

Keeping our workforce safe on the track



Federal Transit
Administration

marta ®

BOMBARDIER

the evolution of mobility

Abhay “A.J.” Joshi, Project Manager, MARTA

Mark Willer, Product Manager, Bombardier



Key Topics

- The Problem
- NTSB/FTA recommendations
- Collaboration with public and private organizations to provide a solution
- The TrackSafe Solution
- How the problem is solved
- Enhancing SMS with TrackSafe

The Problem

How do we reduce the hazards of inspecting and maintaining rail infrastructure in the right-of-way or wayside?



“The first rule of being on the railroad:
Expect a train ANY time, ANY direction.”

Recommendations Safety Advisory

- NTSB investigates incidents, close calls and fatalities and issues urgent safety recommendations R-13-039 and R-13-040

“Issue a directive to all rail transit properties requiring redundant protection for roadway workers, such as positive train control, secondary warning devices, or shunting.” (NTSB R-13-039)

- FTA safety advisory SA 14-1 is issued in December 2013

FTA Call to Action

- Public and Private Organizations partner to benefit from each others unique expertise to develop a safety solution.
- Collaboration between 3 parties:
 - FTA** – Serve as the Project Sponsor
 - MARTA** – Grantee that will provide a Test Environment and operational expertise
 - Bombardier** – Provide engineering, fabrication and development of a solution

TrackSafe Solution

An innovative safety system that enables railway staff to be aware of oncoming trains and equipment.



Train Operators

want visibility of workers and to provide real time awareness as their train approaches personnel



Track Workers

want highly relevant audible, visual and tactile alerts when trains or equipment are approaching

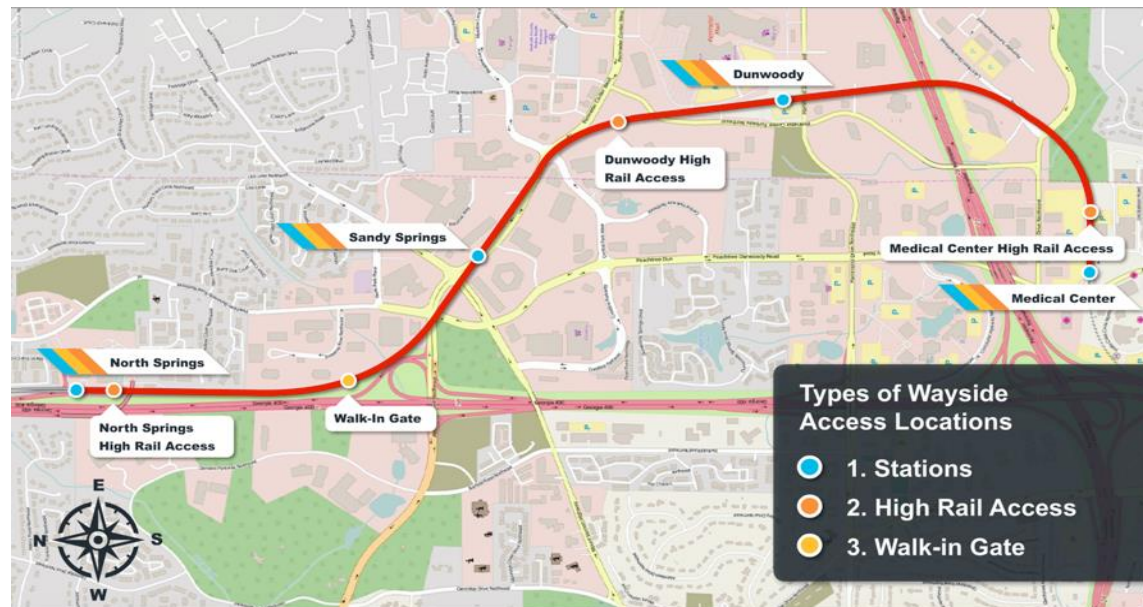


Rail Control

wants visibility of worker locations and activities to be able to better respond to emergency situations

TrackSafe at MARTA

- FTA Office of Research, Innovation and Demonstration award MARTA a competitive grant under the “Innovative Safety, Resiliency and All-Hazard Emergency Response” (SRER) program to develop innovative wayside safety technology
- MARTA selects Red Line to test high hazard conditions such as:
 - Aerial Track Sections
 - Tunnel Sections
 - Curved Sections
 - Parallel to highway



Wayside Access Unit (WAU)

WAUs can be installed at Stations, High Rail Access Points, or walk-in gates. WAUs provide authorized access to the wayside by verifying worker identification and qualifications, establishing communications with Rail Control.

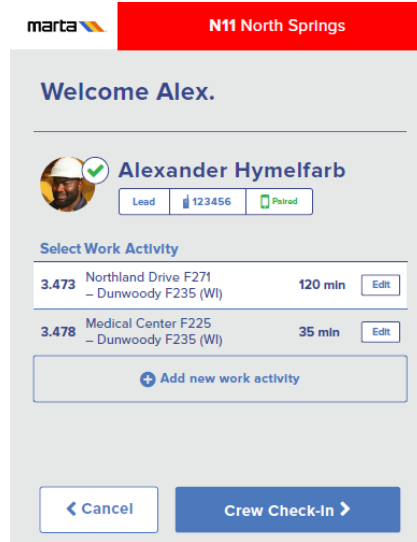
- 12" High Resolution Color Touch Screen
- Integrated RFID Reader
- NEMA 4x rated, security enhanced, vandal resistant enclosure



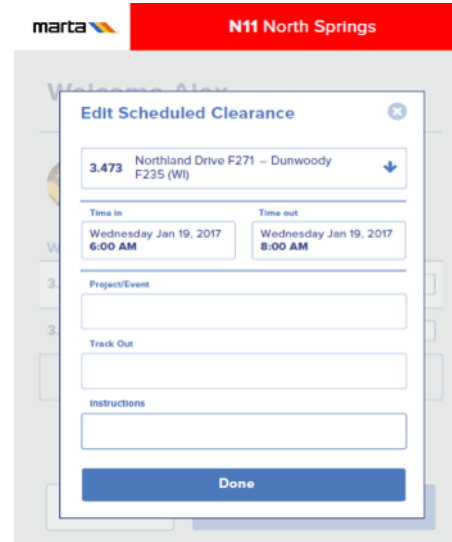
WAYSIDE ACCESS UNIT (WAU) CHECK IN PROCESS



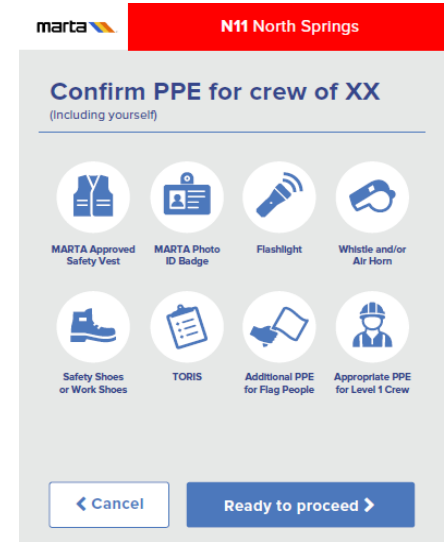
TAG



CREW



RESTRICTIONS



PPE

Converting wayside access requests from paper to electronic

Tag In Unit



Provides Safety and Audible Alerts for Track Workers

- Single cable install quick connect POE
- Integrated radar
- Long range RFID reader
- Color touch screen
- Wireless 80211G capability
- NEMA 4x compliance

Operator Warning Light



Visually warn Rail and Equipment operators about workers on track

- Configurable LED lights
- Self-Health Monitoring
- Radars detect speed and direction
- Adjustable audible alerts

VITAL Device



Wayside wearable device provides alert when equipment is approaching

- Rechargeable units with long battery
- Integrated TrackSafe RFID
- Vibration, audible and visual warnings

Enhancing SMS Procedures with TrackSafe

Compliance to existing wayside access procedures

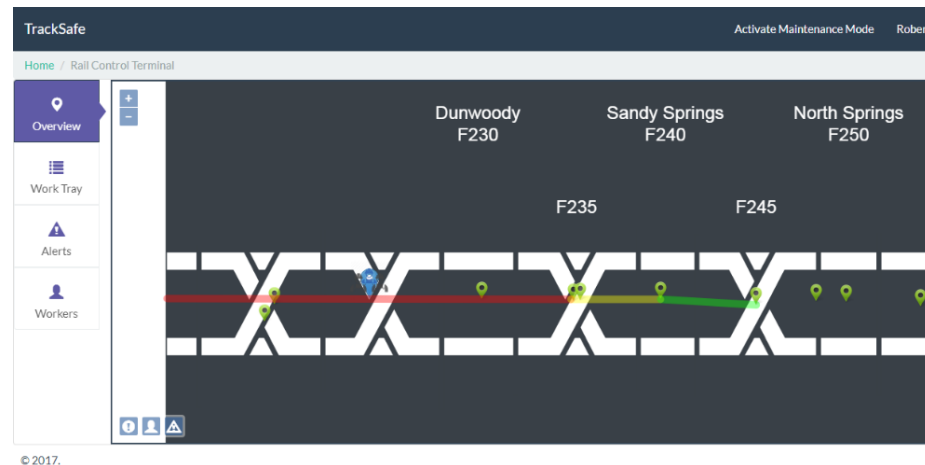
- Verify wayside certification level
- Verify work restriction

Converting from paper to e-filing process

- Results in quicker to access to wayside
- Accessible auditable data

Enhance wayside access procedure by providing accurate and visible information to Rail Service Control Center (RSCC)

- Improves communication with field personnel
- Emergency response



TrackSafe Rail Control Center

APTA TECHNICAL TOUR

Meet at 1pm at
GWCC Building “A” Main Entrance
Wednesday, October 11th

CONTACT:

ajoshi@itsmarta.com

mark.willer@rail.bombardier.com