CALENDAR YEAR 2019
REPORT OF
STATE SAFETY OVERSIGHT ACTIVITIES
FOR
RAIL FIXED GUIDEWAY TRANSPORTATION SYSTEMS
IN CALIFORNIA

California Public Utilities Commission

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EXECUTIVE SUMMARY

Pursuant to California Public Utilities Code section 99152, the California Public Utilities Commission (CPUC) regulates the safety and security of 15 rail transit agencies (RTAs), of which eight are funded in part by and under Federal Transit Administration (FTA) regulation. The CPUC regulates the safety of these RTAs plus an additional seven that are rail and other fixed guideway public transportation systems that receive no FTA funding. The Rail Safety Division's (RSD) Rail Transit Safety Branch (RTSB) is responsible for the CPUC's rail transit safety oversight program.

In order to comply with the new regulations in Code of Federal Regulations, Title 49, Part 674.39 (49 CFR 674.39), established by the FTA, all State Safety Oversight Agencies (SSOA) must provide data and several required documents to the FTA each calendar year into an FTA online reporting system. Per 49 CFR Part 674.39 (a)(3), the CPUC must submit an SSOA Annual Report (Annual Report) by March 15 of each year that includes 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 Public Transportation Agency Safety Plans
- The level of effort by the SSOA in carrying out its oversight activities

In addition, 49 CFR Part 674.13(a)(7) requires that at least once a year, the SSOA report the status of the safety of each RTA under their jurisdiction to the Governor, the FTA, and the board of directors, or equivalent entity, of RTAs.

This is the CPUC's first such Annual Report under the new regulations. The CPUC was certified by the FTA as the SSOA for California on October 23, 2018. This report summarizes the data and information submitted to the FTA's online annual reporting system, outlining the RTSB activities from October 23, 2018, the FTA certification date, to December 31, 2019.

This report summarizes the 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. Data and information are presented summarizing data from all RTAs, and then additional information is presented indicating the types of accidents each RTA has reported and the primary causal factors for those accidents. Additionally, there is a section outlining the capital projects that staff are actively performing safety oversight on.

As outlined in this report, RTSB and other CPUC Staff performed approximately 70,011 hours of safety and security oversight activities during the reporting period, for both Non-FTA Funded and FTA Funded RTA's. RTSB inspectors conducted 312 inspections during the reporting period, while participating in seven triennial Safety and Security reviews and numerous accident investigations. RTAs experienced 479 reportable accidents during the period, the vast majority (approximately 90 percent) of

which are related to collisions with vehicles and pedestrians at rail crossings or along street-running transit lines.

BACKGROUND

The US Congress enacted, and President Obama signed into law the Moving Ahead for Progress in the 21st 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 was to strengthen the rail transit State Safety Oversight program of the FTA required by 49 CFR Part 659.

The CPUC has a long-standing rail transit safety oversight program which pre-dates the federal program, which began in the early 1990's. The CPUC was given authority by the legislature as early as the mid-1950's over the safety of rapid transit systems in California, at first by individual agencies 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. Specifically, California Public Utilities Code § 99152[1] 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.

On October 13, 1992, pursuant to the requirements of the 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. The CPUC has been operating its SSOA program under authority from 49 CFR Part 659 since that time.

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

[1] 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.*"

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 passed Resolution ST-169 (10/2/2014), which authorized 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 five grants thus far totaling $20,517,560.

As required by MAP-21, in order 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 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 in order 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.

In order 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 by March 15 of each year. Considering that in 2018 RTSB had been certified for only 2 months, RTSB requested, and FTA agreed, that 2018 data could be included in the calendar year 2019 report. Accordingly, this report provides the data required from October 23, 2018 (the date the CPUC was certified by FTA) to December 31, 2019.

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:

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

The remaining seven, that do not receive FTA funding and are not under FTA regulation are:

- Americana at Brand Trolley
- Angel's Flight Railway Company (funicular)
- Getty Center Museum Automated People Mover
- The Grove Trolley
- Los Angeles International Airport Automated People Mover (Los Angeles World Airports)
- Sacramento County Department of Airports Automated People Mover (SCDOA)
- San Francisco International Airport Automated People Mover (AirTrain)

From the systems listed above, the following are currently under construction and not yet operating:

- Los Angeles International Airport Automated People Mover
- Orange County Transportation Authority

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

- Downtown Riverfront Streetcar (Cities of Sacramento and West Sacramento)
- Los Angeles Streetcar (City of Los Angeles)

Rail Transit Safety Branch Structure

RTSB is responsible for conducting the CPUC's rail transit safety oversight program activities. The RTSB has 33 staff members located in San Francisco, Los Angeles, Sacramento, and San Diego, as well as home-based inspectors and other staff to provide California effective safety oversight of the rail transit and other fixed guideway systems under the CPUC's jurisdiction. The Branch as two Sections: the Rail Transit Safety Section (staff engineers and analysts) and the 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.

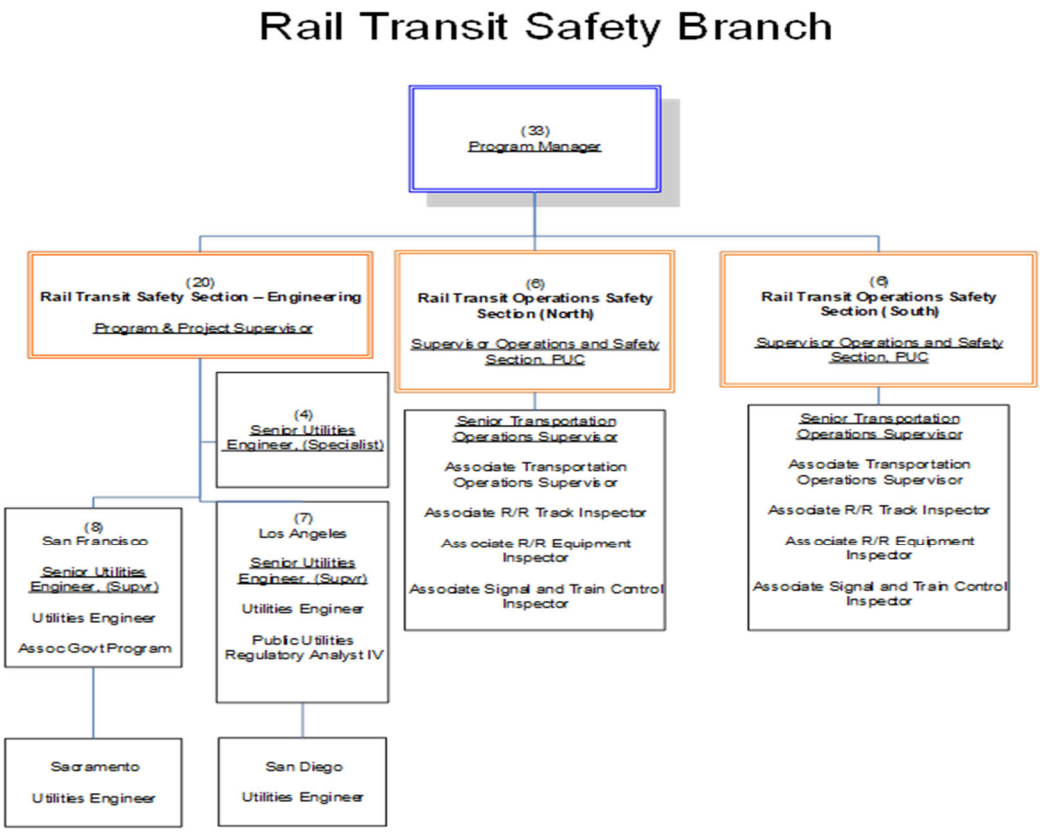


Figure 1: RTSB Organizational Chart

SSOA programs are required to develop a qualified staff to conduct the rail transit safety oversight activities and provide a minimum level of initial and refresher training to the personnel in the program under the requirements of 49 CFR Part 672. RTSB Staff is highly qualified and RTSB developed and submitted a FTA Technical Training Plan (TTP) as part of the FTA certification process. The TTP demonstrates how the staff involved in the CPUC SSOA program will obtain and continue to acquire the necessary training to develop and maintain a highly qualified staff.

The new 49 CFR 674.27 requires SSOAs to adopt and distribute a written program standard. Accordingly, RTSB modified its existing Program Standard titled "*Program Standard - Procedures Manual State Safety and Security Oversight of Rail Fixed Guideway Systems.*" As required by 49 CFR 674, the revised Program Standard identifies the persons responsible and describes the practices to be followed in conducting the SSOA program; sets forth the processes and procedures the RTSB uses in implementing the various aspects of the safety oversight program; and . is posted on the Commission's web site at www.cpuc.ca.gov/rtsb .

The CPUC 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 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 and corrective action plans and schedules
- Reporting and investigating events and hazards
- Performing triennial on-site safety and security reviews
- RTSB Inspections
- Hazard management
- Handling formal and informal complaints

SUMMARY OF OVERSIGHT ACTIVITIES OF ALL RAIL TRANSIT AGENCIES FROM OCTOBER 23, 2018 TO DECEMBER 31, 2019

Summary of Staff Time on Safety Oversight Activities

The RTSB activities fall into the following major categories:

- conducts comprehensive triennial safety and triennial security audits of RTAs
- perform ongoing inspections of RTA facilities, operations, and construction projects to assess compliance with federal and state regulations, including CPUC GOs
- monitor RTA operational and safety activities
- evaluates new SCPs covering new major projects
- evaluate and recommend certain RTA safety plans for Commission approval
- makes recommendations to CPUC leadership to develop new or modify existing CPUC General Orders (GOs) related to RTA safety
- facilitates communication between the FTA and RTAs by notifying RTAs of all FTA Safety Directives and Safety Advisories
- collects 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 investigations if RTSB management determines it is necessary or appropriate
- participates in National Transportation Safety Board (NTSB) investigations when they occur at jurisdictional RTAs in California
- if RSD management deems necessary, conduct its own investigations of certain accidents

During the reporting period covered by this Annual Report, the CPUC Staff (including 33 authorized RTSB positions, as well as the CPUC Staff from the Rail Crossings and Engineering Branch of RSD, the Legal Division, and the Administrative Law Judges Division who participate in oversight activities of jurisdictional RTAs at CPUC) spent 70,011.05 hours in carrying out its safety and security oversight activities for both non-FTA and FTA funded transit agencies.

Table 1 below summarizes total hours spent for each activity for both Non-FTA funded and FTA funded RTAs.

	Total Hours			
	Oct 23, 2018-Dec 31, 2018		2019	
Program Activity	Non-FTA Funded	FTA Funded	Non-FTA Funded	FTA Funded
Developing Policy/Standards, Supporting Management, Special Project	0.00	1,679.25	0.00	9,627.05
Other Transit Safety Oversight/Investigations	225.50	1,663.00	1093.50	9,164.50
Inspections	175	1,369.00	321.00	8,504.50
Accident Investigations	0.00	1,232.50	20.00	7,033.25
Managing/Supervising	0.00	968.00	133.00	6,399.00
Certifying Capital Projects	69.00	742.00	931.00	3,810.75
Triennial Audits		457.50	1739.50	3,270.50
Miscellaneous *	0.00	402.25	284.00	3,007.50
Rail Transit Crossings	0.00	385.00	0.00	2,207.50
Training (receiving and giving)	0.00	189.00	0.00	1,991.50
Administrative Law Judges Division/Legal Division	0.00	235.00	12.00	669.00
Total	469.50	9,322.50	4,534.00	55,685.05

*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 from October 23, 2018 to December 31, 2019

Rail Transit Inspections

California is one of only a few states to have inspectors with broad experience in specific rail transit disciplines that are core to the industry, who are out in the field conducting facility 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 that field procedures frequently stray from the established written procedures, potentially leading to failures and sometimes accidents.

RTSB inspectors have a combined total of 352 inspections performed between October 23, 2018, and December 31, 2019. 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 inspectors in 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 representatives before RTSB inspectors leave the RTA properties. Often, RTSB conducts 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, the 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), a timeline for its implementation, and the RTA staff responsible for its completion. RTSB inspectors monitor responses and field-verify the corrective actions and CAPs. The inspection is considered closed when RTSB sends a follow-up report to the RTA accepting the corrective action or CAP. RTSB inspectors track CAPs to closure.

Table 2 below summarizes the inspection activities conducted by the RTSB inspectors.

	Agency	Total between October 23, 2018 to December 31, 2018	Total between January 1, 2019 to December 31, 2019
FTA FUNDED	Sacramento Regional Transit District	9	61
	Bay Area Rapid Transit (BART)	5	38
	San Francisco Municipal Transportation Agency	5	25
	Santa Clara Valley Transportation Authority	6	46
	Los Angeles Metropolitan Transportation Authority	3	73
	North [San Diego] County Transit District (Sprinter)	3	19
	San Diego Trolley, Inc.	2	31
	FTA Funded Sub Total	33	293
NON-FTA FUNDED	Angels Flight Railway Company	2	1
	Sacramento International Airport Automated People Mover (APM)	1	5
	Getty Center Museum APM	0	5
	San Francisco International Airport (AirTrain) APM	0	3
	Americana at Brand/The Grove Trolley	4	5
	Non-FTA Funded Sub Total	7	19
	Grand Total	40	312

Table 2: RTSB Inspections from October 23, 2018, to December 31, 2019

Comprehensive Triennial Safety and Security Audits of Rail Transit Systems

The RTSB performs comprehensive safety and security audits of RTAs on a triennial basis. These audits involve reviews of RTA's operational processes and procedures pertaining to compliance with GOs and federal rules/regulations. The RTSB reviews RTA's records, performs site inspections, and other activities to evaluate the RTAs' implementation of their system safety program plan, systems security plan, standard operating procedures, accident investigations, and maintenance practices. For each RTA, the RTSB conducts one triennial review focused on RTA safety[2], and another on RTA security[3]. The triennial safety review typically lasts one to two weeks and involves a dozen or more RTSB inspectors and engineers. A significant level of Staff effort on these audits takes place after the field component, when Staff involved in the audit and management review information collected, develop findings, and prepare the audit report. These activities typically take 10 to 15 weeks, depending on the size of the RTA, Staff workload, and other factors. A triennial security audit is typically conducted concurrently with a triennial safety audit but is documented in a separate report. Each of the two reports requires a Commission Resolution offering the report and findings for the Commission's review and approval.

In calendar year (CY) 2018, RTSB performed three triennial reviews and in CY 2019 RTSB performed four triennial reviews. Table 3 below is the schedule for the triennial reviews:

Rail Transit System	Triennial Review Dates
San Diego Trolley, Inc.	6/9-20/2018
North (San Diego) County Transit District	8/11-22/2018
San Francisco Municipal Transportation Agency	10/6-17/2018
Sacramento International Airport APM	5/13-17/2019
San Francisco International Airport AirTrain APM	6/10-21/2019
Los Angeles County Metropolitan Transportation Authority	9/9 – 20/2019
BART Oakland Airport Connector APM	10/21-25/2019

Table 3: Schedule of Triennial Safety and Security Reviews in CY 2018 and 2019

[2] As defined in Commission GO 164-E, Section 2.26: safety means freedom from harm resulting from unintentional acts or circumstances.

[3] As defined in Commission GO 164-E, Section 2.32: security means freedom from harm resulting from intentional acts or circumstances.

Accident Investigations

As prescribed in the RTSB's Program Standard, titled "*Program Standard - Procedures Manual State Safety and Security Oversight of Rail Fixed Guideway Systems,*" 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[4] and incidents[5] to the RTSB. Typically, RTSB receives over 300 rail transit accident notifications per year. GO 164-E requires RTAs to investigate and RTSB staff to review and approve the RTA's accident investigation reports. In some cases, RTSB staff will conduct a separate investigation of certain accidents. The RTSB tracks accident investigation closeouts by RTAs and any CAPs associated with the accidents. In some cases, the RTSB 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. From October 23, 2018, to December 31, 2019, RTAs reported 479 accidents under the requirements of GO 164-E.

SRTD GRADE CROSSING ACCIDENT

It should be noted that in 2018 the Commission revised GO 164-D to GO 164-E as part of the CPUC's FTA certification requirements. One of the changes was to the accident reporting requirements applicable to RTAs, which the FTA had altered. The FTA no longer required reporting of all collisions at crossings and other minor collisions. Due to the CPUC's jurisdiction over the safety of highway and pedestrian rail crossings, the CPUC retained in GO 164-E the requirements to report all collisions with objects or individuals, rather than just those that resulted in a fatality, serious injury or substantial property damage (as required by 49 CFR Part 674). That would assure the data on accidents

[4] 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.

[5] 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.

at crossings and other locations could continue to be available for analysis and risk assessment of those crossings and other locations.

In 2018 the RTSB worked to develop and deploy an on-line web form for RTAs to report accidents to the RTSB. The process ensures a wider distribution of initial accident notifications to RTSB staff and management, allowing for timely responses by the RTSB.

Table 4 and Figure 2 below summarize the types of accidents and Table 5 and Figure 3 summarize primary probable causes of accidents between October 23, 2018 and December 31, 2019.

Accident Type	LACMTA	MUNI	NCTD	SRTD	SDTI	BART	VTA	Grand Total
Train vs Vehicle	24	173	1	37	9		24	268
Train vs Individual	23	13	1	12	12	19	12	92
Other	2	13	10	17	1	6	27	76
Derailment	3	11		4		12	3	33
Yard Collision						2	1	3
Grand Total	**52**	**216**	**12**	**71**	**22**	**39**	**67**	**479**

Table 4: Types of Accidents Reported by Rail Transit Agencies (10/23/2018 – 12/31/2019)

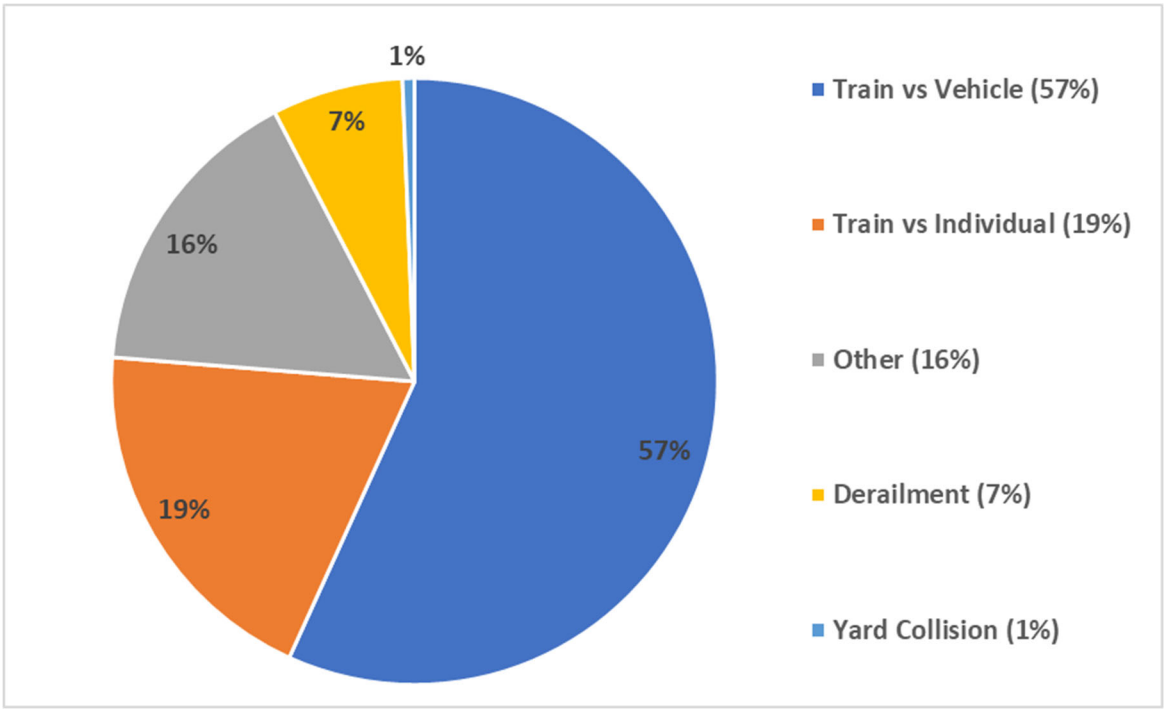


Figure 2: Types of Accidents Reported by Rail Transit Agencies (10/23/2018 – 12/31/2019)

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 debris or shopping carts left on or next to the tracks.

	2018 (Oct 23 - Dec 31)		2019 (Jan 1 - Dec 31)		Grand Total
Primary Causal Factors	Total Accidents	Percentage of Accidents	Total Accidents	Percentage of Accidents	
Action of Motorist, Non-transit auto driver at fault	35	41.18%	144	42.6%	179
Operating Rule Violation/ Human Factor, Employee error or organizational issue	22	25.88%	75	22.19%	97
Under Investigation	0	0%	56	16.57%	56
Other, Acts of Nature/ Unknown	4	4.71%	29	8.58%	33
Trespasser, Trespasser action	7	8.24%	24	7.1%	31
Pedestrian Actions, Pedestrian at fault	5	5.88%	20	5.92%	25
Suicide, Suicides and suicide attempts	4	4.71%	19	5.62%	23
Imprudent Customer Actions, Inappropriate patron or passenger behavior on vehicles or in stations	2	2.35%	12	3.55%	14
Equipment Failure, System component failure	2	2.35%	8	2.37%	10
Poor Maintenance, System not properly maintained	2	2.35%	5	1.48%	7
Slips and Falls, Slips and falls in station or vehicle	1	1.18%	2	0.59%	3
Medically Related, Illness, heart-attacks	1	1.18%	0	0%	1
Grand Total	85	100%	338	100%	479

Table 5: Primary Causal Factors Identified through Accident Investigation (10/23/2018 – 12/31/2019)

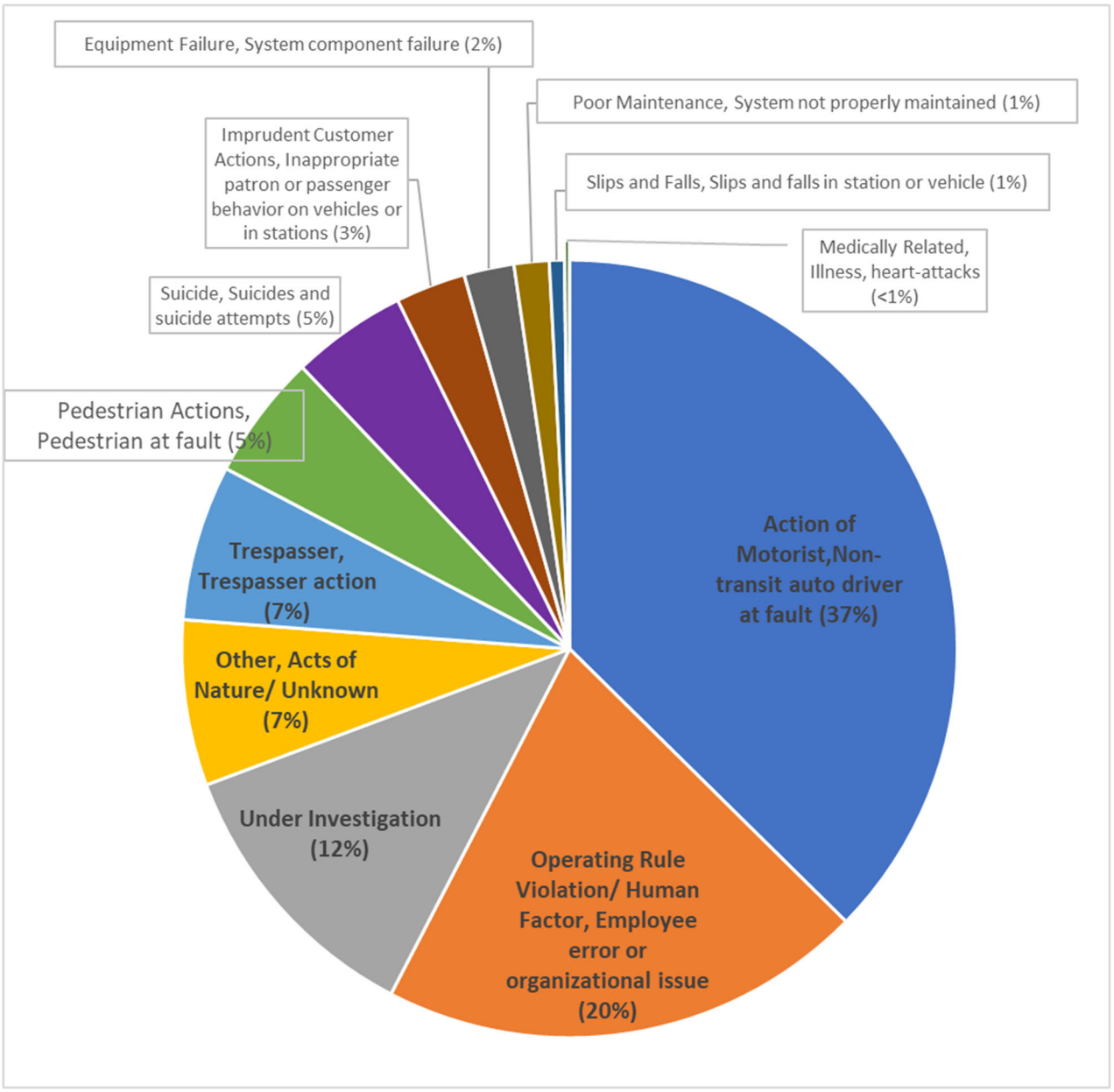


Figure 3: Primary Causal Factors Identified through Accident Investigation (10/23/2018 – 12/31/2019)

National Transportation Safety Board Accident Investigations

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. The RTSB works with the NTSB and participates 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.

On August 22, 2019, Sacramento Regional Transit District experienced a train collision when a revenue train collided with a train allowed onto the mainline track for testing a mechanical problem.

The NTSB chose to investigate this accident and SRTD and RTSB staff participated along with employee union representatives. NTSB has not yet issued its report. The RTSB is completing its own investigation and report on the accident as well.

Corrective Action Plans

As described previously, CAPs are developed by RTAs and tracked by RTSB. RTSB's Program Standard and 49 CFR 674.37 require RTAs to develop CAPs for investigations of events; hazard management; triennial review audits conducted by RTSB; internal safety/security reviews conducted by the RTAs; and other purposes as deemed necessary by the RTSB. CAPs describe the proposed corrective actions and the responsible RTA personnel who will implement and track the CAP to closure. The RTSB reviews the proposed CAPs to determine their adequacy in addressing the inspection, audit and investigation findings, and either approves or requires modifications to the CAP. Routine meetings are held with RTAs to assess CAP status and update RTSB records. Typically, the RTSB reviews over 300 CAPs every year.

Table 6 below summarizes the status of CAPs by FTA source category.

FTA Category	CAPs Generated between October 23, 2018-December 31, 2018			CAPs Generated in CY 2019		
		CAP Status			CAP Status	
	Number	Open	Closed	Number	Open	Closed
Bay Area Rapid Transit						
Accident Investigation	2	0	2	13	0	13
Hazard Management	0	0	0	0	0	0
Inspection	5	0	5	9	5	4
Internal Safety Audit Program	0	0	0	0	0	0
Triennial Review	0	0	0	0	0	0
Other	0	0	0	0	0	0
Sub Total	7	0	7	22	5	17
San Francisco Municipal Transportation Agency						
Accident Investigation	24	2	22	72	60	12
Hazard Management	3	0	3	4	0	4
Inspection	4	1	3	3	1	2
Internal Safety Audit Program	0	0	0	0	0	0
Triennial Review	0	0	0	0	0	0
Other	0	0	0	0	0	0
Sub Total	31	3	28	79	61	18
Santa Clara Valley Transportation Authority						
Accident Investigation	1	0	1	15	1	14
Hazard Management	0	0	0	1	1	0
Inspection	6	0	6	24	2	22
Internal Safety Audit Program	26	3	23	3	2	1
Triennial Review	0	0	0	0	0	0
Other	0	0	0	0	0	0
Sub Total	33	3	30	43	6	37
Los Angeles County Metropolitan Transportation Authority						
Accident Investigation	0	0	0	8	5	3
Hazard Management	0	0	0	0	0	0
Inspection	4	0	4	47	6	41
Internal Safety Audit Program	0	0	0	6	6	0
Triennial Review	0	0	0	0	0	0
Other	0	0	0	1	1	0
Sub Total	4	0	4	62	18	44

Table 6: Status of Corrective Actions by FTA Source Category (10/23/2018 – 12/31/2019)

FTA Category	CAPs Generated between October 23, 2018-December 31, 2018			CAPs Generated in CY 2019		
		CAP Status			CAP Status	
	Number	Open	Closed	Number	Open	Closed
North [San Diego] County Transit District						
Accident Investigation	0	0	0	1	0	1
Hazard Management	3	0	3	0	0	0
Inspection	2	0	2	16	2	14
Internal Safety Audit Program	0	0	0	0	0	0
Triennial Review	0	0	0	0	0	0
Other	0	0	0	0	0	0
Sub Total	5	0	5	17	2	15
San Diego Trolley, Inc						
Accident Investigation	2	0	2	0	0	0
Hazard Management	0	0	0	0	0	0
Inspection	1	0	1	20	0	20
Internal Safety Audit Program	0	0	0	0	0	0
Triennial Review	0	0	0	17	7	10
Other	0	0	0	0	0	0
Sub Total	3	0	3	37	7	30
Sacramento Regional Transit District						
Accident Investigation	1	0	1	7	0	7
Hazard Management	0	0	0	0	0	0
Inspection	9	0	9	25	2	23
Internal Safety Audit Program	0	0	0	7	6	1
Triennial Review	0	0	0	46	25	21
Other	0	0	0	0	0	0
Sub Total	10	0	10	85	33	52
San Francisco International Airport Automatic People Mover (AirTrain)						
Accident Investigation	0	0	0	0	0	0
Hazard Management	0	0	0	0	0	0
Inspection	0	0	0	4	0	4
Internal Safety Audit Program	0	0	0	8	4	4
Triennial Review	0	0	0	0	0	0
Other	0	0	0	0	0	0
Sub Total	0	0	0	12	4	8

Table 6: Status of Corrective Actions by FTA Source Category (10/23/2018 – 12/31/2019)

FTA Category	CAPs Generated between October 23, 2018-December 31, 2018			CAPs Generated in CY 2019		
		CAP Status			CAP Status	
	Number	Open	Closed	Number	Open	Closed
Getty Center Museum Automated People Mover						
Accident Investigation	0	0	0	0	0	0
Hazard Management	0	0	0	0	0	0
Inspection	0	0	0	0	0	0
Internal Safety Audit Program	2	0	2	0	0	0
Triennial Review	0	0	0	0	0	0
Other	0	0	0	0	0	0
Sub Total	2	0	2	0	0	0
Sacramento County Department of Airports						
Accident Investigation	0	0	0	0	0	0
Hazard Management	0	0	0	0	0	0
Inspection	1	0	1	0	0	0
Internal Safety Audit Program	3	0	3	2	0	2
Triennial Review	0	0	0	0	0	0
Other	0	0	0	0	0	0
Sub Total	4	0	4	2	0	2
Angels Flight Railway Company						
Accident Investigation	0	0	0	0	0	0
Hazard Management	0	0	0	0	0	0
Inspection	2	0	2	0	0	0
Internal Safety Audit Program	0	0	0	0	0	0
Triennial Review	0	0	0	0	0	0
Other	0	0	0	0	0	0
Sub Total	2	0	2	0	0	0
Americana At Brand Trolley						
Accident Investigation	0	0	0	0	0	0
Hazard Management	0	0	0	0	0	0
Inspection	0	0	0	1	0	1
Internal Safety Audit Program	0	0	0	0	0	0
Triennial Review	0	0	0	0	0	0
Other	0	0	0	0	0	0
Sub Total	0	0	0	1	0	1

Table 6: Status of Corrective Actions by FTA Source Category (10/23/2018 – 12/31/2019)

FTA Category	CAPs Generated between October 23, 2018-December 31, 2018			CAPs Generated in CY 2019		
		CAP Status			CAP Status	
	Number	Open	Closed	Number	Open	Closed
Grove Trolley						
Accident Investigation	0	0	0	0	0	0
Hazard Management	0	0	0	0	0	0
Inspection	1	0	1	1	0	1
Internal Safety Audit Program	0	0	0	0	0	0
Triennial Review	0	0	0	0	0	0
Other	0	0	0	0	0	0
Sub Total	1	0	1	1	0	1
Total	**102**	**6**	**96**	**361**	**136**	**225**

Table 6: Status of Corrective Actions by FTA Source Category (10/23/2018 – 12/31/2019)

Changes to Agency Safety Plans

RTAs are currently guided by their System Safety Program Plan (SSPP), as required by 49 CFR Part 659. Under the direction of the U.S. Congress, FTA developed 49 CFR Part 673, which requires RTAs under FTA jurisdiction (recipients of FTA funding) to develop Public Transportation Agency Safety Plans (PTASPs), based on the principles of Safety Management Systems. RTAs under FTA jurisdiction have until July 20, 2020, to have their PTASP submitted and approved by their SSOA. The RTSB has been working closely with the RTAs in California under FTA jurisdiction to have a completed and approved PTASP. The RTSB has advised RTAs under the FTA jurisdiction to submit their PTASP by March 15, 2020, in order to allow staff time to review, approve, or provide comments regarding items that need to be addressed, while still leaving time for them to get approval of the document by their Board of Director's by July 20, 2020. Upon a satisfactory PTASP as determined by RTSB's evaluation checklist, RTSB will issue conditional approval to the RTA. Upon submittal of evidence of RTA Board approval, RTSB will issue a final written approval for the PTASP.

RTAs have updated their SSPP to adopt changed accident reporting requirements, and reclassify accidents and incidents to "events" pursuant to 49 CFR Part 674 and GO 164-E.

The FTA has specific requirements for PTASPs, in accordance with United States Code, Title 49, Section 5329(d)), including 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. In addition, RTAs would be required to include an emergency preparedness and response plan in their PTASP

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 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.

On December 22, 2014, the CPUC issued Resolution ST-163, 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, 49 CFR 659 et seq, and other requirements for RTAs operating in California. RTSB and two other CPUC branches involved in rail safety used to be 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.

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

BART Order Instituting Investigation (OII) 16-06-010

On June 28, 2016, the Commission instituted an OII in response to a two fatality BART accident that occurred on October 19, 2013. The Commission issued Decision (D.) 18-10-020 on October 22, 2018, regarding alleged violations by BART relating to the fatal accident. In part, D. 18-10-020 imposed a total fine of $1,348,000 against BART. The Commission stayed half of the fine under the condition that BART "… remains in compliance with the directives in this Decision during the probationary period." In accordance with D. 18-10-020, BART will be on probation for three years from the date of issuance. Additional compliances regarding training of supervisors and managers and other items are intended to improve BART's safety culture. Staff continues to monitor BART's compliance with the Commission's directives in D. 18-10-020.

SFMTA Citation RTSB-18-07-001 for Personal Electronic Device Violations by Employees

RTSB issued Citation 1807001 to SFMTA on December 11, 2018. The citation levied a fine of $120,000. The citation was the result of a series of violations of GO 172, (Rules Governing the use of Personal Electronic Devices by RTA Employees) and for violations of the SFMTA Rail Rule Book's Personal Electronic Devices Rules. The violations were observed by RTSB inspectors from late 2017 through July 18, 2018. SFMTA was notified of its right to appeal the citation, but chose not to do so, and subsequently paid the fine on January 11, 2019. Additional corrective actions were implemented by SFMTA to reduce the potential for recurrence.

SRTD Citation RTSB-19-02-001 for Speeding Violations by Light Rail Vehicle Operators

RTSB issued Citation 19-02-001 for multiple speeding violations by SRTD light rail operators on February 19, 2019. The RTSB met multiple times with SRTD safety officers and management regarding excessive speeds into stations and other locations. The majority of SRTD stations are configured as pedestrian malls, where they are closed to motor vehicles but pedestrian movement across the tracks is authorized, and subject to speed limitation of 20 MPH. The RTSB determined that SRTD had not taken the steps to mitigate the hazards caused by excessive operating speed at their stations and elsewhere in a timely manner. The SRTD did not contest the citation and paid the associated fine of $115,000 on April 4, 2019.

SUMMARY OF ACTIVITIES FOR ALL FTA REGULATED RAIL TRANSIT AGENCIES FROM OCTOBER 23, 2018, TO DECEMBER 31, 2019

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, and San Mateo counties. The BART Board is comprised of nine elected officials from the 9 BART Districts, and serve 4-year terms.

BART serves 48 stations along seven routes on 112 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. With an average of 411,000 weekday passengers and 118 million annual passengers in fiscal year 2019, BART is the fifth-busiest heavy rail rapid transit system in the United States.

The current BART system operates on the following seven lines:

- Warm Springs/South Fremont - Daly City Line
- Dublin/Pleasanton—Millbrae Line
- Richmond—Millbrae Line
- Pittsburg/Bay Point— San Francisco Airport Line
- Richmond—Fremont Line
- Oakland Airport Connector
- e-BART (East Contra Costa County BART extension)

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. Finally, the Warm Springs/South Fremont extension opened on March 25, 2017 adding one station and 5.4 miles of track.

BART SYSTEM MAP

East Contra Costa BART Extension (e-BART)

The East Contra Costa BART Extension (e-BART) 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 vehicles instead of BART's standard, electrically driven trains and includes two new stations and a transfer platform to provide timed transfers between e-BART 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 Doppelymayr 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. 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 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. OAC underwent its first triennial safety and security review in October 2016, and its second in October of 2019. Preliminary findings from the 2019 triennial safety and security review indicate there are no significant issues identified. Staff will finalize its report and present it to the Commission in 2020 for approval.

BART Accident Summary

Below is a summary of the types of accidents reported under General Order 164-E from October 23, 2018 to December 31, 2019 and illustrated in Figure 4.

Accident Type	BART
Train vs Individual (49%)	19
Derailment (31%)	12
Other (15%)	6
Yard Collision (5%)	2
Grand Total	**39**

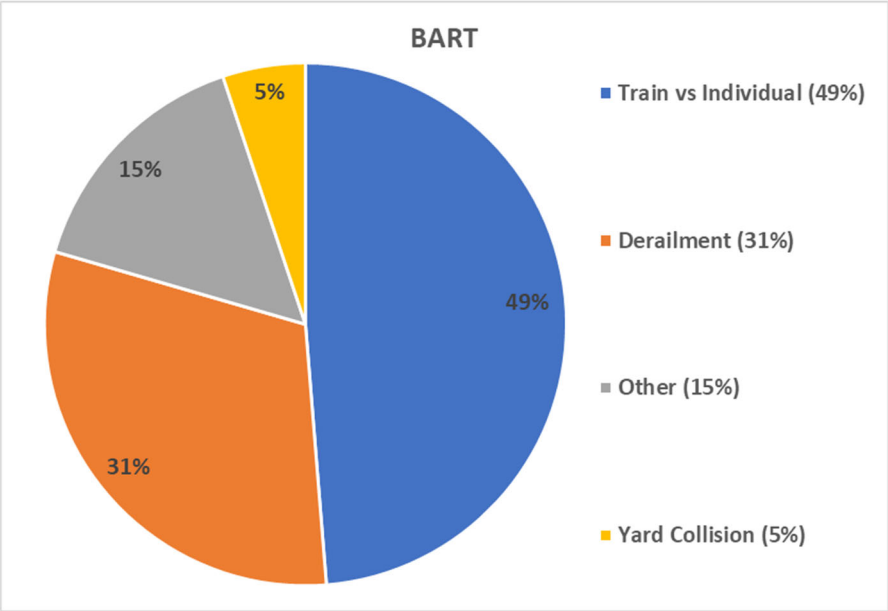


Figure 4: Types of Accidents Reported by BART (10/23/2018 – 12/31/2019)

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 debris or shopping carts left on or next to the tracks.

System Expansions and Capital Projects

Silicon Valley Berryessa Extension/Silicon Valley Rapid Transit (SVRT) Project

The VTA and BART are constructing a 16.3-mile extension that will extend the BART system into Santa Clara County and to 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 line will extend from the planned Warm Springs Station to Milpitas alongside Union Pacific Railroad tracks, continuing to 28th 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 under Construction & Testing
- Santa Clara Valley Extension - 6.3 miles in length which is environmentally cleared and under final design

The CPUC approved BART's SCP with Resolution ST-83 (2/15/2007), and RTSB has been monitoring and inspecting the engineering, design, and construction phases of this project through the Safety Certification process.

New Vehicle Procurement Project

BART's new vehicle procurement project currently underway will add up to 1,000 new rail cars to its existing fleet. The new cars will be rolled out between 2017 and 2021. Staff has been monitoring the procurement project through the safety certification process, and the Commission approved BART's SCP. As of January 2020, BART has acquired 150 vehicles on-site, of which 139 have been approved for use by Staff after final acceptance testing by BART and are operating in revenue service. The project is 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 production. BART is safety certifying the cars in accordance with the SCP approved by the Commission in Resolution ST-150 (3/22/2013).

Communications Based Train Control

BART is upgrading its entire mainline with Communications-Based Train Control (CBTC). CBTC technology utilizes two-way digital Radio Frequency communications between intelligent trains, and a network of distributed track-side zone controllers. The primary characteristics of a CBTC system include high resolution train location determination by car borne equipment, independent of track circuits. The new CBTC System will provide shorter headways, lower maintenance costs, greater operational flexibility, enhanced safety (due to reduced maintenance and more precise tracking of trains and maintenance vehicles), smoother and more predictable operation, and improved reliability and availability. This project is just beginning, and the SCP was approved by the Commission in Resolution ST-206 (10/30/2017).

BART's Transbay Tube Seismic Retrofit Project

This project is a portion of the Earthquake Safety Program approved by the Commission in Resolution ST-81 (10/27/2005). BART began this four year, $276 million retrofit of the 3.6-mile-long connector between Oakland and San Francisco during 2019. It will upgrade the infrastructure within the Transbay Tube as well as strengthen the overall structure by reinforcing the tube itself. The estimated completion date for the project is Fall 2023.

Hayward Maintenance Complex

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 regional population growth, system expansion for Warm Springs and Silicon Valley/San Jose Extension projects, and additional riders from the Oakland Airport Connector, and e-BART projects. Accordingly, BART requires expanded maintenance and storage facilities to serve the expanded fleet. The project will add storage tracks for up to 250 rail cars, expand maintenance facilities, construct a flyover bridge structure to move cars

south out of the complex, and an equipment/personnel overcrossing to allow movement between the existing complex and new storage yard.

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

LACMTA 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.

LACMTA Rail System Description

The LACMTA rail system consists of the Metro Blue, Red, Purple, Green, Expo and Gold lines. LACMTA is in the process of renaming its lines with the Blue Line renamed to the A Line, Red Line to B Line, Purple Line to D Line, Green Line to C Line, Expo Line to E Line, and Gold Line to L Line. 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. Regional Connector, the Crenshaw Corridor and the Westside Extension are currently in the construction phase. LACMTA operates over 105 miles with 93 stations. The average ridership of the system was approximately 108,755,659 per year from fiscal year 2017 to 2019.

LACMTA SYSTEM MAP

A Line (Metro Blue Line)

The Metro Blue Line (MBL) is a light rail line that runs between downtown Los Angeles and downtown Long Beach and serves 22 stations over a 22-mile route. MBL connects to the Metro Green Line at Rosa Parks/Imperial station in Compton and connects to the Metro Red Line at 7th/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. MBL is LACMTA's oldest line and underwent an extensive rehabilitation during 2019, with track replacements and additions and signal and grade crossing system upgrades.

B Line (Metro Red Line)

The Metro Red Line (MRL), a heavy rail subway, runs between Los Angeles Union Station and North Hollywood with 16 stations over its 17.4-mile route. It opened for service in 1990. The MRL connects to the MBL and the Mid-City Expo Line at 7th/Metro Station in downtown Los Angeles and connects to the Amtrak and Metrolink commuter rail, as well as the Gold Line, at Union Station. LACMTA operates four-car and six-car trains on the line.

C Line (Metro Green Line)

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

D Line (Metro Purple Line)

The Metro Purple Line is a heavy rail subway line that runs between Los Angeles Union Station and the Koreatown area of Los Angeles and diverges from the Red Line at the Vermont-Wilshire Station with two additional stations. It will eventually provide the connection to the three phases of the Purple Line capital project extensions currently in construction, more fully described below.

L Line (Metro Gold Line a.k.a. Pasadena Gold Line)

The Metro Gold Line is a light rail line that runs from Los Angeles Union Station to Pasadena Sierra Madre Villa Station. The Metro Gold Line revenue operation service started in July 2003. It has 13 stations over 14-mile route. It connects to the Metro Red Line at Union Station. LACMTA operates two-car trains on the line with the exception of one-car trains during low use periods.

L Line (Metro Gold Line Foothill Extension)

The Metro Gold Line Foothill Extension project opened in March 2016. It is an eleven-mile, duel track light rail system with six new stations. The extension originates from the Sierra Madre Station, previously a terminal station of the Pasadena Gold Line, traveling eastbound through Arcadia, Monrovia, Duarte, Irwindale, downtown Azusa and terminating just north of Azusa Pacific University and Citrus College.

L Line (Metro Gold Line Eastside Extension)

The Metro Gold Line East Side Extension project opened in November 2009. It is a six-mile, dual track light rail system with eight new stations and one station modification at Union Station. The system originates at Union Station in downtown Los Angeles, where it connects with Metro Gold Line and Metro Red Line, traveling east through East Los Angeles to Pomona and Atlantic Boulevards.

E Line (Metro Mid-City Expo Line)

The Metro Mid-City Expo Line Phase I project opened in April 2012. It is an eight and a half-mile, dual track light rail system with twelve new stations and two stations shared with MBL. Both the Mid-City Expo and Blue Line terminate at 7th/Metro where they connect to the Red and Purple Lines. The Mid-City Expo Line Phase I also shares the Pico Station with the Blue Line which serves the Staples Center and L.A. Live. The Mid-City Expo Line Phase I serves USC, Exposition Park, the Mid-City communities, the Crenshaw District, and Culver City.

The Metro Expo Line Phase II project opened in May 2016. It is a 6.6-mile duel 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 Santa Monica. The system serves Culver City, West Los Angeles, and Santa Monica with seven new stations and travels along the old Pacific Electric Exposition right-of-way to 4th Street and Colorado Ave in downtown Santa Monica.

LACMTA Accident Summary

Below is a summary of the types of accidents reported under General Order 164-E from October 23, 2018 to December 31, 2019 and illustrated in Figure 5.

Accident Type	LACMTA
Train vs Vehicle (46%)	24
Train vs Individual (44%)	23
Derailment (6%)	3
Other (4%)	2
Grand Total	**52**

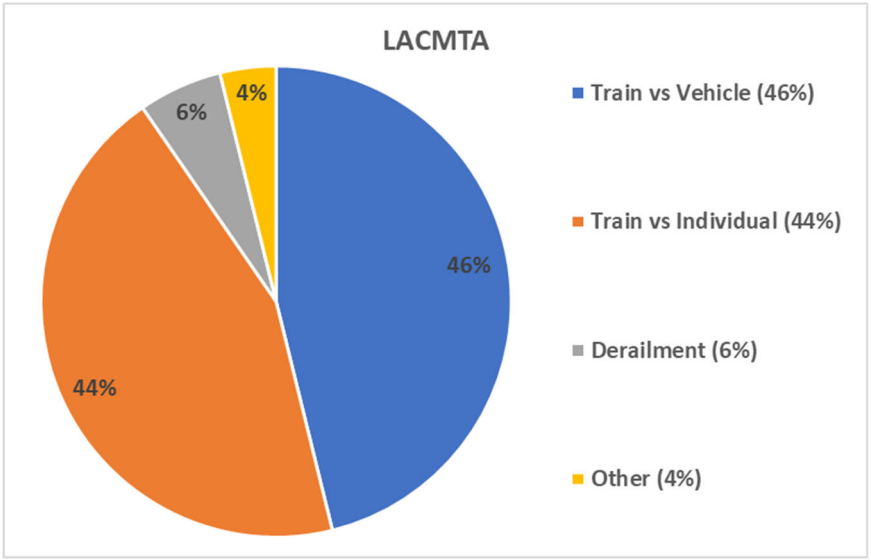


Figure 5: Types of Accidents Reported by LACMTA (10/23/2018 – 12/31/2019)

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 debris or shopping carts left on or next to the tracks.

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 cars are prepared for service, staff will recommend official approval to RTSB management after a successful review of the Car History Books (testing documentation) in person. LACMTA received authorization to place the first five cars in service on 3/4/2016. To date, RTSB management has certified 185 vehicles for revenue service.

HR4000 Heavy Rail Vehicle Procurement

LACMTA is in the process of procuring a base order of sixty-four, with options for up to two hundred eighty-two, new heavy rail vehicles to provide for the future expansions of Regional Connector and Purple Line Extensions, and to replace the aging heavy rail vehicle fleet operating on the Red/Purple Line subways. Resolution ST-185 (10/25/2018) approved the procurement option, but as of January 2020, there have been no vehicles delivered.

Regional Connector Project

The Regional Connector Project is a1.9-mile underground light-rail extension with 3 new stations. It connects the Metro Gold Line to the 7th Street/Metro Center Station. It will provide a direct connection between Azusa and Long Beach and between East Los Angeles and Santa Monica. RTSB regularly attends LACMTA's monthly Fire Life Safety and Security Meetings, as well as Safety and Security Certification Review Committee meetings. RTSB approved a temporary shoofly (a temporary by-pass track) and tunnel boring is now complete. The Regional Connector revenue service date has been delayed and now is predicted to be completed in mid-2022.

Purple Line (Westside) Extension Project

LACMTA is currently extending the Purple Line. The Westside Purple Line Extension, previously named the Westside Subway Extension, extends service from the terminus at Wilshire/Western Station

to Westwood (UCLA and Veteran's Administration Hospital). This extension will consist of nearly nine miles of heavy rail subway and seven stations. The planned revenue service years for Purple Line Segments 1, 2, and 3 are 2023, 2025, and 2027, respectively. The SCP was approved by Resolution ST-142 (1/10/2013).

Gold Line Foothill Extension Phase 2B

The phase 2B alignment is from the current terminus of Gold Line's Azusa Station, to the City of Montclair. It will traverse 6 cities with 6 new stations on 12.3 miles of light rail transit (LRT) at-grade track. Due to funding issues, the current terminus of the alignment will be changed to Pomona Station. The SCP was approved by the CPUC in Resolution ST-194 (1/19/2017).

Crenshaw/LAX Corridor Project

LACMTA is constructing a new light rail line from the LACMTA Expo's Crenshaw Station to close to the Los Angeles International Airport (LAX). The Line will travel 8.5 miles from the existing Metro Exposition Line Station at Crenshaw and Exposition Boulevards to the Green Line and will serve the cities of Los Angeles, Inglewood, El Segundo and portions of unincorporated Los Angeles County. Substantial completion is currently anticipated to occur in 2021 and revenue service is expected to commence later the same year. The SCP was approved by the CPUC in Resolution ST-143 (10/3/2014).

NORTH [SAN DIEGO] COUNTY TRANSIT DISTRICT

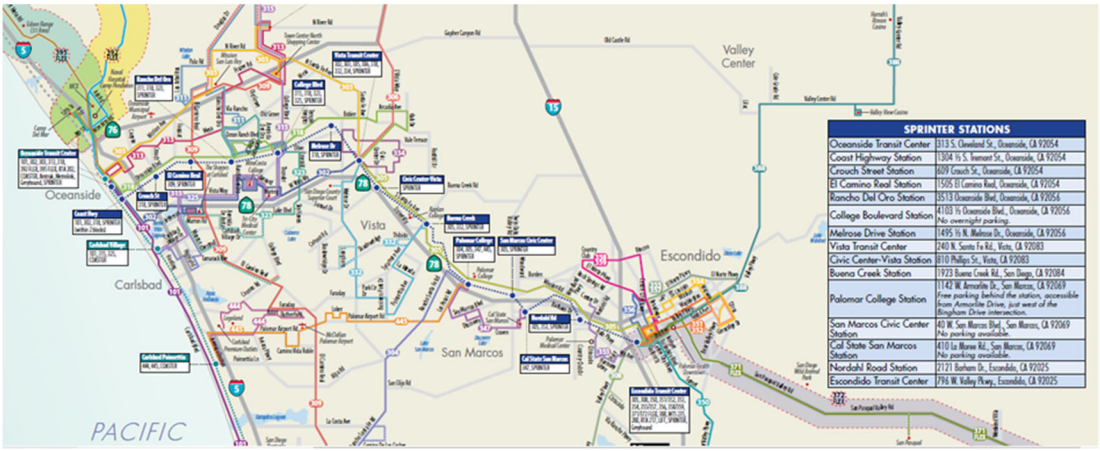
The San Diego North County Transit District (NCTD) was created by passage of Senate Bill 802 in 1975 and started operations as North County Transit District on July 1, 1976. The NCTD Board of Directors is made up of one representative from each incorporated city served by NCTD, plus the County Supervisor representing the County's Fifth District which covers unincorporated areas of north San Diego County. 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.

In June 1994, the NCTD created San Diego Northern Railroad (SDNR) to operate the "Coaster" commuter rail which provides service from the City of Oceanside to downtown San Diego. The SDNR 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 and extends from City of Oceanside to City of Escondido for Sprinter light rail service. Only the line from City of Oceanside to City of Escondido hosting Sprinter light rail 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. On June 11, 2016, NCTD entered into a consolidated rail contract with Bombardier, Inc. (Bombardier), which is responsible for dispatching, train operations, maintenance of revenue facilities, maintenance of signal, maintenance of track, and maintenance of rail equipment for both the Sprinter and Coaster rail systems. Prior to June 11, 2016, the contracts for various aspects of operations and maintenance were spread among several contractors.

NCTD Rail System

The NCTD Sprinter LRT system operates over 22.3 miles, from the City of Oceanside to the City of Escondido, partially double-tracked, with 15 stations. NCTD fiscal year ridership averaged 2,600,932 in 2016, 2,570,595 in 2017, and 2,403,417 in 2018. NCTD's rail lines are classified as light rail on semi-exclusive right-of-way. There is a shared corridor with Amtrak and Coaster trains beginning at Oceanside Transit Center and ending less than a quarter mile South of the Oceanside Blvd grade crossing, where Sprinter tracks turn east toward Escondido. In addition to the shared corridor, most of NCTD track on the Sprinter line is jointly used by LRT and freight operations under temporal separation[6]. The Pacific Sun Railroad (PSRR), a subsidiary short line railroad owned by Watco Companies, is the freight railroad that shares track with NCTD on the Sprinter line. Freight operations by PSRR operate during the late-night hours outside of NCTD Sprinter LRT revenue service, under a Federal Railroad Administration (FRA) waiver. FRA approved NCTD standard operating procedures that ensure the light rail vehicles (LRVs) and freight vehicles remain temporally separated.



NCTD SPRINTER SYSTEM MAP

[6] Temporal separation exists when no simultaneous operation of light rail transit and freight trains on the same track occurs.

The Sprinter LRT system began revenue service on March 9, 2008. The Escondido Transit Center Station and Vista Transit Center Station are the main transfer stations for light rail/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 Oceanside, San Marcos, Vista and Escondido.

NCTD Accident Summary

Below is a summary of the types of accidents reported under General Order 164-E from October 23, 2018 to December 31, 2019 and illustrated in Figure 6.

Accident Type	NCTD
Other (83%)	10
Train vs Vehicle (9%)	1
Train vs Individual (8%)	1
Grand Total	**12**

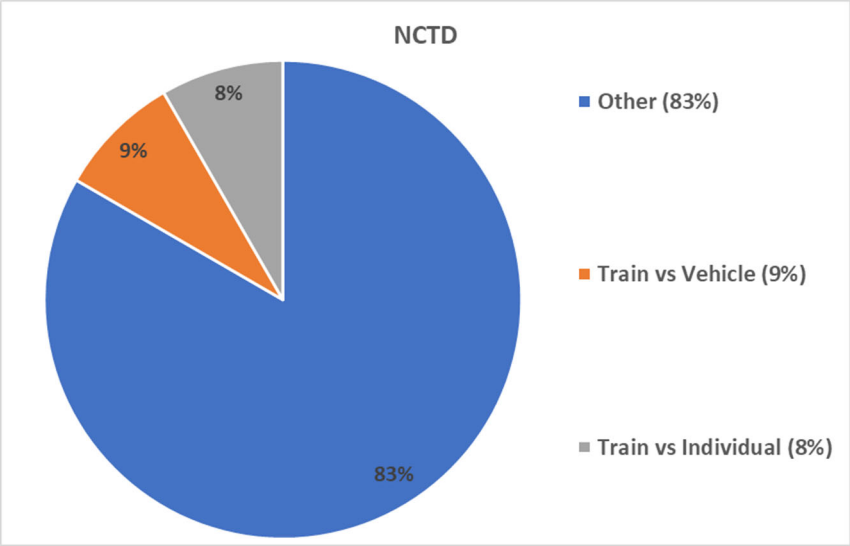


Figure 6: Types of Accidents Reported by NCTD (10/23/2018 – 12/31/2019)

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 debris or shopping carts left on or next to the tracks.

NCTD currently has no capital projects under construction, nor are there any known to be under consideration.

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

Director serving as the 18th member in an ex-officio capacity. The Commission has approved the system SCP for the project in Commission Resolution ST-191 (4/27/2017). The system is planned for revenue service in 2022.

The trackway includes both operations along exclusive right-of-way, in the old Pacific Electric (PE) railway right-of-way, and street-running operations, along Santa Ana Boulevard and 4th Street. 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 operations 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 Santa Ana.

The system is not yet operating, and current project activities include utility relocation and PE right-of-way hazmat cleanup, prior to actual system construction. Vehicle procurement has begun.

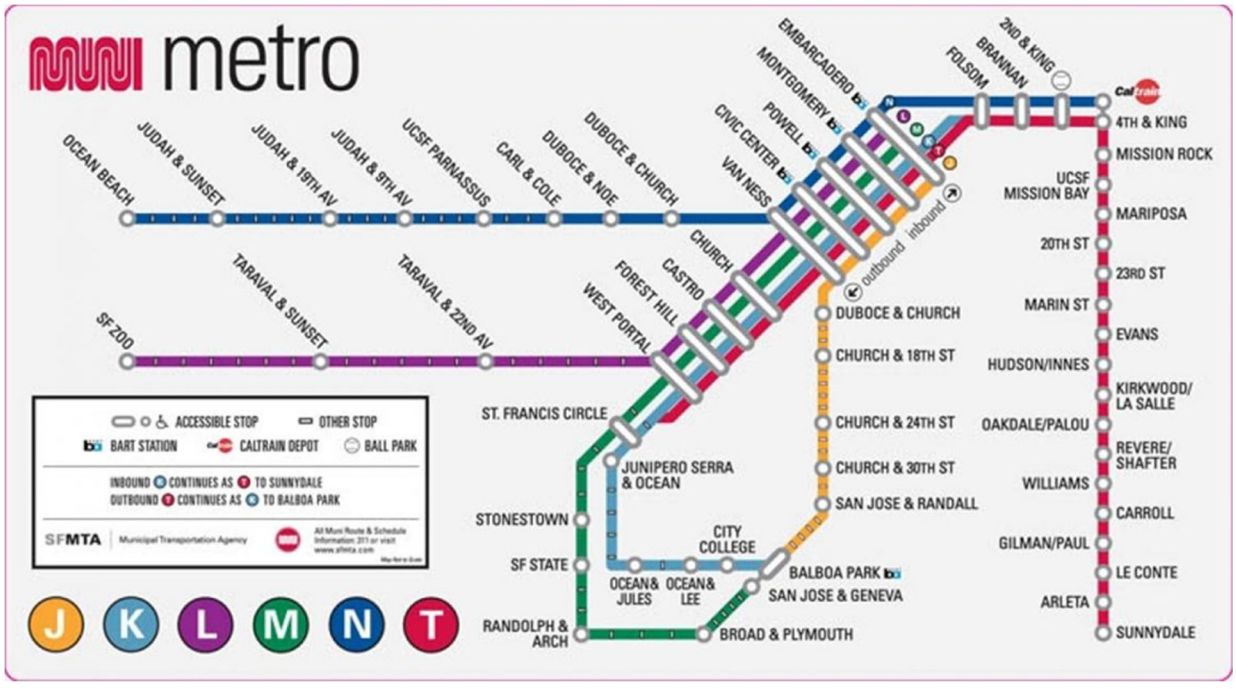
SAN FRANCISCO MUNICIPAL TRANSPORTATION AGENCY

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 mayor, governs SFMTA and the Director of Transportation serves as the agency's senior management officer.

The SFMTA MUNI was the first publicly owned streetcar system in a major city of the United States and began operation in 1912. It has a relatively small service area of just 46.7 square miles. However, the combined rail transit modes average more than 179,000 weekday riders. SFMTA MUNI's fleet of rail transit vehicles consists of the subway and surface operating LRV, surface operating Historic Streetcars (HSC), and cable cars. Francisco Department of Parking and Traffic, became a part of the SFMTA on March 1, 2000. A seven-member board, appointed by the mayor, governs SFMTA and the Director of Transportation serves as the agency's senior management officer.

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 – Oceanview Line
N – Judah Line
T – Third Street Line



SFMTA Muni SYSTEM MAP

Trains in SFMTA MUNI Metro Subway and Twin Peaks Tunnel operate under the control of a fully automated communications-based train control system. The majority of rail operations are on the surface in semi-exclusive and mixed traffic right-of-way, with up to a seven percent 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 percent. 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, the cable cars transport an average of over 21,900 riders on weekdays 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 Accident Summary:

Below is a summary of the types of accidents reported under General Order 164-E from October 23, 2018 to December 31, 2019 and illustrated in Figure 7.

Accident Type	MUNI
Train vs Vehicle (83%)	173
Train vs Individual (6%)	13
Other (6%)	13
Derailment (5%)	11
Grand Total	**216**

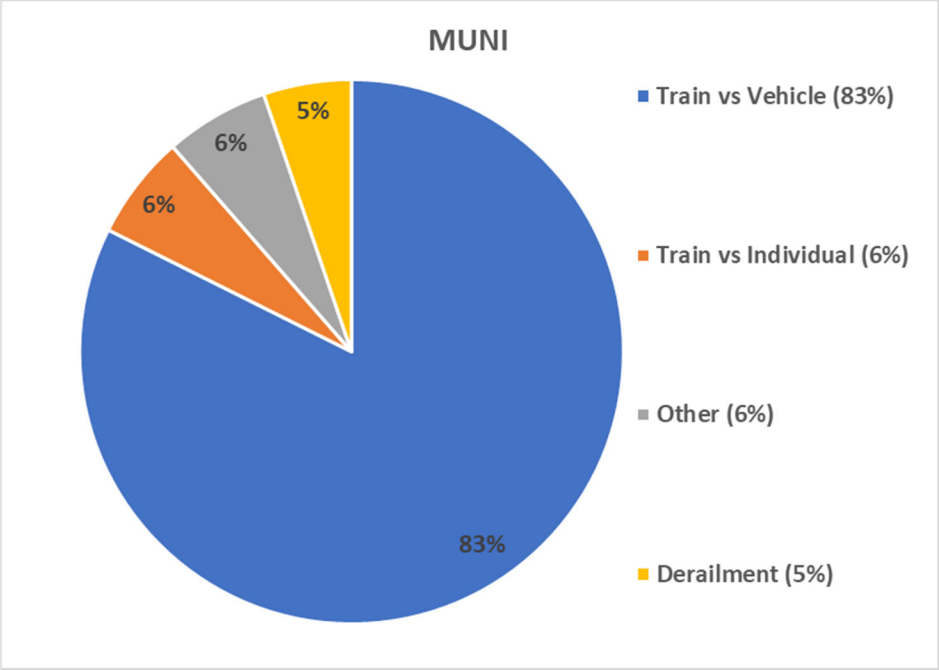


Figure 7: Types of Accidents Reported by SFMTA (10/23/2018 – 12/31/2019)

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 debris or shopping carts left on or next to the tracks.

System Expansions and Capital Projects

Muni Metro 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. A new surface 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). The project is significantly behind schedule and service is not projected until 2023.

LRV4 Vehicle Procurement

SFMTA has initiated a new LRV procurement to acquire up to 264 vehicles over a period of 15 years (LRV4 project). The scope of the LRV4 project will include the design, manufacture, delivery, and test of up to 260 LRVs together with associated services, spare parts, special tools, training, and documentation. The base quantity is 175 vehicles including an initial delivery of 24 cars, scheduled for delivery to supplement the fleet when the Third Street Phase 2 (Central Subway) extension opens. A further 151 LRV4s are projected for the replacement of the existing 151 LRVs supplied by Siemens, with deliveries starting 2021, and projected completion in 2028. SFMTA has issued contract modifications for an additional 44 vehicles, bringing the total fleet size to 219. An option for an additional 45 vehicles may be issued

in the future. The LRV4s are expected to have a 30-year life, which includes a mid-life overhaul. The Procurement will be funded through a number of different sources including federal funds. The SCP for the project was approved by the CPUC in Resolution ST-190 (11/10/2016).

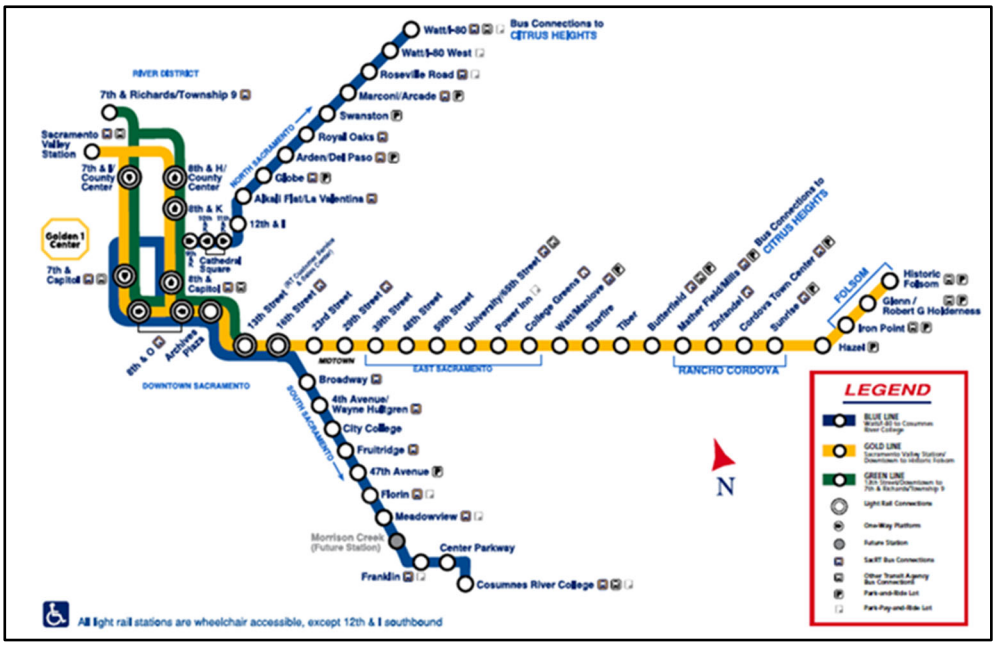
SACRAMENTO REGIONAL TRANSIT DISTRICT

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 currently operates over approximately 43 miles, covering a 422 square-mile service area with 54 stations. Weekday ridership averages 44,000 passengers. 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 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



SRTD SYSTEM MAP

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. This line includes 2 stations, running a 30-minute service from the Township 9 Station on Richards Boulevard to the existing 13th Street Station. The Green Line to the Airport Project is a future planned extension, which will extend the system from the Richards Boulevard/Township 9 Station to the Sacramento International Airport.

SRTD Accident Summary

Below is a summary of the types of accidents reported under General Order 164-E from October 23, 2018 to December 31, 2019 and illustrated in Figure 8.

Accident Type	SRTD
Train vs Vehicle (53%)	37
Other (24%)	17
Train vs Individual (17%)	12
Derailment (6%)	4
Grand Total	**71**

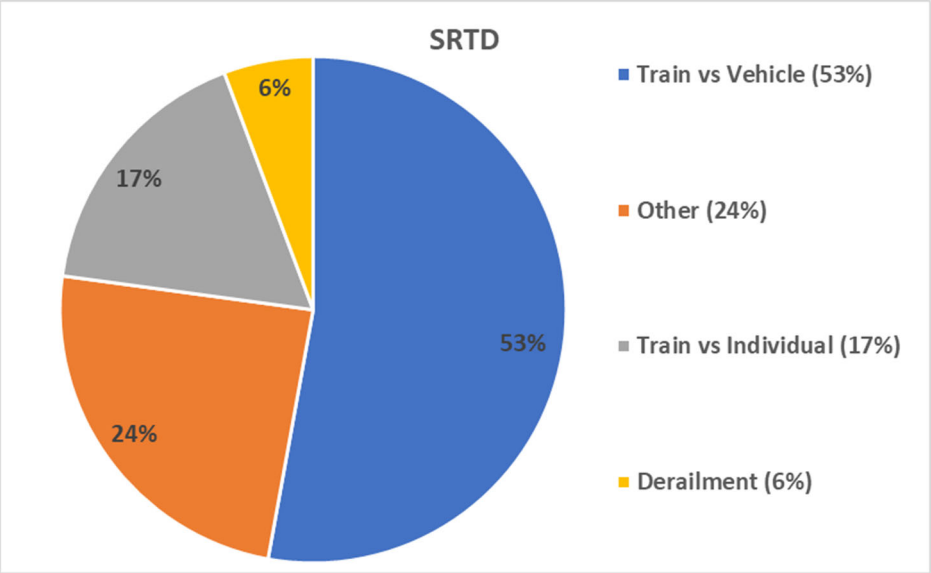


Figure 8: Types of Accident Reported by SRTD

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 debris or shopping carts left on or next to the tracks.

SRTD currently has no capital projects under construction, nor are there any known to be under consideration. However, SRTD may become involved in the construction or even the operation of the Downtown Riverfront Streetcar project of the Cities of Sacramento and West Sacramento due to its experience in rail transit systems. That project has not yet received the FTA funding needed to advance.

SAN DIEGO TROLLEY, INC.

The California legislature created the Metropolitan Transit Development Board (MTDB) in 1975 by passage of California Senate Bill 101, empowering the board to design, engineer, and build fixed guideway facilities within San Diego County, California. 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. The area of jurisdiction is about 570 square miles serving a population of 3 million, approximately 75 percent of southwestern San Diego County. The SDTI LRT system operates over 53.5 miles on three routes, mostly double-tracked, with 53 stations. MTS fiscal year ridership averaged 239,633,896 in 2015.

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 scripted 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 operates four lines described as:

Blue Line - Revenue service began on July 26, 1981. The Blue Line currently extends 15.4 miles from the America Plaza Station to the San Ysidro station at the U.S-Mexico international border. Trains operate on city streets for 1.4 miles (C Street & India to 12th & Imperial) of the total 15.4 miles with the remaining 14 miles from 12th & Imperial to the San Ysidro station operating in semi-exclusive right-of-way. The Blue Line operates through four jurisdictions: 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 32nd & Commercial). After the 32nd & Commercial station, the line continues east for an additional 13.8 miles on semi-exclusive right-of-way to the El Cajon Transit Center station. The Orange Line operates through four jurisdictions including the City of San Diego, Lemon Grove, La Mesa and El Cajon.

SAN DIEGO TROLLEY SYSTEM MAP

Green Line - Revenue service began on July 10, 2005. The Green Line begins at the Imperial Transfer Station and extends 23.8 miles through Mission Valley, under San Diego State University via a subway and continues east on semi-exclusive right-of-way to Cuyamaca Street in Santee. The last 0.6 miles of the line are operated on city streets before terminating at the Santee Town Center Station.

Silver Line – One Presidential Conference Car (PCC) Vintage Trolley Streetcar began revenue service on August 2011 and the second PCC began in March 2015. The PCC operates on an existing 2.7-mile downtown loop from the 12PthP & Imperial Transit Center station clockwise, adjacent to Harbor Drive, on C Street, and Park Blvd and completes its loop at the 12th & Imperial Transit Center station on the "third track". The PCC operates on Friday 5:30am-12:30pm, Saturday on 1:30pm-10:30pm, and Sunday 9:30am-6:30pm and major holidays on 30-minute headway.

SDTI Accident Summary

Below is a summary of the types of accidents reported under General Order 164-E from October 23, 2018 to December 31, 2019 and illustrated in Figure 9.

Accident Type	SDTI
Train vs Individual (55%)	12
Train vs Vehicle (41%)	9
Other (4%)	1
Grand Total	**22**

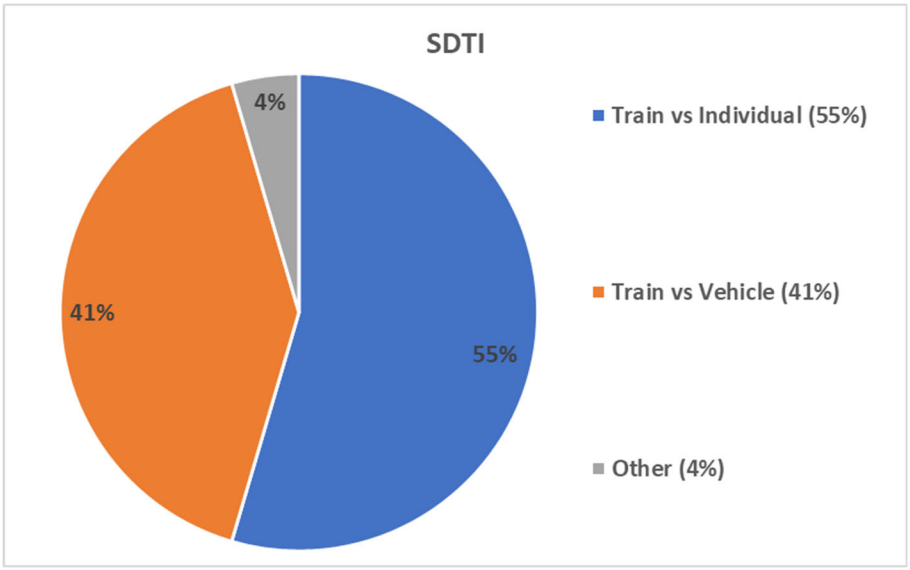


Figure 9: Types of Accidents Reported by SDTI (10/23/2018 – 12/31/2019)

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 debris or shopping carts left on or next to the tracks.

System Expansions and Capital Projects

Mid-Coast Corridor Transit Project

The Mid-Coast Trolley project will extend Trolley service from Santa Fe Depot in Downtown San Diego to the University City community, serving major activity centers such as Old Town, the University of California San Diego, and Westfield UTC. Construction is underway and service is anticipated to begin in 2021. The SCP was approved by the CPUC in Resolution ST-186 (1/19/2017).

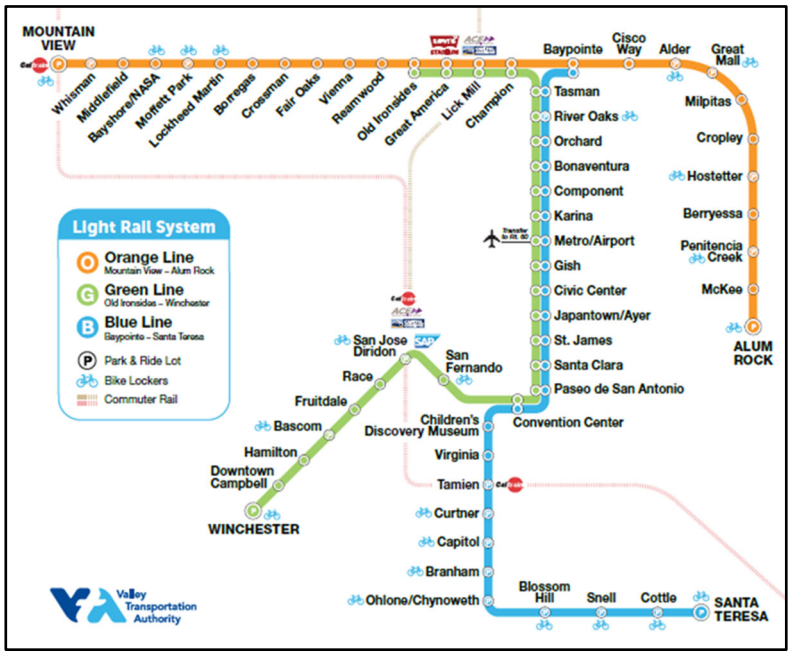
SD9 Light Rail Vehicle Procurement

SDTI is procuring 45 new LRVs from Siemens Transportation Group. The 45 new LRVs are being procured in advance of the Mid-Coast Light Rail Extension activation, scheduled for revenue service Fall 2021. The new vehicles will operate on the existing SDTI system and their future Mid-Coast Rail Extension. The procurement project began January 2018 with an expected scheduled completion and acceptance of all 45 LRVs by June 2021. The 45 new SD9 LRVs will be manufactured by Siemens Transportation Systems, Inc. in Sacramento, California. The SCP was approved by the CPUC in Resolution ST-186 (1/19/2017).

VTA is an independent special transit district that provides bus, light rail, and paratransit services, as well as participates as a funding partner in regional rail service including Caltrain, Capitol Corridor, and the Altamont Corridor Express in Santa Clara County. As the county's congestion management agency, VTA is responsible for countywide transportation planning, including congestion management, design and construction of specific highway, pedestrian, and bicycle improvement projects, as well as promotion of transit-oriented development.

The VTA board of directors has 18 members and 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. VTA currently operates an urban transit service with LRVs within Santa Clara County. VTA's service coverage is 346 square miles, serving 15 cities in Santa Clara County with a population of nearly 2 million. Historic trolley service may be provided in the downtown San Jose Transit Mall on a seasonal basis.

The VTA rail system consists of the Guadalupe, Tasman West, Tasman East, Capitol and Vasona Lines with two other proposed extensions. The total operating system is about 42.2 miles with 61 Light Rail Stations. The average weekday ridership of the light rail system was approximately 29,262 passengers per day in Fiscal Year 2017.



VTA SYSTEM MAP

Guadalupe Line

The 21-mile Guadalupe light rail line began service in 1991, which extends from south San Jose, into downtown and continues to employment centers of north San Jose and Santa Clara. The Downtown

Transit Mall in San Jose serves as a hub for rail/bus connections. Light rail and Caltrain service connects at the Tamien Station in San Jose. The Guadalupe Line has 27 light rail stations.

Tasman West Line

The 7.6-mile Tasman West light rail line began service in 1999, and travels through four cites: San Jose, Santa Clara, Sunnyvale, and Mountain View serving major employment centers of Silicon Valley. It links with Caltrain in Downtown Mountain View. In August 2014, VTA started providing light rail and bus service to the new Levi's Stadium for large events. Levi's Stadium is located near the Great America Light Rail Station. The Tasman West Line has 16 light rail stations.

Tasman East Line

The Tasman East light rail line is a 4.8-mile extension from North First Street to Hostetter Road which travels through the cities of San Jose and Milpitas. The first phase, a 1.9-mile extension from North First Street to I-880 along the median of Tasman Drive opened for revenue service in May 2001 and marked the beginning of VTA LRVs in the City of Milpitas. The second phase, a 2.9-mile segment from I-880 to Hostetter Road along the Capitol Avenue median opened for revenue service in June 2004. Approximately 7,200 feet of this segment is grade separated over two railroad crossings, Montague Expressway, and other cross streets. The Tasman East Line has six light rail stations.

Capitol Line

The Capitol light rail line, a 3.5-mile extension of the Tasman light rail line opened for revenue service in June 2004. It travels along Capitol Avenue from just south of Hostetter Road to Alum Rock Avenue, north of Capitol Expressway and operates in the median of Capitol Avenue, with two vehicle travel lanes and a bike lane in each direction paralleling the track way. The Capitol Line has four stations.

Vasona Line

The Vasona Light Rail Project is a 5.3-mile light rail extension to the existing VTA Light Rail system and operates primarily on the existing Union Pacific Railroad right-of-way. Revenue service began in 2005. The Vasona Line has 8 light rail stations and links with Caltrain, ACE, and Capitol Corridor at Diridon Station.

VTA Accident Summary

Below is a summary of the types of accidents reported under General Order 164-E from October 23, 2018 to December 31, 2019 and illustrated in Figure 10.

Accident Type	VTA
Other (40%)	27
Train vs Vehicle (36%)	24
Train vs Individual (18%)	12
Derailment (4%)	3
Yard Collision (2%)	1
Grand Total	**67**

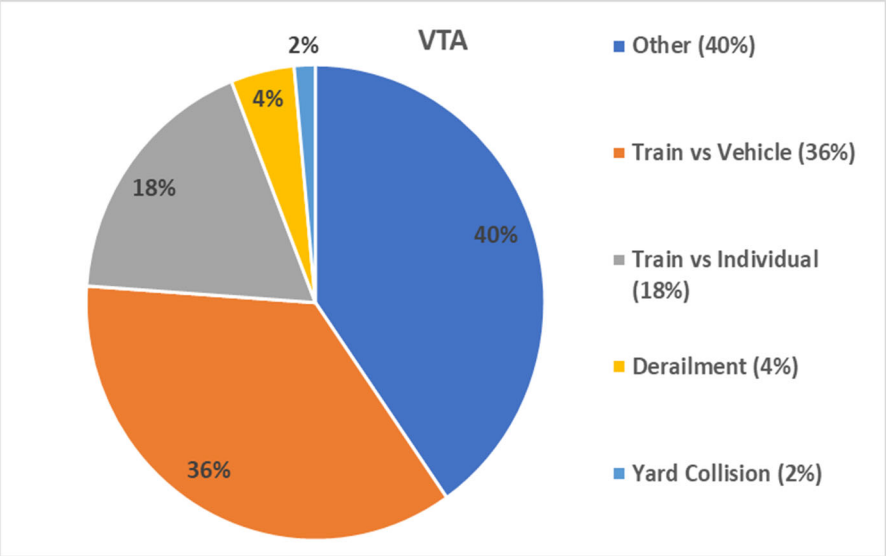


Figure 10: Types of Accidents Reported by VTA (10/23/2018 – 12/31/2019)

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 debris or shopping carts left on or next to the tracks.

System Expansions and Capital Projects

Eastridge to BART Regional Connector Project

Plans include a 2.6-mile extension from the existing Alum Rock Station to Eastridge Transit Center. The alignment will be primarily grade separated. The Eastridge to BART Regional Connector 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. Construction will begin in mid-2020 and will be completed in mid-2023. The SCP was approved by the CPUC in Resolution ST-88 (5/24/2007), however VTA is currently working on an updated revision.

Vasona Junction Light Rail Extension

Plans include a 1.5-mile extension from Winchester Station into the Town of Los Gatos. A federal environmental document for the Vasona Light Rail Extension was completed and approved by the FTA. A SCP has not yet been submitted to the CPUC for this project.

BART Silicon Valley Extension Project

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 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 has experienced some delays and is now scheduled for passenger service in late spring/summer 2020.

VTA is completing planning and environmental activities for Phase II of the BART Silicon Valley Extension, which includes a subway tunnel through downtown San Jose. Construction of the second phase is expected to begin in 2021 with passenger service targeted for 2026. The SCP for this project was submitted by BART and was approved by the CPUC in Resolution ST-83 (2/15/2007).

SUMMARY OF ACTIVITIES FOR ALL NON-FTA REGULATED RAIL TRANSIT AGENCIES FROM OCTOBER 23, 2018 TO DECEMBER 31, 2019

No accident graphs are shown for the smaller non-FTA regulated systems, because no 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

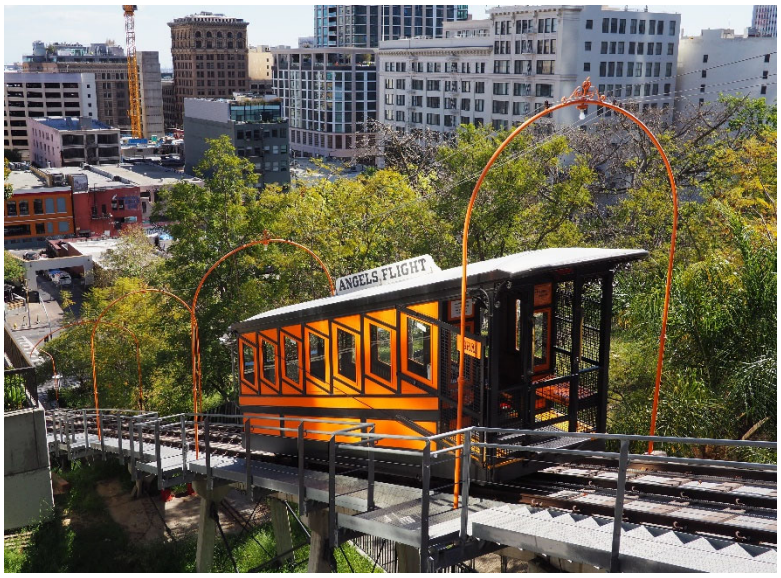
The Americana At Brand (AAB) trolley began service in 2008 and is owned by Caruso Affiliated in the City of Glendale. The AAB trolley operates on a single track that travels around the AAB shopping center from Americana Way to Caruso Ave. The AAB trolley is a single-story vehicle mounted on the undercarriage of a circa early 1900s trolley from Milan. 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-man teams and can seat up to 72 passengers. Caruso Affiliated utilizes contracts with LAZ Parking to operate the trolley with properly trained individuals and Midwest Trolley Services to provide maintenance of the trolley.

ANGELS FLIGHT RAILWAY COMPANY FUNNICULAR

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 eventual 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 two blocks south of its 1969 location, now located between 2nd and 3rd 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, in particular 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 as a result 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 as a result 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, communicated their intent to refurbish and re-open Angels Flight. AFRC contracted engineering and manufacturing services to refurbish Angels Flight. After RTSB'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 entire system was refurbished in 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. RTSB 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 RTSB 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. RTSB indicated it would not support such a request unless and until AFRF submitted a SCP to safety certified any changes to the system and implemented both NTSB recommendations from the 2001 accident (track-adjacent emergency walkway and raised end doors). The AFRF agreed and submitted a SCP and designs for the walkway and end doors to the RTSB. 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 and has been operating since that time.

During 2018 and 2019, the RTSB worked closely with the AFDC to review the funicular system for its compliance with all the ANSI B77.2 Standards, including those whose strict compliance is not required due to the vintage of the system. The RTSB also conducts frequent inspections and meetings with AFDC personnel regarding the operations of the system. A comprehensive triennial safety review is scheduled for 2020.

THE GETTY CENTER MUSEUM AUTOMATED PEOPLE MOVER

The Getty Center Tram is an Otis Hovair 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, links a street-level parking area to the Getty Center, 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 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.

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.

Although the Getty Center Tram started operating in 1997, it wasn't until 2013 that the CPUC asserted jurisdiction for safety oversight of the system following an evaluation of unregulated rail fixed guideway systems throughout California. RTSB worked with Getty personnel to develop the initial Getty System Safety Program Plan (SSPP) meeting CPUC GO 164 requirements. Full implementation of the SSPP commenced in January 2015.

The Getty Center Tram was scheduled for a triennial safety review in late 2019, however, the wildfires that impacted the Los Angeles metro area in late 2019 impacted the Getty property (but not the APM system), and RTSB staff agreed to postpone the safety review until the first quarter of 2020.

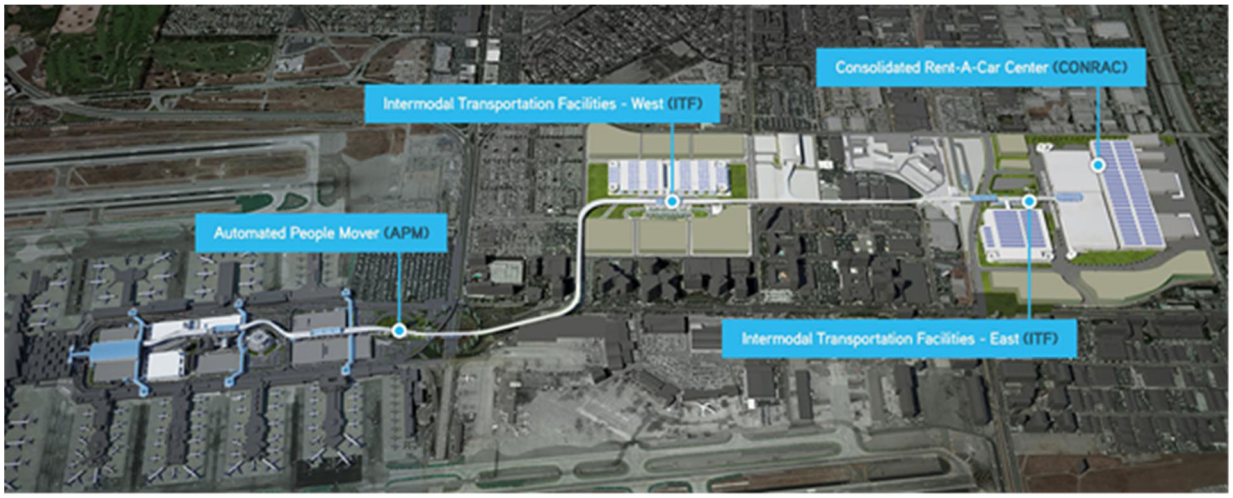
THE GROVE TROLLEY

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 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 individuals and Midwest Trolley Services to provide maintenance of the trolley.

LOS ANGELES WORLD AIRPORTS AUTOMATIC 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 guideway between the terminals and ground transportation options. Three new Central Terminal stations will connect to stations at new rental car, airport parking and LACMTA rail transit and bus facilities. The LACMTA station will be a multilevel station connecting to the new LACMTA Crenshaw rail transit line currently under construction. 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). Construction has begun however no guideway or stations have yet been constructed. The Project's Safety and Security Certification Design Checklist Review is scheduled to start in 2020.

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 B, with an emergency/backup walkway located between guideways. Two passenger stations with flow-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 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 Safety and Security Review in 2019 and the final report is scheduled to come before the Commission during the first quarter of 2020.

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 as a design-build-operate-maintain project. The system is owned by the San Francisco Airports Commission and currently operated and maintained by Bombardier.

With a fleet of 38 CX-100 vehicles, the 6-mile system serves nine stations connecting all the airport's terminals, parking garages, the Rental Car Center and an external connection to the BART Airport Station.

The AirTrain system underwent a Triennial Safety and Security Review during 2019 and the final report will be presented to the CPUC during the first part of 2020.

AirTrain Extension Project

On August 10, 2017, Resolution ST-205 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 future 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. Project culmination and start of complete revenue service is anticipated to take place in 2020. RTSB management approved the segment of the new line that allowed the Hotel Station (Phase 2) to begin revenue service in October 2019. To date, 19 cars have been approved with line-of-sight communication upgrades.

SYSTEMS IN DEVELOPMENT OR FUNDING STAGES

LOS ANGELES STREETCAR

The Los Angeles Streetcar is a project 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 downtown's residents, commuters, and tourists. The 3.8-mile route will run approximately 18 hours a day to connect riders with places like South Park, the Financial District and Historic Broadway, Grand Park and the Civic Center, the Fashion District and the Convention Center, Staples Center, and LA Live. It will also serve as a much-need connector to key local and regional bus and rail lines, serving as the first/last mile solution needed to bridge the gaps in Downtown's existing public transportation system. LACMTA is assisting the City of Los Angeles on the project. As of the end of 2019, the project received Federal National Environmental Policy Act environmental clearance. A SCP will be submitted in the future if the project is funded and approved.

DOWNTOWN RIVERFRONT STREETCAR

The Cities of Sacramento and West Sacramento have partnered to propose a streetcar system linking the two cities and connecting to SRTD's rail system in downtown Sacramento. FTA funding was secured for the design and development of the project, which SRTD is assisting with, however bids were sought for the proposed system which came in significantly higher than estimated. The project has been reduced in scope and a revised project was submitted in January 2020 to the FTA. A SCP will be submitted in the future if the project is funded and approved.

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 Rail Transit Safety Branch continues with its ongoing safety and security oversight activities for RTAs. The CPUC modified its program in response to FTA certification requirements and was certified as California's SSOA 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.

This and other rail safety programs at the CPUC feed into the CPUC's Strategic Directive SD-02, regarding safety and the CPUC's promotion of continuous improvement of safety culture, based on processes adopting the concepts of Safety Management Systems.

As part of its enforcement program, the CPUC levied one of the largest fines of $1.348 million against Bay Area Rapid Transit (BART) for failures leading to a fatal collision with two BART workers. The CPUC placed BART on a 3-year monitoring and reporting period and stayed half of that amount pending compliance with the CPUC Decision's requirements. Thus far, BART has made 2 payments totaling $449,333.33. The RTSB also issued citations to Sacramento Regional Transit District in the amount of $115,000 for numerous speeding violations by its operators, and to San Francisco Municipal Transportation Authority in the amount of $120,000 for repeated employee cell phone violations. All fines go to the California General Fund.

In 2020, the RTSB is focused on its routine safety oversight activities as well as reviewing and approving Public Transportation Agency Safety Plans that each RTA under FTA jurisdiction is required to prepare pursuant to 49 CFR 673. The RTSB will also initiate a process to revise General Orders series 143 during 2020.