AASHTO CORT 2019
New Technologies in Freight and Passenger Rail

September 17, 2019
Technology: 4-P Components

- Problem
- Process
- Product
- People

RESOLUTION
Strategies for Reducing Railroad Trespassing (SRRT) Pilot Program
The Department has a long-standing mission to provide a safe transportation system

- The Statewide Highway-Rail Grade Crossing Safety (HRGCS) Improvement Program is the statewide program for rail grade crossing hazard elimination
- A total of 587 improvements implemented over the past 10 years
- An average of 82.7% reduction in fatal incidents at the crossings evaluated which adds up to 32 lives saved over the past 10 years
Goal 1: Leverage drone technology, and GIS to develop effective countermeasures.

Goal 2: Develop intuitive project models/templates for local law enforcement.

Goal 3: Develop effective media and outreach strategies for local communities.
Task Overview

- **Data Mining**
  - Historical data of reported trespassing events

- **Interviews with Stakeholders**
  - Events not being reported
  - Origin and destination locations
  - Mitigation techniques

- **Drone Survey and Analysis**
  - Planning and design of solutions-focused initiatives

- **Design of the Pilot Area within the Central Florida Rail Corridor (CFRC)**
Task Overview (continued)

- **Trespass Prevention Task Force**
  - Developing a model for building effective problem-solving partnerships with law enforcement
  - Law Enforcement Trespass Alert and Response Procedures

- **Public Awareness, Outreach and Countermeasures**
  - Based on root causes
Data Mining

- Review and analyze existing trespassing data and documentation
  - Using existing trespassing incident reports from CFRC/SunRail.
  - Meeting and interviewing stakeholders to identify “hot spots”.
Interviews

- Law enforcement, tenant railroads and governments in the Pilot Area to validate:
  - Trespasser locations
  - Contributing factors
  - Root causes
  - Current mitigation strategies

- Nationwide commuter agencies to:
  - Identify best practices
  - Lessons learned
  - Innovative approaches

Strategies for Reducing Railway Trespassing (SRRT) – Pilot Program
Drone Survey & Analysis

- Drone survey will be used to obtain aerial topographical information at known locations of interest where there are instances of trespassing events.

- Survey and 4K video data from the drone fly over will be used to create the design plans.
Design of the Pilot Area

- Design applicable trespass mitigation measures in the pilot area such as:
  - Natural deterrents
  - Video monitoring

- The following criteria will be incorporated into the design of the electronic/video monitoring system:
  - Concealed, tamper and theft resistant.
  - Integration with existing stakeholder video monitoring systems
  - Instances of intrusion will be reported to the Control Centers
Confer with Law Enforcement on:

- Emerging areas of trespassing
- Root Causes
- Funding Sources
- Alert and Response Procedures
Trespass Prevention Task Force and Public Awareness

- Trespass Awareness, Outreach and Countermeasures Plan
  - Data driven
  - Based on root causes and Law Enforcement input
  - Based on Operation Lifesaver principles

- Informational Materials
  - Newsletter to the Public
  - Presentation
Deliverables

- **Product**
  - GIS map identifying the greatest concentration
  - Drone video
  - 100% design plans
  - Civil landscape deterrents: defensive rocks and plants
  - Surveillance mentoring system connected to both railroad dispatch center and the Regional Transportation Management Centers (RTMC)

- **Process**
  - Contributing factors identified through interviews
  - Law Enforcement procedure for alerts and response

- **People**
  - Awareness, Outreach and Countermeasures Program