



# WI-TRONIX STRATEGY

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# Agenda

- Who we are
- Locomotive IoT platform
- Customer use cases
- OmniTRAX use cases
- Q&A



# Inspired by technology, motivated by safety

At Wi-Tronix, it's simple. We strive to integrate technology to enable businesses to improve the operational efficiency, safety, service reliability, and sustainability of the world's transportation systems.



**Founded in  
2004**

Led by founders  
130+ employees

Based in suburban Chicago



**14,000+ rail  
vehicles**

Platform agnostic  
monitoring & analytics  
Integrating data on  
diverse fleets & data  
sources



**60+ customers  
4,000+ users**

4,000+ users across  
freight, passenger, and  
light rail markets in the  
US, Canada, Mexico, and  
Australia



**Siemens  
investment**

2017 investment capital  
for growth and  
international outreach



**Innovators at  
our core**

Leadership team with 100+  
years of rail industry  
expertise

# Violet IoT Platform: The all-in-one solution

*Consolidate the functions of multiple devices into a single, sustainable, continuously-evolving IoT platform*

## What is Violet?

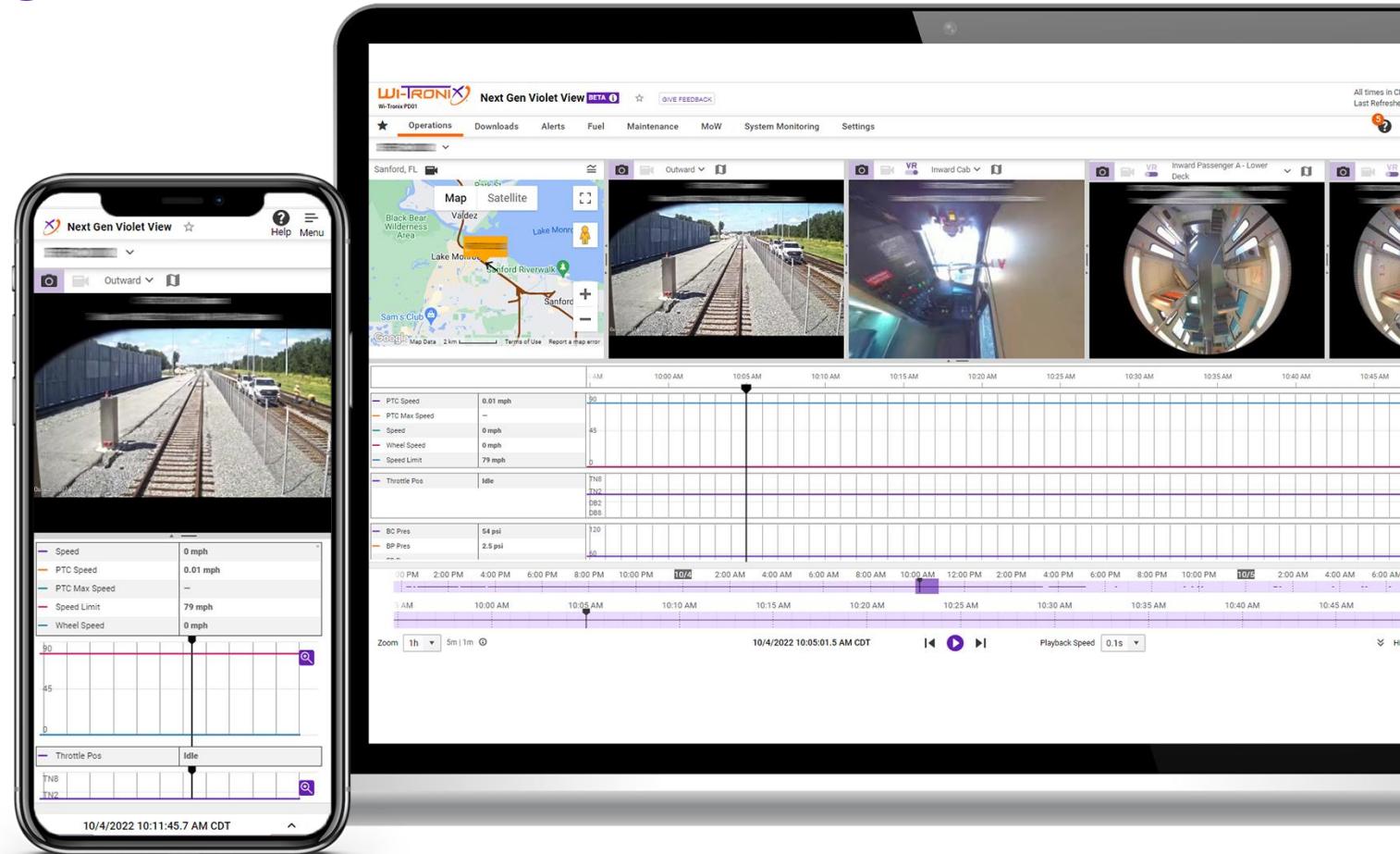
- Locomotive Data Acquisition Recording System (LDARS)
- Event Recorder (ER)
- Digital Video Recorder (DVR)
- Crash Hardened Memory Module (CHMM)
- Remote Monitoring Device
- Ability to run third-party applications on Violet (Works With Wi-Tronix)

Paired with the Wi-Tronix cloud-based portal, customers notice an improvement in safety, efficiency, and reliability of overall railroad operations



# At Wi-Tronix, SaaS is the future of rail innovation

- Our Violet View platform is a cloud-based remote monitoring service that displays rail vehicle imagery, signals, and data in a time-synchronized view
  - View any time, anywhere, from any device
- Cloud-based technology allows us to adapt to change for our customers and remain agile
  - 5 major releases each year
  - Over-the-air software updates every 2 weeks



# Wi-Tronix: A SOC 2 Type II compliant solution



SOC (System Organization Control) is an internationally recognized standard that, when met, allows customers to be assured that their sensitive data is safe, secure, and protected

**Security:** Protects against unauthorized access, disclosure and damage

**Availability:** Assures information and systems are operationally accessible

**Processing Integrity:** System processing is complete, valid, accurate, timely, and authorized

**Confidentiality:** Information designated as confidential is protected

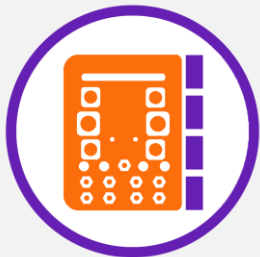
**Privacy:** Personal information is collected, used, retained, disclosed, and disposed of to meet the privacy objectives

# Wi-Tronix product areas



## Operations/Safety

- Crew Monitoring, Scoring & Reporting
- Train Tracking & On Time Performance
- Real-Time and Historical Dashboards
- Customer Service for railroad end customers



## Risk Management / Claims

- Event Recorder: Third party & Wi-Tronix
- DVR: Third party & Wi-Tronix
- PTC Integration
- LIG



## Violet View

- Online Incident Investigation via Violet View
- Violet Live and Live Signals



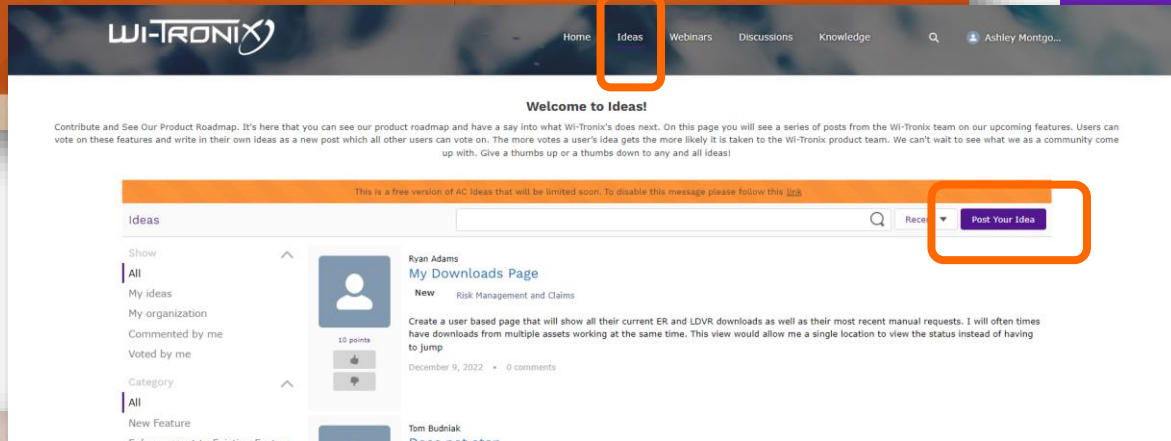
## Energy Management

- Fuel Inventory/Vendor Management
- Train Planning
- Smart Fueling
- Fuel Burn



## Maintenance, Maintenance of Way

- Fleet Management Assist
- Install & Commissioning Support
- Real-Time, Remote Troubleshooting
- Shop Tools
- Track & Signal Maintenance
- PTC critical asset monitoring



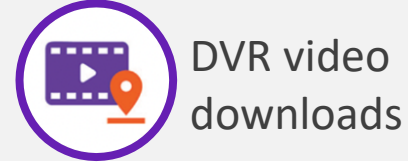
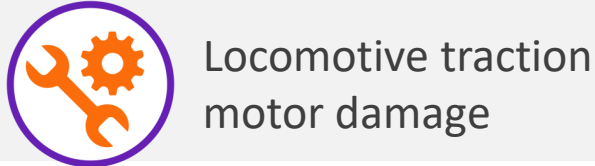
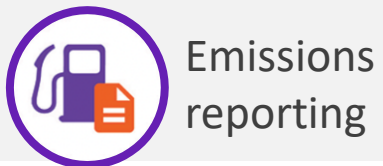
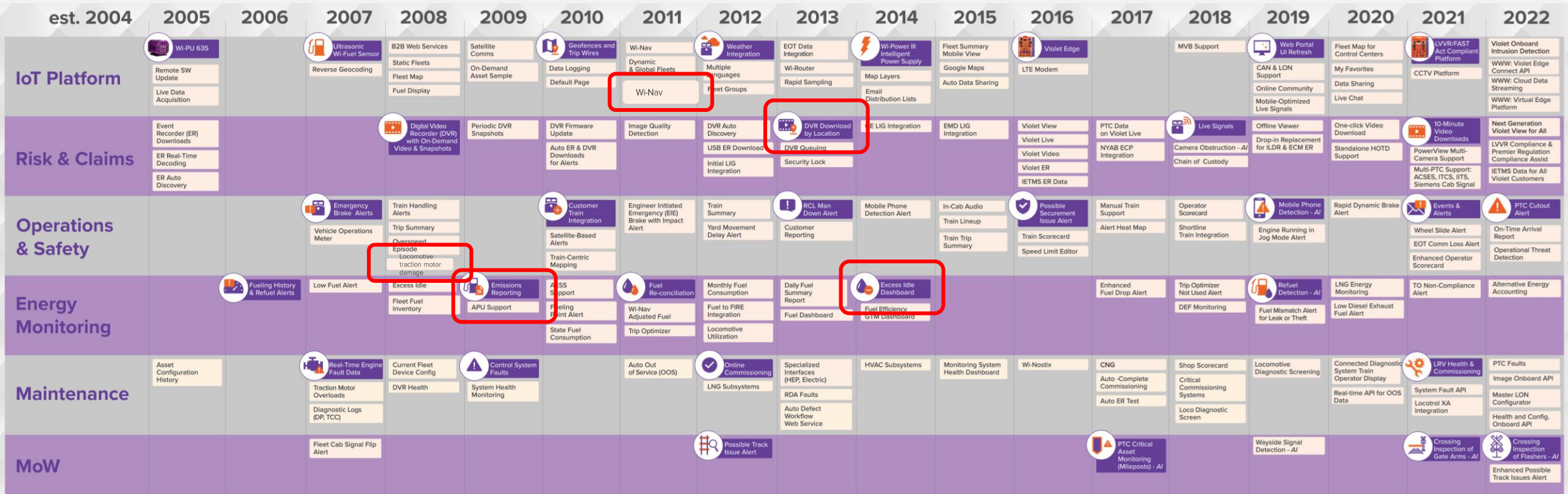
# How we innovate & create products

- Wi-Tronix uses an agile product strategy to focus on our customer's needs through 10-week program increment (PI) planning sessions
- We listen to customers and gather feedback through:
  - Tradeshow discussions and speaking engagements
  - Wi-Tronix bi-annual User Conference event for our customers
  - 'Community,' our interactive customer portal where ideas can be shared about future products and releases



# Customer use cases

# Driving over 18 years of rail industry innovation



# Fuel strategies unlock new possibilities



## Fuel Accounting

### Vendor Reconciliation

Fuel ticket to locomotive delivery

### Daily Locomotive Utilization Report

Daily, monthly, quarterly reports for assigned fleet



## Train Planning

### Live Fuel Inventory

Verify onboard fuel level

### Locomotive Fuel Burn Profile vs Performance

Identify poor performance locomotive fuel consumption



## Locomotive Fuel Inventory

### Low Fuel

Reduce preventable service interruption and excessive damage to locomotive

### Fuel Drop

Awareness and risk migration



## Train/Locomotive Fuel Burn

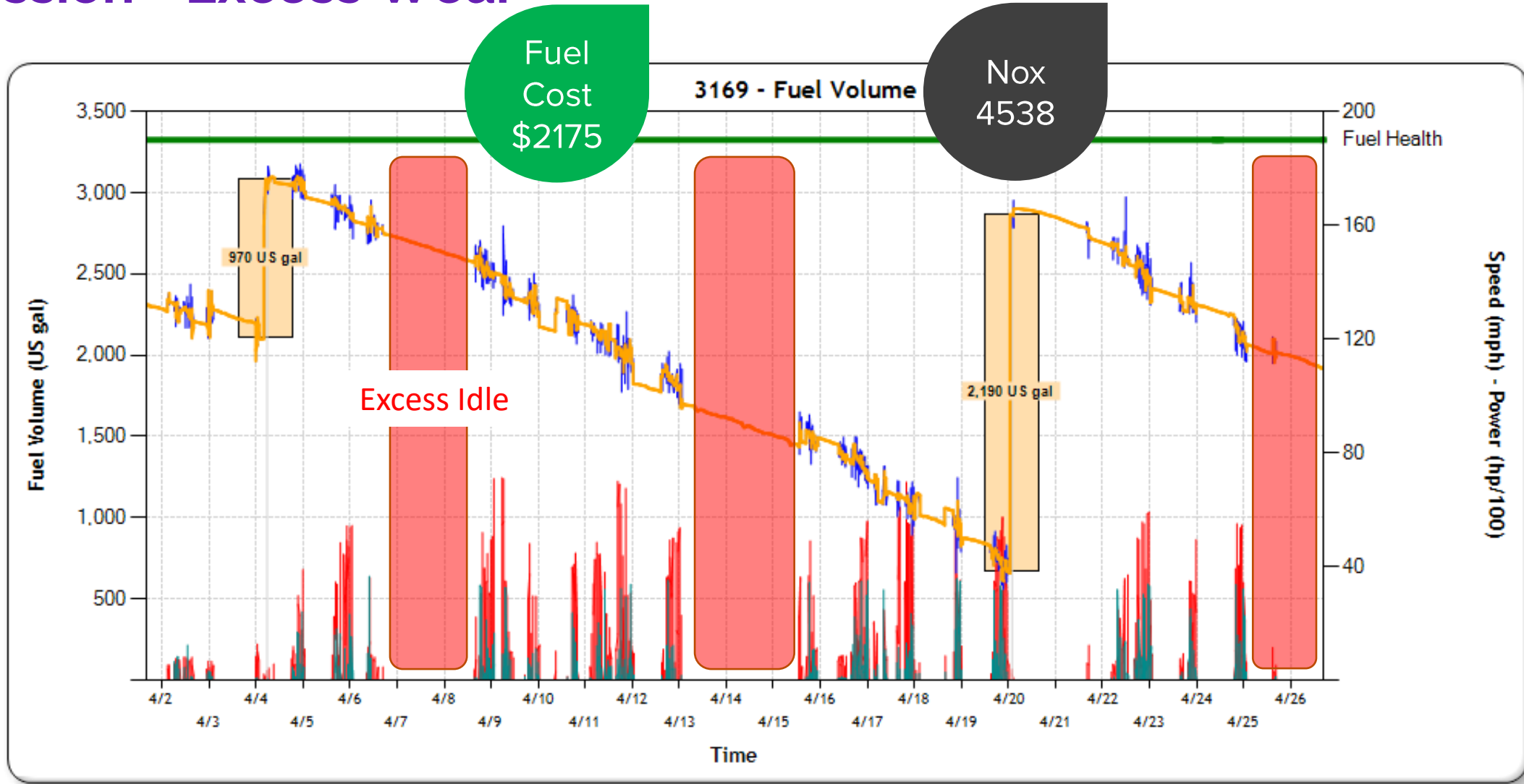
### Excess Idle

Reduce unnecessary idle to control costs and reduce emission (ESG)

### AESS State

Monitor system health to ensure equipment availability

# Controllable Costs = Excess Fuel = Excess Emission = Excess Wear

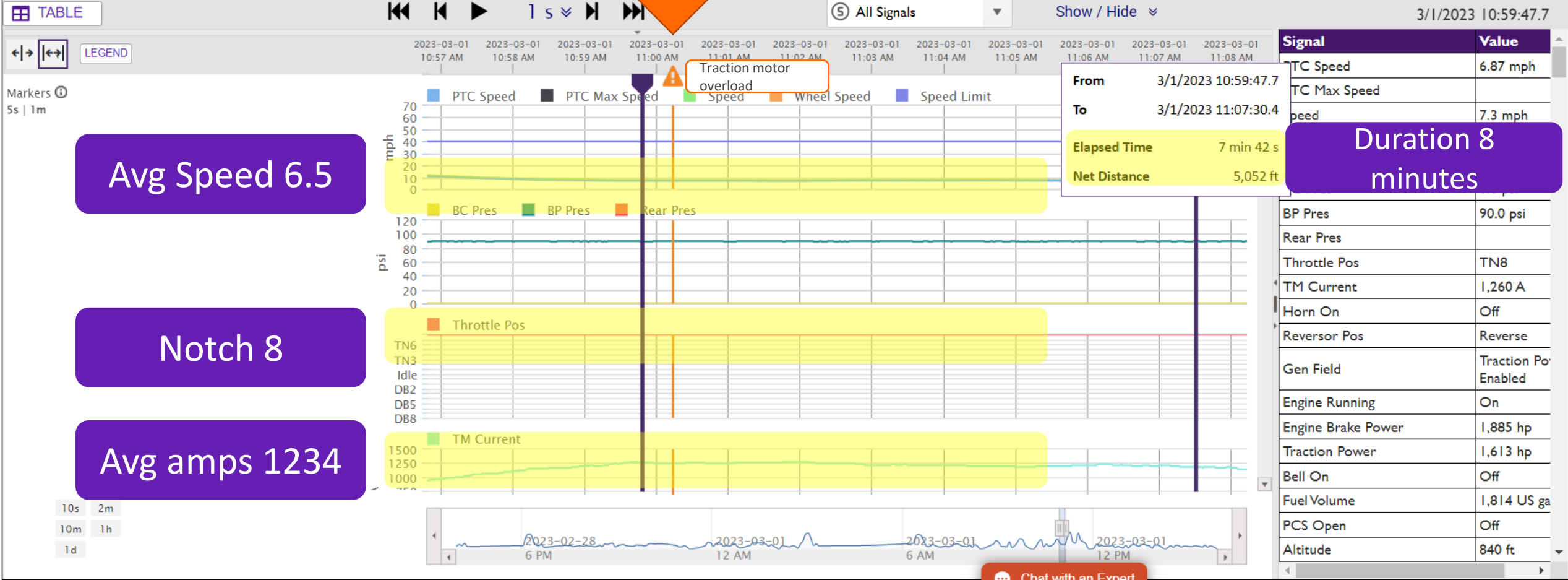


# Unnecessary locomotive traction motor damage



Change Scan Data Share Direct Link

2/28/2023 15:56:13 - 3/1/2023 15:56:13



Avg Speed 6.5

Notch 8

Avg amps 1234

Duration 8 minutes

# Real-time locomotive data



Wi-Tronix technology enables customers with real-time visibility to time-synchronized locomotive data, images, and video

Access data not only for historical purposes, but in real-time during an incident or accident via the Wi-Tronix customer portal

- Save time by sidestepping physical downloads
- Begin accident/incident investigation immediately
- Securely share data with local law enforcement



# Wi-Nav: Locomotive rollover detection

On November 18<sup>th</sup>, a Grenada Railroad freight train derailed after a bridge collapsed, causing one locomotive and two cars to derail. Luckily, no one was injured.

The Wi-Tronix technical support team received an email alert of a rollover of an asset from Grenada Railroad, a short line railroad in Mississippi.

The General Manager contacted the Wi-Tronix team to be a second pair of eyes to identify exactly what happened. The GM knew an event had occurred and trusted Wi-Tronix to help them figure out what happened and respond to the event as quickly as possible.



One locomotive and multiple cars derailed when a Grenada Railroad bridge collapsed on Wednesday. Photo by Debbie Fly Hayward via Facebook.



# Connectivity is key to keeping your railway informed and staff safe

The Wi-Tronix team worked over the phone to download video footage from the locomotive cameras and present the appropriate information about the bridge collapse and subsequent derailment

The locomotive rollover alert can be used as a proactive tool to quickly and effectively triage critical derailments

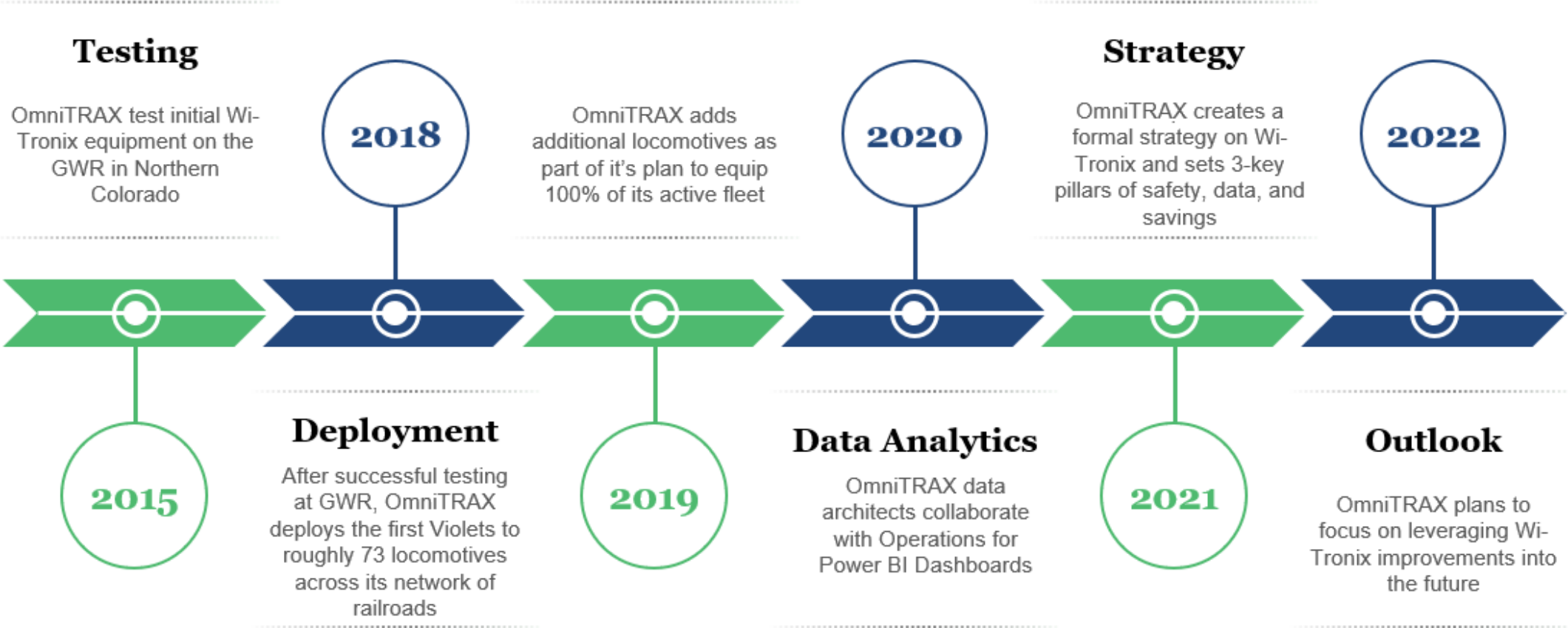
Being notified immediately and having quick access to these serious derailments can help dispatch the needed crew to take appropriate action to remedy any infrastructure blockages.



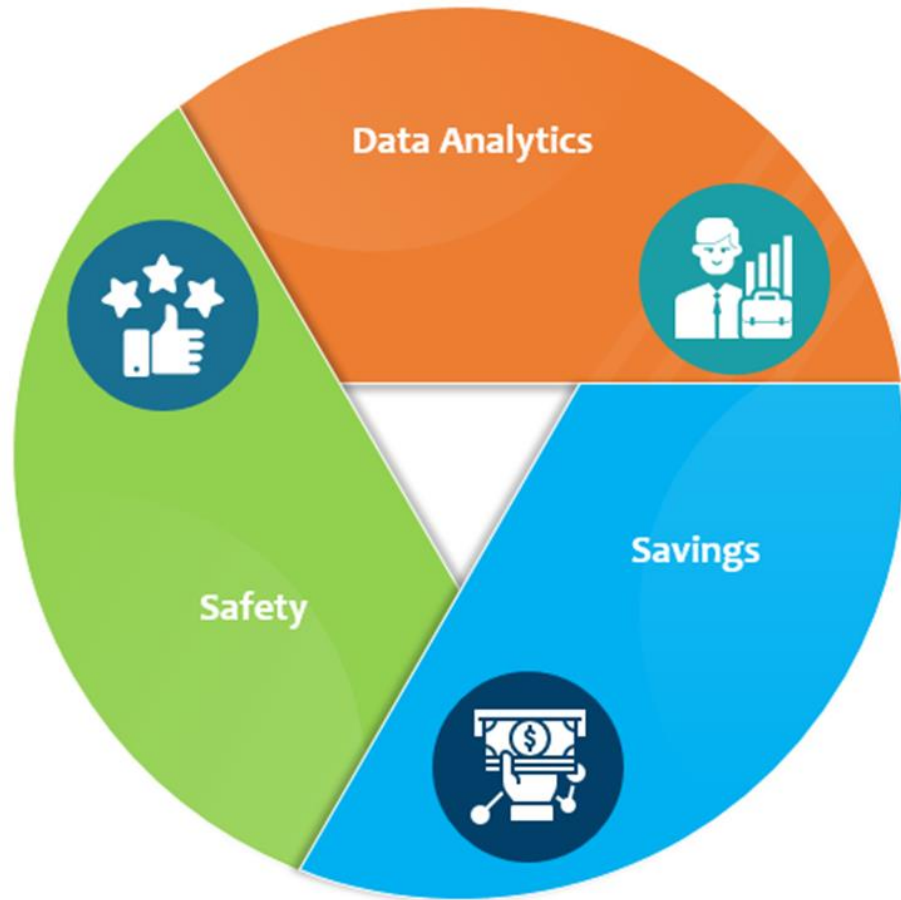
# OmniTRAX use cases

Scott Remington

# Evolution of Wi-Tronix



# Deploying A Strategy



## Safety:

- Incident Investigation & Train Handling
- Derailments & Crossing Incidents
- Locomotive Engineer Operating Behavior Alerts

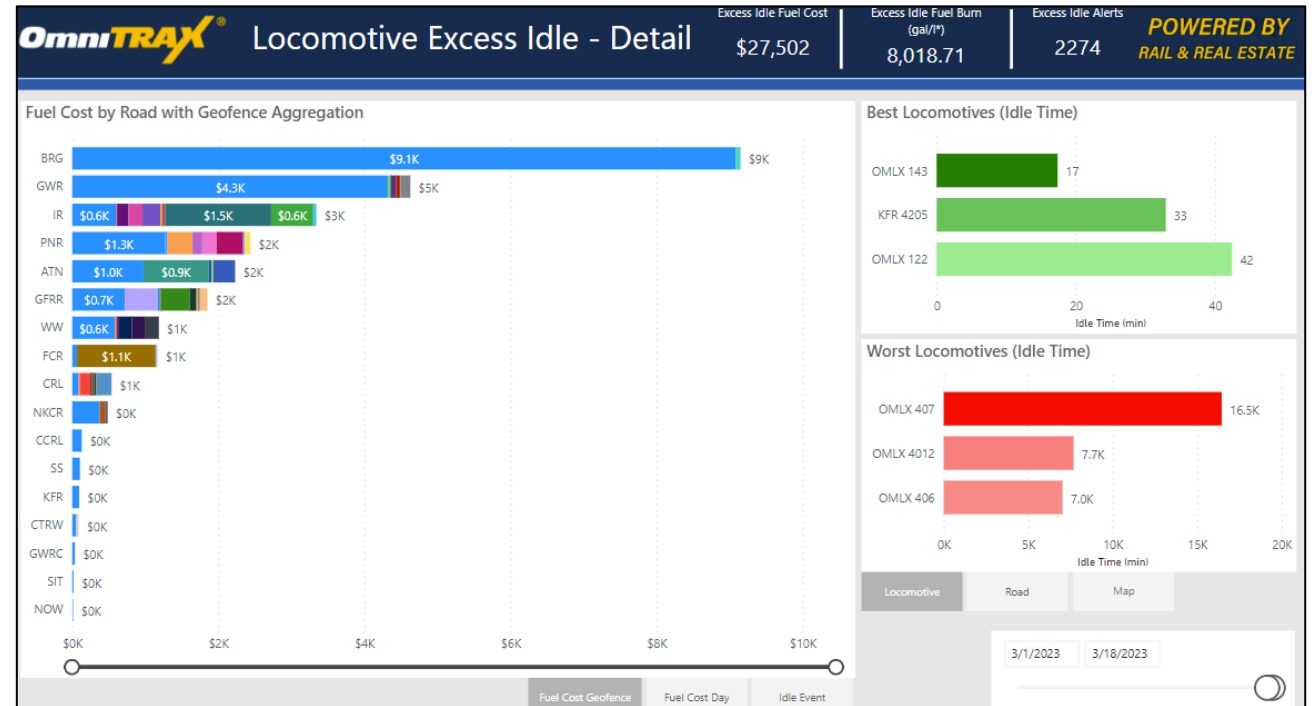
## Data Analytics:

- Gamification
- Operator Scorecards
- Power Bi- Reporting
- Pro-Active Educational Opportunities

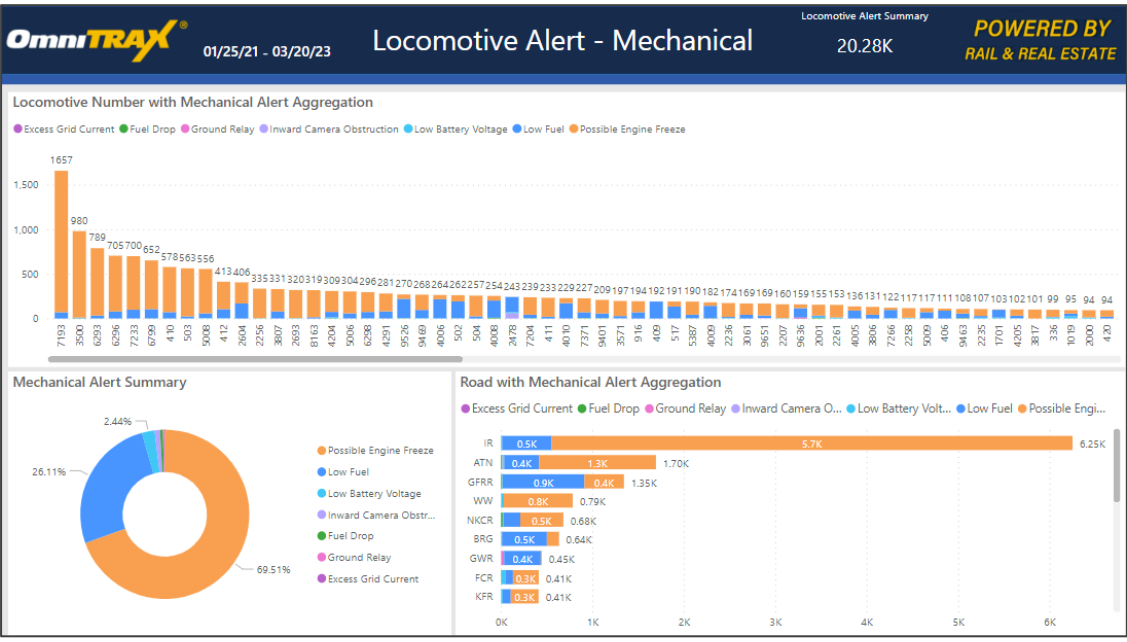
## Savings:

- Enhanced Investigative Tools to Mitigate Liabilities
- Manage Fuel Conservation
- Fuel Management and Idle Alert System
- Traction Motor Alerts

# Train Handling and Idle Reports



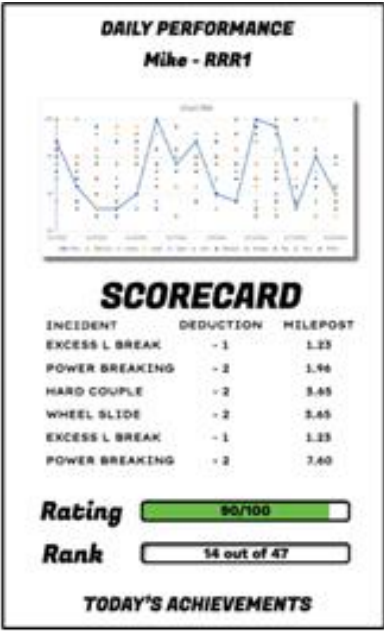
# Mechanical & Gamification



In Development

## Daily Leader Board

Rank	Road	Name	Points
1		Kris	99
2		BeJay	98
3		Randy	98
4		Barry	97
5		Arlin	96



- ### Achievements
- Jesus @ BRG  
Earned "RailBlazer" Badge  
October 31, 2021
  - John @ NSR  
Earned "RailBlazer" Badge  
October 31, 2021
  - Stefan @ MJ  
Earned "Zero Waste" Achievement  
October 31, 2021
  - Corky @ GFRR  
Earned "On Time" Achievement  
October 30, 2021
  - Austin @ GWR  
Earned "Safety First" Achievement  
October 30, 2021
  - Eric @ IR  
Earned "White Glove" Achievement  
October 30, 2021
  - Jacob @ SIT  
Earned "Slow and Low" Achievement  
October 30, 2021



# Q&A Session

**THANK YOU!**

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**RAILROAD DAY**  
**ON CAPITOL HILL**  
**MAY 17**

**REGISTER NOW**

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