

# SMART BOARD OF DIRECTORS

## Review of 2020 Performance and 2021 Goals and Challenges



FEBRUARY 17, 2021

# Real Estate Department

# Real Estate Department

SMART Real Estate Dept consist of 2 staff members:

- Real Estate Manager
- Senior Real Estate Officer

# Real Estate – Description

- Manages SMART Right-of-Way
- Processes Third-Party access to work in the right-of way
- Property Acquisitions, Sales and Easements
- Supports all departments with title research and boundary information

# WHAT DO WE OWN?

- 81 miles of tracks (or approximately 590 acres of land)
- 12 stations and their properties
- 4 ½ acre major maintenance facility,
- 3 smaller maintenance facilities,
- 4.5 acre site in Downtown Petaluma
- 11 acre site in Healdsburg

When SMART takes over properties from North Coast Rail Authority (NCRA) , we will own over 102 miles of track and numerous properties

# HOW DID WE GET THESE PROPERTIES?

- Railroad ownership of the property is a combination of 16 old railway or railroad companies dating back to the 1840's.
- Ownership of the old rail lines was purchased with public dollars to become part of the public's assets to build a new NORTH BAY transportation system.

# DEED CHALLENGES - 1887 Original

DBk 107 pgs 607-609 607

This Indenture, made the fourteenth day of June in the year of our Lord one thousand eight hundred and eighty seven, Between Marco Greenwood of the City and County of San Francisco, State of California, the party of the first part, and the Marin & Napa Railroad Company, the party of the second part, Witnesseth, That the said party of the first part, for and consideration of the sum of Two hundred and ninety four & 9/10 Dollars lawful money of the United States to him in hand paid, the payment, whereof is hereby acknowledged, has granted bargained and sold conveyed and by these presents does grant bargain sell and convey unto the said party of the second part, its assigns and successors in interest, for the use and purposes of a way for the Railroad of said party of the second part and, for its side tracks, turn tables, depots, water tanks, and other appurtenances thereunto belonging, the following described tract of land, situate being and lying in the County of Sonoma, State of California more particularly described as follows, to-wit: A tract of land One hundred & 00 feet in width, being Fifty & 50/100 feet on each side of the located center line of the Marin and Napa Railroad Company's projected Rail Road, and that the said party of the first part

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# 2020 ACCOMPLISHMENTS



## PROPERTY MANAGEMENT

Managed existing and new requests for third parties to use SMART property:

- **Encroachments**
  - 49 Permits – Right Of Entry
  - 653 Permits - Right of Access
  - 39 Leases/Licenses
- **Special Events**
- **Utility Agreements**



## TITLE AND OWNERSHIP RIGHTS

Started a new database of property records:

- Created an ownership database by using the old railroad maps and deeds for details on the parcels.
- Database tracks records that SMART has or needs to research and locate.
- Created database for records for built Pathway segments.



## PROPERTY SALES PRIVATE CROSSINGS

- Finalized sale of Santa Rosa Railroad Square.
- Worked on DRAFT Private Crossing Policy



# 2020 CHALLENGES



## PROPERTY MANAGEMENT

- Acceptance of SMART's property rights by other entities. Some believe that SMART has the burden of proof of property rights and it is challenging to assist other agencies in understanding and respecting the rights.
- Receiving timely requests from third parties to access property.



## TITLE AND OWNERSHIP RIGHTS

- Deeds are often difficult to locate and many are hard to read without being transcribed – very time consuming.
- Large volume of deeds because most deeds cover very short linear distances.



## PROPERTY SALES PRIVATE CROSSINGS

- Extensions of time for agreements due to litigation and the threat of litigation from property owners.

# 2021 GOALS



## PROPERTY MANAGEMENT

Streamline processes with:

- Issue Right Of Entry Permit number for all Right of Way Access Permits for Operations Division.
- Establish Annual Vegetation Maintenance permit process for PG&E Electrical Division.

We do all of this with staff of 2



## TITLE AND OWNERSHIP RIGHTS

- Continue development of District Records:
- Complete database for property ownership at crossings on the Brazos Branch.
- Integrate new survey records for the sections of the Windsor Pathway



## PROPERTY SALES PRIVATE CROSSINGS

Research and finalize agreements:

- Research title records of property acquired from NCRA.
- Complete sale of the Petaluma Station property.
- Private crossing agreement with property owner on Brazos branch.

# POST PANDEMIC GROWTH OPPORTUNITIES



## PROPERTY MANAGEMENT

Seek out opportunities for revenue:

- Evaluate all leases and increase revenue for any that are below fair market value.



## TITLE AND OWNERSHIP RIGHTS

Electronic Management of District Records:

- Get entire Right of Way surveyed to create Records of Survey for the entire line.
- Add Deed document links to Ownership Database.



## PROPERTY SALES PRIVATE CROSSINGS

Implement Private Crossing Policy.

# QUESTIONS



# Operations Department



# What Do We Do?

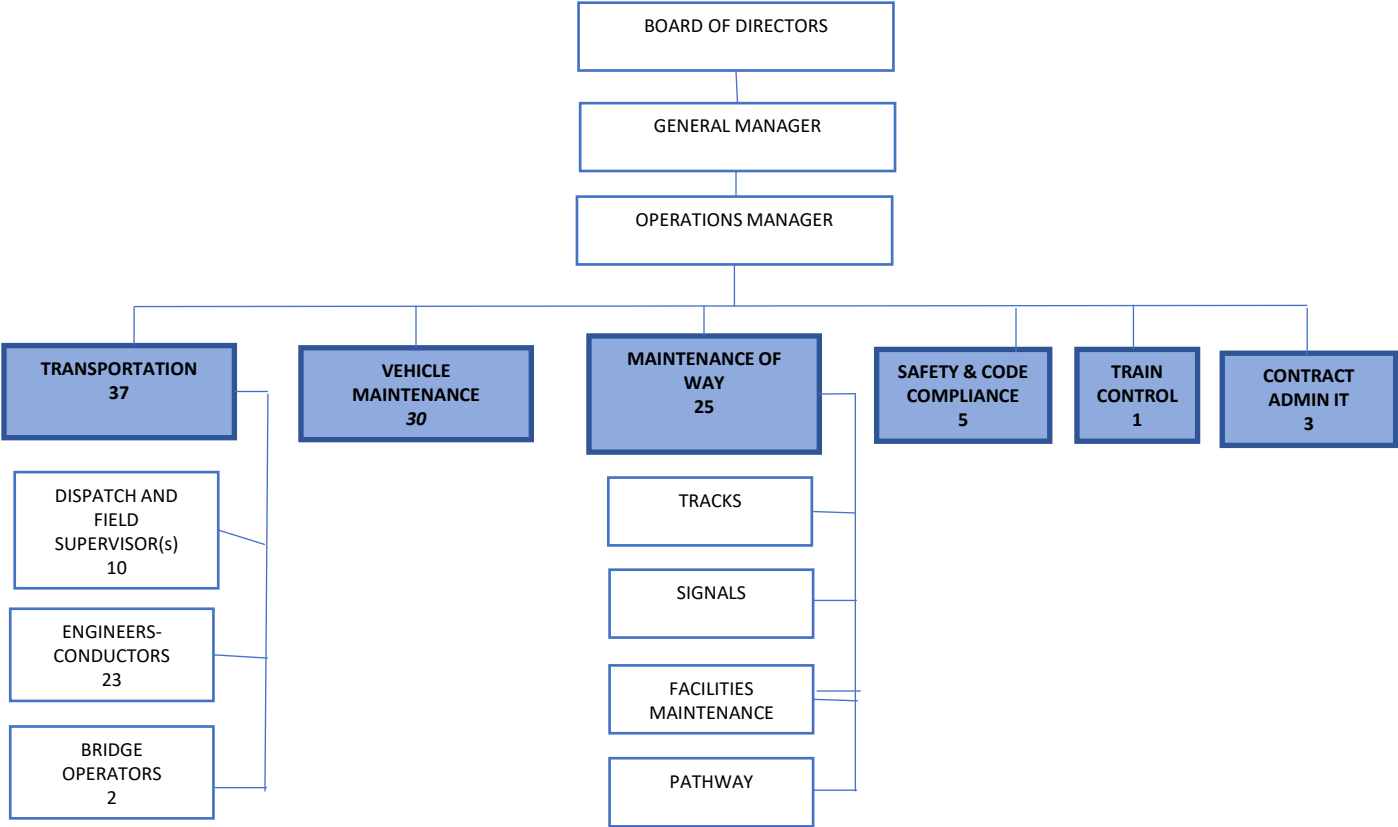
- We move people
- We connect communities
- We fight global warming
- We reduce greenhouse gases
- We are reliable, affordable and safe

# Stuck on 101 ??





# What It Takes to Operate a Commuter Train - Operations



# SMART in a unique class of elites

- 5 Commuter Railroads in California
- 31 Commuter Railroads in the USA
- All regulated by the Federal Railroad Administration (FRA) who regulates almost everything that we do
- Additionally:
  - California Public Utilities Commission (CPUC)
  - OSHA/CalOSHA



# Federal Railroad Administration (FRA):

- **Hours of Service Laws**
  - Restrict certain Transportation, Vehicle Maintenance, and Signal maintenance employees to 12-hour workdays. This regulation results in having more staff since we operate from 4 a.m. to 9 p.m.
  - Daily Safety check on every train prior to start service
  - Dozens of daily, weekly, monthly, and annual inspections and tests are required in all 3 Divisions with documentation requirements.

# Federal Railroad Administration (FRA) Requirements- Partial List

- The automatic warning devices at every crossing require testing every month. In addition, there are quarterly and annual tests that take three employees 4-6 hours to complete.
- The train control system requires two-year testing at each control point (siding switches, gauntlet tracks, etc.) of each route through that location. This can take multiple days with 4 Signal employees for each location, currently 23 total.
- Every inch of our main track and sidings must be inspected **twice weekly**. Each turnout location must be inspected on foot every month.
- DMU's require daily inspections before being placed into service. They require a more detailed inspection every 184 days that takes two employees a full day to complete. The DMU's also require an in-depth inspection every 365 days that takes two employees 2 days to complete. Inspections of the on-board Automatic Train Control (ATC) system take place every 30 days.

# Federal Railroad Administration (FRA):

- There are strict training and safety requirements for employees working on or near the tracks and working on bridges. Employees must be trained and qualified annually on the specific rules and procedures that allow them to foul the track while working.
- There are initial and ongoing training requirements required in several sections of the regulations. In addition to annual rules training, Engineers and Conductors need to be re-certified every two years. This process involves both classroom and field testing. Training on the hours-of-service regulations and proper documentation are required annually for all safety sensitive operations employees. Vehicle Maintenance employees are required to pass testing related to the proper protection of work areas. Inspectors are recertified every two years.
- In 2020, SMART was subject to several unannounced inspections and audits from the above agencies and was found to be in compliance during each one of the inspections.



## California Public Utilities Commission (CPUC):

- Regulates the location and types of warning devices and signage required for public at grade crossings
- Walkway Standards for employee work areas along the right of way
- Requirements for at grade crossing maintenance and construction

## OSHA/CalOSHA:

- Regulates workplace safety not covered by FRA regulations such as overhead crane inspection and use, fall protection safety requirements, Injury and Illness Prevention Program (IIPP) requirements, and COVID-19 related workplace protocols pursuant to Center for Disease Control (CDC) Regulations

# The Most Efficient Commuter Railroad in the Country

SMART Operations is responsible for the safe and efficient operation of our revenue service schedule. Our District staff operates, maintains, inspects, and repairs all facilities, right-of-way infrastructure (track, signals, bridges), and revenue vehicles (DMU'S). To accomplish this, SMART Operations is organized into 3 divisions;

- 1) Transportation Division
- 2) Vehicle Maintenance Division
- 3) Maintenance of Way Division

- 92 Full-Time Employees
- 24-hour operation, seven days a week
- 18 Diesel Multiple Units (DMU) in service
- 45 Miles of Track, 54 miles of right of way (44 additional miles with addition of freight service)
- 12 Passenger Stations
- 80 total at grade crossings, including 63 public crossings with automatic warning devices
- 1 moveable bridge at Haystack, 2 train tunnels, and 1 pedestrian tunnel (addition of freight will include 34 bridges with 2 moveable bridges (Napa and Petaluma Rivers))



# Transportation Division

Conductors and Engineers are the face of SMART with direct daily customer interaction.

- Conductors check fares and assist passengers
- Engineers operate the train
- They are responsible for ensuring onboard passenger safety
- They are both responsible for ensuring compliance with all FRA regulations related to train operations and passenger service





# Transportation Division

- Rail Operations Center, known as the ROC
- The SMART Operations Control Center (OCC) is a 24/7/365 Operations Center responsible for managing and controlling the entire railroad. The Control Center is in communication with all federal, state, regional, and local public safety organizations.
- Coordinate all Mainline and Brazos Sub movement (Trains, Maintenance, and Freight)
  - There were over 6,000 train trips dispatched and nearly 800 track work authorities issued in 2020
- Job Brief with crews and verify they are fit for duty
- Monitor systems for issues such as clipper machine malfunctions and crossing gates
- Keep up to date notification for train delays, incidents, clipper machine issues

# Vehicle Maintenance Division

The Vehicle Maintenance team currently works around the clock 5 days a week.

## The day shift focuses on:

- Maintenance and repairs to items found by the night shift
- Plans Preventative Maintenance work
- Performs Major repairs
- Mid-day interior inspections and cleanings

## Night shift:

Night work involves inspections, cleaning, and maintenance on the Diesel Multiple Units (DMU) fleet in preparation for the next day service.

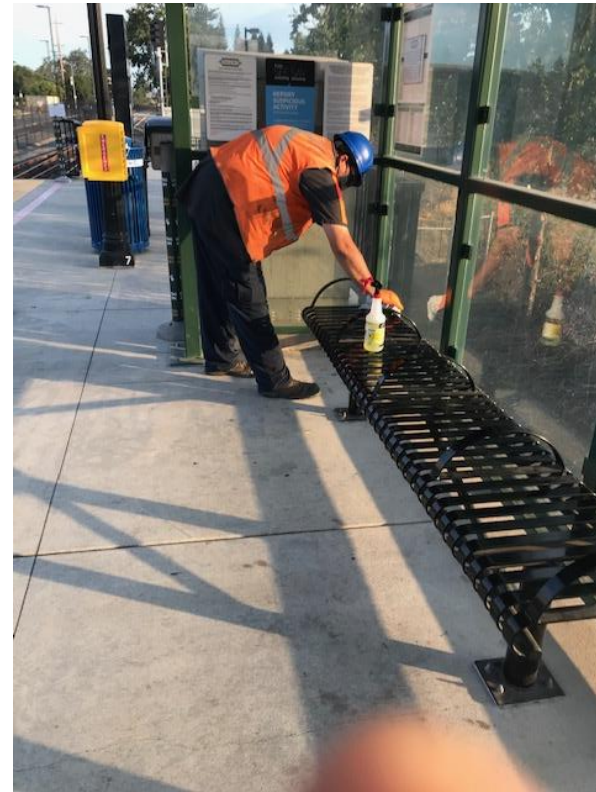
Every single night we conduct:

- Brake Tests
- Wheel inspections
- Federal Railroad Administration required inspections
- Daily interior inspections and cleanings
  - Checking and cleaning every seat recliner and every tray table in the passenger area
  - Checking and cleaning restroom



# Your Safety is our Mandate

SMART cleans and sanitizes its fleet two times per day using products on the Environmental Protection Agency approved for use against COVID-19.



# Preventative Actions Taken

SMART has implemented multiple measures to prevent and limit the spread of COVID-19 including:

- Installing hand sanitizer stations throughout the railcars
- Posting local Health Official guidelines
- Increasing cleaning of the vehicles from once daily to twice daily
- Providing facial coverings freely to the public for any customers who did not have one
- Adding the usage of electrostatic sanitizers to the vehicle cleaning procedures
- Upgrading the onboard air circulation system including:
  - Upgrading the onboard recirculation filters
  - Implementing UV sanitizers for circulating air

# Electrostatic Sanitizers

In addition to the cleaning of the Diesel Multiple Units two times a day by our Vehicle Maintenance Team.

- SMART uses an electrostatic application system which offers an increased level of surface disinfection
- SMART also provides hand sanitizer towelettes upon request to passengers which will allow them to wipe their hands, tables, or handrails if they choose



# Onboard HVAC Operation

- SMART's DMU's each have 2 Heating, Ventilation, Air Conditioning (HVAC) units.
- These units each pull in 25% of their air supply from outside (fresh air) and 75% of their air from the inside (recirculated/filtered).
- This air is mixed and released throughout the car length through overhead vents.
- SMART's HVAC units replace the air in the car with filtered/fresh roughly every 1 minute and 20 seconds. They also entirely replace the air in the car with fresh outside air every 5 minutes and 20 seconds.



# Air Filter Upgrade

- Filters are rated by their minimum efficiency reporting value (MERV).
- The higher the MERV rating, the more airborne materials the filter will pull from the air.
- SMART previously used MERV-8 filters and has upgraded them to MERV-13 following CDC recommendations.

## MERV Ratings

Captures allergens smaller than 1 micron

Strong		Stronger		Strongest	
MERV 8		MERV 11		MERV 13	
Dust	✓	Dust	✓	Dust	✓
Mold	✓	Mold	✓	Mold	✓
Pet Dander	✓	Pet Dander	✓	Pet Dander	✓
Smoke	✓	Smoke	✓	Smoke	✓
Dust Mites & Debris		Dust Mites & Debris	✓	Dust Mites & Debris	✓
Bacteria		Bacteria		Bacteria	✓
Virus Carriers		Virus Carriers		Virus Carriers	✓
Smog		Smog		Smog	✓
Allergens		Allergens		Allergens	✓



# Filter Upgrade Results

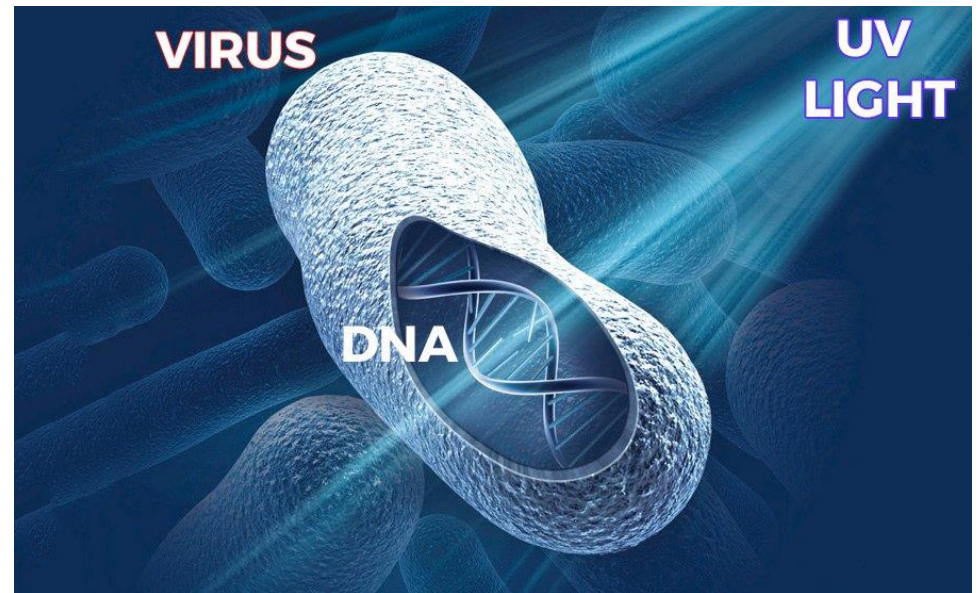
- Testing showed that this modification actually provides a 67% improvement over the old filters.
- Air within the passenger cabin now has 67% less airborne particulates than before.





# UV Light Sterilization

- As a second line of defense against airborne pathogens, SMART has demonstrated installing UV sterilizers to the HVAC systems aboard SMART Trains.
- These systems break down the DNA within pathogens to keep them from growing, effectively killing them.



# Maintenance of Way Division

The Maintenance of Way Division currently works 7 days a week and is responsible for **Tracks, Signal System, and Facilities.**

## The Track Maintenance Team:

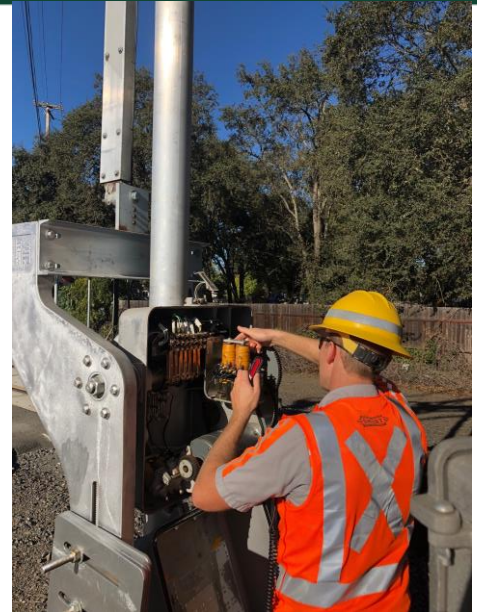
- Performs FRA required weekly and monthly inspections.
  - **Every inch of track must be inspected twice every week**
- Handles all right of way vegetation maintenance and Pathway cleanup
- Performs track and grade crossing maintenance and repairs

## Signal Maintenance Team:

- Performs FRA required weekly, monthly, and annual inspections of the signal system and grade crossing automatic warning devices
- Respond and investigates all reported trouble calls in the field (broken gates, power outages, etc.)
- Preventative maintenance on the above systems and devices

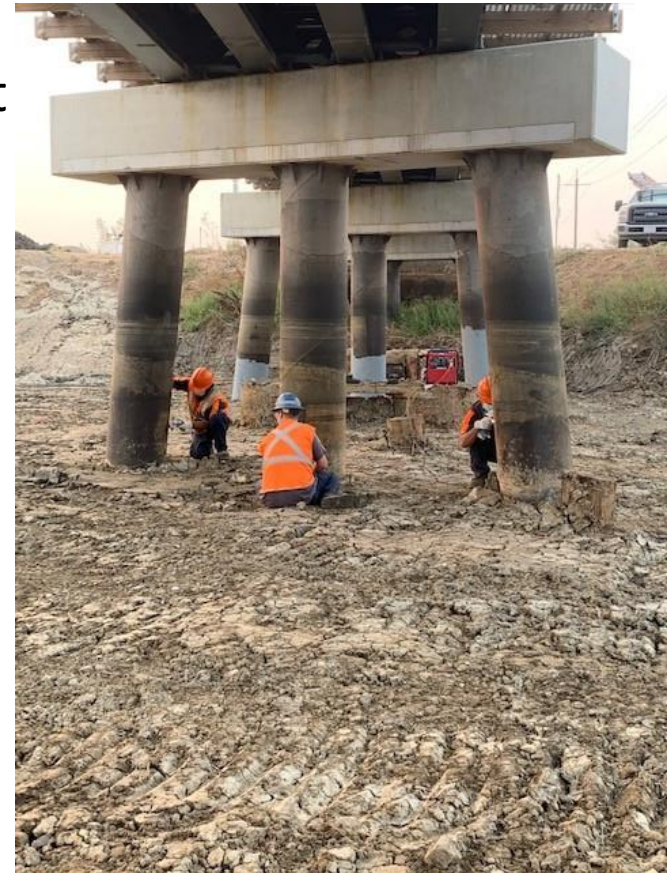


- 45 miles of Tracks
  - 14 miles of Pathway
  - Positive Train Control and Signal System
  - 63 Public and 17 Private at-grade-crossings
  - 2 Tunnels
  - 1 Moveable Bridge
  - 29 Bridges
  - 140 Drainage Facilities
  - 60-acre Environmental Mitigation Site at Mira Monte
  - 12 Stations
  - 100+ Central Instrument Locations
- And much more



## The Facilities Maintenance Team:

- Performs monthly preventative maintenance, repairs, and graffiti abatement at our Stations and Park-n-Ride lots
- Performs fence repairs along the entire right of way
- Maintains tunnel lighting and fire suppression systems at both CalPark and Puerto Suello
- Responsible for monthly preventative maintenance and repairs at all SMART owned facilities (ROC, Fulton, Healdsburg, and Roblar)
- Maintain the mechanical and electrical functions of the Haystack moveable bridge



# SMART and Mother Nature



# 2020 Accomplishments

- Successfully implemented a 38 train/day schedule in January that incorporated the new Larkspur and Novato Downtown stations.
- Signal Maintenance team reduced the number of crossing malfunctions resulting in significant reduction of train delays from a monthly average of 11 in 2019 to an average of only 2 in 2020.
- Vehicle Maintenance team completed 10,000 hour/mid-life engine overhauls on 14 original DMU's.
- There were **0** trains cancelled or delayed due to manpower shortages despite COVID protocols, wildfires, employee turnover, FMLA leaves, and scheduled vacations.
- Maintenance of Way Division, along with the Manager of Train Control Systems and Human Resources departments, created an in-depth training program and secured Board approval for establishing a Signal Technician Trainee position.
- Operations non-revenue vehicles logged over 400,00 miles in 2020 with no at fault vehicle accidents. The only vehicle accident involving our employees occurred while a Track Maintainer was rear ended while stopped at a traffic light in Novato.



# 2020 Challenges

- Maintaining staffing levels for key positions continues to be a challenge.
- In 2020, 14 Operations employees resigned, retired or left SMART for personal and family reasons.
- Keeping employees informed with up to date and correct COVID related information.
- On going implementation of best safety and healthy practices and staying a head of the curve.

# 2021 Goals and Opportunities

- Maintaining a healthy staff and staffing levels throughout the remainder of the pandemic. We will continue to emphasize and train best on going practices as necessary to ensure staff and passengers health and safety is covered.
- Employee retention and turnover has been a challenge for the last 4+ years. The high cost of living, and in particular affordable housing, continues to be a major factor causing employees to seek employment in other parts of the country.



# SMART's Training Program

We are addressing cost of living issue by developing in-house trainee programs for key positions in each of Operations 3 Divisions.

We have completed a formal training program for Signal Technician Trainee's and currently have candidates in the testing and interview phase of hiring.

The formal training program for Vehicle Maintenance Technician Trainee's will be completed and ready for presentation to the Board for approval soon. We will utilize the existing authorized Conductor positions and Engineer training programs to create additional opportunities for internal and external local candidates.

# 2021 Goals and Opportunities

- Complete the installation of UV lighting in the HVAC system. A prototype retrofit has been designed and successfully tested on one DMU.
- Modifying our instructions and protocols to coincide with multiple changes at the various regulatory levels.
- DMU warranty issues continued to effect fleet availability. Fleetwide engine modifications were completed for the second time since 2017.
- SMART's Vehicle Maintenance team communicates regularly with Toronto's commuter agency. They've had Nippon Sharyo manufactured DMU's (just like SMART's) in revenue service since 2015 and have experienced issues SMART hasn't yet. As a result, SMART has been able to get ahead of several issues utilizing the manufacturer during the warranty period. SMART will be completing 3 fleetwide modifications in 2020 to avoid potential issues.



# 2021 Post Pandemic Growth

- Closely monitor ridership and increase service accordingly as we transition out of the pandemic.
- Supporting ridership growth will require an increase in active positions in Operations. During the pandemic, many vacant positions have been left open due to the reduction in service levels. Prior to a transition into more frequent weekday service and weekend service, Operations will need to fill many of these vacant positions. Current job assignments in all Divisions will need to be reassigned to provide coverage for weekend service.
- Continue to provide a positive onboard experience for our customers.
- The acquisition of a common carrier freight obligation by SMART will require Operations involvement whether we perform this service with District employees or contract it out. We need to make a smooth transition from the NCRA/NWP to ensure existing customers aren't adversely affected.

# Post Pandemic

- From the time we are authorized to fill a vacancy, i.e. Engineer-Conductor until he/she is able to operate one of our DMUs it takes close to 6 months
- Work with our partners and review the new schedules and connection times on weekdays as well as on weekends and holidays

# Pre-COVID Schedule

## Current Schedule 6 Trainsets, 32 Minute Headway, 38 Trips

### SOUTHBOUND - Sonoma County Airport to Larkspur

Train →	1	2	3	4	5	1	2	3	4	1	Maintenance	3	4	5	1	6	2	3	4	5	
Sonoma County Airport	4:30 AM	5:02 AM	6:08 AM	6:38 AM	7:10 AM	7:42 AM	8:14 AM	9:18 AM	9:50 AM	12:45 PM	Maintenance	2:21 PM	2:53 PM	3:25 PM	3:57 PM	4:29 PM	5:01 PM	5:33 PM	6:05 PM	6:37 PM	6:37 PM
Santa Rosa North	4:37 AM	5:09 AM	6:13 AM	6:45 AM	7:17 AM	7:49 AM	8:21 AM	9:25 AM	9:57 AM	12:52 PM	Maintenance	2:28 PM	3:00 PM	3:32 PM	4:04 PM	4:36 PM	5:08 PM	5:40 PM	6:12 PM	6:44 PM	6:44 PM
Santa Rosa Downtown	4:41 AM	5:13 AM	6:17 AM	6:49 AM	7:21 AM	7:53 AM	8:25 AM	9:29 AM	10:01 AM	12:56 PM	Maintenance	2:32 PM	3:04 PM	3:36 PM	4:08 PM	4:40 PM	5:12 PM	5:44 PM	6:16 PM	6:48 PM	6:48 PM
Rohnert Park	4:49 AM	5:21 AM	6:25 AM	6:57 AM	7:29 AM	8:01 AM	8:33 AM	9:37 AM	10:09 AM	1:04 PM	Maintenance	2:40 PM	3:12 PM	3:44 PM	4:16 PM	4:48 PM	5:20 PM	5:52 PM	6:24 PM	6:56 PM	6:56 PM
Cotati	4:52 AM	5:24 AM	6:28 AM	7:00 AM	7:32 AM	8:04 AM	8:36 AM	9:40 AM	10:12 AM	1:07 PM	Maintenance	2:43 PM	3:15 PM	3:47 PM	4:19 PM	4:51 PM	5:23 PM	5:55 PM	6:27 PM	6:59 PM	6:59 PM
Petaluma Downtown	5:07 AM	5:39 AM	6:43 AM	7:15 AM	7:47 AM	8:19 AM	8:51 AM	9:55 AM	10:27 AM	1:22 PM	Maintenance	2:58 PM	3:30 PM	4:02 PM	4:34 PM	5:06 PM	5:38 PM	6:10 PM	6:42 PM	7:14 PM	7:14 PM
Novato San Marin	5:19 AM	5:51 AM	6:55 AM	7:27 AM	7:59 AM	8:31 AM	9:03 AM	10:07 AM	10:39 AM	1:34 PM	Maintenance	3:10 PM	3:42 PM	4:14 PM	4:46 PM	5:18 PM	5:50 PM	6:22 PM	6:54 PM	7:26 PM	7:26 PM
Novato Downtown	5:22 AM	5:54 AM	6:58 AM	7:30 AM	8:02 AM	8:34 AM	9:06 AM	10:10 AM	10:42 AM	1:37 PM	Maintenance	3:13 PM	3:45 PM	4:17 PM	4:49 PM	5:21 PM	5:53 PM	6:25 PM	6:57 PM	7:29 PM	7:29 PM
Novato Hamilton	5:30 AM	6:02 AM	7:06 AM	7:38 AM	8:10 AM	8:42 AM	9:14 AM	10:18 AM	10:50 AM	1:45 PM	Maintenance	3:21 PM	3:53 PM	4:25 PM	4:57 PM	5:29 PM	6:01 PM	6:33 PM	7:05 PM	7:37 PM	7:37 PM
Marin Civic Center	5:36 AM	6:08 AM	7:12 AM	7:44 AM	8:16 AM	8:48 AM	9:20 AM	10:24 AM	10:56 AM	1:51 PM	Maintenance	3:27 PM	3:59 PM	4:31 PM	5:03 PM	5:35 PM	6:07 PM	6:39 PM	7:11 PM	7:43 PM	7:43 PM
San Rafael	5:42 AM	6:14 AM	7:18 AM	7:50 AM	8:22 AM	8:54 AM	9:26 AM	10:30 AM	11:02 AM	1:57 PM	Maintenance	3:33 PM	4:05 PM	4:37 PM	5:09 PM	5:41 PM	6:13 PM	6:45 PM	7:17 PM	7:49 PM	7:49 PM
Larkspur	5:49 AM	6:21 AM	7:25 AM	7:57 AM	8:29 AM	9:01 AM	9:33 AM	10:37 AM	11:09 AM	2:04 PM	Maintenance	3:40 PM	4:12 PM	4:44 PM	5:16 PM	5:48 PM	6:20 PM	6:52 PM	7:24 PM	7:56 PM	7:56 PM

### NORTHBOUND - Larkspur to Sonoma County Airport

Train →	1	2	3	4	5	1	2	Maintenance	4	1	2	3	4	5	1	6	2	3	4	5	
Larkspur	6:06 AM	6:38 AM	7:42 AM	8:14 AM	8:46 AM	9:18 AM	9:50 AM	Maintenance	11:41 AM	2:21 PM	3:25 PM	3:57 PM	4:29 PM	5:01 PM	5:33 PM	6:05 PM	6:37 PM	7:09 PM	7:41 PM	8:29 PM	8:29 PM
San Rafael	6:14 AM	6:46 AM	7:50 AM	8:22 AM	8:54 AM	9:26 AM	9:58 AM	Maintenance	11:49 AM	2:29 PM	3:33 PM	4:05 PM	4:37 PM	5:09 PM	5:41 PM	6:13 PM	6:45 PM	7:17 PM	7:49 PM	8:37 PM	8:37 PM
Marin Civic Center	6:19 AM	6:51 AM	7:55 AM	8:27 AM	8:59 AM	9:31 AM	10:03 AM	Maintenance	11:54 AM	2:34 PM	3:38 PM	4:10 PM	4:42 PM	5:14 PM	5:46 PM	6:18 PM	6:50 PM	7:22 PM	7:54 PM	8:42 PM	8:42 PM
Novato Hamilton	6:26 AM	6:58 AM	8:02 AM	8:34 AM	9:06 AM	9:38 AM	10:10 AM	Maintenance	12:01 PM	2:41 PM	3:45 PM	4:17 PM	4:49 PM	5:21 PM	5:53 PM	6:25 PM	6:57 PM	7:29 PM	8:01 PM	8:49 PM	8:49 PM
Novato Downtown	6:32 AM	7:04 AM	8:08 AM	8:40 AM	9:12 AM	9:44 AM	10:16 AM	Maintenance	12:07 PM	2:47 PM	3:51 PM	4:23 PM	4:55 PM	5:27 PM	5:59 PM	6:31 PM	7:03 PM	7:35 PM	8:07 PM	8:55 PM	8:55 PM
Novato San Marin	6:35 AM	7:07 AM	8:11 AM	8:43 AM	9:15 AM	9:47 AM	10:19 AM	Maintenance	12:10 PM	2:50 PM	3:54 PM	4:26 PM	4:58 PM	5:30 PM	6:02 PM	6:34 PM	7:06 PM	7:38 PM	8:10 PM	8:58 PM	8:58 PM
Petaluma Downtown	6:48 AM	7:20 AM	8:24 AM	8:56 AM	9:28 AM	10:00 AM	10:32 AM	Maintenance	12:23 PM	3:03 PM	4:07 PM	4:39 PM	5:11 PM	5:43 PM	6:15 PM	6:47 PM	7:19 PM	7:51 PM	8:23 PM	9:11 PM	9:11 PM
Cotati	7:01 AM	7:33 AM	8:37 AM	9:09 AM	9:41 AM	10:13 AM	10:45 AM	Maintenance	12:36 PM	3:16 PM	4:20 PM	4:52 PM	5:24 PM	5:56 PM	6:28 PM	7:00 PM	7:32 PM	8:04 PM	8:36 PM	9:24 PM	9:24 PM
Rohnert Park	7:05 AM	7:37 AM	8:41 AM	9:13 AM	9:45 AM	10:17 AM	10:49 AM	Maintenance	12:40 PM	3:20 PM	4:24 PM	4:56 PM	5:28 PM	6:00 PM	6:32 PM	7:04 PM	7:36 PM	8:08 PM	8:40 PM	9:28 PM	9:28 PM
Santa Rosa Downtown	7:13 AM	7:45 AM	8:49 AM	9:21 AM	9:53 AM	10:25 AM	10:57 AM	Maintenance	12:48 PM	3:28 PM	4:32 PM	5:04 PM	5:36 PM	6:08 PM	6:40 PM	7:12 PM	7:44 PM	8:16 PM	8:48 PM	9:36 PM	9:36 PM
Santa Rosa North	7:17 AM	7:49 AM	8:53 AM	9:25 AM	9:57 AM	10:29 AM	11:01 AM	Maintenance	12:52 PM	3:32 PM	4:36 PM	5:08 PM	5:40 PM	6:12 PM	6:44 PM	7:16 PM	7:48 PM	8:20 PM	8:52 PM	9:40 PM	9:40 PM
Sonoma County Airport	7:23 AM	7:55 AM	8:59 AM	9:31 AM	10:03 AM	10:35 AM	11:07 AM	Maintenance	12:58 PM	3:38 PM	4:42 PM	5:14 PM	5:46 PM	6:18 PM	6:50 PM	7:22 PM	7:54 PM	8:26 PM	8:58 PM	9:46 PM	9:46 PM



# Current COVID Schedule

## COVID Schedule 3 Trainsets AM, 4 Trainsets PM - 16 Trips

		SOUTHBOUND - Windsor to Larkspur																			
Train →	1	2	3	4	5	1	2	3	4	1	2	3	4	5	1	2	3	4	5		
Sonoma County Airport	4:30 AM	5:02 AM	6:06 AM	6:38 AM	7:10 AM	7:42 AM	8:14 AM	8:46 AM	9:50 AM	12:46 PM	1:17 PM	2:21 PM	2:53 PM	3:25 PM	3:57 PM	4:29 PM	5:01 PM	5:33 PM	6:05 PM	6:37 PM	
Santa Rosa North	4:37 AM	5:09 AM	6:13 AM	6:45 AM	7:17 AM	7:49 AM	8:21 AM	8:53 AM	9:57 AM	12:52 PM	1:24 PM	2:28 PM	3:00 PM	3:32 PM	4:04 PM	4:36 PM	5:08 PM	5:40 PM	6:12 PM	6:44 PM	
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Petaluma North (Planned at Corona)	5:02 AM	5:34 AM	6:38 AM	7:10 AM	7:42 AM	8:14 AM	8:46 AM	9:50 AM	10:22 AM	1:17 PM	1:49 PM	2:53 PM	3:25 PM	3:57 PM	4:29 PM	5:01 PM	5:33 PM	6:05 PM	6:37 PM	7:09 PM	
Petaluma Downtown	5:00 AM	5:39 AM	6:43 AM	7:15 AM	7:47 AM	8:19 AM	8:51 AM	9:55 AM	10:27 AM	1:22 PM	1:54 PM	2:58 PM	3:30 PM	4:02 PM	4:34 PM	5:06 PM	5:38 PM	6:10 PM	6:42 PM	7:14 PM	
Novato San Marin	5:19 AM	5:51 AM	6:55 AM	7:27 AM	7:59 AM	8:31 AM	9:03 AM	10:07 AM	10:39 AM	1:34 PM	2:06 PM	3:10 PM	3:42 PM	4:14 PM	4:46 PM	5:18 PM	5:50 PM	6:22 PM	6:54 PM	7:26 PM	
Novato Downtown	5:22 AM	5:54 AM	6:58 AM	7:30 AM	8:02 AM	8:34 AM	9:06 AM	10:10 AM	10:42 AM	1:37 PM	2:09 PM	3:13 PM	3:45 PM	4:17 PM	4:49 PM	5:21 PM	5:53 PM	6:25 PM	6:57 PM	7:29 PM	
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# Post COVID Schedule

## Weekday Revised Schedule 6-1-6 5 Trainsets, 26 Trips

### SOUTHBOUND - Sonoma County Airport to Larkspur

Train →	1	Tripper	Tripper	4	5	1	2	3	4	1	Tripper	2	3	4	5
Trip Number →	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sonoma County Airport	4:30 AM	5:02 AM	6:06 AM	6:38 AM	7:10 AM	7:42 AM	8:14 AM	9:18 AM	9:50 AM	12:45 PM	2:21 PM	2:53 PM	3:25 PM	3:57 PM	4:29 PM
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Cotati	4:57 AM	5:24 AM	6:28 AM	7:00 AM	7:32 AM	8:04 AM	8:36 AM	9:40 AM	10:12 AM	1:07 PM	2:43 PM	3:15 PM	3:47 PM	4:19 PM	4:51 PM
Petaluma Downtown	5:04 AM	5:39 AM	6:43 AM	7:15 AM	7:47 AM	8:19 AM	8:51 AM	9:55 AM	10:27 AM	1:22 PM	2:58 PM	3:30 PM	4:02 PM	4:34 PM	5:06 PM
Novato San Marin	5:19 AM	5:51 AM	6:55 AM	7:27 AM	7:59 AM	8:31 AM	9:03 AM	10:07 AM	10:39 AM	1:34 PM	3:10 PM	3:42 PM	4:14 PM	4:46 PM	5:18 PM
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San Rafael	5:42 AM	6:14 AM	7:18 AM	7:50 AM	8:22 AM	8:54 AM	9:26 AM	10:30 AM	11:02 AM	1:57 PM	3:33 PM	4:05 PM	4:37 PM	5:09 PM	5:41 PM
Larkspur	5:49 AM	6:21 AM	7:25 AM	7:57 AM	8:29 AM	9:01 AM	9:33 AM	10:37 AM	11:09 AM	2:04 PM	3:40 PM	4:12 PM	4:44 PM	5:16 PM	5:48 PM

### NORTHBOUND - Larkspur to Sonoma County Airport

Train →	1	Tripper	Tripper	4	5	1	2	3	4	1	Tripper	2	3	4	5
Trip Number →	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Larkspur Ferry Schedule Arrival-Revised 3/17/20			6:50 AM	7:40 AM	8:05 AM	9:05 AM	9:05 AM	9:05 AM	10:45 AM	2:00 PM	3:30 PM	4:00 PM	4:30 PM	5:00 PM	5:30 PM
Transfer time to SMART from Ferry arrival (minutes)			0:52	0:35	0:41	0:13	0:45	0:45	0:56	0:21	0:27	0:29	0:31	0:33	0:35
Larkspur	6:06 AM	6:38 AM	7:42 AM	8:14 AM	8:46 AM	9:18 AM	9:50 AM	10:54 AM	11:41 AM	2:21 PM	3:57 PM	4:29 PM	5:01 PM	5:33 PM	6:05 PM
San Rafael	6:14 AM	6:46 AM	7:50 AM	8:22 AM	8:54 AM	9:26 AM	9:58 AM	11:02 AM	11:49 AM	2:29 PM	4:05 PM	4:37 PM	5:09 PM	5:41 PM	6:13 PM
Marin Civic Center	6:19 AM	6:51 AM	7:55 AM	8:27 AM	8:59 AM	9:31 AM	10:03 AM	11:07 AM	11:54 AM	2:34 PM	4:10 PM	4:42 PM	5:14 PM	5:46 PM	6:18 PM
Novato Hamilton	6:26 AM	6:58 AM	8:02 AM	8:34 AM	9:06 AM	9:38 AM	10:10 AM	11:14 AM	12:01 PM	2:41 PM	4:17 PM	4:49 PM	5:21 PM	5:53 PM	6:25 PM
Novato Downtown	6:32 AM	7:04 AM	8:08 AM	8:40 AM	9:12 AM	9:44 AM	10:16 AM	11:20 AM	12:07 PM	2:47 PM	4:23 PM	4:55 PM	5:27 PM	5:59 PM	6:31 PM
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Sonoma County Airport	7:23 AM	7:55 AM	8:59 AM	9:31 AM	10:03 AM	10:35 AM	11:07 AM	12:11 PM	12:58 PM	3:38 PM	5:14 PM	5:46 PM	6:18 PM	6:50 PM	7:22 PM



# Weekend Schedule

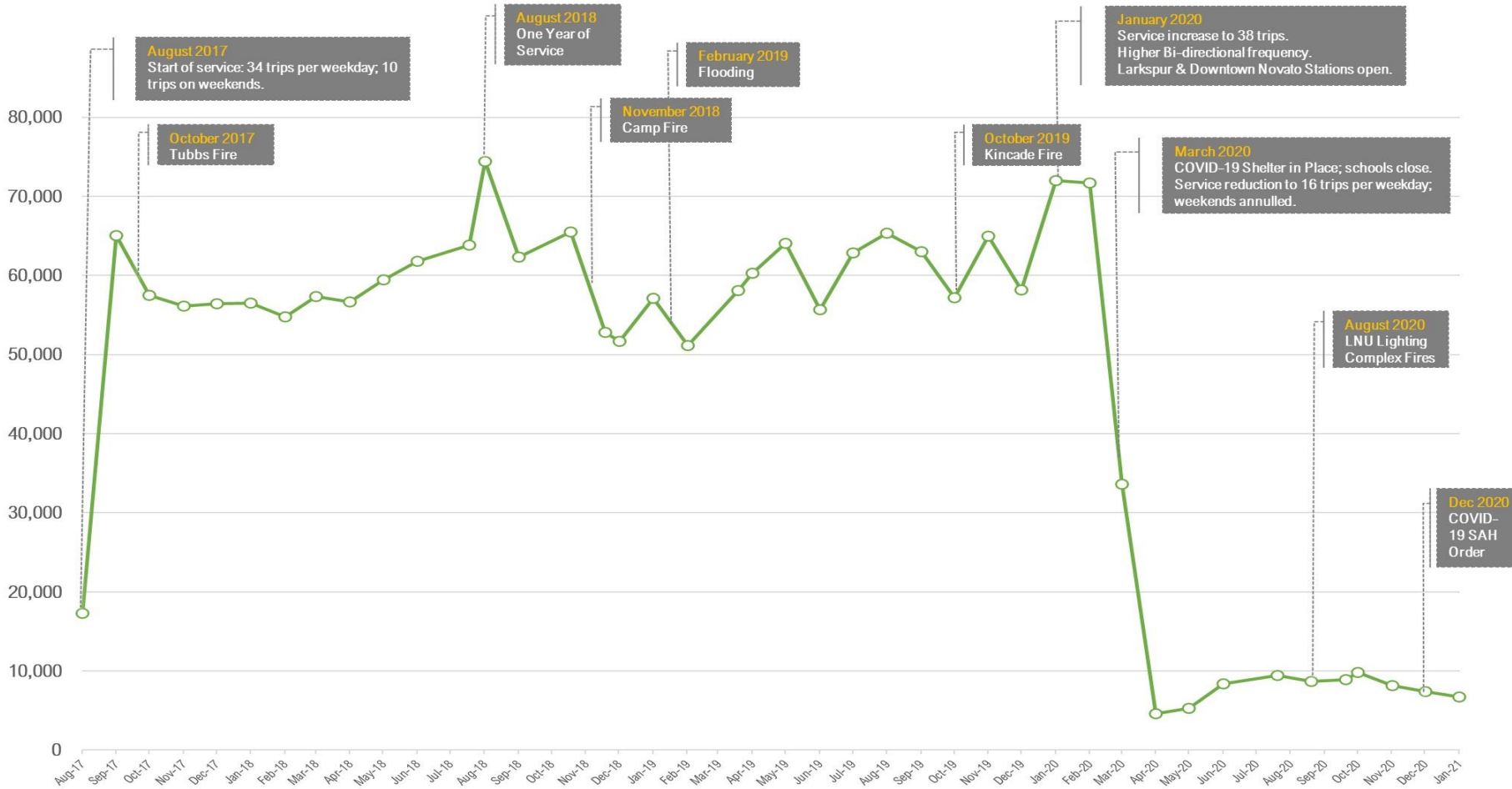
SOUTHBOUND - Sonoma County Airport to Larkspur					
Train →	1	2	1	2	2
Windsor	7:30 AM	9:30 AM	11:20 AM	1:30 PM	5:05 AM
Sonoma County Airport	7:35 AM	9:35 AM	11:25 AM	1:35 PM	5:10 AM
Santa Rosa North	7:42 AM	9:42 AM	11:32 AM	1:42 PM	5:17 AM
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Novato Hamilton	8:35 AM	10:35 AM	12:25 PM	2:35 PM	6:10 AM
Marin Civic Center	8:41 AM	10:41 AM	12:31 PM	2:41 PM	6:16 AM
San Rafael	8:47 AM	10:47 AM	12:37 PM	2:47 PM	6:22 AM
Larkspur	8:54 AM	10:54 AM	12:44 PM	2:54 PM	6:29 AM

NORTHBOUND - Larkspur to Sonoma County Airport					
Train →	1	2	1	2	2
Larkspur	9:34 AM	11:24 AM	1:34 AM	3:34 PM	6:39 PM
San Rafael	9:42 AM	11:32 AM	1:42 AM	3:42 PM	6:47 PM
Marin Civic Center	9:47 AM	11:37 AM	1:47 AM	3:47 PM	6:52 PM
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Sonoma County Airport	10:51 AM	12:41 PM	2:51 AM	4:51 PM	7:56 PM
Windsor	10:56 AM	12:46 PM	2:56 AM	4:56 PM	8:01 PM





# SMART Ridership



# The Best Decision you can make



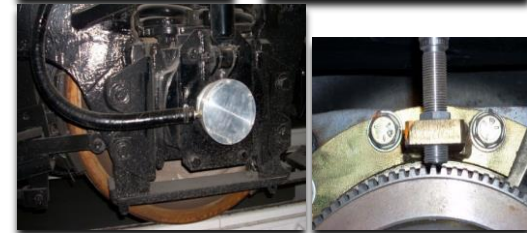
# QUESTIONS



# Train Control Systems

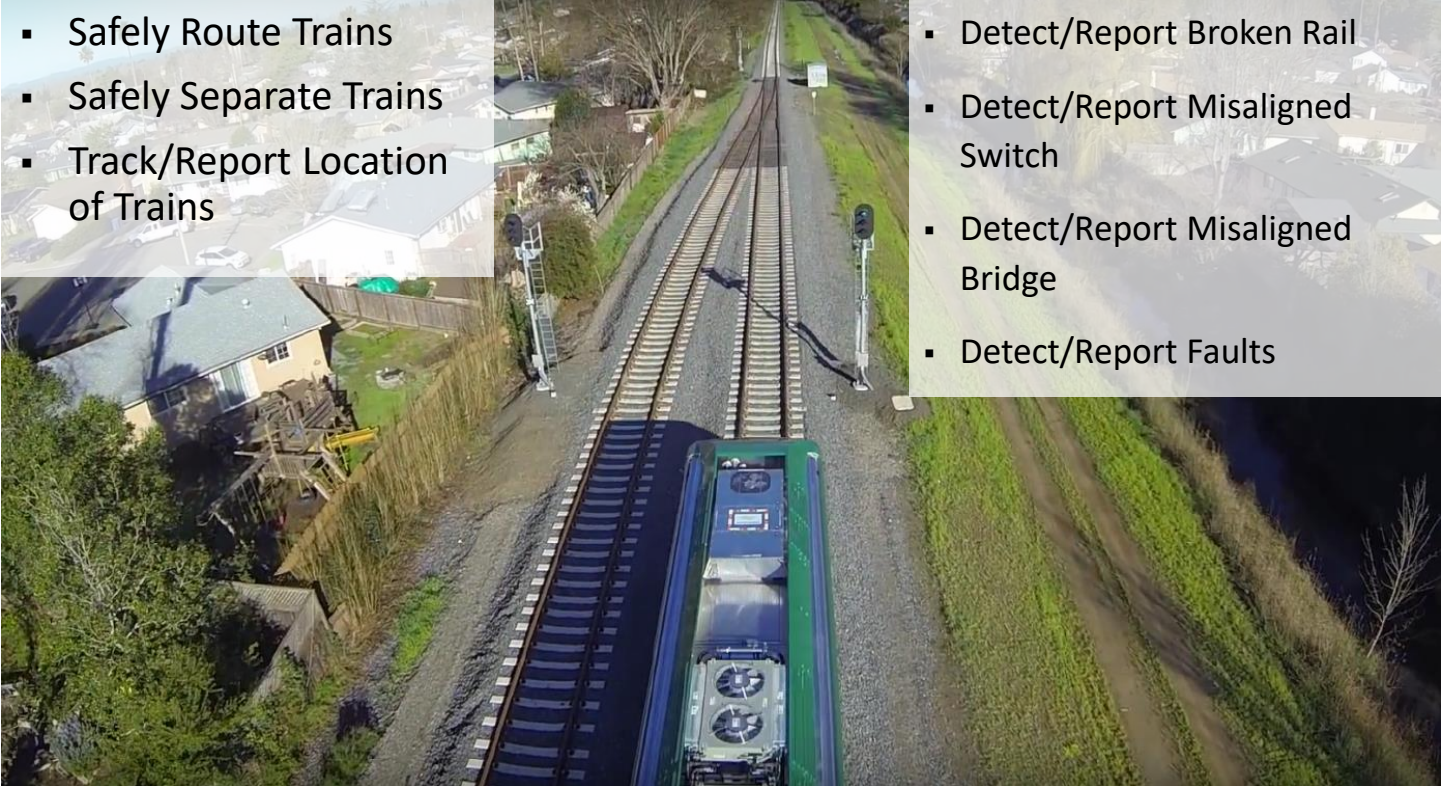
# Train Control Systems

- Monitors and Manages Train Control Systems
- Collaborates with:
  - SMART Engineering
  - SMART Operations
  - SMART Maintenance of Way
  - SMART Vehicle Maintenance
  - SMART Legal
  - SMART Outreach
  - SMART Real Estate
  - Railroad Partners
  - Freight Operator
  - Contractors
  - Suppliers
  - Federal and State Regulators
  - Local Jurisdictions
- Department of One



# Train Control Systems - Overview

- Safely Route Trains
- Safely Separate Trains
- Track/Report Location of Trains

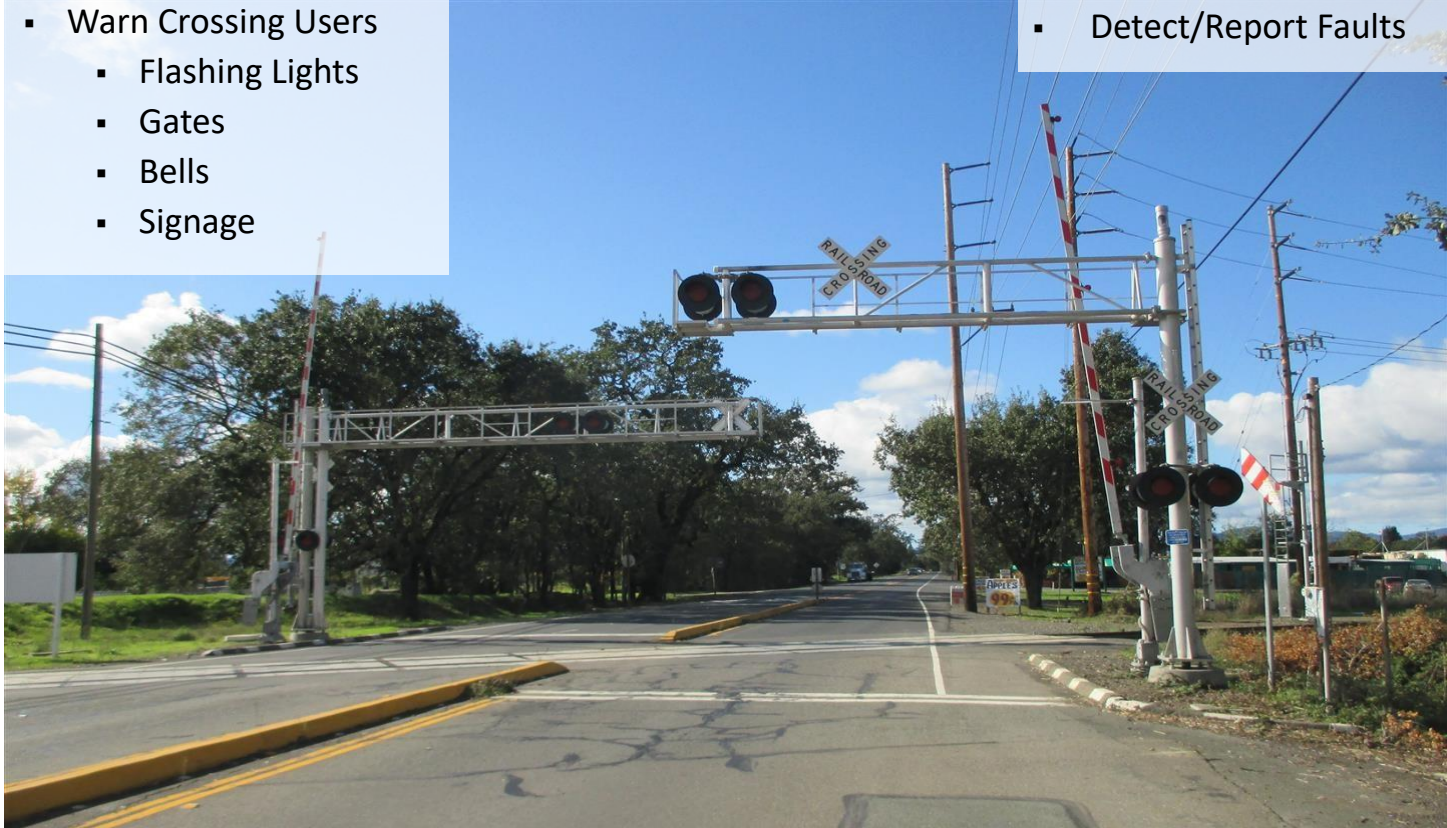


- Detect/Report Broken Rail
- Detect/Report Misaligned Switch
- Detect/Report Misaligned Bridge
- Detect/Report Faults

# Grade Crossing Warning Systems - Overview

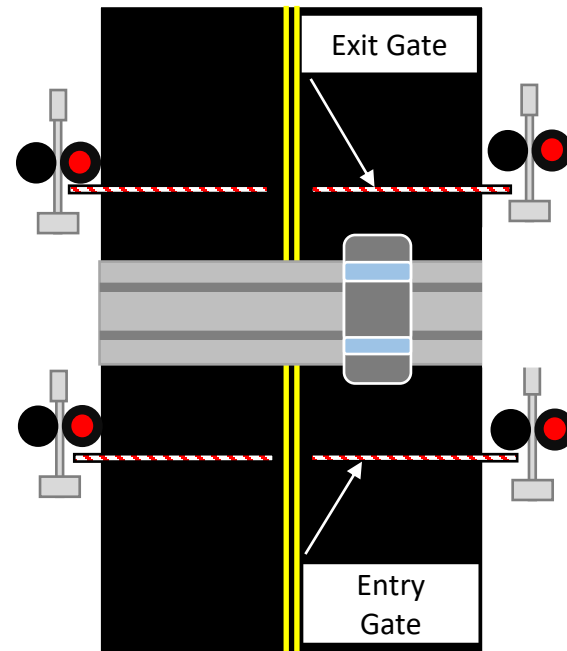
- Warn Crossing Users
  - Flashing Lights
  - Gates
  - Bells
  - Signage

- Detect/Report Faults



# Four Quadrant Gate Crossings

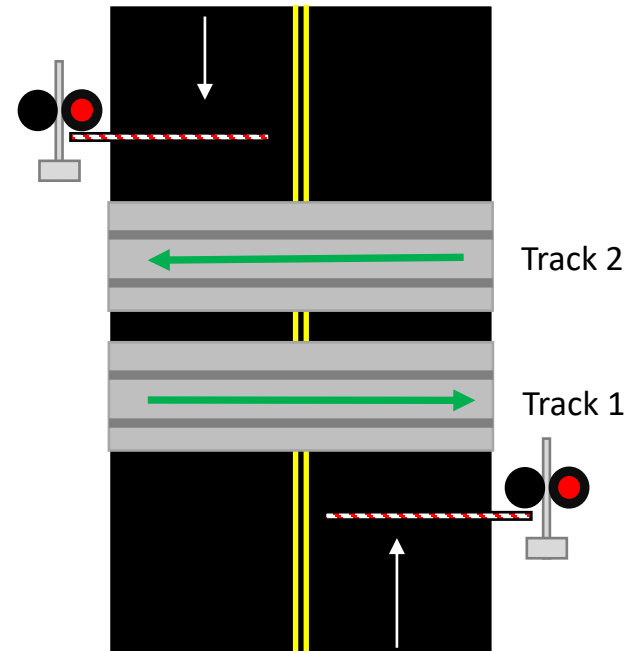
- Four Quadrant Gate Crossings
- Entry Gates Are Used to Block Entry to the crossing in the normal direction of traffic
  - Exit Gates are used to block entry to the crossing in the opposing direction of traffic
  - Exit gates descend after entry gates to allow vehicles to clear the crossing
  - Exit gates do not descend if a car is detected in the crossing
  - Exit gates rise if a car is detected in the crossing
  - Exit gates rise first once the train is detected to be clear of crossing
  - Once exit gates are vertical, entry gates will rise





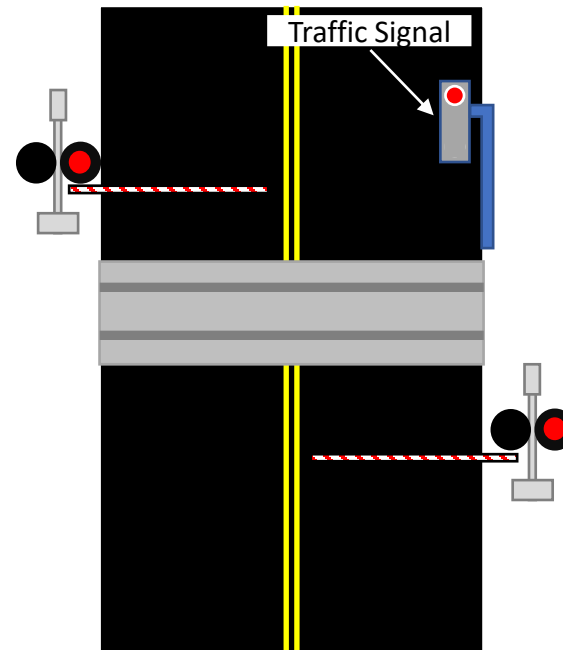
# Double Track Crossings

- Designed to provide a minimum of 25 seconds of warning time for movements in both directions of travel on both tracks
- Double track crossings exist where two trains “meet”, or pass one another



# Traffic Signal Interconnects

- Traffic Signal Interconnects
  - Many public crossings feature traffic signals adjacent to the crossing
  - These traffic signals are owned and maintained by the City or County
  - These systems must be properly coordinated in advance of a train's arrival to clear traffic that may be stopped on the track
  - SMART's system communicates with the traffic signals to provide the necessary advanced notification of an approaching train
  - The traffic signal system responds by clearing cars from the crossing, and then holding traffic from entering the crossing



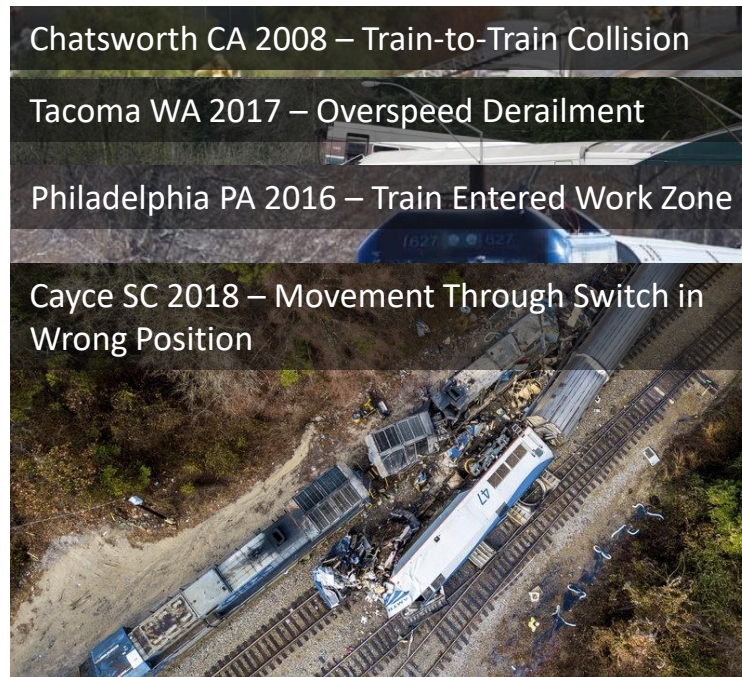
# Haystack Movable Bridge over the Petaluma River

- Detect Bridge Alignment
- Detect Bridge Locking
- Detect/Report Faults



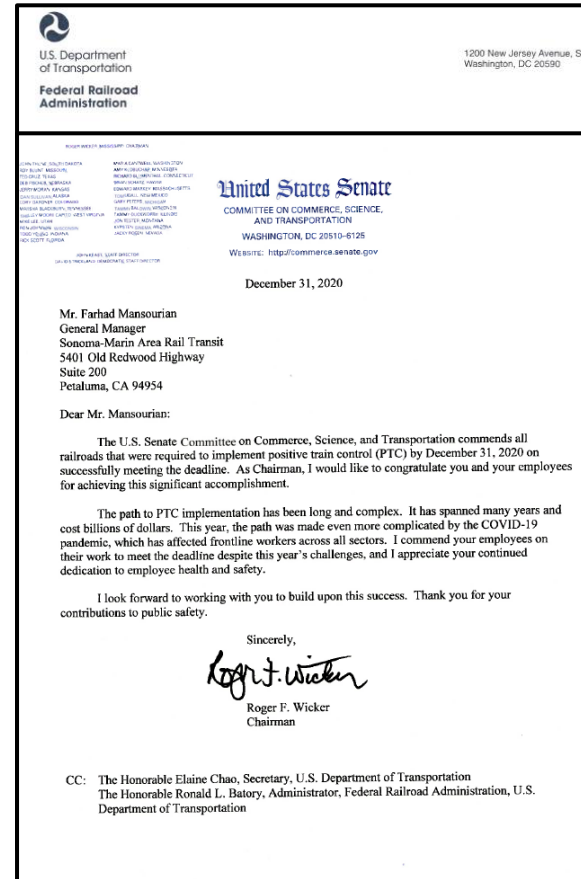
# Positive Train Control - Overview

- Congressional Mandate via 2008 Rail Safety Improvement Act
- Positive Train Control Prevents:
  - Train-to-train collisions
  - Derailments caused by overspeed
  - Unauthorized train movement into Work Zones
  - Movement of a train through a switch left in the wrong position
- SMART has invested over **\$60M** in its Positive Train Control System



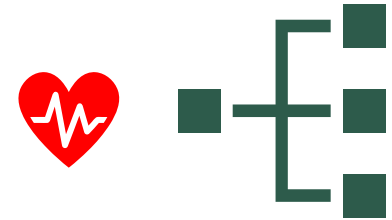
# Train Control Systems 2020

- Positive Train Control (PTC) Implementation
  - SMART was the first railroad in the nation to enter Revenue Service with its Enhanced Automatic Train Control System in August of 2017
  - 28,300+ end-to-end trips safely completed to date
  - Obtained System Certification from FRA in December 2020
  - System Certification indicates that FRA agrees that SMART's system complies with regulations
  - Certification is the final step for SMART to meet the requirements of the Rail Safety Improvement Act of 2008
  - Received letters of congratulation from:
    - FRA Administrator
    - US Senate Committee on Commerce, Science, and Transportation
- Windsor Extension Project
  - Managed Systems portion of Windsor Extension Project
  - Oversaw progression of preliminary design to final design
  - Optimized train control design to maximize efficiency of train operation during normal revenue service and during degraded operations involving speed restrictions



# Train Control Systems 2021

- 2021 Goals
  - Implementation of a Rail Network Management System
    - Central monitoring of Rail Network operation and activity
    - Pinpoint system faults along 45.5 miles of railroad
    - Allow for more rapid response to outages and issues
- 2021 Opportunities
  - Operational Efficiency Improvements
    - Minimize schedule delays experienced during incidents
    - Increase train speed in strategic locations
    - Reduce initial delays by several minutes, dependent on scenario
- 2021 Post-Pandemic Growth Outlook
  - Train Control Systems can handle the workload currently anticipated in 2021
  - An increase in capital project work would require the hiring of an Assistant Engineer to support project activities



# QUESTIONS



# Public Safety Department

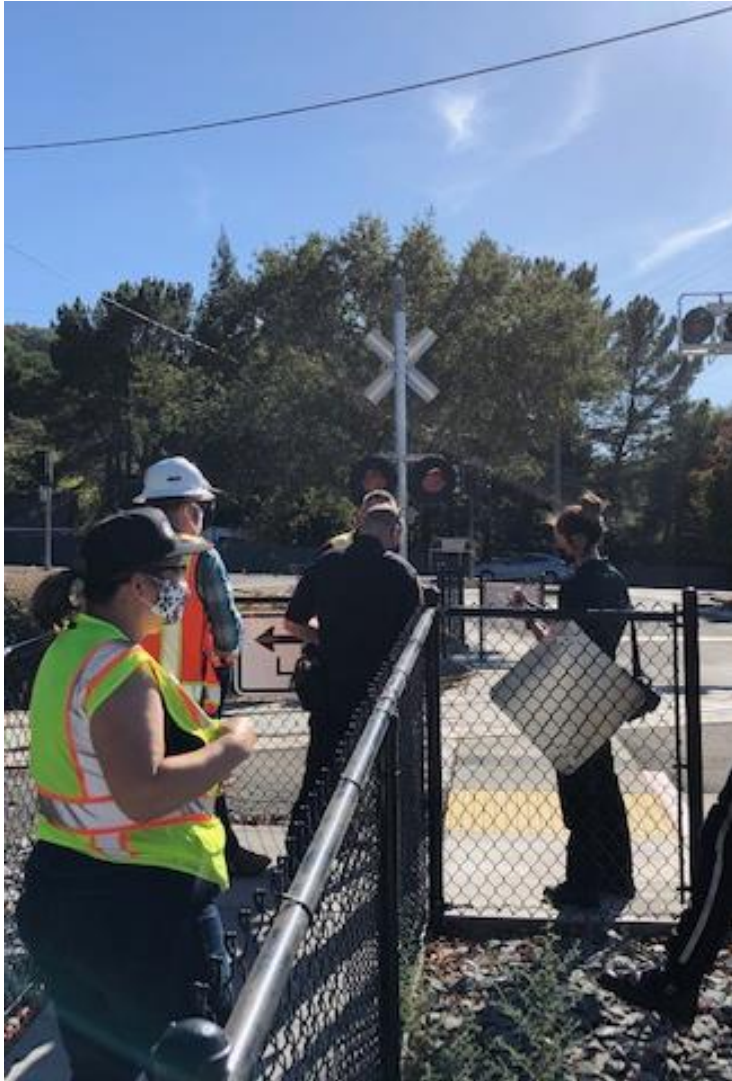


# Department of Public Safety

- Chief of Police
- 3 full time Code Compliance Officers
- Role of Public Safety at SMART
  - Federal Coordination
    - Federal Bureau of Investigations (FBI)
    - Department of Homeland Security (DHS)
    - Transportation Security Administration (TSA)
  - State Interactions
    - Northern California Regional Intelligence Center
  - Local Coordination
    - 22 Marin law enforcement, Coroner, fire and Emergency Medical Agencies
    - 25 Sonoma law enforcement, Coroner, fire and Emergency Medical Agencies



# Incident Response



- Respond to incidents ranging from trespassers to train strikes
- After each incident, the General Manager sends out a task force led by Chief of Police
- Review of incident, outside stakeholders, report back to General Manager with observations and follow up

# 2020 Accomplishments from Public Safety



- Filled 2 vacant Code Compliance positions
- Code Compliance Officers responded to 966 calls for service
  - Calls can be on-viewed, report from train, report from outside agency to our dispatch
- 816 transient/homeless calls
- 34 fare evader calls
- 94 graffiti calls
- 22 misc

# 2020 Challenges



- Maintain safe interactions with transient populations during COVID times
- 3 strikes at N. San Pedro Road in San Rafael
  - Conducted 3 separate field investigations in partnership with San Rafael Police, San Rafael Fire, San Rafael Public Works, Coroners Office, FRA, CPUC and SMART engineering and operations and analyzed the causes, lessons learned and identified next steps.
  - Reported findings to the Board and General Manager

# 2021 Opportunities

- FRA grant opportunity for safety outreach on the horizon
- Training with several police and fire departments in planning stages
- Continued coordination with local, state and federal agencies
- Seek grant opportunities to partner with other law enforcement agencies for enforcement, equipment and outreach materials



# 2021 Challenges

- Continue safe interactions with transients during COVID times
- Continue to work effectively with outside law enforcement agencies for assistance when necessary
- Incorporate required training exercises in a safe manner as we did pre- pandemic for opening of Larkspur



# Public Safety – Growth Post Pandemic

- The Code Compliance team is fully staffed at 3 FTE. If allowed to expand, a team of 5 FTE would allow for expanded coverage of the right of way, more time riding the trains and conduct parking enforcement
- SMART is a 24/7/365 operation, we have trespassers, cars on the tracks, incidents that happen any time of day
- With a territory so large, in 3 counties, its like spanning the distance from Petaluma to Sacramento
- In addition to track coverage, Code Compliance is also responsible for facility safety

# AB 2034 – Human Trafficking Training

- By Jan 2021, all employees be trained on human trafficking;
  - How to recognize
  - How to report
- SMART held its first training in 2018 by the Marin County Human Trafficking Coalition
- Since then, the entire staff has been trained and will be going forward with new hires



# Recent Training



- Napa Fire and Cal Fire training at Brazos Bridge
  - Training on emergency response
  - Bridge Operations- rendering safe in emergency
  - Repelling and rescue



# Safety is Everyone's Responsibility



- We will continue in 2021 to plan trainings for our staff and outside agencies to have the safest response possible to issues
- We will continue to work with our federal, state and local law enforcement partners to ensure our practices are an example for others to follow

# Connect with us:

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