to the COVID-19 pandemic, the CPUC issued Resolution ST-241 (12/18/2020), which delegated to the Director of RSD temporary ministerial authority to extend the timeframes for conducting triennial audits of California RTAs, required by Commission General Order (GO) 164-E.

With Resolution ST-241, some scheduled triennial audits in CY 2021 were rescheduled to CY 2022. In CY 2022, CPUC staff conducted triennial audits for Santa Clara Valley Transportation Authority and North [San Diego] County Transportation District.

**Field Inspections of Rail Transit Facilities, Vehicles, and Operations**

RTSB inspectors conducted 633 inspections during CY 2022, while participating in numerous accident investigations. This was a 75% increase from the previous year. The increase of inspections was largely due to the wide availability of vaccines and most staff being fully vaccinated, allowing CPUC staff to conduct additional field work while still following COVID-19 safety protocols.

**Accident Investigations**

RTAs reported 367 rail transit accidents during CY 2022. CPUC staff investigated and/or reviewed and approved most of the RTA reports for these accidents, however some still remain open and under investigation. The purpose of the accident investigation reports is to assure the RTA identified the causal and contributory factors leading to the accident to prevent recurrence. The largest percentage (approximately 58%) are related to collisions with vehicles and pedestrians/bicycles/other conveyance with rider, at rail crossings or along street-running transit lines. Data provided herein indicates the number and types of accidents for all agencies and also by individual RTA.

### **Capital Projects**

CPUC staff spend a significant portion of their time on safety oversight of RTA capital projects. California RTAs have numerous capital projects, particularly in the Los Angeles area as they prepare for the 2028 Olympics City of Los Angeles will be hosting. Capital projects include new vehicle procurement projects, line extensions for service to new areas, major infrastructure projects such as electric substations, new dispatch and emergency operations centers, new train control systems, seismic retrofit projects, and others. There are over 20 major rail transit projects in California that are in active stages of construction, as detailed herein. An updated workload assessment will be developed to determine the additional resource needs for construction and inspection oversight, as well as general Safety oversight of the expanding California RTA rail transit systems.

### **Corrective Action Plans**

CPUC staff reviewed 662 Corrective Action Plans (CAPs) during CY 2022; an 88% increase from the previous year. CAPs are generated from accident investigations, identified system hazards, inspections, triennial audits, internal safety audits (conducted by RTAs), consumer complaints, and potentially other sources. CPUC staff approved for closure 414 of those CAPs. The remainder are in various stages of completion and CPUC staff continues to monitor their progress.

### **Enforcement Actions**

CPUC staff did not initiate new enforcement actions in CY 2022, however, continued to monitor compliance with previous CPUC Decisions on enforcement actions applicable to the Bay Area Rapid Transit District (BART).

## BACKGROUND

The US Congress enacted, and President Obama signed into law the Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21) on July 6, 2012. Among several other things, MAP-21 required the FTA to adopt a comprehensive Public Transportation Safety Program, one element of which is to strengthen the rail transit State Safety Oversight program of the FTA required by 49 CFR Part 659 in effect at that time, and which was replaced by Part 674.

The CPUC has a long-standing rail transit safety oversight program which pre-dates the federal program. The federal program began in the early 1990's, and the CPUC was given authority by the California legislature as early as the mid-1950's over the safety of rapid transit systems in California, at first by individual RTAs as they were created. In the 1970's, during the construction of the Bay Area Rapid Transit (BART) system, that authority was broadened by the legislature to include all systems.

## CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

Specifically, California Public Utilities Code § 99152<sup>1</sup> makes all fixed guideway public transportation systems in California planned, acquired, or constructed, on or after 1979 subject to the regulations of the CPUC. The CPUC has developed a rigorous and comprehensive program over the years to assure the safety of systems under its jurisdiction. The CPUC has adopted Strategic Directive Statements that collectively define the universe of results the CPUC expects our organization to achieve, and RTSB participates in that process and its safety oversight activities support achieving many of those Strategic Directives.

On October 13, 1992, pursuant to the requirements of the federal Intermodal Surface Transportation Efficiency Act of 1991, Governor Pete Wilson designated the CPUC as the state agency charged with overseeing the development and implementation of safety plans for all fixed guideway transit systems in California, referred to as the State Safety Oversight Agency (SSOA) by the FTA. Subsequently, in 1996 the FTA adopted 49 CFR Part 659, which was the federal regulation for SSOAs such as the CPUC, which describes requirements to meet regarding its public transportation fixed guideway safety oversight obligations.

MAP-21 required the FTA to develop certification requirements for SSOAs, such as the CPUC, and provides for grants to eligible states to develop or carry out rail fixed guideway public transportation safety oversight programs. The FTA developed interim certification requirements based on the Congressional direction provided by MAP-21 until it took the steps to develop regulations to strengthen 49 CFR Part 659. On October 1, 2013, the FTA certified the CPUC SSOA program as one of only two in the nation whose existing program met all interim certification requirements and thus was made eligible for grant funding. Subsequently, the CPUC issued Resolution ST-169 (10/2/2014), which authorized CPUC staff to apply for the available grant funding for the CPUC's SSOA program. On July 2, 2015, the FTA approved the CPUC's first SSOA grant funding application. The CPUC has applied for and received eight grants thus far totaling \$34,070,328.

As required by MAP-21, to strengthen the SSOA program requirements of 49 CFR Part 659, the FTA adopted new requirements in 49 CFR Part 674, which became effective on April 15, 2016. Under the MAP-21 requirements, three years from that date (April 15, 2019) 49 CFR Part 659 was rescinded and

---

<sup>1</sup> Public Utilities Code §99152 states “Any public transit guideway planned, acquired, or constructed, on or after January 1, 1979, is subject to regulations of the Public Utilities Commission relating to safety appliances and procedures. The commission shall inspect all work done on those guideways and may make further additions or changes necessary for the purpose of safety to employees and the general public. The commission shall develop an oversight program employing safety planning criteria, guidelines, safety standards, and safety procedures to be met by operators in the design, construction, and operation of those guideways. Existing industry standards shall be used where applicable. The commission shall enforce the provisions of this section.”

only 49 CFR Part 674 provides authority for the SSOA program.

With the adoption by the FTA of 49 CFR Part 674, the CPUC made changes to its fixed guideway public transportation safety oversight program in 2017 and 2018 to attain FTA certification under Part 674 requirements. The CPUC submitted its Certification Application to the FTA and obtained certification on October 23, 2018, well ahead of the April 15, 2019, deadline.

To comply with the new regulations in 49 CFR Part 674.13(a)(7) and 49 CFR 674.39 (a)(3), every SSOA that oversee Rail Fixed Guideway Public Transportation Systems (RFGPTS, as defined in 49 CFR Part 674) must submit an Annual Report that summarizes its oversight activities for the preceding 12 months. This report describes the causal factors of accidents identified through investigation, and identifies the status of corrective actions, changes to Public Transportation Agency Safety Plans, and the level of effort by the SSOA in carrying out its oversight activities. Accordingly, this report provides the data required for CY 2022.

## OVERVIEW OF CPUC'S RAIL TRANSIT SAFETY OVERSIGHT PROGRAM

The CPUC currently oversees 15 RTAs, of which eight receive FTA funding and are thus subject to FTA regulations. The remaining seven do not receive FTA funding and are not subject to FTA regulations.

### RTAs Subject to FTA Regulations

- Bay Area Rapid Transit District (BART)
- Los Angeles County Metropolitan Transportation Authority (LACMTA or Metro)
- North [San Diego] County Transit District (NCTD or Sprinter)
- Orange County Transportation Authority (OCTA or OC Streetcar) (currently under construction)
- San Francisco Municipal Transportation Agency (SFMTA or Muni)
- Sacramento Regional Transit District (SRTD)
- San Diego Trolley, Inc. (SDTI)
- Santa Clara Valley Transportation Authority (VTA)

### RTAs Not Subject to FTA Regulations

- Americana at Brand Trolley
- Angels Flight Railway Company (funicular)
- Getty Center Museum Automated People Mover (APM)
- The Grove Trolley
- Los Angeles World Airports (LAWA) Automated People Mover (currently under construction)
- Sacramento County Department of Airports (SCDOA) Automated People Mover
- San Francisco International Airport (AirTrain) Automated People Mover

In addition, the following systems are in various stages of development and have not yet been awarded full grant funding from the FTA:

- Downtown Sacramento Riverfront Streetcar (Cities of Sacramento and West Sacramento, as well as Sacramento Regional Transit)
- Los Angeles Streetcar (City of Los Angeles)
- Inglewood Transit Connector Project

### **Rail Transit Safety Branch Structure**

RTSB is responsible for conducting the CPUC’s rail transit safety oversight program activities. RTSB has 33 authorized staff positions to provide effective safety oversight of the rail transit and other fixed guideway systems under the CPUC’s jurisdiction. RTSB has two Sections: Rail Transit Safety Section (engineers and analysts) and Rail Transit Operations Safety Section (field inspectors). Each Section has Supervisors and Senior Engineers or Senior Inspectors to guide their respective teams in Northern and Southern California as shown in Figure 1.

FTA requires SSOAs to develop qualified staff to conduct the rail transit safety oversight activities and provide them a minimum level of initial and refresher training pursuant to 49 CFR Part 672 (FTA’s Public Transportation Safety Certification Training Program rules). RTSB staff are highly qualified, and RTSB developed and submitted to the FTA a Technical Training Plan (TTP) as part of the FTA certification process. RTSB annually reviews, updates as necessary, and provides to the FTA the latest version of its TTP.

# Rail Transit Safety Branch

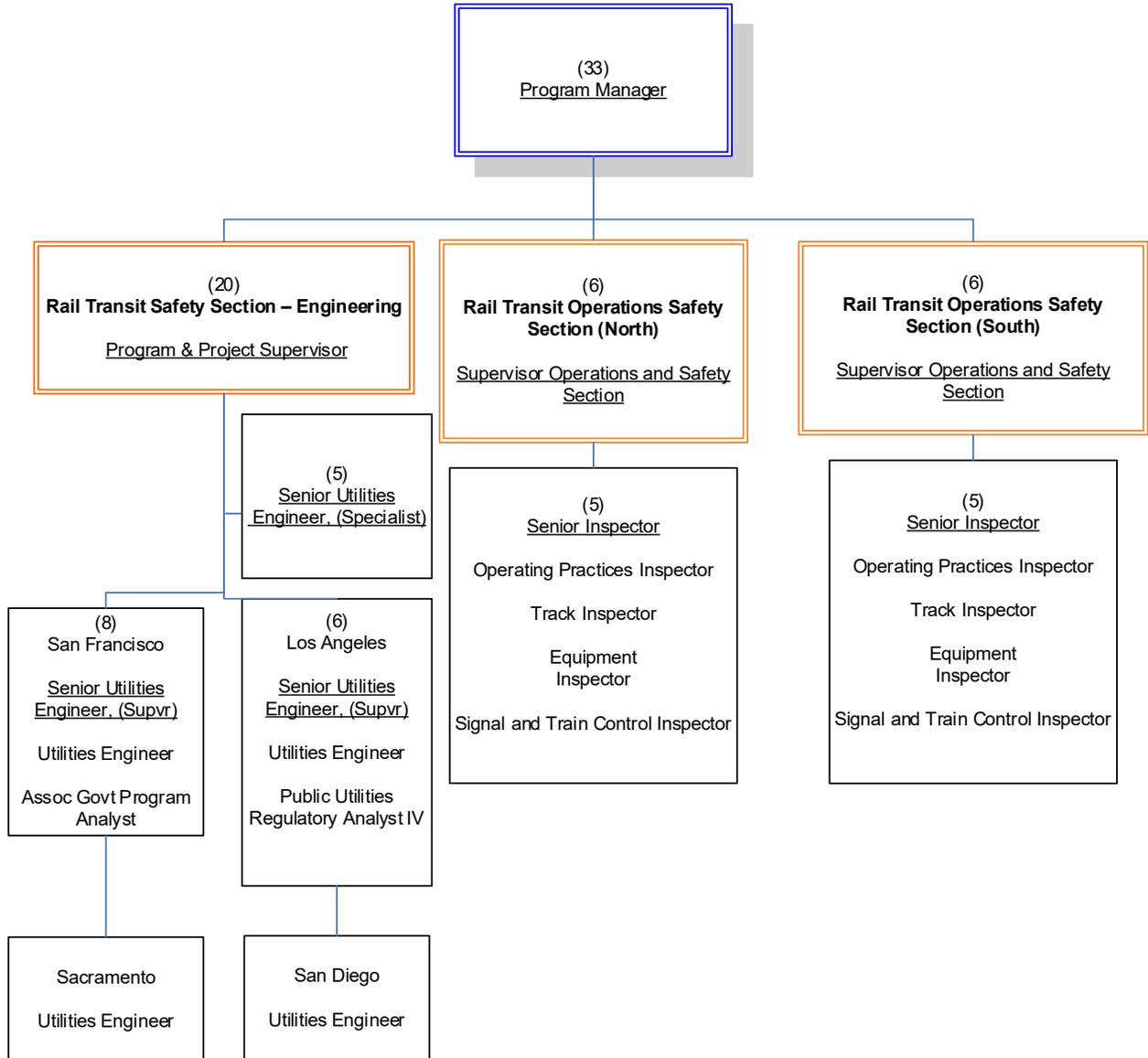


Figure 1: RTSB Organizational Chart

## **RTSB Program Standard**

49 CFR Part 674.27 requires SSOAs to adopt and distribute a written program standard (procedures manual) and at least once a year submit it to the FTA with an indication of any revisions made. Accordingly, RTSB’s Program Standard identifies staff positions responsible for, and describes the practices to be followed in, conducting its SSOA program; sets forth the processes and procedures RTSB uses in implementing the various aspects of the safety oversight program; and is posted on the CPUC’s web site at [www.cpuc.ca.gov/rtsb](http://www.cpuc.ca.gov/rtsb) .

RTSB’s Program Standard includes, but is not limited to:

- System safety and security program management and oversight of the design, construction, safety certification, internal safety and security audits, operation and maintenance of rail fixed guideway transportation systems.
- Review and approval of RTA’s Public Transportation Agency Safety Plan (previously System Safety Program Plan), System Security Plan, Safety Certification Plans (SCPs), accident investigation procedures, accident investigation reports, annual internal safety and security audit reports, hazard management program, and corrective action plans and schedules.
- Reporting and investigating events (including accidents) and hazards.
- Performing triennial audits.
- Inspections.
- Hazard management.
- Handling formal and informal complaints; and
- Procedure for Enforcement Actions.

## **FTA Audit of CPUC’s State Safety Oversight Program for RFGPTS**

49 CFR Part 674.11 requires the FTA to audit each state’s compliance of their SSO program at least triennially. An FTA audit team conducted the on-site portion of CPUC’s triennial audit from July 11–19, 2022. The FTA audit team requested significant documentation and records in advance, and additional supporting documentation, as necessary, during the on-site portion. In addition to interviewing CPUC staff and reviewing CPUC records, the FTA audit team also interviewed RTA personnel on-site. The FTA report was not received until January 2023 and CPUC is finalizing its written reply to FTA.

## COVID-19 PANDEMIC IMPACTS

### Triennial Audits

Generally, to carry out the processes and procedures pertaining to the comprehensive triennial audits, CPUC staff make on-site visits to RTA facilities. CPUC staff review documents; conduct interviews with RTA supervisors, employees, and contractors; inspect infrastructure and rail vehicles (such as, passenger cars and maintenance vehicles); monitor operations, evaluate maintenance practices; and engage in other activities that are routine elements of triennial audits. CPUC typically performs comprehensive triennial audits of three or four RTAs per year, each of which requires many CPUC staff to devote two or more weeks, involving overnight travel and significant interaction with CPUC coworkers, RTA personnel, and others.

In CY 2022, CPUC staff conducted triennial audits for Santa Clara Valley Transportation Authority from April 18 to 29 and North [San Diego] County Transportation District from June 6 to 17.

### Resolution ST-241

The Commission issued Resolution ST-241 (10/18/2020), which delegated to its Director of Rail Safety Division temporary ministerial authority to extend timeframes for triennial audits of California RTAs, and timeframes for retraining and recertification of certain RTA employees, pursuant to conditions and restrictions outlined in the Resolution. In 2022, triennial audits were scheduled to be performed at Santa Clara Valley Transportation Authority, San Francisco Municipal Transportation Agency, and North [San Diego] County Transit District's Sprinter system. Under ST-241, CPUC staff rescheduled and conducted the two triennial audits in CY 2022 noted above.

## RESPONDING TO "FLEX ALERTS"

### Meeting with the Governor's Office

Due to an extended extreme heat event in California during the summer of 2022, on September 1, RTSB management participated in a meeting with the Governor's Office, the California Transit Association, and CPUC executive leadership to discuss how RTAs can help reduce demands on the electric system whenever the California Independent System Operator issues a Statewide Flex Alert, calling on everyone in California to voluntarily conserve electricity.

A Flex Alert is typically issued in the summer when extremely hot weather drives up electricity use in the evening hours when temperatures remain high, and consumers arrive home, and surge electricity use in the afternoon peak hours by switching on air conditioners, lights and appliances. During the September heat wave, on September 6, 2022, California saw its daily power consumption surpass the most ever recorded in a single day (52,061 Megawatts) yet did not experience any unplanned outages.

California system operator attributes that to citizens responding to the Flex Alert issued by the Governor’s office and significantly cutting use during expected peaks on those days.

### **Asking RTAs to Help when Flex Alerts are Issued**

Following the September meeting with the Governor’s Office, RTSB sent an email to all California RTAs asking them to report operational and safety impacts on their systems resulting from heat events. Specifically, RTSB asked the RTAs to report on the following impacts:

- Loss of system traction power,
- Loss of power at station(s),
- Other Equipment Failure resulting in system curtailment or cessation of service,
- Track/guideway displacement resulting in a derailment,
- Track/guideway displacement resulting in operation delays, and
- Other system impacts resulting from the high heat.

RTSB also informed the California RTAs about CPUC’s “Emergency Load Reduction Program,” which is designed to avoid rotating power outages during peak electricity usage periods, and about California Energy Commission’s “Demand Side Grid Support” program, which offers incentives to electric customers that provide load reduction and backup generation to support the state’s electrical grid during extreme heat events.

## **DATABASE SYSTEM UPDATES**

### **Rail Safety and Security Information Management System (RSSIMS)**

The three branches of the CPUC’s Rail Safety Division (RSD), including RTSB, use the centralized, official database called Rail Safety and Security Information Management System (RSSIMS). RSD is currently undertaking a project to replace the existing outdated version of RSSIMS, which will ensure the database meets current state requirements and provides enhanced features. The build phase began in September 2022 and will continue into 2023. RTSB senior staff have been participating in this project as subject matter experts, to ensure the new system conforms with RTSB’s safety review processes established in the RTSB Program Standard.

## SUMMARY OF OVERSIGHT ACTIVITIES OF ALL RAIL TRANSIT AGENCIES IN CALENDAR YEAR 2022

### Summary of CPUC Safety Oversight Activities

In typical years CPUC’s SSOA activities fall into the following major categories:

- Conduct comprehensive triennial audits of RTAs (two were conducted in 2022);
- Perform ongoing inspections of RTA facilities, operations, and construction projects to assess compliance with federal and state regulations, including GOs.
- Monitor RTA operational and safety activities.
- Evaluate new Safety Certification Plans covering new major projects.
- Evaluate and recommend certain RTA safety plans for Commission approval.
- Make recommendations to CPUC leadership to develop new, or modify existing, GOs related to RTA safety.
- Facilitate communication between the FTA and RTAs by notifying RTAs of all FTA Safety Directives and Safety Advisories.
- Collect data requested by the FTA from RTAs.
- Assess RTA compliance with industry standards and with the RTAs’ own operating procedures.
- Review and approve accident investigation reports prepared by RTAs.
- Participate in the RTA accident or other investigations if RTSB management determines it is necessary or appropriate.
- Participate in National Transportation Safety Board (NTSB) investigations when they occur at jurisdictional RTAs in California; and
- Conduct its own investigations of certain accidents if RSD management deems necessary.

As shown in Table 1 below, during CY 2022 CPUC staff (including RTSB, as well as CPUC staff from the Rail Crossings and Engineering Branch of RSD, the Legal Division, and the Administrative Law Judges Division) spent 62,868.4 (61,188.40 for FTA funded RTAs plus 1,680.00 for non-FTA funded RTAs) hours in carrying out its safety and security oversight activities.

## CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

Program Activity	Total Hours			
	2021		2022	
	Non-FTA Funded	FTA Funded	Non-FTA Funded	FTA Funded
Developing Policy/Standards, Supporting Management, Special Projects	0.0	7,802.8	0.0	8,279.0
Other Transit Safety Oversight/Investigations	483.5	8,531.9	736.8	8,449.50
Inspections	307.0	8,760.5	622.0	10,889.0
Accident Investigations	0.0	6,059.3	2	6,090.5
Managing/Supervising	52.5	9,206.3	0	9,298.0
Certifying Capital Projects	361.0	5,884.7	186.3	6,248.5
Triennial Audits	266.0	4,234.0	133.0	3,673.3
Miscellaneous *	10.0	2,754.3	0	3,076.1
Rail Transit Crossings	0.0	2,447.0	0.0	2,726.50
Training (receiving and giving)	0.0	3,246.0	0.0	2,208.1
Administrative Law Judges Division/Legal Division	0.0	20.0	0.0	250
Total	1,480.0	58,946.8	1,680.0	61,188.4
Total Staff Work Hours	<b>60,426.8</b>		<b>62,868.4</b>	
*Miscellaneous includes – Administrative Submittals, Responses to Public Records Act Requests, Responses to FTA inquiries, Responses to general inquiries, and Staff Meetings.				

Table 1: Summary of SSOA Program Staff Activities for Calendar Years 2021 and 2022

## Rail Transit Inspections

Currently, California is one of only a few states to have inspectors for its rail transit oversight program (in addition to inspectors in CPUC’s Railroad Operations and Safety Branch for freight and commuter rail systems) with broad experience in specific rail transit disciplines that are core to the industry, who are primarily out in the field conducting facility, equipment, and operations inspections. The CPUC has developed a rigorous inspection program to determine whether the plans, procedures, processes, and training outlined in the various Standard Operating Procedures, safety plans, and other RTA documents are carried out by RTA employees in the field as they operate and maintain their system. This has become one of the most valuable components of the CPUC’s SSOA program. Since its inception, RTSB inspectors have found RTA employees/contractors in the field straying from the established written procedures, potentially leading to failures and sometimes accidents.

On November 15, 2021, President Biden signed the Bipartisan Infrastructure Law (BIL), enacted as the Infrastructure Investment and Jobs Act, which continues the public transportation safety program. The BIL added provisions directing the FTA to issue a Special Directive to each SSOA on the development and implementation of risk-based inspection programs. Since California has an existing inspection program, it needs to make minor adjustments to its existing program to comply with the new federal requirements.

RTSB inspectors performed 633 inspections in CY 2022. RTSB’s inspection program is divided into the Northern California inspection team and Southern California inspection team. Each team has a supervisor, a senior inspector, and one inspector in each of the four rail transit disciplines (areas of expertise): (1) track, (2) signal and train control, (3) equipment/mechanical (rail vehicles), and (4) operating practices.

RTSB inspectors conduct both announced and unannounced inspections. Any findings of the inspections are discussed with RTA personnel before RTSB inspectors depart from the inspection site. Often, RTSB inspectors conduct joint inspections in shared rail corridors with inspectors from the CPUC’s Railroad Operations and Safety Branch and/or the Federal Railroad Administration. After each inspection, RTSB senior inspector sends an inspection report to the RTA. If the inspection identifies safety concerns that require corrective action, the RTA must respond within 30 days with either completed corrective actions, or a corrective action plan (CAP) with a timeline for its implementation and the RTA personnel responsible for its completion. RTSB inspectors monitor responses and field-verify the corrective actions. The inspection report file is considered closed when RTSB sends a follow-up report to the RTA accepting the corrective action or CAP(s). RTSB inspectors track CAP(s) to closure.

Table 2 below summarizes the inspection activities conducted by RTSB inspectors. Inspection activities increased from the previous year by 73% for FTA funded RTAs, and 91% for non-FTA funded RTAs, for a grand total of 75% for all RTAs. The FTA funded RTAs are larger operations (larger systems,

CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

operating more trains, at longer distances, and transporting more passengers) than the non-FTA funded RTAs, as a result CPUC focuses majority of its activities on the FTA funded RTAs.

	Agency	Total Inspections January 1, 2021 to December 31, 2021	Total Inspections January 1, 2022 to December 31, 2022
<b>FTA FUNDED</b>	Sacramento Regional Transit District	49	99
	Bay Area Rapid Transit (BART)	63	84
	San Francisco Municipal Transportation Agency	50	65
	Santa Clara Valley Transportation Authority	35	90
	Los Angeles Metropolitan Transportation Authority	69	138
	North [San Diego] County Transit District (Sprinter)	18	34
	San Diego Trolley, Inc.	43	54
	OCTA	1	4
	<b>FTA Funded Sub Total</b>	<b>328</b>	<b>568</b>
<b>NON-FTA FUNDED</b>	Angels Flight Railway Company	7	18
	Sacramento International Airport APM	7	10
	Getty Center Museum APM	2	10
	San Francisco International Airport (AirTrain) APM	3	4
	Americana at Brand/The Grove Trolley	15	23
	<b>Non-FTA Funded Sub Total</b>	<b>34</b>	<b>65</b>
	<b>Grand Total</b>	<b>362</b>	<b>633</b>

Table 2: Total RTSB Inspections by Agency for Calendar Years 2021 and 2022

## Accident Investigations

As prescribed in the RTSB’s Program Standard, causal factors are identified through accident investigations and documented in the Commission’s Rail Safety and Security Information Management System (RSSIMS) database.

RTAs are required to report accidents<sup>2</sup> and incidents<sup>3</sup> to CPUC. GO 164-E requires RTAs to investigate, and CPUC staff to review and approve the RTA’s accident investigation reports. In some cases, CPUC staff conducts a separate investigation of certain accidents. CPUC staff tracks accident investigation closeouts by RTAs and any CAP(s) associated with the accidents. In some cases, the CPUC staff may conduct additional on-site accident follow up investigations to obtain more detailed information. Workload associated with this element is highly variable due to the number and complexity of the investigations, as well as other factors. In CY 2022 RTAs reported 367 accidents.



### LACMTA GRADE CROSSING ACCIDENT

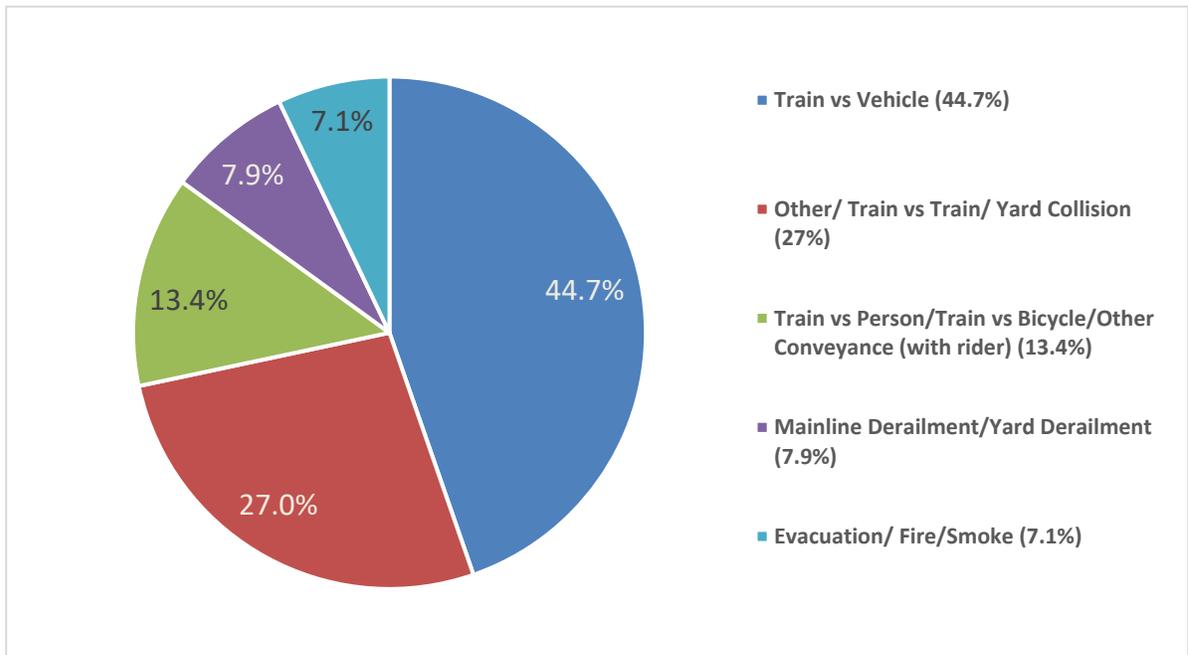
<sup>2</sup> Commission GO 164-E, 2.1: *Accident* means an event that involves any of the following: a loss of life; a report of a serious injury to a person; a collision involving a rail transit vehicle; a runaway train; an evacuation for life safety reasons; or any derailment of a rail transit vehicle, at any location, at any time, whatever the cause.

<sup>3</sup> Commission GO 164-E, 2.13: *Incident* means an event that involves any of the following: a personal injury that is not a serious injury; one or more injuries requiring medical transport; or damage to facilities, equipment, rolling stock or infrastructure that disrupts the operations of a rail transit agency.

**Accident Types**

	LACMTA	MUNI	NCTD	SRTD	SDTI	BART	BRAND	VTA	Total	Percent of Total
<b>Train vs Vehicle</b>	32	90	0	14	13	0	0	15	164	44.7%
<b>Other/ Train vs Train/ Yard Collision</b>	27	16	7	15	1	14	0	19	99	27%
<b>Train vs Person /Train vs Bicycle /Other Conveyance (with rider)</b>	10	6	3	4	5	11	0	10	49	13.4%
<b>Mainline Derailment/Yard Derailment</b>	2	7	0	3	1	14	1	1	29	7.9%
<b>Evacuation/ Fire/Smoke</b>	5	1	0	0	0	17	0	3	26	7.1%
<b>Grand Total</b>	76	120	10	36	20	56	1	48	367	100%

**Table 3: Types of Accidents Reported by All Rail Transit Agencies in Calendar Year 2022**



**Figure 2: Types of Accidents Reported by All Rail Transit Agencies in Calendar Year 2022**

NOTE: The category “Other” is comprised of all accidents not included in the other categories. These include accidents resulting in substantial damage, evacuations, or a collision with an object such as signs/poles, crossing gates, ADA ramps, signal cabinet door, etc.

**Accident Primary Causal Factors**

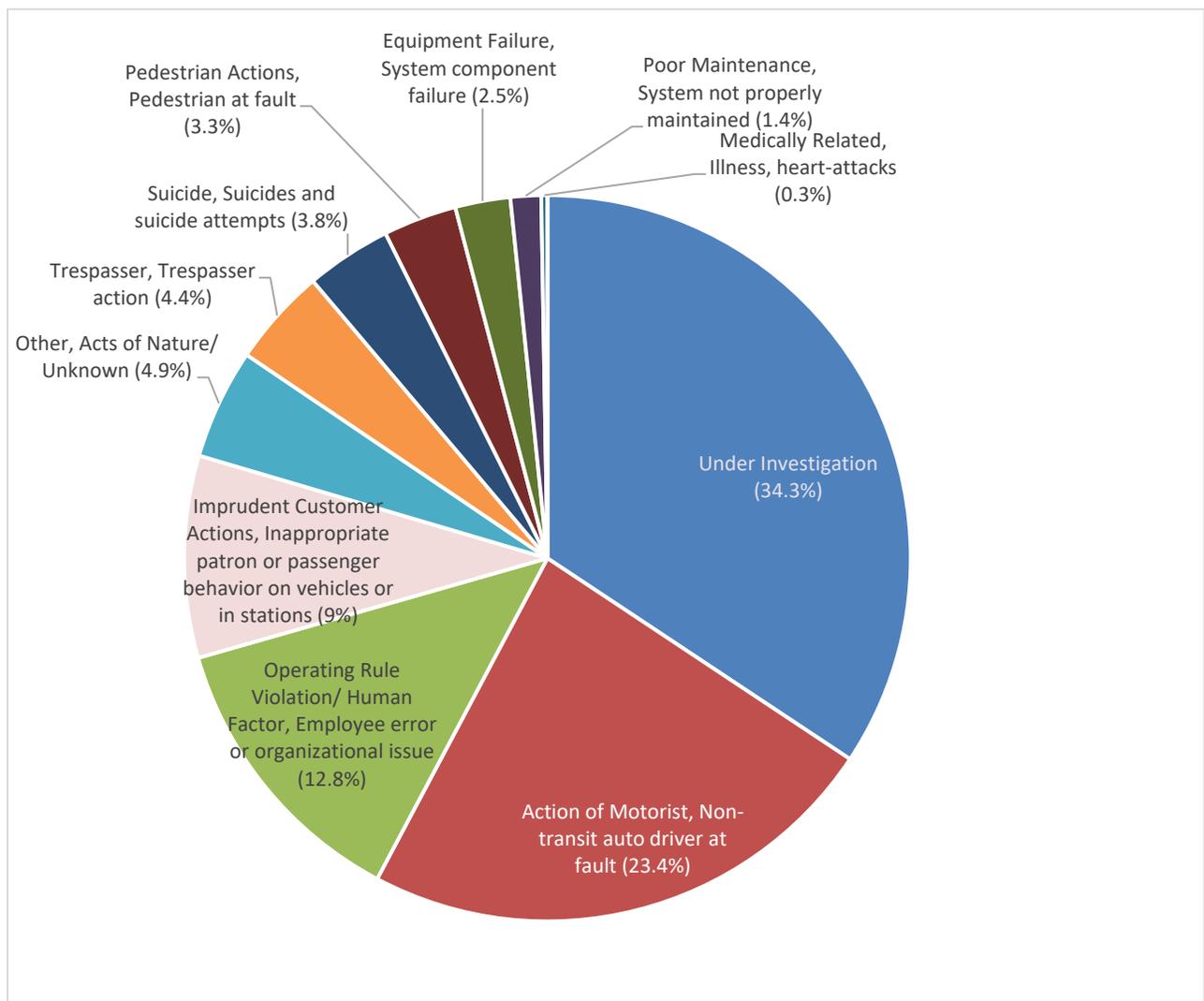
Primary Causal Factors	2021		2022		Difference between 2021 and 2022
	Total Accidents	Percentage of Accidents	Total Accidents	Percentage of Accidents	
Action of Motorist, Non-transit auto driver at fault	92	34.85%	86	23.43 %	-6.52 %
Operating Rule Violation/ Human Factor, Employee error or organizational issue	38	14.39%	47	12.81 %	23.68 %
Imprudent Customer Actions, Inappropriate patron or passenger behavior on vehicles or in stations	20	7.58%	33	8.99 %	65 %
Other, Acts of Nature/ Unknown	12	4.55%	18	4.9 %	50 %
Trespasser, Trespasser action	2	0.76%	16	4.36 %	700 %
Suicide, Suicides and suicide attempts	14	5.30%	14	3.81 %	0 %
Pedestrian Actions, Pedestrian at fault	9	3.41%	12	3.27 %	33.33 %
Equipment Failure, System component failure	6	2.27%	9	2.45 %	50 %
Poor Maintenance, System not properly maintained	3	1.14%	5	1.36 %	66.67 %
Medically Related, Illness, heart-attacks	0	0.00%	1	0.27 %	0
Slips and Falls, Slips and falls in station or vehicle	1	0.38%	0	0 %	-100 %

**Table 4: Primary Causal Factors Identified through Accident Investigation for Calendar Years 2021 and 2022**

CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

Primary Causal Factors	2021		2022		Difference between 2021 and 2022
	Total Accidents	Percentage of Accidents	Total Accidents	Percentage of Accidents	
Under Investigation	66	25%	126	34.33 %	90.91 %
Grand Total	264	100.00%	367	100	39.02 %

**Table 4: Primary Causal Factors Identified through Accident Investigation for Calendar Years 2021 and 2022**



**Figure 3: Primary Causal Factors Identified through Accident Investigation in Calendar Year 2022**

## **National Transportation Safety Board (NTSB) Accident Investigations of California RTAs**

The NTSB is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and any significant accidents in other modes of transportation – rail, highway, marine and pipeline. The NTSB determines the probable cause of accidents and issues safety recommendations aimed at preventing future accidents.

When a rail transit accident occurs, the NTSB may initiate an accident investigation depending upon the severity of the accident. In such a case, the NTSB is responsible for leading the investigation, including the determination of facts, conditions, and circumstances, the cause or probable causes, and recommendations to reduce the likelihood of recurrence. CPUC staff will work with the NTSB and participate along with the involved RTAs to complete any accident investigation the NTSB chooses to investigate. The NTSB will typically address any accident findings through recommendations to the involved parties that they believe would have prevented or mitigated the accident.

### **NTSB Report RIR-22-07, Safety Recommendation R-22-3**

On August 22, 2019, a Sacramento Regional Transit District (SRTD) train carrying passengers collided with another SRTD train on the same track, with no passengers onboard, testing a mechanical problem. The NTSB launched an investigation and published their accident investigation report on April 14, 2022. Subsequently on May 19, 2022, the NTSB issued a letter to the CPUC urging the Commission to respond within 90 days, detailing the actions the CPUC has taken or intends to take to implement the recommendations in the report. On August 16, 2022, the CPUC submitted the response letter describing actions the CPUC had already taken addressing NTSB's recommendations. NTSB has not replied to the CPUC response letter.

### **NTSB Accident Number RRD21FR015**

On September 13, 2021, a Bay Area Rapid Transit District train berthed at the Powell Street Station platform where a train door closed on a dog leash with the dog inside the train and patron outside the train. The leash was tied to the patron's backpack, who was subsequently dragged along the platform as the train departed the station resulting in a fatality. The NTSB chose to investigate this accident. The CPUC, BART, FTA, the Amalgamated Transit Union (the union representing BART employees), and BART Police participated in the investigation. NTSB has not yet issued its report. CPUC staff are also working on the accident investigation and potential mitigations so that BART can complete a report acceptable to CPUC.

### **Corrective Action Plans**

As described previously, CAP(s) are developed by RTAs and tracked by CPUC staff. CPUC and FTA rules require RTAs to develop CAP(s) for addressing the findings of investigations of events; hazard management program; triennial audits conducted by CPUC; internal safety/security reviews conducted by the RTAs; and other purposes. CAP(s) describe the proposed corrective actions and the responsible

## CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

RTA personnel who will implement and track the CAP to closure. CPUC staff review the proposed CAP(s) to determine their adequacy in addressing the issue, and either approve or require modifications to the CAP. CPUC staff hold routine meetings with RTA personnel to assess CAP status and update CPUC records. In CY 2022, CPUC staff reviewed 662 CAP(s), as shown in Table 5 below.

FTA Category	CAPs Generated in CY 2021			CAPs Generated in CY 2022		
	Number	CAP Status		Number	CAP Status	
		Open	Closed		Open	Closed
<b>Bay Area Rapid Transit</b>						
Accident Investigation	6	0	6	24	14	10
Hazard Management	0	0	0	0	0	0
Inspection	44	9	35	117	72	45
Internal Safety Audit Program	0	0	0	9	0	9
Triennial Audit	0	0	0	0	0	0
Other	0	0	0	0	0	0
Sub Total	50	9	41	150	86	64
<b>San Francisco Municipal Transportation Agency</b>						
Accident Investigation	33	15	18	85	18	67
Hazard Management	0	0	0	0	0	0
Inspection	33	10	23	45	17	28
Internal Safety Audit Program	0	0	0	0	0	0
Triennial Audit	0	0	0	0	0	0
Other	0	0	0	0	0	0
Sub Total	66	25	41	130	35	95
<b>Santa Clara Valley Transportation Authority</b>						
Accident Investigation	4	1	3	10	1	9
Hazard Management	0	0	0	1	0	1
Inspection	20	3	17	85	45	40
Internal Safety Audit Program	8	2	6	0	0	0
Triennial Audit	0	0	0	0	0	0
Other	0	0	0	0	0	0
Sub Total	32	6	26	96	46	50

Table 5: Status of Corrective Action Plans by FTA Source Category for Calendar Years 2021 and 2022

## CALENDAR YEAR 2022 ANNUAL REPORT – STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

FTA Category	CAPs Generated in CY 2021			CAPs Generated in CY 2022		
	Number	CAP Status		Number	CAP Status	
		Open	Closed		Open	Closed
<b>Los Angeles County Metropolitan Transportation Authority</b>						
Accident Investigation	14	2	12	6	1	5
Hazard Management	0	0	0	0	0	0
Inspection	56	3	53	69	8	61
Internal Safety Audit Program	0	0	0	0	0	0
Triennial Audit	0	0	0	0	0	0
Other	0	0	0	1	0	1
Sub Total	70	5	65	76	9	67
<b>North [San Diego] County Transit District</b>						
Accident Investigation	0	0	0	6	0	6
Hazard Management	0	0	0	0	0	0
Inspection	4	0	4	10	1	9
Internal Safety Audit Program	16	0	16	0	0	0
Triennial Audit	0	0	0	0	0	0
Other	0	0	0	0	0	0
Sub Total	20	0	20	16	1	15
<b>San Diego Trolley, Inc</b>						
Accident Investigation	4	0	4	1	0	1
Hazard Management	0	0	0	0	0	0
Inspection	35	3	32	27	1	26
Internal Safety Audit Program	0	0	0	0	0	0
Triennial Audit	0	0	0	0	0	0
Other	0	0	0	0	0	0
Sub Total	39	3	36	28	1	27

Table 5: Status of Corrective Action Plans by FTA Source Category for Calendar Years 2021 and 2022

## CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

FTA Category	CAPs Generated in CY 2021			CAPs Generated in CY 2022		
	Number	CAP Status		Number	CAP Status	
		Open	Closed		Open	Closed
<b>Sacramento Regional Transit District</b>						
Accident Investigation	7	0	7	1	0	1
Hazard Management	0	0	0	0	0	0
Inspection	41	19	22	116	61	55
Internal Safety Audit Program	5	2	3	1	1	0
Triennial Audit	0	0	0	0	0	0
Other						
Sub Total	53	19	29	118	62	56
<b>San Francisco International Airport Automatic People Mover (AirTrain)</b>						
Accident Investigation	1	0	1	0	0	0
Hazard Management	0	0	0	0	0	0
Inspection	0	0	0	4	1	3
Internal Safety Audit Program	4	4	0	0	0	0
Triennial Audit	0	0	0	0	0	0
Other	0	0	0	0	0	0
Sub Total	5	4	1	4	1	3
<b>Getty Center Museum Automated People Mover</b>						
Accident Investigation	0	0	0	0	0	0
Hazard Management	0	0	0	0	0	0
Inspection	3	0	3	3	0	3
Internal Safety Audit Program	0	0	0	3	0	3
Triennial Audit	0	0	0	0	0	0
Other	0	0	0	2	0	2
Sub Total	3	0	3	8	0	8

Table 5: Status of Corrective Action Plans by FTA Source Category for Calendar Years 2021 and 2022

CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

FTA Category	CAPs Generated in CY 2021			CAPs Generated in CY 2022		
	Number	CAP Status		Number	CAP Status	
		Open	Closed		Open	Closed
<b>Sacramento County Department of Airports</b>						
Accident Investigation	0	0	0	0	0	0
Hazard Management	0	0	0	0	0	0
Inspection	2	0	2	6	4	2
Internal Safety Audit Program	3	0	3	0	0	0
Triennial Audit	0	0	0	0	0	0
Other	0	0	0	4	1	3
Sub Total	5	0	5	10	5	5
<b>Angels Flight Railway Company</b>						
Accident Investigation	0	0	0	0	0	0
Hazard Management	0	0	0	0	0	0
Inspection	4	0	4	8	2	6
Internal Safety Audit Program	0	0	0	0	0	0
Triennial Audit	0	0	0	0	0	0
Other	0	0	0	0	0	0
Sub Total	4	0	4	8	2	6
<b>Americana At Brand Trolley</b>						
Accident Investigation	0	0	0	7	0	7
Hazard Management	0	0	0	0	0	0
Inspection	4	2	2	7	0	7
Internal Safety Audit Program	0	0	0	0	0	0
Triennial Audit	0	0	0	0	0	0
Other	0	0	0	0	0	0
Sub Total	4	2	2	14	0	14

Table 5: Status of Corrective Action Plans by FTA Source Category for Calendar Years 2021 and 2022

FTA Category	CAPs Generated in CY 2021			CAPs Generated in CY 2022		
	Number	CAP Status		Number	CAP Status	
		Open	Closed		Open	Closed
<b>Grove Trolley</b>						
Accident Investigation	1	0	1	0	0	0
Hazard Management	0	0	0	0	0	0
Inspection	1	0	1	4	0	4
Internal Safety Audit Program	0	0	0	0	0	0
Triennial Audit	0	0	0	0	0	0
Other	0	0	0	0	0	0
Sub Total	2	0	2	4	0	4
<b>Grand Total</b>	<b>353</b>	<b>75</b>	<b>278</b>	<b>662</b>	<b>248</b>	<b>414</b>

Table 5: Status of Corrective Action Plans by FTA Source Category for Calendar Years 2021 and 2022

### Changes to the RTA Public Transportation Agency Safety Plans

On July 29, 2018, FTA issued 49 CFR Part 673, which requires RTAs under FTA jurisdiction to develop Public Transportation Agency Safety Plans (PTASPs), based on the principles of Safety Management Systems and comply with the following minimum requirements:

- An approval by the RTA board of directors, or an equivalent entity, and a signature from the RTA's Accountable Executive
- Documented processes and procedures for a Safety Management System, which would include a Safety Management Policy, a process for Safety Risk Management, a process for Safety Assurance and Safety Promotion
- Performance targets based on the safety performance measures set out in the National Public Transportation Safety Plan
- Compliance with the National Public Transportation Safety Plan and FTA's Public Transportation Safety Program
- A process and timeline for conducting an annual review and update of the plan.
- Emergency preparedness and response plan or procedures that addresses, at a minimum, the assignment of employee responsibilities during an emergency, and coordination with federal, state, regional, and local officials with roles and responsibilities for emergency preparedness and response in the RTA's service area.

CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

On February 17, 2022, FTA issued a “Dear Colleague Letter” informing the transit industry about the Bipartisan Infrastructure Law changes to the PTASP requirements at 49 U.S.C. § 5329(d) and establishes compliance deadlines for implementing these new provisions.

By July 31, 2022, a transit agency that receives federal funding under 49 U.S.C. § 5307 must establish a Safety Committee compliant with 49 U.S.C. § 5329(d)(5). By December 31, 2022, the Safety Committee must comply with the statutory requirement that it must approve an update to the agency’s PTASP, incorporating applicable PTASP requirements in 49 U.S.C. § 5329(d).

CPUC staff has been working with and reviewing the RTA’s PTASP to ensure compliance with the new Bipartisan Infrastructure Law.

---

## ENFORCEMENT ACTIONS

The CPUC has two primary methods of taking enforcement actions. One is to open a formal proceeding before the Commission referred to as an Order Instituting Investigation (OII) and the second process allows CPUC staff to issue a citation.

If the Commission issues an OII, a formal proceeding is initiated where an Administrative Law Judge is assigned to preside over hearings and may prepare a draft Decision for Commission consideration.

The Commission issued Resolution ST-163 (12/22/2014), which approved a citation program under the administration of the CPUC’s Director of the Safety and Enforcement Division (SED) for enforcing compliance with certain GOs, Codes of Federal Regulations (CFRs), and other requirements for RTAs operating in California. RTSB and two other CPUC branches involved in rail safety were formerly part of SED. In 2019 CPUC formed RSD by separating the 3 rail safety branches from SED. Therefore, the authority delegated to the SED Director in Resolution ST-163, now is delegated to the RSD Director.

RSD has delegated authority to draft and issue citations for specific violations and levy penalties in specified amounts as set forth in the Resolution. RSD works with CPUC’s Legal Division to generate and issue citations. The Rail Transit Citation Program includes an appeal process.

No new OII formal proceedings and no citations under Resolution ST-163 were initiated by RTSB during calendar year 2022.

## SUMMARY OF ACTIVITIES FOR ALL FTA REGULATED RAIL TRANSIT AGENCIES IN CALENDAR YEAR 2022

### BAY AREA RAPID TRANSIT DISTRICT

BART is a rapid transit public transportation system serving the San Francisco Bay Area, that began revenue operations on September 11, 1972. BART is operated by the Bay Area Rapid Transit District, formed in 1957. The initial system opened in stages from 1972 to 1974. The heavy rapid rail, electrically powered, elevated and subway system connects San Francisco and Oakland with urban and suburban areas in Alameda, Contra Costa, San Mateo and Santa Clara counties. The BART Board is comprised of nine elected officials from the 9 BART Districts who serve 4-year terms.

BART serves 50 stations along seven routes on 131 miles of rapid transit lines, including a 10-mile spur line in

eastern Contra Costa County which utilizes diesel powered trains and a 3.2-mile automated guideway transit line to the Oakland International Airport.



### **BART Rail System Description**

The current BART system operates on the following seven lines:

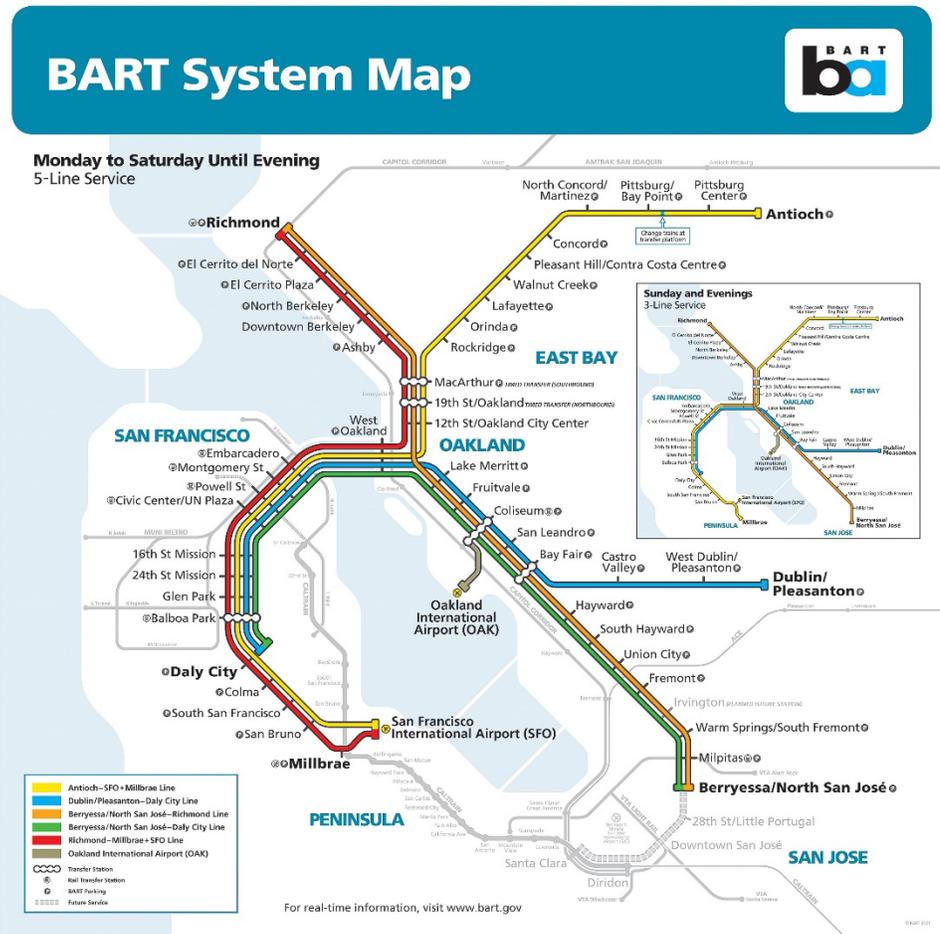
- Berryessa/North San José - Daly City Line
- Dublin/Pleasanton—Daly City Line
- Richmond—San Francisco Airport Line
- Pittsburg/Bay Point— San Francisco Airport Line
- Richmond—Berryessa/ North San José Line
- Pittsburg/Bay Point – Antioch Line (East Contra Costa County BART extension)
- Coliseum – Oakland International Airport Line (Oakland Airport Connector)

CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

The initial segment was 28 miles of track in Alameda County, servicing Oakland to Fremont. The second segment opened on January 29, 1973, with 12 miles of track extending to Richmond. A 17-mile segment opened on May 21, 1973, offering service from Oakland to Concord. On November 5, 1973, a new, temporarily disconnected 7.5-mile segment opened between Montgomery Street in Downtown San Francisco and Daly City. The Transbay Tube opened on September 16, 1974, fully connecting the 71.5 miles of track of the original BART system. Embarcadero Station opened on May 27, 1976, bringing the total station count to 34.

An extension to the Concord line, continuing to the North Concord/Martinez Station, opened on December 16, 1995, adding 2.25 miles of track to the BART system. The Colma Station opened for revenue service on February 24, 1996, adding 1.6 miles of track south of the Daly City Yard. The Pittsburg/Bay Point Station opened on December 7, 1996, completing the 7.8-mile extension from Concord station which included the North Concord/Martinez Station. The

Dublin/Pleasanton extension opened on May 10, 1997, adding 14 miles of track and two stations to the system. The San Francisco Airport extension opened on June 22, 2003, adding four stations and 8.7 miles of track. The Warm Springs/South Fremont extension opened on March 25, 2017, adding one station and 5.4 miles of track. Finally, Berryessa/North San José extension began service on June 13, 2020.



BART SYSTEM MAP

### **East Contra Costa BART Extension (e-BART)**

The East Contra Costa BART Extension Project opened in 2018 and provides passenger service along 10 miles of the California State Route 4 corridor connecting east of the Pittsburg/Bay Point Station. The extension uses Diesel Multiple Unit (DMU) vehicles instead of BART’s standard electrically driven trains and includes two new stations and a transfer platform to provide timed transfers between DMU vehicles and traditional BART trains. The SCP for this extension was approved by the Commission in Resolution ST-139 (3/23/2012).

### **BART’s Oakland Airport Connector**

The Oakland Airport Connector (OAC) is an APM system designed to integrate with BART at the Coliseum Station, to convey passengers to and from the Oakland International Airport. OAC began revenue operation on November 22, 2014. The system was designed and constructed by Flatiron Construction and Parson Transportation along with Doppelmayr Cable Car (DCC) that designed, manufactured, and supplied the APM system and guideway. DCC now operates and maintains the system as part of a 20-year BART operations and maintenance contract. The pinched-loop cable-driven system is 3.2 miles in length, including two passenger stations and a vehicle maintenance facility which houses the traction motors. CPUC staff monitored the engineering design and construction phases of this project through the safety certification process approved by the Commission in Resolution ST- 64 (10/2/2003). BART established the OAC as a separate system because of its significant difference from traditional BART service.

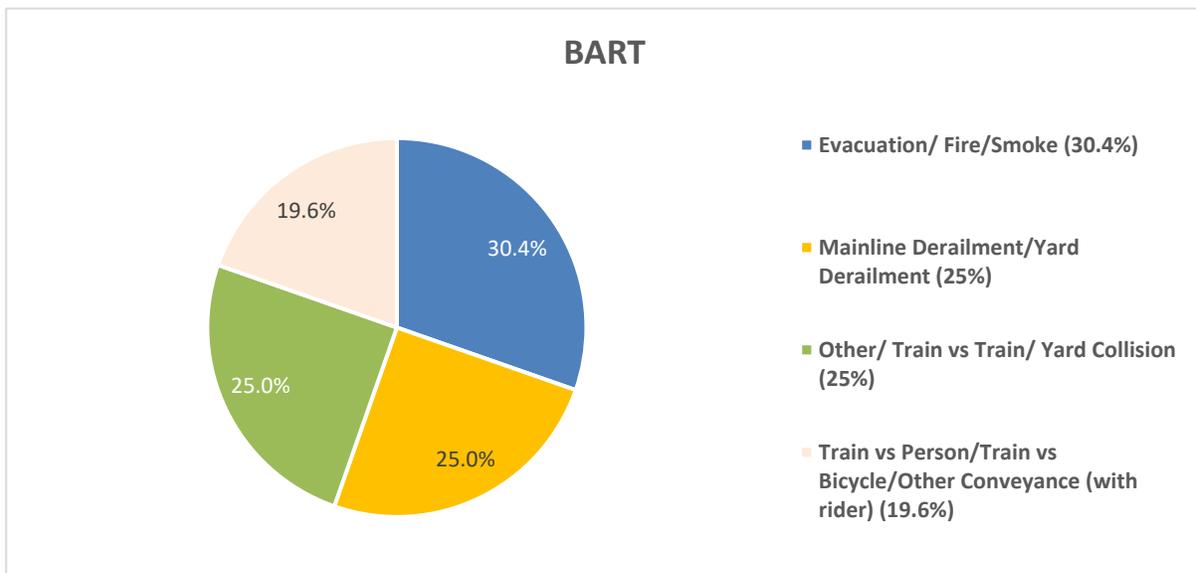
The OAC system has not experienced any accidents or significant operational concerns since it began operations. The OAC underwent its first triennial review in October 2016, and its second in October of 2019.



**BART Accident Summary**

Accident Type	BART
Evacuation/ Fire/Smoke (30.4%)	17
Mainline Derailment/Yard Derailment (25%)	14
Other/ Train vs Train/ Yard Collision (25%)	14
Train vs Person/Train vs Bicycle/Other Conveyance (with rider) (19.6%)	11
Grand Total	56

**Table 6: BART Accidents Primary Causal Factors - Calendar Year 2022**



**Figure 4: BART Accidents Primary Causal Factors - Calendar Year 2022**

NOTE: The category “Other” is comprised of all accidents not included in the other categories. These include accidents resulting in substantial damage or evacuations, and a collision with an object such as signs/poles, crossing gates, signal cabinet door, motor vehicles, shopping carts, etc. left on or next to the tracks.

**COVID-19 Impacts**

In CY 2022, BART had an average ridership of 130,283 weekday passengers and 41.4 million annual passengers compared to 408,000 weekday passengers and 117.4 million annual passengers in expected ridership pre-COVID. There has been a steady increase of monthly ridership from 24% of pre-COVID expected ridership in January 2022, to 35% of pre-COVID expected ridership in December 2022, with a high monthly average of 41% in September. As of December 2022, BART had an annual average of approximately 29% ridership and 50% weekend ridership compared to pre-COVID levels.

### **Bipartisan Infrastructure Legislation**

As of December 2022, BART has formed the Safety Management System (SMS) Joint Union Management Safety Committee, meeting the requirement of the Bipartisan Infrastructure Law on the Public Transportation Agency Safety Plan per 49 U.S.C. § 5329(d). This committee will identify risk-based corrective measures needed to eliminate or control recognized safety and health hazards to transit operations and workforce, annually review and approve BART’s Public Transportation Agency Safety Plan, and other work that the committee might decide.

### **System Expansions and Capital Projects**

#### **Silicon Valley Berryessa Extension/Silicon Valley Rapid Transit Project**

The Santa Clara Valley Transit Authority (VTA) and BART are constructing a 16.3-mile extension that will extend the BART system into Santa Clara County and to the City of San Jose. The extension was planned and developed jointly by BART and VTA. VTA and its contractors are constructing the extension in accordance with BART Standards and BART will operate the rail system when completed. The



planned revenue service date is June 1, 2030. The line will extend from the planned Warm Springs Station to Milpitas alongside Union Pacific Railroad Company tracks, continuing to 28<sup>th</sup> Street and Santa Clara Street in San Jose, then proceeding underground through downtown San Jose to the Diridon Caltrain Station and finally terminating at the Santa Clara Station. This project has been divided into 2 phases:

- Silicon Valley Berryessa Extension (SVBX) – 10 miles in length which is currently in operation and was approved for rail service on June 13, 2020. This segment is currently operating.
- Santa Clara Valley Extension - 6.3 miles in length which is environmentally cleared and under final design, slated for completion by June 2030.

The CPUC approved BART’s Safety Certification Plan (SCP) with Resolution ST-83 (2/15/2007), and CPUC staff have been monitoring and inspecting the engineering, design, and construction phases of this project through the safety certification process.

## New Vehicle Procurement Project – Fleet of the Future

BART’s new vehicle procurement project currently underway will replace the existing fleet of 669 legacy cars with 775 Fleet of the Future (FOTF) new cars. BART has since purchased an additional 225 cars for the FOTF project. The new cars have been continuously being rolled out since 2018. CPUC staff have been reviewing test records



prior to approval for each car during the procurement project through the safety certification process. As of January 2023, CPUC staff have approved 448 new cars after final acceptance testing by BART and the new cars are operating in revenue service. Due to the project being behind schedule, the final assembly and test facility is being moved to Pittsburg, California from Plattsburg, New York. BART and the vendor believe moving the final assembly and test facility location will have a positive effect on the production schedule by eliminating two weeks of travel per car and will give BART a more hands-on approach with the vehicle production. BART is safety certifying the cars in accordance with the SCP, approved by the Commission in Resolution ST-150 (3/22/2013).

## BART Communications Based Train Control Upgrade

BART is upgrading its entire mainline with a Communications-Based Train Control (CBTC) system. The CBTC technology utilizes a two-way digital radio frequency communication between intelligent trains, and a network of distributed track-side zone controllers. The primary characteristics of a CBTC

### Train Control Modernization

#### CBTC (Moving Block Signaling)

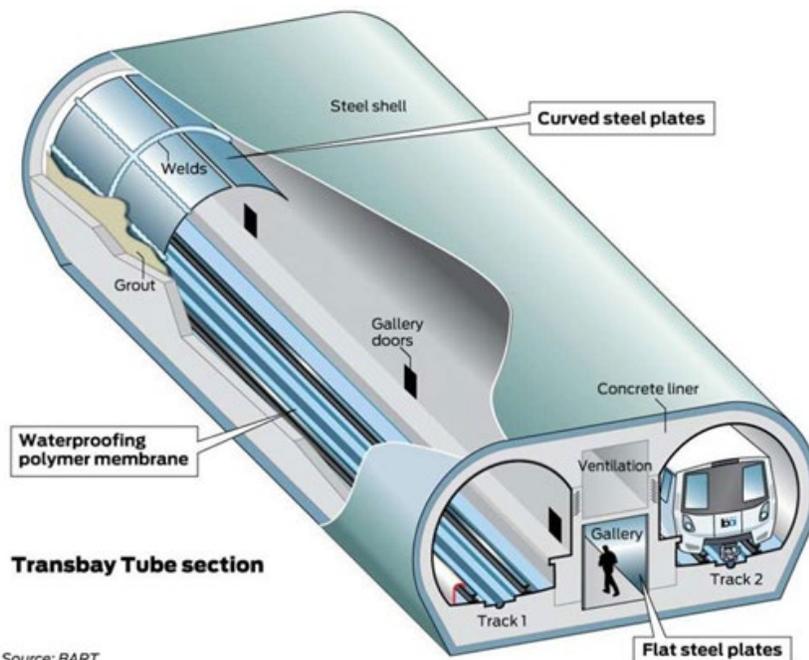


system include high resolution train location determination by car borne equipment and independent of track circuits. The new CBTC system will provide shorter headways (amount of time between train arrivals at a station), lower maintenance costs, greater operational flexibility, enhanced safety (due to reduced maintenance and more precise tracking of trains and maintenance vehicles), smoother and

## CALENDAR YEAR 2022 ANNUAL REPORT – STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

more predictable operation, and improved reliability and availability. BART awarded the contract to Hitachi to design and build the project, with Notice to Proceed executed in November 2020. The SCP was approved by the Commission in Resolution ST-206 (10/30/2017). The Project is entering final design phase for deploying CBTC Automatic Train Supervision (ATS) over the entire network, which is the initial stage of the many phases project.

### BART Transbay Tube Seismic Retrofit Project



Source: BART

This project is a part of the Earthquake Safety Program approved by the Commission in Resolution ST-81 (10/27/2005). The program is to retrofit the 1976 Transbay Tube. In 2005, the project began to retrofit elements including aerial structures, underground structures, and stations that may be vulnerable to a major earthquake. All elements have been completed with the exception of the 3.6-mile-long Transbay Tube connecting the cities of Oakland and San Francisco that started the retrofitting construction in 2019.

The Transbay Tube retrofit project will upgrade and strengthen the infrastructure by reinforcing the tube itself. The estimated cost for the project is \$267 million and the projected completion date is Summer 2023.

### Hayward Maintenance Complex (HMC)

BART's new project to expand and improve its Hayward maintenance and storage yard, approved by Commission Resolution ST-218 (4/16/2019), is partially complete. BART's Hayward Yard is one of four BART maintenance facilities serving the BART system. Over the next 30 years, BART will acquire additional vehicles to meet future demand associated with the regional population growth,



be determined. An SCP was approved via Commission Resolution ST-239 (July 20, 2020). The construction for the West Bay sites is underway. East Bay sites completed the engineering design phase and is ready for construction bids.

### **BART Irvington Station Project:**

The Irvington Station Project includes construction of a new station halfway between the existing Fremont and Warm Springs / South Fremont stations. The estimated completion year is 2029. The project is in the engineering design phase. The SCP was approved by Commission Resolution ST-240 (November 5, 2020).




---

## LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

LACMTA, also referred to as L.A. Metro, is the transportation agency for Los Angeles County. LACMTA is governed by a 13-member Board of Directors comprised of five Los Angeles County Supervisors, the Mayor of Los Angeles, three Los Angeles mayor-appointed members, four city council members representing the other 87 cities in Los Angeles County, and one non-voting member appointed by the Governor of California. The Twenty-Eight by '28 initiative set forth by the City of Los Angeles Mayor and the LACMTA Board of Directors proposes for the completion of 28 LACMTA transportation infrastructure projects before the start of the 2028 Summer Olympic and Paralympic Games, many of which are rail transit projects.

### **LACMTA Rail System Description**

The LACMTA rail system consists of Metro A (formerly Blue), Metro B (formerly Red), Metro C (formerly Green), Metro D (formerly Purple), Metro E (formerly Expo), Metro L (formerly Gold), and Metro K Lines. The Metro Gold Line Eastside Extension was opened in November 2009. The Mid-City Exposition Light Rail Line Phase One opened in April 2012. The Gold Line Foothill Extension and Expo Phase Two opened for revenue service March and May 2016, respectively. The Metro K Line (Crenshaw/LAX Line) opened for revenue service in October 2022. The Regional Connector, Foothill Phase 2B, and the Westside Extension projects are currently in the construction phase. LACMTA operates over 105 miles with 93 stations. Rail transit ridership for the system in fiscal year 2022 was 55.7 million, compared to 41.8 million in fiscal year 2021.



LACMTA Rail System Map

**A Line (Metro Blue Line)**

The Metro A Line (MAL, formerly the Blue Line) is a light rail line that runs between downtown Los Angeles and downtown Long Beach and serves 22 stations over a 22-mile route. MAL connects to the Metro C Line (formerly the Green Line) at Rosa Parks/Imperial station in Compton and connects to the Metro B Line (formerly the Red Line) at 7<sup>th</sup>/Metro Station in downtown Los Angeles. Currently, LACMTA operates two-car and three-car trains on the line depending on the time of the day. MAL is LACMTA's oldest line and underwent an extensive rehabilitation during 2019, including track replacements and additions, and signal and grade crossing upgrades. Additionally, the train control system at the MBL Yard (Division 11) will be modernized and undergo verification testing prior to deployment of the new system. In 2022 LACMTA upgraded and tested the new train control system, However, it is not deployed yet in the yard because LACMTA is troubleshooting an issue.

**B Line (Metro Red Line)**

The Metro B Line (MBL, formerly the Red Line) is a heavy rail subway line that has been operating since 1990. LACMTA operates four-car and six-car trains on this 17.4-mile route between the Los Angeles Union Station and North Hollywood with 16 stations. The MBL connects to the MAL and the Mid-City E Line at the 7<sup>th</sup>/Metro Station in downtown Los Angeles and to Amtrak, Metrolink commuter rail and the Metro L (formerly the Gold Line) at the Los Angeles Union Station.

**C Line (Metro Green Line)**

The Metro C Line (MCL, formerly the Green Line) is a light rail line that runs east-west along the median of the Glenn Anderson (a.k.a. Century) Freeway (Interstate 105) through Los Angeles County between City of Norwalk and City of Redondo Beach. LACMTA operates a two-car configuration on the line with the exception of one-car trains during low service use period. MCL has been operating since 1995 and has 14 stations over its 20-mile route. It connects to the MAL at the Imperial/Wilmington (Rosa Parks) Station in City of Compton.

**D Line (Metro Purple Line)**

The Metro D Line (formerly the Purple Line) is a heavy rail subway line that runs between the Los Angeles Union Station and the Koreatown area of the City of Los Angeles and diverges from the Metro B Line at the Vermont-Wilshire Station with two additional stations. The Metro D Line construction expansion will eventually provide the connection to the three phases of the Metro D Line capital project extensions currently in construction.

**L Line (Metro Gold Line)**

The Metro L Line (formerly the Gold Line) is a light rail line that runs from the City of Azusa through Downtown Los Angeles to East Los Angeles. The Metro L Line has been operating since July 2003 from Los Angeles Union Station to the City of Pasadena Sierra Madre Villa Station. The Metro Gold Line East Side Extension project, which was completed in November 2009, added eight new stations and extended the L line approximately 6 miles from Union Station to East Los Angeles. The Metro Gold Line Foothill Extension project, which was completed in March 2016, added six new stations and

## CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

extended the L line approximately 11 miles from Pasadena through the cities of Arcadia, Monrovia, Duarte, Irwindale, and Azusa. The Foothill Extension Project Phase 2B currently in construction will further extend the L line from Azusa to Pomona.

**E Line (Metro Mid-City Expo Line)**

The Metro Mid-City Expo Line Phase I project opened in April 2012, and operates on eight and a half-mile, double track light rail system with 12 stations and with two stations shared with Metro A Line. Both the Metro E Line and Metro A Line terminate at the City of Los Angeles 7<sup>th</sup>/Metro where they are transfer points to the B and D Lines. The Metro Mid-City Expo Line Phase I also shares the City of Los Angeles Pico Station with the A Line which serves the Staples Center and L.A. Live. The Metro E Line serves the University of Southern California, Exposition Park, the Mid-City communities, the Crenshaw District, and Culver City.

The Metro Expo Line Phase II project opened in May 2016. This line is a 6.6-mile double track extension of the Expo Mid-City Expo Phase I Line, which extends the existing 8-mile system from downtown Los Angeles to Culver City westbound to City of Santa Monica. The system continues from Culver City to West Los Angeles and Santa Monica, with seven new stations and travels along the old Pacific Electric Exposition right-of-way to 4<sup>th</sup> Street and Colorado Ave in downtown Santa Monica.

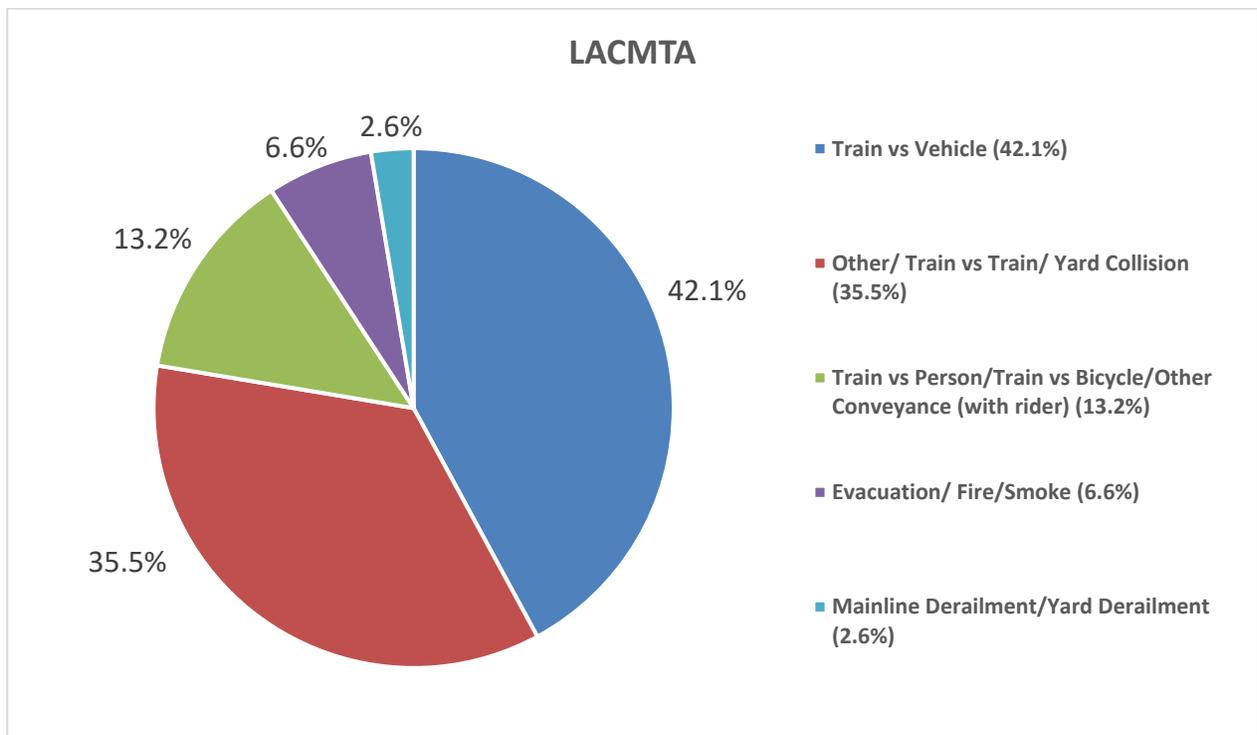
**K Line (Crenshaw/LAX Line)**

The Metro K Line is a light rail line with a northern terminus of Expo/Crenshaw which also serves as a transfer point to the Metro E Line. The current southern terminus is Westchester/Veterans Station. Heavy construction continues along the southern segment of the K line. When construction is complete the K line will share a station with the future LAX People Mover at the LAX/Metro Transit Center and have a direct connection with the existing C line. Currently the K line consists of 7 stations.

**LACMTA Accident Summary**

Accident Type	LACMTA
Train vs Vehicle (42.1%)	32
Other/ Train vs Train/ Yard Collision (35.5%)	27
Train vs Person/Train vs Bicycle/Other Conveyance (with rider) (13.2%)	10
Evacuation/ Fire/Smoke (6.6%)	5
Mainline Derailment/Yard Derailment (2.6%)	2
Grand Total	76

**Table 7: LACMTA Accidents Primary Causal Factors - Calendar Year 2022**



**Figure 5: LACMTA Accidents Primary Causal Factors - Calendar Year 2022**

NOTE: The category “Other” is comprised of all accidents not included in the other categories. These include accidents resulting in substantial damage or evacuations, and a collision with an object such as signs/poles, crossing gates, signal cabinet door, motor vehicles, shopping carts, etc. left on or next to the tracks.

## **COVID-19 Impacts**

Rail transit ridership for the system in fiscal year 2022 was 55.7 million compared to 41.8 million in fiscal year 2021, a 33% increase primarily due to recovery from the impacts of COVID-19.

## **System Expansions and Capital Projects**

### **P3010 New Vehicle Procurement Project**



LACMTA is in the process of procuring as many as 235 new rail vehicles. These vehicles are intended to expand passenger capacity for the recently completed projects (Expo Phase 2 and Foothill Extension Phase 2) and the future LAX/Crenshaw line currently under construction. The SCP was approved by

Resolution ST-149 (1/10/2013). As rail cars are prepared for service, CPUC staff will approve them after reviewing the Car History Books (testing documentation). On March 4, 2016, CPUC staff gave LACMTA personnel approval to place the first five cars in service. To date, CPUC staff have certified 226 vehicles for revenue service. Kinkisharyo, the vehicle manufacturer, completed a required 4,000 miles of Operational Reliability test in December 2020, allowing the shipment of the final 50 light rail vehicles (LRV) to resume in January 2021. On January 7, 2021, LACMTA received the final rail car of the order at the new maintenance yard for the Crenshaw/LAX Transit Project (Division 16). This shipment completed the P3010 LRV fleet, the largest rail fleet at LACMTA.

Starting in April 2021, LACMTA resumed the conditional acceptance process for the final 50 cars but had to pause until fall of 2021 because the remaining 48 LRVs had a new communication system installed and received updates to the Automatic Passenger Counter (APC) system. Additionally, there will be ongoing efforts to retrofit the other LRVs with the new communication system installed in the 48 LRVs. Throughout 2022, internal LACMTA testing continued in preparation for CPUC approval. There were 6 Car History Book review meetings in 2022 between CPUC and LACMTA staff, leading to CPUC certification of 226 vehicles.

### HR4000 Heavy Rail Vehicle Procurement

LACMTA is in the process of procuring a base order of 64, with options for up to 282, new heavy rail vehicles to provide for the future expansions of its Regional Connector and Metro D Line (Purple Line)

Extensions, and to replace the aging heavy rail vehicle fleet operating on the Metro B and Metro D Lines (Red/Purple Line) subways. Resolution ST-185 (10/25/2018) approved the procurement option. The first set of married pair vehicles is estimated to be shipped to

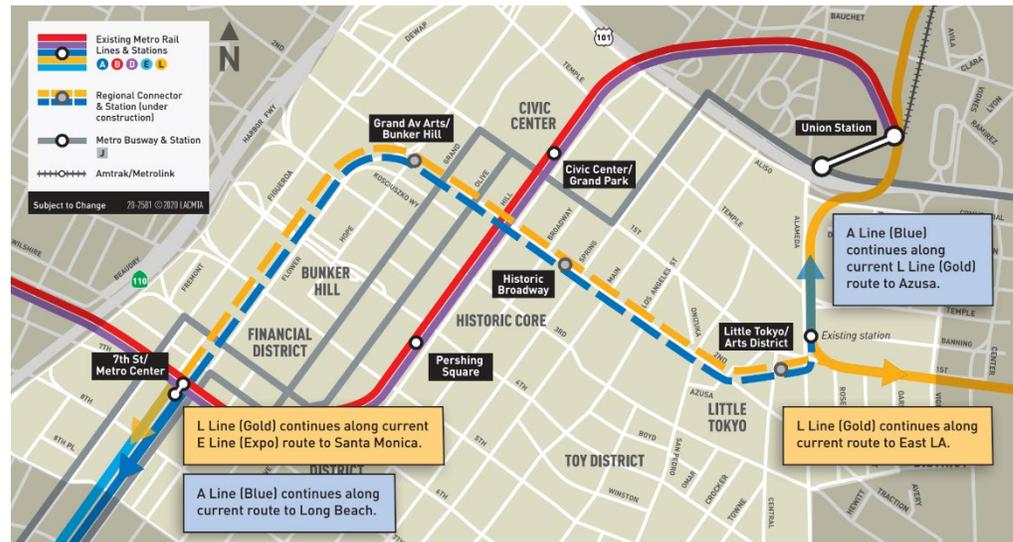
LACMTA in February 2023, while two other married pairs are estimated to be shipped to LACMTA in June 2023. Shipment has been delayed to due several reasons. First, COVID-19 has affected the international supply chain, such as causing lockdowns in China. The shipment of the first married pair has been delayed because open items were identified in the Springfield assembly site that have high risk to LACMTA operations. The shipment of 2 married pairs from Changchun, China, is delayed because China Railway Rolling Stock Corporation, the rail car manufacturer, is awaiting replacement parts from a new vendor. A new vendor had to be selected because the Uyghur Forced Labor Prevention Act restricted the original supplier.



Image of proposed HR4000 Heavy Rail Vehicle

## Regional Connector Project

The Regional Connector Project is a 1.9-mile underground light-rail extension with 3 new stations being constructed in Downtown Los Angeles. This project will provide a direct connection between the Metro L, Metro A, and



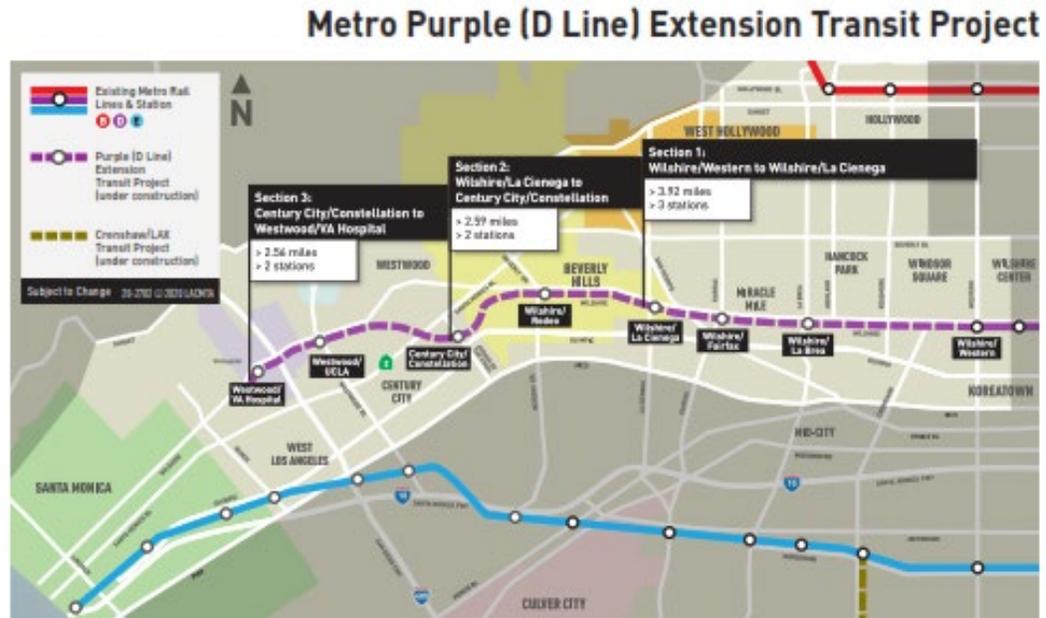
Metro E lines that currently would require a transfer from the Metro B or Metro D lines. This will provide a direct connection between the Cities of Azusa and Long Beach, and between East Los Angeles and Santa Monica, and in general allows LACMTA to have much greater flexibility with regard to route options within LA County. CPUC staff are working with LACMTA personnel to ensure design conformance of safety related requirements through participation in the Safety Certification Review Committee meetings and Fire Life Safety Committee meetings. In October 2020, heavy construction impacting the current rail transit revenue service commenced in which the existing Little Tokyo station was demolished, and five at-grade rail crossings were permanently closed. LACMTA has implemented a bus bridge service around the work zone, which is still in place as of today. The Regional Connector revenue service date is estimated for 2023.

Five emergency drills with local first responding agencies were scheduled and completed, spanning November 2022 to January 2023. RTSB Staff visited the project site on 12/15/2022 preceding the upcoming submittal of the Safety Certification Verification Report (SCVR). The project has achieved sufficient progress such that Regional Connector Transit Corridor project began limited pre-revenue service on the alignment the week of 1/2/23. Trains run between the 3 underground stations, without tying into existing lines, during the 3rd working shift at night. Platform construction work is restricted from occurring at the same time as the limited pre-revenue service. Because of supply chain disruptions due to COVID-19, shipment of stainless steel has been delayed and in turn has prevented station elements, such as ground-level structures, from being finalized.

### D Line (Westside) Extension Project

The Westside Metro D Line (Purple Line) Extension project will extend subway service from the current terminus at the Wilshire/Western Station to Westwood (UCLA and the Veteran's Administration Hospital). This extension will consist of nearly nine miles of heavy rail subway, seven stations and is separated into 3 different projects/segments (PLE1, PLE2, PLE3). The design build contractor for

Segment 1 is STS (a joint venture of Skanska, Traylor, Shea). The design build contractor for Segment 2 is TPOG (a joint venture of Tutor Perini and O&G). Tutor Perini is also the design



build contractor for Segment 3 tunneling and stations. The planned revenue service years for Purple Line Segments 1, 2, and 3 are 2024, 2025, and 2027, respectively. All project tunnel boring machine mining activities for Segment 1 have been completed in May 2021. Tunnel boring machine mining activities for Segment 2 are at 99% complete. CPUC staff are working with the project contractors/management and LACMTA's safety department to ensure design conformance of safety related requirements through the participation at the Safety Certification Review Committee meetings and Fire Life Safety Committee meetings.

### L Line Foothill Extension Phase 2B

The Foothill Phase 2B light rail transit project extends the Metro L Line (Gold Line) from the current terminus of Azusa Station to the City of Pomona (in Los Angeles County), with a contract option for the design build contractor (Kiewit-Parsons) to build to the City of Montclair (in San Bernardino County). Major construction commenced on July 2020, beginning with track and warning equipment installation at the at-grade rail crossings. Project completion is scheduled for 2025. CPUC staff have been meeting with the project teams, LACMTA, and the Foothill Construction Authority to audit and review design conformance of safety related requirements. The SCP was approved by the CPUC in Resolution ST-194 (1/19/2017). As of January 2023, project completion is at 63% which includes near

completion of the grade crossings, completed freight track relocation, and near completion of bridgework.

### Crenshaw/LAX Corridor Project

LACMTA is constructing a new light rail line from the existing Metro E Line (Expo Line) Crenshaw Station to the existing Metro C Line (Green Line) Aviation/LAX Station. An additional at-grade station is included in the project at 96th Street and Aviation, known as the Airport Metro Connector (AMC), which will connect to the future LAWA APM system at Los Angeles International Airport (LAX) currently under construction. The line will travel 8.5 miles and will serve the Cities of Los Angeles, Inglewood, El Segundo, and portions of unincorporated Los Angeles County. The SCP was approved by the CPUC in Resolution ST-143 (10/3/2014).

AMC is under construction in the southern segment of the alignment. This station will connect to the future LAX APM. To avoid the construction zone but allow revenue service, the Crenshaw/LAX project opened to the public on October 7, 2022 from the Expo/Crenshaw Station to Westchester/Veterans Station, with a turnback operation north of the construction zone. The Safety Certification Verification Report (SCVR) for the first phase of opening was approved by CPUC on 9/28/2022, and remaining concerns were addressed satisfactorily prior to opening. The rest of the alignment leading south that will connect to the future LAX APM and Metro C Line (formerly Green), will open within the next 2 years.



### East San Fernando Valley Project

The East San Fernando Valley project alignment will start in the City of Los Angeles at the Van Nuys Bus Rapid Transit Orange line station and head north for 10 miles through the San Fernando Valley. It

## CALENDAR YEAR 2022 ANNUAL REPORT – STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

will primarily be a street running system for the most part with approximately 3 miles on a shared corridor with Metrolink/Amtrak. LACMTA has contracted Gannett Fleming Inc. to develop a 30/60% design package. LACMTA was planning to begin the procurement process of the final design build package sometime in the middle of 2021. The final design build package procurement process was delayed due to the pandemic. A groundbreaking ceremony for advanced utility work was held in December 2022 and the anticipated start date for major construction is in mid-2023. The SCP was approved by the CPUC in Resolution ST-244 (12/16/2021).

---

**NORTH [SAN DIEGO] COUNTY TRANSIT DISTRICT**

San Diego’s North County Transit District (NCTD) was created by Senate Bill 802 in 1975 and started operations as North County Transit District on July 1, 1976. The NCTD Board of Directors is made up of one representative from each incorporated city served by NCTD, plus the County Supervisor representing the County’s Fifth District which covers unincorporated areas of north San Diego County and a non-voting member from City of San Diego. The NCTD is responsible for planning, developing, and implementing a fixed route system throughout North San Diego County. The region is described as the San Diego County-Orange County border at the northern end, City of La Jolla at the southern end, and from the western coast of the City of Oceanside to the City of Ramona at the eastern end.

The NCTD is responsible for maintaining the San Diego rail subdivision, purchased in 1994, which extends from the San Diego County-Orange County border south to downtown San Diego for commuter rail service. The NCTD is also responsible for maintaining the Escondido subdivision which extends from City of Oceanside to City of Escondido for



## CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

SPRINTER hybrid<sup>4</sup> rail service. Only the Escondido subdivision hosting SPRINTER service is jurisdictional to the rail transit safety regulations and are included in this SSOA Annual Report.

NCTD has contracted out maintenance and operations of the SPRINTER system for many years, but as of June 26, 2022, they have brought operations and maintenance of equipment in-house. Currently maintenance of way and maintenance of signal are still contracted with Alstom. NCTD plans to bring these last two areas in-house in 2023.

### **NCTD Rail System Description**

The NCTD SPRINTER system operates over 22.3 miles, from the City of Oceanside to the City of Escondido, partially double-tracked, with 15 stations. The average ridership of the system was approximately 1.36 million for calendar year 2022 compared to 1.24 million for calendar year 2021. NCTD's SPRINTER line is classified as hybrid rail on semi-exclusive right-of-way<sup>5</sup>. There is a shared corridor with Amtrak and COASTER trains beginning at the Oceanside Transit Center and ending less than a quarter mile South of the Oceanside Boulevard grade crossing, where SPRINTER tracks turn east toward City of Escondido. In addition to the shared corridor, most of NCTD track on the SPRINTER line is jointly used by rail transit and freight operations under a temporal separation<sup>6</sup>. The BNSF Railway operates freight service that shares track with NCTD on the SPRINTER line. BNSF Railway operates during the late-night hours outside of NCTD SPRINTER revenue service hours, under a Federal Railroad Administration (FRA) waiver. The FRA approved NCTD's standard operating procedures that ensure rail transit and freight service remain temporally separated.

The SPRINTER system began revenue service on March 9, 2008. The Escondido Transit Center Station and Vista Transit Center Station are the main transfer stations for rail transit/bus connections, and the Oceanside Transit Center Station provides service connections to Amtrak, NCTD COASTER commuter train, and the NCTD BREEZE bus system. The SPRINTER operates through four jurisdictions including the Cities of Oceanside, San Marcos, Vista and Escondido.

---

<sup>4</sup> Hybrid Rail means rail system primarily operating routes on the national system of railroads, but not operating with the characteristics of commuter rail. This service typically operates light rail-type vehicles as diesel multiple-unit trains (DMU's). These trains do not meet Federal Railroad Administration standards, and so must operate with temporal (time of operation) separation from freight rail traffic.

<sup>5</sup> A semi-exclusive alignment is in a separate right-of-way or along a street or railroad right-of-way where motor vehicles, pedestrians, and bicycles have limited access and cross only at designated locations, such as rail crossings.

<sup>6</sup> Temporal separation exists when no simultaneous operation of light rail transit and freight trains on the same track occurs.

CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

NCTD currently has no SPRINTER capital projects under construction. NCTD began procuring an early warning technology in July 2022 that will bring them into compliance with GO 175-A. The technology is meant to offer another layer of safety by warning workers of incoming train traffic. The contract is expected to be awarded in March or April 2023.

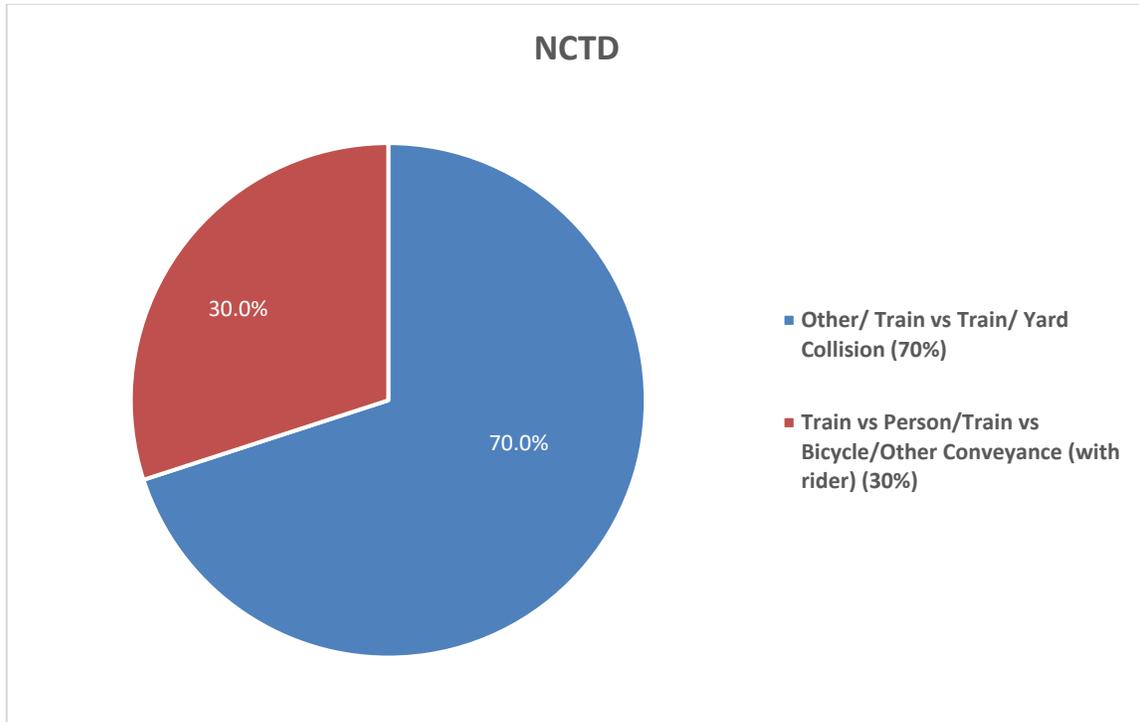


NCTD SPRINTER SYSTEM MAP

**NCTD Accident Summary**

Accident Type	NCTD
Other/ Train vs Train/ Yard Collision (70%)	7
Train vs Person/Train vs Bicycle/Other Conveyance (with rider) (30%)	3
Grand Total	10

Table 8: NCTD Accidents Primary Causal Factors - Calendar Year 2022



**Figure 6: NCTD Accidents Primary Causal Factors - Calendar Year 2022**

NOTE: The category “Other” is comprised of all accidents not included in the other categories. These include accidents resulting in substantial damage or evacuations, and a collision with an object such as signs/poles, crossing gates, signal cabinet door, motor vehicles, shopping carts, etc. left on or next to the tracks.

### **COVID-19 Impacts**

Currently, NCTD’s cleaning standard is based on the American Public Transportation Association’s (APTA) Cleaning and Disinfecting Transit Vehicles and Facilities During a Contagious Virus Pandemic program. NCTD signed the APTA National Transit Recovery Commitment Program pledge in August 2020. It defines four core categories of responsibilities for transit agencies to address for themselves and for their passengers including frequent cleaning, personal protective equipment, face coverings, social distancing, self-health evaluations, and minimizing touching surfaces.

NCTD buses, trains, paratransit vehicles and transit facilities are cleaned every day, and high-use facilities are disinfected throughout the day. Face covering compliance is enforced with signage posted. Free face coverings are available for customers. Hand sanitizer stations have been added onboard vehicles.

---

**ORANGE COUNTY TRANSPORTATION AUTHORITY**

The OCTA has received a full-funding grant agreement from the FTA and is constructing a streetcar system consisting of 4.15 miles of track between the Santa Ana Regional Transportation Center in the City of Santa Ana and the Harbor Boulevard/Westminster Avenue intersection in the City of Garden Grove. The system will be a completely new rail transit streetcar system, with OCTA becoming a new jurisdictional rail transit agency to the CPUC and will be known as the OC Streetcar. The OCTA Board of Directors is comprised of seventeen members (mostly elected officials), and the Caltrans District 12 Director serving as the 18th member in an ex-officio capacity. The CPUC has approved the system SCP for the project in Commission Resolution ST-191 (4/27/2017). The system is planned for revenue service in 2024.



**Image of Proposed OC Streetcar**

The trackway includes both operations along exclusive right-of-way<sup>7</sup>, in the old Pacific Electric (PE) railway right-of-way, and street-running operations, along Santa Ana Boulevard and 4th Street in the City of Santa Ana. Bi-directional operations occur over a new bridge north of the existing PE Santa Ana River Bridge. The Project includes 10 stations in the eastbound direction and 10 stations in the westbound direction. A new operation and maintenance facility will be bordered by 5th Street to the north, the PE Right-of-Way to the south, approximately 500 feet west of Raitt Street to the east, and approximately 1,000 feet west of Raitt Street to the west, in the City of Santa Ana.

The system is not yet operating, and current project construction activities include track installation, overhead catenary system (OCS) pole installation, maintenance facility construction, and bridge

---

<sup>7</sup> Exclusive alignment is a right-of-way without at-grade crossings, which is grade-separated or protected by a fence or substantial barrier, as appropriate to the location. Includes subways and aerial structures.

CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

construction. Construction is approximately 42% complete. Vehicle procurement has begun, with the first four of eight vehicles in preliminary static and dynamic testing at Siemens.



OC Streetcar Future System Map

**COVID-19 Impacts**

All OCTA employees assigned to the OC Streetcar project are working in a telecommute capacity from their homes, in compliance with the state’s stay at home order. All scheduled meetings within the agency and with contractors have been elected to be in a Google Hangouts Meet, Microsoft Teams, or teleconference forum, to comply with social distancing recommendations by the CDC. The agency’s pandemic response has been in line with best practices from the APTA, CDC, Federal Emergency Management Agency, California Department of Public Health, and Orange County Health Care Agency recommendations.

## SAN FRANCISCO MUNICIPAL TRANSPORTATION AGENCY

The SFMTA is the public transportation system of the City and County of San Francisco. The San Francisco Municipal Railway (MUNI), along with the San Francisco Department of Parking and Traffic, became a part of the SFMTA on March 1, 2000. A seven-member board, appointed by the City of San Francisco Mayor, governs the SFMTA and the Director of Transportation serves as the agency's senior management officer.



**SFMTA Rail Vehicles**

The SFMTA MUNI was the first publicly owned streetcar system in a major city in the United States and began operation in 1912. It has a relatively small service area of just 46.7 square miles. SFMTA MUNI's fleet of rail transit vehicles consist of the subway and surface operating LRVs, surface operating Historic Streetcars (HSC), and cable cars. The total ridership of the system was approximately 13.9 million for calendar year 2022.

### **SFMTA Rail System Description**

SFMTA MUNI LRT operations are carried out by the Green Metro Division. It operates LRVs on six different lines.

- J – Church Line
- K – Ingleside Line
- L – Taraval Line
- M – Ocean View Line
- N – Judah Line
- T – Third Street Line

Trains on the SFMTA MUNI Metro Subway and Twin Peaks Tunnel operate under the control of a fully automated communications-based train control system. Most rail operations are on the surface, in semi-exclusive and mixed traffic right-of-way, with up to a 7% grade in some locations.

The Green Metro Division is also responsible for the operation of the HSC. The HSCs are operated on the surface and principally on the double track F – Market and Wharves Line.

The Cable Car Division is responsible for operation of the cable cars. It provides passenger cable car service on three surface lines and traverse grades of up to 21%. The SFMTA MUNI Cable Car Division operates three lines. They include the Powell-Hyde Line, the Powell-Mason Line, and the California Street Line. Operating in mixed traffic, cable cars and vehicular traffic sharing traffic lanes, over narrow congested streets. A moving cable, below the surface of the street, provides propulsion for the cable cars via a mechanical grip, extending from the cable car and down through a continuous slot between the running rails. All onboard propulsion and braking controls for the cable cars are mechanical and are hand or foot-operated by the cable car operator. Cable car operation and equipment has changed little since the late 19th century and relies heavily on human performance and craft.

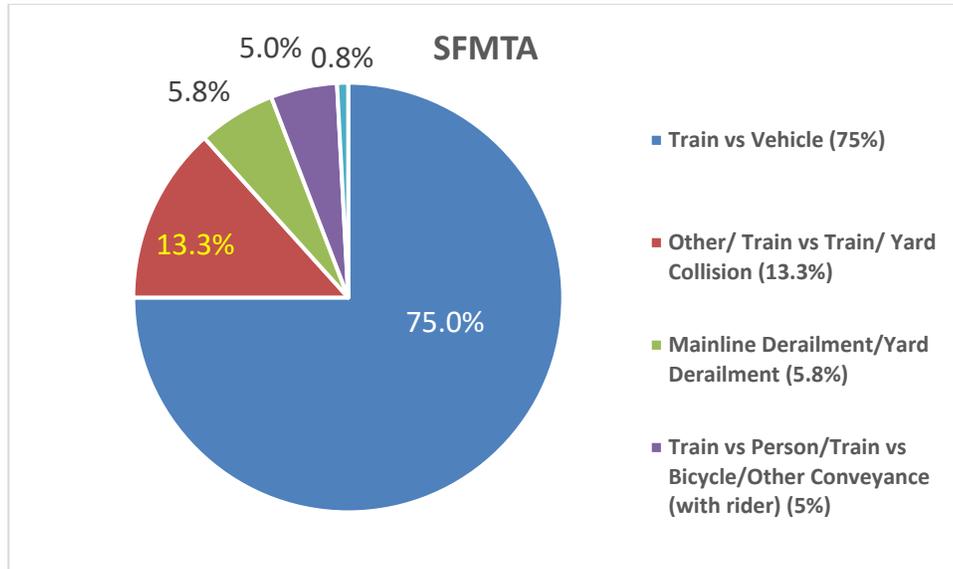


SFMTA MUNI System Map

**SFMTA Accident Summary**

Accident Type	SFMTA
Train vs Vehicle (75%)	90
Other/ Train vs Train/ Yard Collision (13.3%)	16
Mainline Derailment/Yard Derailment (5.8%)	7
Train vs Person/Train vs Bicycle/Other Conveyance (with rider) (5%)	6
Evacuation/ Fire/Smoke (0.8%)	1
Grand Total	120

Table 9: SFMTA (MUNI) Accidents Primary Causal Factors - Calendar Year 2022



**Figure 7: SFMTA (MUNI) Accidents Primary Causal Factors - Calendar Year 2022**

NOTE: The category “Other” is comprised of all accidents not included in the other categories. These include accidents resulting in substantial damage or evacuations, and a collision with an object such as signs/poles, crossing gates, signal cabinet door, motor vehicles, shopping carts, etc. left on or next to the tracks.

**COVID-19 Impacts**

Due to the COVID-19 pandemic, SFMTA suspended their rail service from the end of March 2020 to near the end of 2020. In November 2020, they restored the J Line surface, then in January 2021, they restored the T Line service to Embarcadero Station. A further service restoration plan was implemented to start service again on the other lines starting August 2021. The COVID surge in late 2021 has further delayed full-service restoration.

Starting Saturday, February 19, 2022, SFMTA began implementing the 2022 Muni Service Network plan. Changes include long-awaited Muni service restorations set to return in phases over the course of the year based on available resources.

While SFMTA looked forward to continuing implementation of the approved 2022 Muni Service Network as quickly as possible, Muni service since the beginning of 2022 has been significantly impacted by the Omicron surge.

Starting February 19, 2022, Muni Metro service hours in the subway were extended on Sundays until midnight (instead of 10 p.m.). The new Muni Metro hours are approximately 6 a.m.–12 a.m. on weekdays and 8 a.m.–12 a.m. on weekends.

The total ridership of the system was approximately 3.6 million for calendar year 2021 compared to 13.9 million for calendar year 2022.

## **System Expansions and Capital Projects**

### **Third Street Light Rail Extension Phase II (Central Subway Project)**

Phase II of SFMTA's Third Street Light Rail extension project, commonly known as the Central Subway Project, will extend SFMTA's Third Street Line north of the intersection of Fourth Street and King Street to Chinatown on Stockton Street near Washington Street. The project will construct new surface tracks along Fourth Street to a portal structure between Bryant Street and Harrison Street, where two newly excavated precast concrete-lined subway tunnels will carry light rail traffic underneath Fourth Street to Market Street, then continue under Stockton Street. One new at-grade station is planned at Fourth Street and Brannan Street, and three new subway stations will be constructed at Yerba Buena/Moscone (Fourth Street and Folsom Street), Union Square/Market Street (Stockton Street and Geary Street, with mezzanine-level access to the existing Powell Street BART and Muni Station), and Chinatown (Stockton Street and Washington Street). The project SCP was approved by the CPUC in Resolution ST-102 (3/26/2009). SFMTA completed construction in Fall of 2022.

On October 28, 2022, SFMTA requested approval from RTSB to open Central Subway for passenger service. On November 14, 2022, the RSD Director sent an approval letter to SFMTA providing authority to open the Central Subway project for passenger service. The letter states that due to the soft launch and remaining outstanding final test reports on some items completed in recent days, that a final Safety and Security Certification Verification Report (SSCVR) will be required to be submitted to gain approval from CPUC to initiate full revenue service, which SFMTA has planned to begin towards the end of January 2023.

On December 16, 2022, SFMTA submitted Revision 2 of their SSCVR, which demonstrates Central Subway's readiness to start full revenue service along with a letter requesting CPUC's authorization to start daily passenger service on the Central Subway on Saturday, January 7, 2023.

On January 5, 2023, RTSB sent the letter to SFMTA providing authority for SFMTA to initiate full revenue service on the Central Subway Line beginning January 7, 2023.

## LRV4 Vehicle Procurement

SFMTA has initiated a new LRV procurement project (LRV4 Project) to acquire up to 264 vehicles over a period of 15 years. The scope of the LRV4 project will include the design, manufacture, delivery, and test of up to 260 LRVs together with the associated services, spare parts, special tools, training, and documentation. The base quantity is 175 new vehicles including an initial delivery of 24 vehicles, scheduled for delivery to supplement the fleet when the Third Street Phase 2 (Central Subway)



**SFMTA New Siemens Rail Vehicle**

extension opens. Another 151 new vehicles are projected for the replacement of the existing 151 LRVs with a projected completion date in 2028. SFMTA has issued contract modifications for an additional 44 new vehicles, bringing the total fleet size to 219. An option for an additional 45 new vehicles may be issued in the future. The LRV4 are expected to have a 30-year life, which includes a mid-life overhaul. The LRV4 Procurement will be funded through several different sources including federal funds. The SCP for the project was approved by the CPUC in Resolution ST-190 (11/10/2016).

After delivery of 68 cars by 2020, SFMTA found issues with the doors. SFMTA have since stopped accepting new cars and asked Siemens to resolve the issue. Siemens redesigned sensitive edges and rubber elements for the doors for improved sensitivity for patron use and updated the rear viewing technology.

During 2021, SFMTA and its contractor, Siemen's worked to resolve coupler shear pin failures that were being experienced with the new vehicles, and SFMTA did not receive any vehicles during the year. The issue was traced back to the SFMTA operating environment, including unusually tight curves and hilly terrain that applies additional stress on the shear pins. This issue has been resolved and the shear pins modified to prevent the failures from occurring.

Currently, SFMTA has 92 LRV4 vehicles that have completed testing and have been authorized by the CPUC for revenue service operation.

## SACRAMENTO REGIONAL TRANSIT DISTRICT

SRTD is governed by an 11-member Board of Directors. The Board is comprised of members of the Sacramento, Rancho Cordova, Citrus Heights, Elk Grove, and Folsom City Councils, as well as the Sacramento County Board of Supervisors.

### **SRTD Rail System Description**

SRTD light rail system currently operates over approximately 43 miles, covering a 422 square-mile service area with 54 stations. The average ridership of the system was approximately 5.41 million for calendar year 2022 compared to 4.06 million for calendar year 2020. SRTD began operations in 1973 with the acquisition of the Sacramento Transit Authority. Over the next decade, SRTD continued to expand its bus service while city, county and state



**SRTD Light Rail Train at the State Capital**

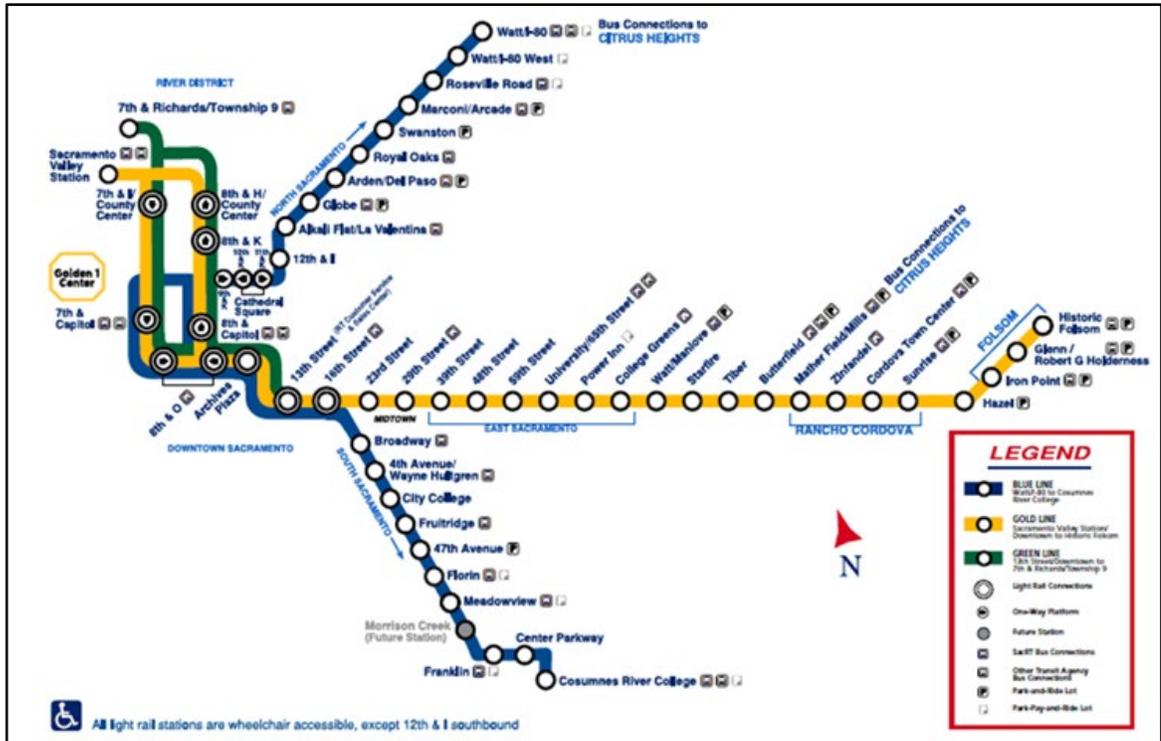
government officials worked together to develop a light rail system. In 1987, the 18.3-mile light rail system opened, linking the northeast (Interstate 80) and eastern (Highway 50) corridors with downtown Sacramento. In 1998, SRTD began expanding its light rail system to further meet the transportation needs of the Sacramento area. Since then, several light rail expansion projects have been completed, including:

- 1998 - 2.3-mile Mather Field extension and Brighton Bridge double track project
- 2003 - Bee Bridge double track project
- 2003 - 6.3-mile South Line Phase I extension
- 2004 - 2.8-mile extension from Mather to Sunrise
- 2005 - 2.4-mile extension from Sunrise to Folsom
- 2006 - 0.55-mile extension to Amtrak Station
- 2009 - Watt Avenue Grade Separation
- 2012 – Green Line Township 9 Extension to Richards Boulevard
- 2016 – South Line 4.3-mile extension to Cosumnes River College

The Gold Line runs from the Historic Folsom Station in downtown Folsom to the Sacramento Valley Station at the Amtrak Station in downtown Sacramento. The Blue Line runs from the Watt/I-80 Station in the northeast corridor to the Cosumnes River College to the south. In 2012, SRTD completed the Green Line, a one-mile extension from downtown Sacramento to Richards Boulevard.

CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

This line includes 2 stations, running a 30-minute headway service from the Township 9 Station on Richards Boulevard to the existing 13<sup>th</sup> Street Station.

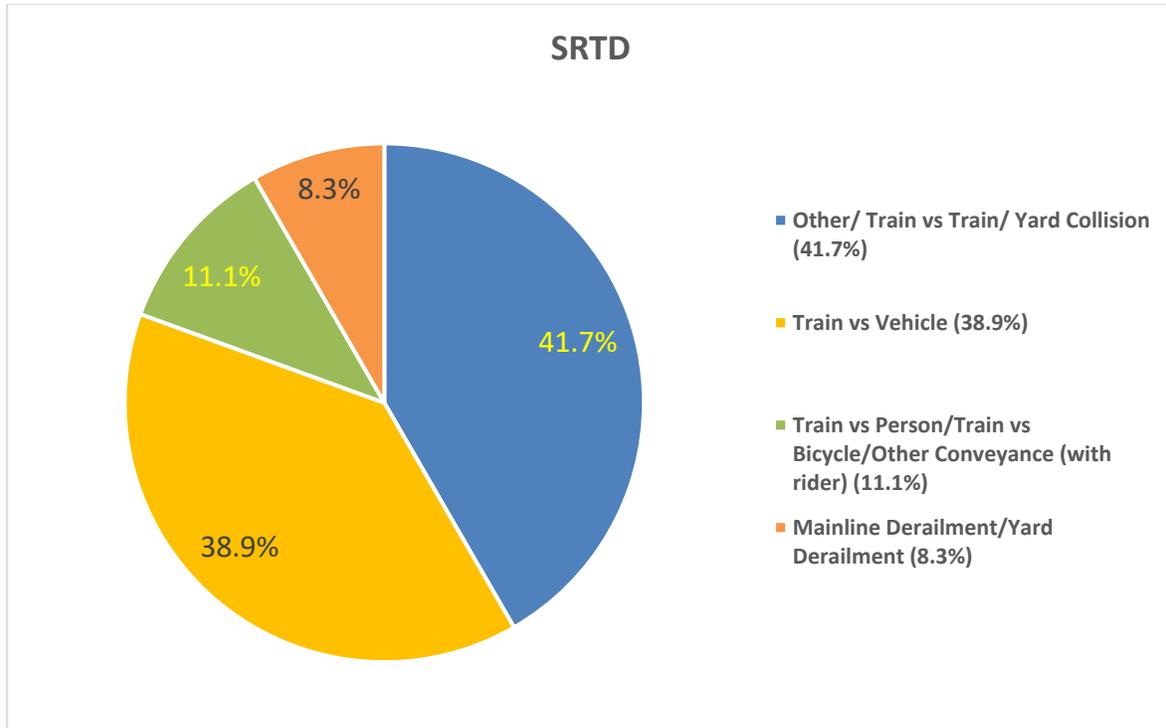


Sacramento Regional Transit District System Map

**SRTD Accident Summary**

Accident Type	SRTD
Other/ Train vs Train/ Yard Collision (41.7%)	15
Train vs Vehicle (38.9%)	14
Train vs Person/Train vs Bicycle/Other Conveyance (with rider) (11.1%)	4
Mainline Derailment/Yard Derailment (8.3%)	3
Grand Total	36

Table 10: SRTD Accidents Primary Causal Factors - Calendar Year 2022



**Figure 8: SRTD Accidents Primary Causal Factors - Calendar Year 2022**

NOTE: The category “Other” is comprised of all accidents not included in the other categories. These include accidents resulting in substantial damage or evacuations, and a collision with an object such as signs/poles, crossing gates, signal cabinet door, motor vehicles, shopping carts, etc. left on or next to the tracks.

**COVID-19 Impacts**

Due to the COVID-19 pandemic, in March 2020 SRTD temporarily reduced the size of the LRV consists, but not service frequency. Effective August 30, 2020, SRTD implemented its service recovery plan. SRTD also requires all passengers to wear masks during the FTA/TSA mask mandate, which has since expired.

**System Expansions and Capital Projects**

**LRV (Light Rail Vehicle) Procurement Project:**

SRTD has secured funding for 20 new Siemens Transportation Group S700 Light Rail Vehicles scheduled for delivery starting in February 2023 and anticipated to enter revenue service in mid-2024.

**Light Rail Station Addition – Dos Rios Station:**

SRTD has secured funding for the Dos Rios Station project scheduled to begin construction in early 2024. Site environmental conditions are being remediated by the City and have delayed the start of construction.

**Gold Line Double Track Project:**

SRTD has secured funding for the Gold Line Doubletrack project scheduled to begin construction in August 2023. Two passing tracks and changes to grade crossings will be constructed to allow for 15-minute service from Folsom to Sacramento.

**Light Rail Station Addition – Railyards Station**

City of Sacramento has secured funding for the Railyards Station project scheduled to begin construction in late 2023. The project will construct a station for one direction of travel. The project will also realign approximately 0.8 mile of track, permitting development of the area. The project is managed by the City of Sacramento, with SRTD providing design consulting and acceptance.

**Gold Line Low-Floor Vehicle Station Modification Project:**

SRTD has secured partial funding to begin the Gold Line low-floor vehicle platform modifications and is scheduled to complete construction in Fall of 2024. Existing Gold Line stations will have the platforms raised to accommodate a two-car consist of the S700 Low-Floor LRVs; and maintain sufficient existing platform and E&H ramps to accommodate the legacy LRV fleet.

**Sacramento Streetcar Project:**

To maintain project viability, the project has been reduced in scope and the plan is that a revised project is being transferred to SRTD from the Cities of West Sacramento and Sacramento, the original grant applicants. SRTD will now become the lead agency and the project will be an expansion of RTD's existing light rail system that will still link the two cities over the Sacramento River. Final design of the reduced scope system has not been completed as of the end of 2022.

See “Systems in Development or Funding Stages” section below for additional details on the Downtown [Sacramento] Riverfront Streetcar.

---

**SAN DIEGO TROLLEY, INC.**

The California legislature created the Metropolitan Transit Development Board (MTDB) in 1975 by Senate Bill 101, empowering the board to design, engineer, and build fixed guideway facilities within San Diego County. The MTDB established the San Diego Trolley, Inc. in August 1980 as a wholly owned subsidiary responsible for operation and maintenance of the LRT system. In 2005, MTDB changed its name to the Metropolitan Transit System (MTS). Its board of directors has 15 members selected as follows: four appointed from the City of San Diego (the Mayor of San Diego and 3 San Diego City Council members); two appointed from the City of Chula Vista (the Mayor of Chula Vista and a Chula Vista City Council Member); and one appointed from each city council of Coronado, El Cajon, Imperial Beach, La Mesa, Lemon Grove, National City, Poway and Santee; and one appointed from the San Diego County Board of Supervisors.

## CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

The area of jurisdiction is about 570 square miles serving a population of 3 million, approximately 75% of southwestern San Diego County. The SDTI LRT system operates over 53.5 miles on three routes, mostly double-tracked, with 53 stations. The average ridership of the system was approximately 34 million for CY 2022 compared to 24 million for calendar year 2021. In May 2022 MTS launched the Youth Opportunity Pass Pilot Program, which allows Youth 18 and under to ride the MTS System up to one-year for free.



**San Diego Trolley Light Rail Vehicle in Downtown San Diego**

SDTI's rail lines are classified as light rail on semi-exclusive right-of-way. There is a shared corridor with BNSF Railway, Amtrak, and Coaster trains through downtown San Diego. In addition to the shared corridor, portions of SDTI track on the Blue and Orange Lines are jointly used by LRT and freight operations under temporal separation with limited night-time joint operations. The San Diego and Imperial Valley Railroad (SDIV), a subsidiary short line railroad owned by Rail America Corporation, shares track with SDTI on the Blue line from the Imperial Transfer Station to the International Border. SDTI and SDIV share track on the Orange Line from Commercial Street at the Imperial Junction to Bradley Avenue in El Cajon, California. SDIV operates freight trains during the early morning hours with a fringe period of overlap with SDTI LRT operations under a FRA waiver. FRA approved SDTI standard operating procedures ensure during this overlap mode of operation the LRVs remain spatially and temporally separated.

### **SDTI Rail System**

**Blue Line** - Revenue service began on July 26, 1981. The Blue Line extends 30 miles from the San Ysidro Station at the Mexican Border to University Town Center. Of the total 30 miles, 1.4 miles (C Street & India to 12<sup>th</sup> & Imperial) are operated on city streets, and 14 miles (12th & Imperial to San Ysidro) are operated on semi-exclusive right-of-way. The Blue Line is comprised of 32 stations, sharing six stations with the Orange and Silver Lines downtown and five stations with the Green Line. The

CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

Blue Line operates through four jurisdictions in the Cities of San Diego, National City, Chula Vista, and an unincorporated area of San Diego County.

**Orange Line** – Revenue service on the first phase, from Imperial Transfer to the Euclid Avenue station, began on March 23, 1986. The line was extended in 1989 to El Cajon, and to Santee in 1995. The Orange Line currently extends 16.9 miles from the Santa Fe Depot station (via the downtown San Diego C Street corridor) to the El Cajon Transit Center station. Of the 16.9 miles, 1.7 miles of track are operated on city streets (C Street & India to 32<sup>nd</sup> & Commercial). The line continues east for an additional 14.6 miles on semi-exclusive right-of-way from 32<sup>nd</sup> and Commercial to the Arnele Avenue. The Orange Line is comprised of 19 stations, sharing five stations with the Blue and Silver Lines downtown and five stations with the Green Line (one in downtown and four in East County). The Orange Line operates through four jurisdictions in the Cities of San Diego, Lemon Grove, La Mesa and El Cajon.

**Green Line** - Revenue service began on July 10, 2005. The Green Line begins at the Imperial Transfer Station and extends 23.8 miles from the 12th & Imperial Station along the Bayside to Old Town Transit Center through Mission Valley to Santee Town Center, including a 0.7-mile subway tunnel, under San Diego State University (SDSU). The Green Line is comprised of 27 stations, sharing five stations with the Orange Line (two in downtown and three in East County), one station with the Blue Line downtown, and four stations with the Silver Line downtown. The Green Line operates through four jurisdictions in the Cities of San Diego, La Mesa, El Cajon, and Santee.

**Silver Line** – Revenue service on the Silver Line began in August 2011. The Silverline is a 2.7-mile loop in downtown San Diego along Harbor Drive, on C Street, and Park Blvd and completes its loop at the 12th & Imperial and is host to restored 1940's era Presidential Conference Committee (PCC) streetcars. The Silver Line is comprised of nine stations, sharing six with both the Blue and Orange Lines, and three with the Green Line.

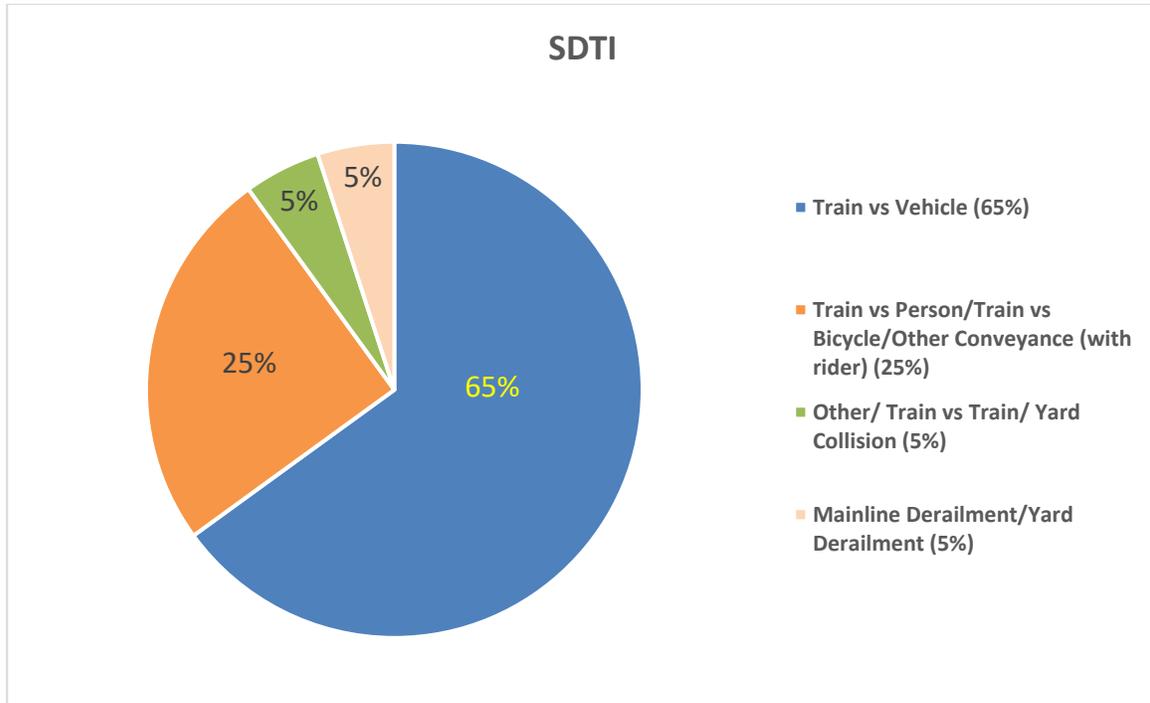


SAN DIEGO TROLLEY SYSTEM MAP

**SDTI Accident Summary**

Accident Type	SDTI
Train vs Vehicle (65%)	13
Train vs Person/Train vs Bicycle/Other Conveyance (with rider) (25%)	5
Other/ Train vs Train/ Yard Collision (5%)	1
Mainline Derailment/Yard Derailment (5%)	1
Grand Total	20

Table 11: SDTI Accidents Primary Causal Factors - Calendar Year 2022



**Figure 9: SDTI Accidents Primary Causal Factors - Calendar Year 2022**

NOTE: The category “Other” is comprised of all accidents not included in the other categories. These include accidents resulting in substantial damage or evacuations, and a collision with an object such as signs/poles, crossing gates, signal cabinet door, motor vehicles, shopping carts, etc. left on or next to the tracks.

**COVID-19 Impacts**

MTS experienced a decline in revenue service after March 2020, however it was not as extreme as on other systems. They ran 3-car trains to help maintain “social distance” between passengers on-board their trains. All rail transit and bus stations are being cleaned by the Facilities Maintenance Department staff in accordance with the national protocols. The MTS offices, building work areas, etc. have hand sanitizer dispensers available for use. In late March 2020, MTS established designated “temperature check-in stations” at their bus and rail divisions for all MTS employees and visitors who are required to have their temperature and name recorded prior to work and conducting business on MTS premises.

## **System Expansions and Capital Projects**

### **SD10 Light Rail Vehicle Procurement**

SDTI is procuring 47 LRVs known as SD10 project (Car Nos. 5046-5093) to replace the current SD-100 models cars which will be retired from revenue service. The vehicles are the same as the SD9 project vehicles and uses the same safety certification plan approved by Resolution ST-217 (10/11/18) for the SD9 project. The procurement process began September



2020 with an expected schedule completion and acceptance of all 47 LRVs by late 2023. As Siemens cars are delivered on-site at the SDTI Yard, they will undergo commissioning and dynamics tests. Staff will participate in the acceptance testing throughout the procurement process and to date has accepted 14 LRVs for revenue service.

### **SD-10 Car No. 5001 on the Greenline**

Projects currently in process are the Imperial Transfer Station Double Tracking Project which adds an additional rail line for the Greenline terminus which is currently single-track. Also planned for late Fall 2023 is the Orange Line Signaling System and Grade Crossing Upgrades to replace the current system.

---

## **THE SANTA CLARA VALLEY TRANSPORTATION AUTHORITY**

One of the largest transit networks in the San Francisco Bay Area, the Santa Clara Valley Transportation Authority (VTA) is an independent special transit district that operates an urban transit service using a diverse fleet of vehicles and modes (bus, light rail, paratransit) across a 346 square-mile service area serving fifteen (15) cities within Santa Clara County for a population of approximately 2 million residents. VTA currently operates a vehicle service fleet of approximately 98 Light Rail Vehicles, 445 buses, and 194 cars, vans, and shuttle buses. VTA also operates four historic trolleys through the downtown San Jose Transit Mall which occasionally provide service on a seasonal basis.

VTA participates as a funding partner in regional rail services including Caltrain, Capitol Corridor, and the Altamont Corridor Express in Santa Clara County. As Santa Clara County's congestion management agency, VTA is responsible for countywide transportation planning, including congestion

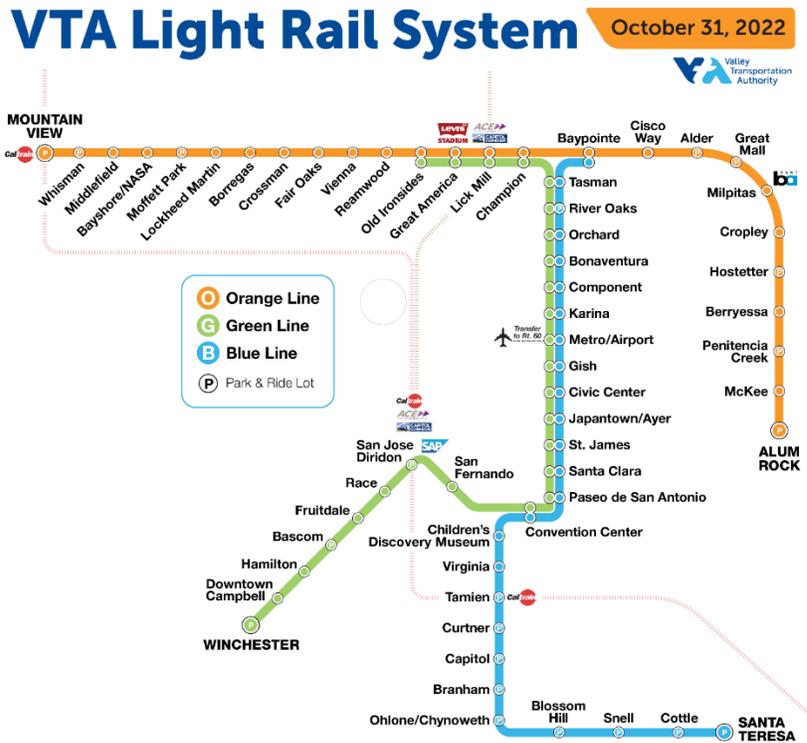
CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

management, design and construction of specific highway, pedestrian, and bicycle improvement projects, as well as the promotion of transit-oriented development.

The VTA Board of Directors has 18 members and six ex-officio members, all of whom are elected officials appointed to serve on the Board by the jurisdictions they represent. Fifteen Directors are city council members and three are County Supervisors. Twelve Directors serve as voting members and there are six Directors who serve as alternates. The ex-officio members are non-voting members and are the three Santa Clara County representatives to the Metropolitan Transportation Commission.

The VTA light rail system consists of three (3) service lines, the Blue, Green, and Orange Lines (See VTA Light Rail System Map) with two (2) proposed extension. VTA total operating system consists of approximately about 42.2 miles of trackway with 59 Light Rail Stations. The daily average ridership of the light rail system was approximately 6305 passengers per day in Fiscal Year 2022.





VTA LIGHT RAIL SYSTEM MAP

**VTA Rail System Description**

**Green Line**

The 13.9-mile Green Light Rail Line operates north-south from Campbell to San Jose and Santa Clara. It overlaps the Blue Line between downtown San Jose and north San Jose. The Downtown Transit Mall in San Jose serves as a hub for rail/bus connections. Light rail and Caltrain service connects at the Diridon Station in San Jose. Levi’s Stadium is located near the Great America Light Rail Station. The Green Line has 26 light rail stations.

**Orange Line**

The 17.7-mile Orange Line operates east-west from Mountain View to Alum Rock, with a major transfer point at Baypointe to the Blue Line. Light rail and BART service connects at the Milpitas Station, while the Caltrain connection is at Mountain View. Levi’s Stadium is located near the Great America Light Rail Station. The Orange Line has 26 light rail stations.

**Vasona Corridor (Part of the Green Line)**

Within the 15-mile Vasona Corridor, VTA operates 5.3-miles of its light rail system parallel to Union Pacific Railroad right-of-way sharing 14 highway-rail grade crossings. The Vasona Corridor has 8 light rail stations and links to Caltrain, ACE, and Capitol Corridor service via the Diridon Light Rail Station. This section of corridor is an FRA shared corridor starting just beyond the Diridon Light Rail Station

## CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

and running up to the Winchester Light Rail Station. Union Pacific Railroad (UPRR) and VTA trackways do not physically share or cross tracks in this corridor.

VTA revenue service began in 2005, VTA performs all dispatching (except for controlling UPRR train movement) and track zone/right-of-way (ROW) maintenance functions in the shared portion of the corridor requiring VTA to comply with specific Federal Railroad Administration (FRA) regulations related to rail operations, trackway, grade crossing warning systems, signals maintenance, and rail safety. These regulations include 49 CFR Parts 213, 214, 218, 219, 220, 225, 228, 229.125, 233, 234, and 236. The FRA has approved VTA for a 5-year waiver (Docket #FRA-1999-6254) granting full relief from 49 CFR Part 219 and partial relief from 49 CFR Part 225 as of October 6, 2020.

### **BART Silicon Valley Extension -Phase I**

The BART Silicon Valley Extension Project is a 16-mile extension of the BART system to Santa Clara County that is being funded and constructed to BART standards by VTA. VTA will continue to own the assets it funds and constructs, however BART will independently operate the extension of its system.

Phase I, the Berryessa Extension, is a 10-mile extension, including two BART stations. This extension begins in Fremont, south of the Warm Springs/South Fremont BART Station, and proceeds along the former Union Pacific Railroad Company right-of-way through Milpitas, the location of the first station, to the

Berryessa area of North San Jose, the location of the second station. The Berryessa Extension (Phase I) is now in revenue service, having begun starting June 13, 2020.

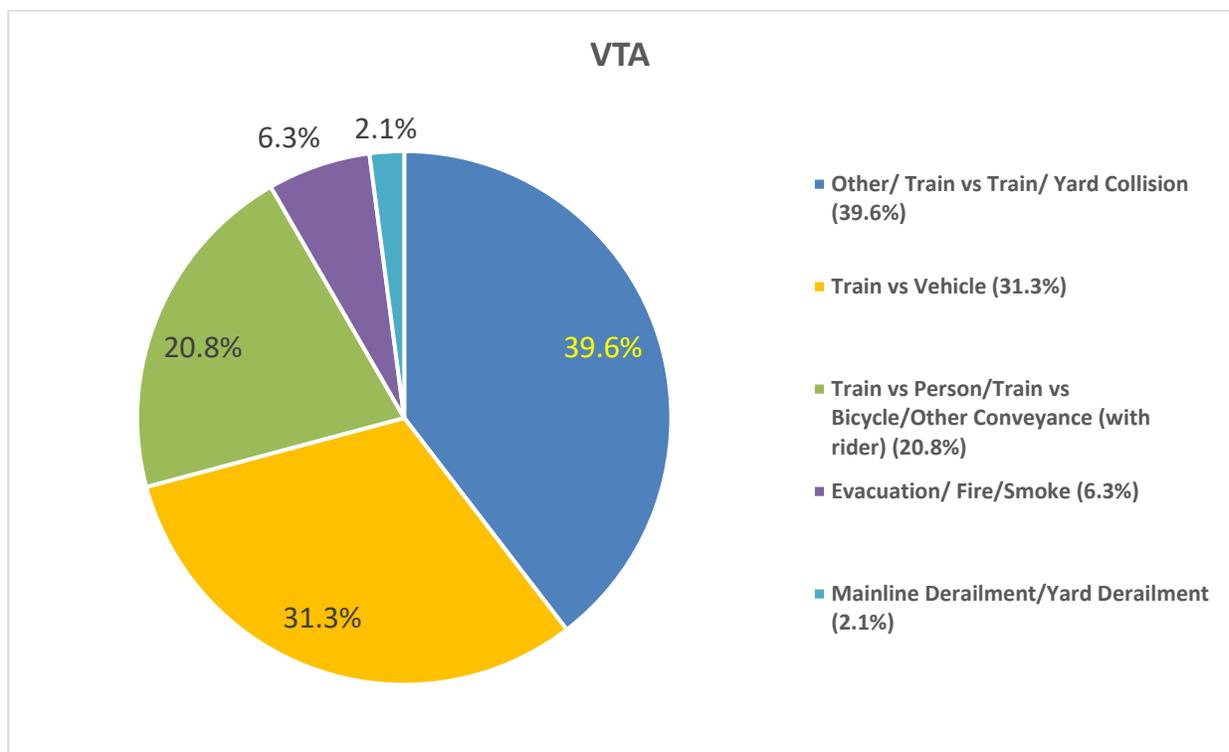


**Berryessa Transit Center, connection between BART and VTA**

**VTA Accident Summary**

Accident Type	VTA
Other/ Train vs Train/ Yard Collision (39.6%)	19
Train vs Vehicle (31.3%)	15
Train vs Person/Train vs Bicycle/Other Conveyance (with rider) (20.8%)	10
Evacuation/ Fire/Smoke (6.3%)	3
Mainline Derailment/Yard Derailment (2.1%)	1
Grand Total	48

**Table 12: VTA Accidents Primary Causal Factors - Calendar Year 2022**



**Figure 10: VTA Accidents Primary Causal Factors - Calendar Year 2022**

NOTE: The category “Other” is comprised of all accidents not included in the other categories. These include accidents resulting in substantial damage or evacuations, and a collision with an object such as signs/poles, crossing gates, signal cabinet door, motor vehicles, shopping carts, etc. left on or next to the tracks.

**COVID-19 Impacts**

VTA continues to follow CDC and the California Department of Industrial Relations’ Division of Occupational Safety and Health (better known as CalOSHA) guidance regarding all requirements and

mandates for the workplace. VTA provides face covering and sanitizer dispensers on board all light rail vehicles.

### **System Expansions and Capital Projects**

#### **Eastridge to BART Regional Connector Project**

The Eastridge to BART Regional Corridor Project is a 2.6-mile extension from the existing Alum Rock Station to Eastridge Transit Center. The alignment will be primarily grade separated. The Project is being implemented in phases. Phase I was completed in the Spring of 2015, and included the installation of sidewalk, landscape, and street lighting on Capital Expressway from Capital Avenue to Tully Road and the reconfiguration of the Eastridge Transit Center. Phase 2 will extend light rail from the existing Alum Rock Light Rail Station to the Eastridge Transit Center. Light rail will operate primarily in the center of Capitol Expressway in an elevated track structure from Capitol Avenue to Tully Road. The Eastridge extension will include two stations: Story and Eastridge. The SSCP was approved by the CPUC in Resolution ST-88 (5/24/2007), however, VTA provided an updated revision of the SSCP in early 2020 and CPUC reviewed and approved the revision in July 2020. Currently, the project has almost completed preliminary engineering design phase and utility relocation is occurring currently. VTA is getting ready to bid the project. CPUC staff plan to attend future meetings related to this project.

#### **Vasona Junction Light Rail Extension**

The Vasona Junction Project is a 1.5-mile extension from Winchester Station into the Town of Los Gatos. A federal environmental document was completed and approved by the FTA. Currently, the construction schedule is dependent upon available funding. A SSCP has not yet been submitted to the CPUC for this project.

#### **BART Silicon Valley Extension Project – Phase II**

The BART Silicon Valley Extension Project is a 16-mile extension of the BART system to Santa Clara County that is being funded and constructed to BART standards by VTA. VTA will continue to own the assets it funds and constructs, however BART will independently operate the extension of its system. Phase I (10 miles) began revenue service in June 2020.

VTA is completing design and engineering for Phase II (6 miles) of the BART Silicon Valley Extension, which includes a subway tunnel through downtown San Jose, 4 stations and a Newhall Yard Maintenance Facility in the City of Santa Clara. Construction of the second phase is expected to begin in 2023 with passenger service targeted for 2033. The SSCP for this project was submitted by BART and was approved by the CPUC in Resolution ST-83 (2/15/2007). On June 16, 2021, CPUC staff received the project SCP for phase II, and CPUC approval was sent on August 17, 2021 approving the SCP. VTA's Phase II BART Extension is the only transit project currently supported by a first of its kind federal funding program, the Expedited Project Delivery Program, facilitated by Federal Transit

CALENDAR YEAR 2022 ANNUAL REPORT – STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

Administration. The program has committed \$2.3 billion, or 33% of project funding, for the \$6.9 billion project. This project is under preliminary design phase and early construction activities have started. CPUC staff continues to attend the FTA Project Management Oversight Contractor (PMOC) meetings, Safety and Security Review Committee (SSRC) meetings, and Fire Life Safety and Security Committee (FLSSC) meetings.

**Light Rail Signal Priority Detection Upgrades Project:**

The work involved is a replacement of the Train-to-Wayside hard-wired system with a new GPS-based LRV detection system to act as primary detection system for requesting transit service priority (TSP) at non-gated signalized intersections. The necessary equipment for the work would be installed on 98 of VTA’s light rail vehicles and would be installed at 89 signalized intersections. VTA submitted the project SCP on May 5, 2021. CPUC staff reviewed and approved the project SCP on June 30, 2021. At its August 19, 2021, meeting the Commission approved Resolution ST-245. The first meeting related to this project was conducted in January 2022. CPUC staff continues to attend the Rail Activation Oversight Committee meetings. Currently, VTA and City of Sunnyvale are planning on conducting a pilot testing for a few intersections. Ninety-six light rail vehicles have been installed with the necessary equipment.

## SUMMARY OF ACTIVITIES FOR NON-FTA REGULATED RAIL TRANSIT AGENCIES FOR CALENDAR YEAR 2022

No accident graphs are shown for the smaller non-FTA regulated systems, because only two very minor reportable accidents occurred on these smaller systems during the reporting period. Several of the systems have never experienced a reportable accident.

### AMERICANA AT BRAND TROLLEY

The Americana At Brand (AAB) trolley began service in 2008 and is owned by Caruso Affiliated in the City of Glendale in Los Angeles County. The AAB trolley operates on a single track that travels around the AAB shopping center from Americana Way to Caruso Avenue. The AAB trolley is a single-story vehicle mounted on the undercarriage of a circa early 1900s trolley from City of Milan, Italy. The trolley is powered by on-board batteries and has a detachable unpowered car.

The AAB trolley operates on a length of track of about one third mile and is capable of speeds of up to 5 miles per hour. The trolley is operated in two-operator teams and can seat up to 72 passengers. Caruso Affiliated utilizes contracts with LAZ Parking to operate the trolley with properly trained operators and the Midwest Trolley Services to provide maintenance of the trolley.



**Americana At Brand Trolley**

### **COVID-19 Impacts**

As of beginning of 2022, all COVID restrictions have been lifted and the trolley has resumed normal operations. This includes mandatory facemasks and social distancing.

During the winter holiday season, the AAB trolley was used as a stage for regular performances featuring a Santa Claus and a brass band. No patrons were allowed on board and all persons not operating the trolley remained seated while trolley was in motion.

## ANGELS FLIGHT RAILWAY COMPANY FUNICULAR

Angels Flight is a landmark funicular railway that was originally built in 1901 in the Bunker Hill region of downtown Los Angeles. Between 1901 and 1969, Angels Flight was owned by 6 different entities, with the funicular eventually becoming under the control of the now defunct Community Redevelopment Agency of the City of Los Angeles (CRA/LA). CRA/LA was the owner of Angels Flight and dismantled the funicular in 1969.

In 1996, after 27 years of storage, CRA/LA oversaw the project to restore and reconstruct Angels Flight. The funicular was reopened to the public after being reinstalled half a block south of its 1969 location, now located between 3<sup>rd</sup> and 4<sup>th</sup> Streets on Hill Street in downtown Los Angeles. Since 1997, Angels Flight has been effectively owned by the Angels Flight Railway Foundation (AFRF) through a 99-year long-term ground lease.

When the system was rebuilt, several modifications were made to the drive and braking systems. In 2001, the modified drive system failed and one of the cars rolled freely down the 33-degree incline before striking the other car. One passenger was killed, because of the accident, five passengers received serious injuries, and two passengers received minor injuries. The accident was thoroughly investigated by the CPUC and the NTSB. The funicular was taken out of revenue service and shut down for several years because of this accident. NTSB investigators made specific recommendations for a track-adjacent emergency walkway and raising the end doors to prevent passenger ejection in the event of an accident.

In January 2007, Angels Flight Railway Company (AFRC) personnel, the operators of Angels Flight acting on behalf of the AFRF, notified CPUC staff their intent to refurbish and re-open Angels Flight. AFRC contracted engineering and manufacturing services to refurbish Angels Flight. After CPUC staff's review of the system upgrades and approval of their request to place the system back in service, Angels Flight was once again reopened to the public in March 2010, with improved safety features. The improvements included a secondary safety cable, redundant fail-safe braking, and fail-safe carrier track brakes. The mechanical drive was once again redesigned, a state-of-the-art controller was installed, and the system was refurbished in



**Angels Flight Railway Company Funicular**

CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

conformance with funicular standards developed by the American National Standards Institute (ANSI B77.2 – 2004). NTSB noted upon reopening that the CPUC had not required implementation of the two NTSB recommendations from the 2001 accident. CPUC staff noted at the time that the ANSI Standards did not specifically require such additions. The system operated from then until a further accident in 2013.

In September 2013, a derailment of one of the cars occurred in which a downward moving Angels Flight car derailed. Although there were no injuries during the derailment, and it resulted in only minor displacement with just the wheel dropping off the track, this was a serious incident. Several contributing factors were identified as causes of the derailment, including improper operating practices that bypassed safety functions of the funicular system, inadvertent carrier brake activation, and carrier brake design issues. The system remained out-of-service for over three years.

In late 2016, AFRF notified CPUC staff that it had acquired engineering services to address the system and operational failures that lead to the 2013 derailment and intended to bring the system back into service. CPUC staff indicated they would not support such a request unless and until AFRF submitted a SCP to safety certify any changes to the system and implemented the remaining NTSB recommendations from the 2001 accident (track-adjacent emergency walkway and raised end doors). The AFRF agreed and submitted to CPUC staff a SCP and designs for the walkway and end doors. The SCP was approved by the CPUC in Resolution ST-197 (1/19/2017). On August 31, 2017, the system was brought back into service after CPUC approval of the Safety Certification Verification Report (SCVR) with new operational management under the Angel’s Flight Development Company (AFDC).

During 2018 and 2019, the CPUC staff worked closely with the AFDC to review the funicular system for its compliance with all ANSI B77.2 Standards, including those whose strict compliance is not required due to the vintage of the system. CPUC staff also conduct frequent inspections and meetings with AFDC personnel regarding the operations of the system.

With Angel’s Flight’s resumption of service, the NTSB reviewed the approved SCVR submitted to the CPUC by AFDC, which verifies all actions taken outlined in CPUC Resolution ST-197 and addresses all areas of NTSB Safety Recommendation R-13-37. On January 6, 2021, NTSB concluded the CPUC and AFDC met all requirements and have classified NTSB Safety Recommendation R-13-37 as “Closed – Acceptable Action.”

On May 19, 2022, Angels Flight conducted System Dynamic Testing and Inspection and completed the major open item requirement from the ANSI B77.2 – 2014 Edition §2.3.4.2 - Compliance Statement.

CPUC Staff is continuously monitoring Angels Flight’s operations status and monthly fault logs to ensure system safety.

### **COVID-19 Impacts**

Angels Flight reopened in Late August 2017 after a long period of being out of service. In CY 2018 and 2019, Angels Flight enjoyed high ridership numbers of approximately 452,000 and 446,000 respectively. In CY 2020 pandemic issues started to impact ridership in the March-April timeframe. Angels Flight closed for approximately 4 months in the summer of 2020 as ridership had dropped to only a few riders per day. In late summer/fall of 2020, Angels Flight reopened while implementing the “Angels Flight Business Continuity and COVID-19 Response Plan” to ensure safety of passengers and Angels Flight workers. CY 2020 ended with ridership at approximately 99,600 which was approximately 20% of the pre-pandemic yearly numbers for 2018 and 2019. CY 2021 ridership increased from 2020 levels, as the pandemic appeared to be receding. However, as the COVID-19 Delta and Omicron variants spread ridership remained flat and the year ended with annual ridership at 222,900. In CY 2022, Angels Flight was closed for approximately 7 weeks to replace the roofing system and total ridership was 350,000. The system operators anticipate returning to pre-pandemic ridership levels by the end of 2023, assuming current trends hold.

---

### **THE GETTY CENTER MUSEUM AUTOMATED PEOPLE MOVER**

The Getty Center Tram is an Otis Hovair Automated People Mover (APM) located in the City of Los Angeles serving the J. Paul Getty Center Museum. The Getty Center Tram was opened at the end of 1997. It is an electric, cable-driven hover train, with 2 tram sets of 3 cars each. When both three-car trains are operating, it has the capability of transporting 1,200 passengers per hour in each direction.

The Tram is located north of Brentwood in the Westside Region of Los Angeles and links a street-level parking area to the Getty Center Museum, located on a hilltop three-quarters of a mile away. The lower station at the bottom of the hill lies beside Sepulveda Boulevard and the San Diego Freeway. The upper station



**Getty Center Tram**

at the top of the hill is located in the arrival plaza of the museum and is part of the museum structure. The tram guideway follows the "Getty Center Drive" and has a by-pass section mid-route.

CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

Unlike most train cars, which are wheeled vehicles, the Getty Center Tram is suspended by a cushion of air. When the air suspension system is deactivated, the vehicle rests on a series of skids which also serve as a part of the emergency braking system. Otis company personnel operate and maintain the system under contract.

Although the Getty Center Tram started operating in 1997, it was not until 2013 that the CPUC asserted jurisdiction for safety oversight of the system following an evaluation of unregulated rail fixed guideway systems throughout California. CPUC staff worked with Getty personnel to develop the initial Getty System Safety Program Plan (SSPP) meeting CPUC GO 164 series requirements. Full implementation of the SSPP commenced in January 2015. More recently, Getty personnel developed a Public Transportation Agency Safety Plan (PTASP) Revision 0, which was revised as Revision 1 per CPUC comments and approved by CPUC in January 2022. In February 2022, Getty personnel submitted PTASP Revision 2 with minor revisions. Based on CPUC comments, Getty revised and resubmitted PTASP Rev 2 in November 2022, which was approved by CPUC in December 2022.

Getty personnel are planning to implement a tram renovation project. They have issued a Request for Proposal (RFP) and anticipate selecting in May 2023. The plan is to update the tram control system, and there are also considerations to update the cars and or tram propulsion system.

### **COVID-19 Impacts**

The Getty Center was closed to the public from March 14, 2020, to May 25, 2021. While Getty Center was closed, Otis's personnel remained onsite to maintain both the tram and the museum elevators. An essential group of Getty personnel also remained onsite to maintain the museum. When the Getty Center reopened to the public, various COVID-19 safety measures were implemented in compliance with current Los Angeles County Department of Public Health orders and Los Angeles City mandates.

When Los Angeles County ended the local health order in September 2022 that required masking while aboard public transit or inside transit hubs, Getty followed suit and ended their mask requirement for the tram, though mask use in the tram and in buildings is still recommended. Getty continues to implement other safety measures such as cleaning high-touch surfaces regularly, providing hand sanitizer near doors and high-touch areas, and contact tracing in the event of a COVID-19 outbreak.

## THE GROVE TROLLEY

The Grove Trolley began operation in 2002 and is owned by Caruso Affiliated in the City of Los Angeles. The Grove Trolley operates on a single track that travels along First Street between The Grove open air shopping center and the Original Farmers Market. The Grove Trolley is built on a historic undercarriage from a Boston streetcar of the 1950s. It is double-deck and open-air, with two spiral staircases that lead to the upper deck. The trolley is powered by on-board batteries and computerized digital controllers manage all trolley functions.

The Grove Trolley operates on a length of track of about one quarter mile and is capable of speeds of up to 5 miles per hour. The trolley is operated in two-man teams and can seat up to 56 passengers. Caruso Affiliated utilizes contracts with LAZ Parking to operate the trolley with properly trained operators and the Midwest Trolley Services to provide maintenance of the trolley.

### **COVID-19 Impacts**

All Covid restrictions were lifted in early 2022 and the trolley resumed normal operations. This includes mandatory facemasks and social distancing.



Grove Trolley

## LOS ANGELES WORLD AIRPORTS AUTOMATED PEOPLE MOVER

Los Angeles World Airports (LAWA), the governing body of Los Angeles International Airport (LAX), is developing a multi-billion-dollar upgrade to the ground transportation system at LAX. The Project is known as the LAWA Landside Access Modernization Program. The project will add six stations and elevated guideway between the



Los Angeles World Airports Proposed Rail System

terminals and ground transportation options. Three new Central Terminal stations will connect to stations at the new Consolidated Rent-A-Car facility, airport parking, and LACMTA rail transit and bus facilities. The LAX/Metro Transit Center, also known as the Airport Metro Connector (AMC), will be a multilevel station connecting to the new LACMTA Crenshaw/LAX rail transit line. To avoid the current LAX/Metro Transit Center construction zone but allow revenue service, the Crenshaw/LAX project opened to the public on October 7, 2022, from the Expo/Crenshaw Station to Westchester/Veterans Station, its temporary southern terminus.

The stations in the Central Terminal Area will provide fast and easy connections to nine airline terminals with a pedestrian walkway system leading to the terminal stations. The project SCP was approved by the Commission in Resolution ST-212 (10/11/2018). LAWA broke ground on the APM project in March 2019 and the APM is expected to open in 2024. Construction of vehicles, guideway, Maintenance and Storage Facility, and stations is underway. In 2022, the remaining four of six pedestrian bridge structures were completed, and once finalized, will connect airport terminals to the APM. The first two pedestrian bridge structures were completed in 2021. On April 20, 2022, LAX celebrated the construction completion of the guideway, which began in November 2019. Construction will continue on the plinths, which the train cars ride on, and the emergency walkway along the guideway.

CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

44 cars will be built for the APM system, with the cars starting to arrive at the LAX site in the first quarter of 2022. The public unveiling of the first APM train car occurred on 8/2/22 with city, federal, and airport officials. By the end of 2022, 8 APM cars were on site at LAX APM.



**LAX APM Train Car**

As of November 16, 2022, the station construction is 69.4% complete, and the guideway construction/installation finishes is 52.5% complete. As of December 7, 2022, only the Maintenance and Storage Facility has been powered up, and train movement there is expected to begin in the coming months.

**COVID-19 Impacts**

The project continued during the COVID-19 pandemic as it is considered essential work. There have been minor delays due to COVID-19, but the project schedule has not been drastically affected. Project meetings continued virtually.

---

**SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED PEOPLE MOVER**

The SCDOA installed and operates an APM between its central terminal and B gates concourse. The APM System includes a completely automated dual lane shuttle offering passengers a connection between the Central Terminal B and Airside Concourse



**Automated People Mover at Sacramento International Airport**

B, with an emergency/backup walkway located between guideways. Two passenger stations with flow-

CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

through configurations (one center platform and two side platforms) are in the Central Terminal building and the B Concourse building.

SCDOA has contracted with Bombardier (now Alstom) for the design, supply, installation, operation, and maintenance of the APM system. The complete system includes power distribution, power rail and vehicle power collector assemblies and interface, communication system, communications-based train control system required to operate the system, automatic station platform doors, and CX-100 vehicles.

The CX-100 vehicle is a fully automated, air-conditioned vehicle capable of operating in various modes twenty-four hours per day. A maintenance facility, including the Central Control Room, is located on level one under the Concourse B station.

SCDOA underwent a triennial audit in 2019 and the final Safety Report and Security Report were approved by the Commission in March 2021.

**COVID-19 Impacts**

The use of APM by airport passengers has returned to pre-COVID levels. SCDOA removed all COVID related reduction of service.

---

SAN FRANCISCO INTERNATIONAL AIRPORT AIRTRAIN AUTOMATED PEOPLE MOVER

The San Francisco International Airport AirTrain APM system began operation on February 24, 2003, as a six-mile system. It operates 24 hours every day, providing free service throughout the San Francisco International Airport. The AirTrain was originally contracted to Bombardier (now Alstom) as a design-build-operate-maintain project. The system is owned by the San Francisco Airports Commission and currently operated and maintained by Alstom.



**San Francisco International Airport AirTrain Automated People Mover**

CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

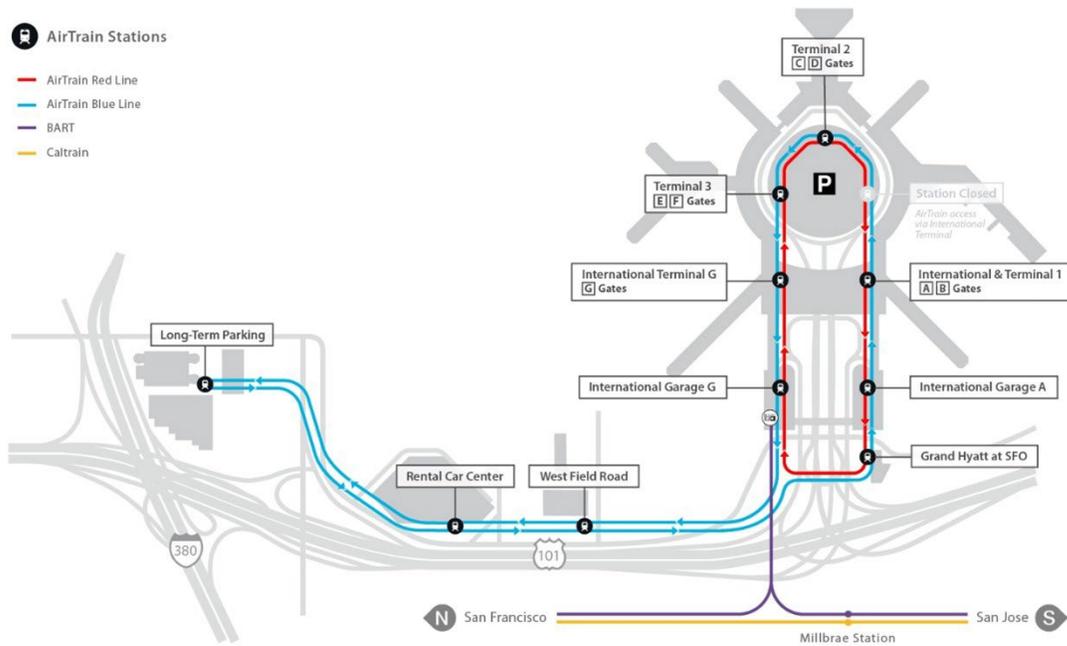
With a fleet of 42 CX-100 vehicles including a Maintenance Recovery Vehicle (MRV), the 6-mile system serves nine stations connecting all the airport’s terminals, hotel, parking garages, the Rental Car Center and an external connection to the BART Airport Station.

The AirTrain system underwent a triennial audit in 2019 and the final report is scheduled to be presented to the Commission for approval in early 2023.

**COVID-19 Impacts**

During the COVID-19 pandemic, San Francisco International Airport maintained service and AirTrain continued operating 24 hours a day, but at a reduced frequency schedule due to passenger reductions during the pandemic; service is back to regular frequency in 2022.

San



Francisco International Airport AirTrain System Map

## **System Expansions and Capital Projects**

### **AirTrain Extension Project**

Resolution ST-205 (8/10/2017) approved AirTrain’s Extension SCP. The project expands the existing AirTrain system to include a new Long-term Parking Garage Station and an additional in-line Hotel Station serving a new hotel. Several additional upgrades to facilities and equipment are part of the project. The project has three phases: upgrade of the train control system, the extension to a new airport hotel, and the extension to a new long-term parking facility. RTSB management approved Phase 1 that allowed line-of-sight communication upgrades for existing fleet of 39 CX-100 cars, and 3 new CX-100 cars that entered the fleet on March 6, 2020. RTSB management approved Phase 2 that allowed the Hotel Station to begin revenue service in October 2019. RTSB management approved Phase 3 that allowed the Long-Term Parking Garage Station and guideway extension to begin revenue service in April 2021 and was the culmination of Project.

**SYSTEMS IN DEVELOPMENT OR FUNDING STAGES**

**LOS ANGELES STREETCAR**

The Los Angeles Streetcar is a project in Downtown Los Angeles (DTLA) that is advancing under the Community Facilities District that is a special tax voted by area residents. Additional funding sources include an FTA Small-Starts Grant, Los Angeles County Measure M transportation funding, and some elements of Public-Private Partnership(s). In 2013, the Los Angeles City Council approved \$295 million in operations funding. The Los Angeles Streetcar is proposed as an urban circulator that was designed to meet the needs of DTLA residents, commuters, and tourists. The 3.8-mile route will run approximately 18 hours a day to connect South Park, the Financial District and Historic Broadway, Grand Park and the Civic Center, the Fashion District and the Convention Center, Crypto.com Arena, and LA Live.

The Los Angeles Streetcar will also serve as a much-needed connector to key local and regional bus and rail lines, serving as the first/last mile solution needed to bridge the gaps in DTLA’s existing public transportation system. LACMTA is assisting the City of Los Angeles on the project. In 2019 the project received Federal National Environmental Policy Act clearance and California Environmental Quality Act clearance. A SCP will be submitted to CPUC in the future if the project is funded and approved.



Los Angeles Streetcar Proposed System Map

## DOWNTOWN [SACRAMENTO] RIVERFRONT STREETCAR

The Cities of Sacramento and West Sacramento partnered to propose a streetcar system linking the two cities and connecting to Sacramento Regional Transit District’s (SRTD’s) rail system in downtown Sacramento in 2015. FTA funding was secured for the design and development of the project, which SRTD assisted with technically and agreed to contribute \$25M to help construct. However, after environmental clearance was completed in 2017, in late 2018 when bids were sought for the proposed system, limited bids were received which came in significantly higher than estimated. To maintain project viability, the project has been reduced in scope and the plan is that a revised project is being transferred to SRTD from the Cities. (See “Summary of Activities for All FTA Regulated Rail Transit Agencies” section above under “Sacramento Regional Transit District” for additional details on the Downtown [Sacramento] Riverfront Streetcar.

## INGLEWOOD TRANSIT CONNECTOR PROJECT

The City of Inglewood has proposed an elevated automated people mover (APM) that aims to address a first/last mile gap in Los Angeles County’s public transportation network. This proposed project will connect the LACMTA’s K-Line Downtown Inglewood Station to the



City’s housing and employment centers, and sports and entertainment venues. The project, which will be 1.6 miles in length, will feature three stations, a maintenance and storage facility, two power distribution system substations, and three new parking lots along the route.

In March 2021, LACMTA’s Board approved the formation of the Inglewood Transit Connector Joint Powers Authority (JPA) with the City of Inglewood to implement and operate the project. The City of Inglewood is the lead agency for the project and is responsible for overseeing various aspects. On January 31, 2023, the California State Transportation Agency awarded a \$407 million grant to assist with the construction. Currently, the City of Inglewood and the JPA are working with the FTA to secure additional funding through a Capital Investment Grant. This project, which will be a Design Build Finance Operation and Maintenance (DBFOM) project, is expected to break ground in 2024 with the goal of providing passenger service in time for the 2028 Olympics.



Inglewood Transit Connector Proposed System Map

## ANNUAL REPORT FINDINGS

This Annual Report, as required by Code of Federal Regulation, Title 49, Sections 674.13(a)(7) and 674.39(a), provides a summary of the activities of California’s State Safety Oversight program for Rail Fixed Guideway Public Transportation Systems.

The California Public Utilities Commission (CPUC) continues with its ongoing safety and security oversight activities for Rail Transit Agencies (RTAs). The Federal Transit Administration certified CPUC as California’s State Safety Oversight Agency (SSOA) on October 23, 2018. The CPUC’s SSOA program has been a national leader for years and continues to lead in developing a rail transit field inspection program, a citation program, on-line tools for reporting accidents and tracking corrective action plans, and other areas that improve safety.

In 2015, the CPUC undertook a strategic planning process to assess new developments in the industries it regulates, develop priorities for the agency and create an action plan that would align the CPUC’s responsibilities and goals. Commissioners and staff were extensively involved in the development of the Strategic Directives (SDs) - a set of high-level goals to guide the CPUC’s daily activities and responsibilities. The document was updated in February 2020. The CPUC’s rail transit safety oversight program, along with the other rail safety programs under the Rail Safety Division, feed into the following CPUC SDs:

- SD-02, regarding risk management, safety quality improvement, safety assurance, and safety and the CPUC’s promotion of continuous improvement of safety culture, based on processes adopting the concepts of Safety Management Systems;
- SD-03, regarding assuring regulated systems are resilient and capable of recovering from adverse events, and have proactive maintenance programs that are adequate, verifiable, and auditable;
- SD-05, regarding promotion of compliance with applicable laws, standards, and regulations; enforcement of applicable laws, rules, and regulations in a fair, consistent, and timely manner; promote individual and organizational accountability within regulated entities; and continually improve oversight efforts through regular periodic reviews of CPUC compliance and enforcement efforts;
- SD-08, regarding responsibly administering CPUC human resources by providing relevant and practical training and mentoring to staff; maximizing the efficiency and effectiveness of the agency where possible; using moder technology to help CPUC employees perform their job effectively; and being a prudent steward of public funds;
- SD-09, regarding engaging in open communications with CPUC staff and outside stakeholders, by increasing awareness of and engagement in the work of the CPUC, both internally and externally; communicating the CPUC’s role in facilitating the safe and reliable delivery of services by regulated entities to diverse stakeholders; providing the public with accurate

CALENDAR YEAR 2022 ANNUAL REPORT –STATE SAFETY OVERSIGHT OF RAIL FIXED GUIDEWAY SYSTEMS

information and documents in a timely manner; and supporting an organization-wide culture and core values through dialogue, critical thinking, learning, innovation, collaboration, and collegiality.

- SD-10, regarding to impartial, fair, consistent, and transparent decision-making process, by implementing procedures, practices, and rules for decision-making that are consistent, understandable, and accessible to the public, interested persons, and parties; and ensuring decision-making documents in the administrative record are logged and available to the public to the extent allowed by law, and that accessibility to the record is regularly assessed and enhanced; and
- SD-11, regarding collaboration and coordination with local, state, and federal entities, as appropriate, by communicating within the CPUC and to stakeholders the agreed-upon roles and responsibilities of the CPUC and its governmental partners; coordinating with governmental entities on the effective and efficient regulation and delivery of services; assessing the results of governmental collaboration and continuously working to improve it, and giving due deference to adopted policies and decisions of other state and federal agencies.

In 2023, CPUC’s Rail Transit Safety Branch will continue its rail transit safety oversight activities including inspections of facilities and operations, oversight of capital projects, and investigations of accidents and other incidents of rail transit agencies. Plans for 2023 also include initiating a rulemaking to revise GO 143 series; continue developing the new Rail Safety and Security Information Management System (RSSIMS) database; adjusting its inspection program to meet new federal mandates on risk-based inspection program; update the RTSB workload assessment to determine and justify the resource needs for additional staff to oversee the expanding California rail transit network; and continue work on developing an on-line system for improved processing and monitoring of corrective action plans.