

Trespass Detection and Warning Research Brunswick, ME

August 4, 2015



»» AUG 04 - 06
CHARLOTTE, NC

Trespass Detection and Warning Research Brunswick, ME

Goal

- ❑ Partner with Brunswick Police Department to develop, install, and evaluate a trespass detection and warning system for rail right-of-way applications.

Research Method

- ❑ Engage Stakeholders
- ❑ Identify trespass locations
- ❑ Deploy and evaluate technology



*Sponsored by the FRA Office of Research & Development
Train Control & Communications Division (RPD-33)*

Current Project Partners



U.S. Department
of Transportation

**Federal Railroad
Administration**

Volpe

The National Transportation Systems Center

TOWN OF
Brunswick
MAINE



**Pan Am
Railways**



MaineDOT



**NORTHERN NEW ENGLAND
PASSENGER RAIL AUTHORITY**

Brunswick Rail Trespasser Detection System

Expected Features

- Closed-Circuit Television surveillance (CCTV) and 24/7 automated video monitoring
- Sensors to detect trespassers
- Video transmission to central office (Brunswick PD)
- Pre and Post alarm digital recording
- Amplified speakerphone to warn trespassers
- Mounting height designed to eliminate vandalism
- Scalable

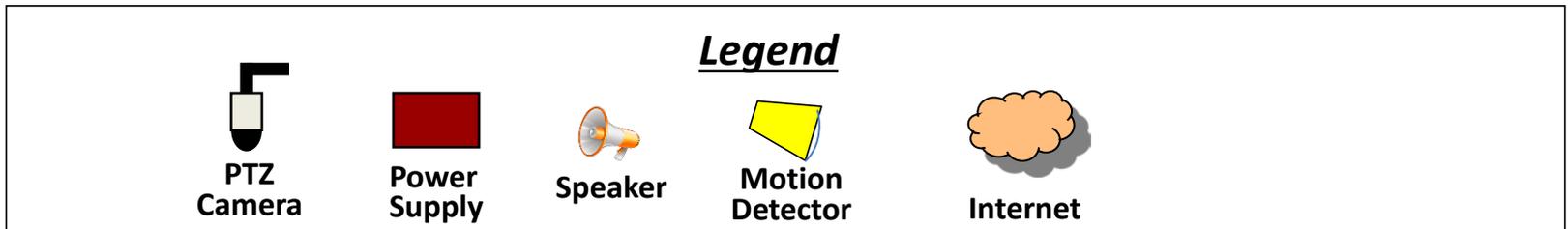
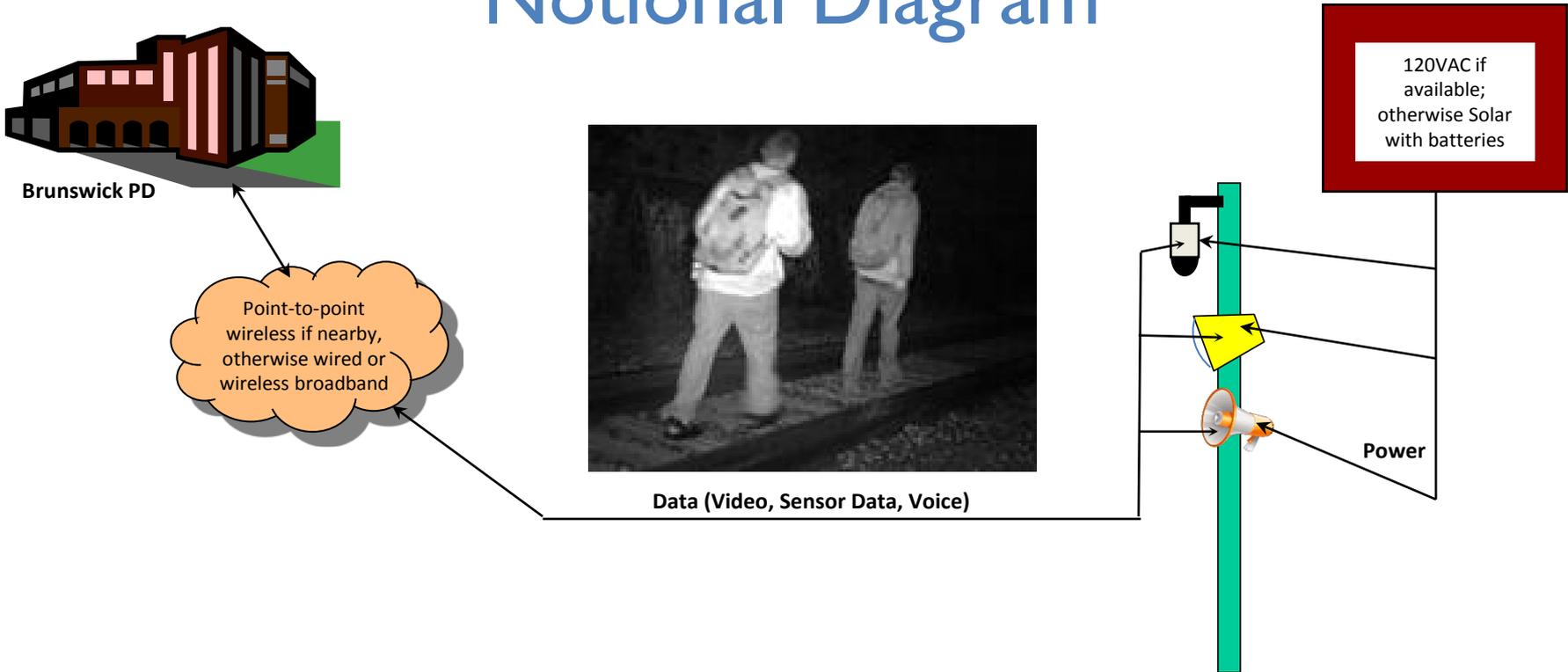


Expected Outcomes

- Detects trespass events within monitored area
- Technology system interacts with Brunswick PD dispatch center
- Dispatch determines the nature of a trespass alarm
- Dispatch provides audio warning and/or initiates police response
- Reduce trespass events through the use of a reliable monitoring system

Brunswick Rail Trespasser Detection System

Notional Diagram



Brunswick Rail Trespasser Detection System

Concept of Operations

1. Trespasser approaches monitored location, trips motion sensors
2. System displays alarm on wall mounted screen at PD dispatch center
3. Dispatch observes video screen and determines if a trespasser is present (pan-tilt-zoom camera may be available)
5. Dispatch uses loudspeaker and says (could also be a pre-recorded message),
“WARNING. YOU ARE TRESPASSING ON PRIVATE PROPERTY AND ARE IN DANGER OF BEING STRUCK BY A TRAIN. LEAVE THE AREA IMMEDIATELY.” (actual language to be determined)
And/or dispatches police vehicle to the scene
6. The incident and resolution is documented

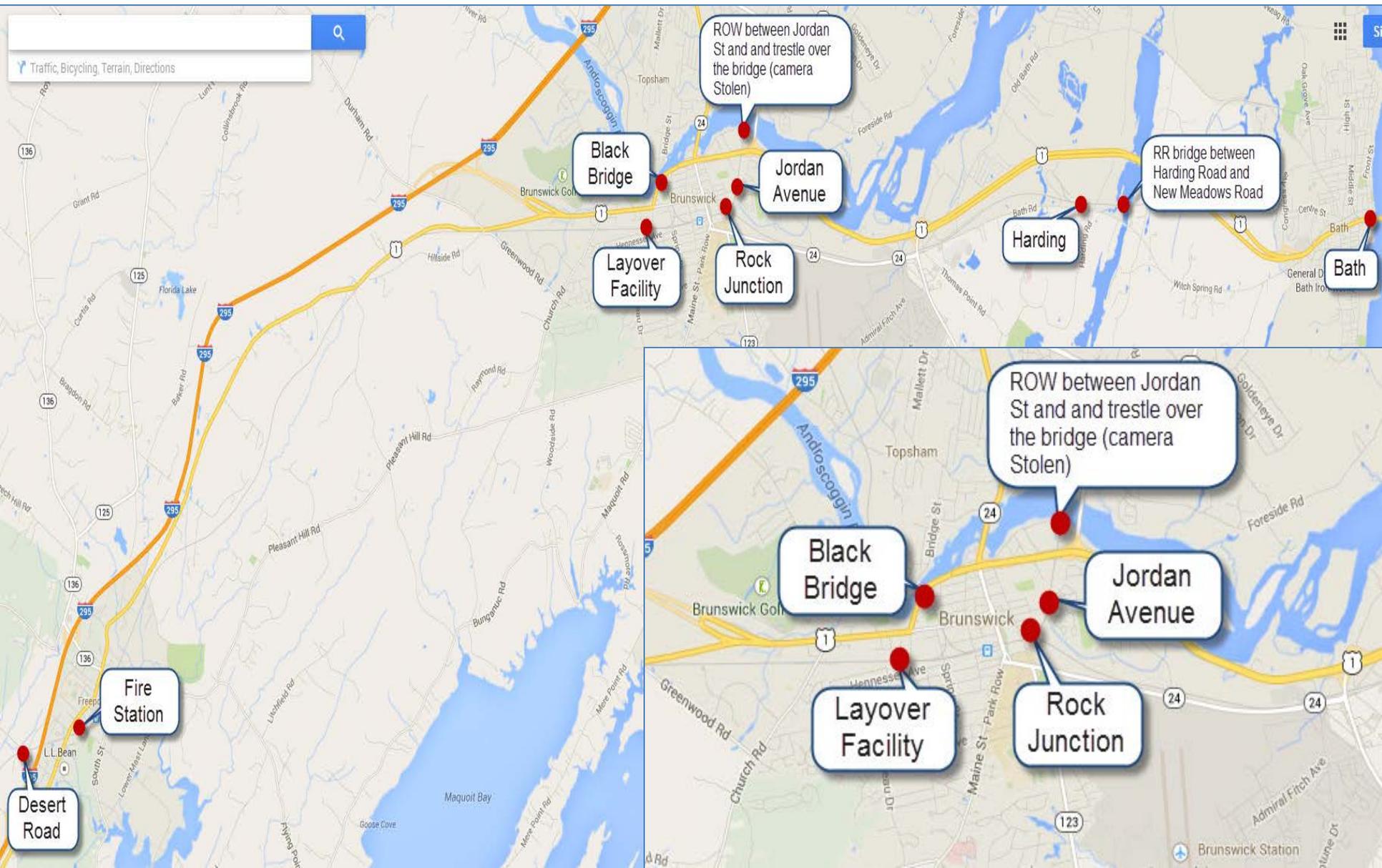


Trespass Location Identification

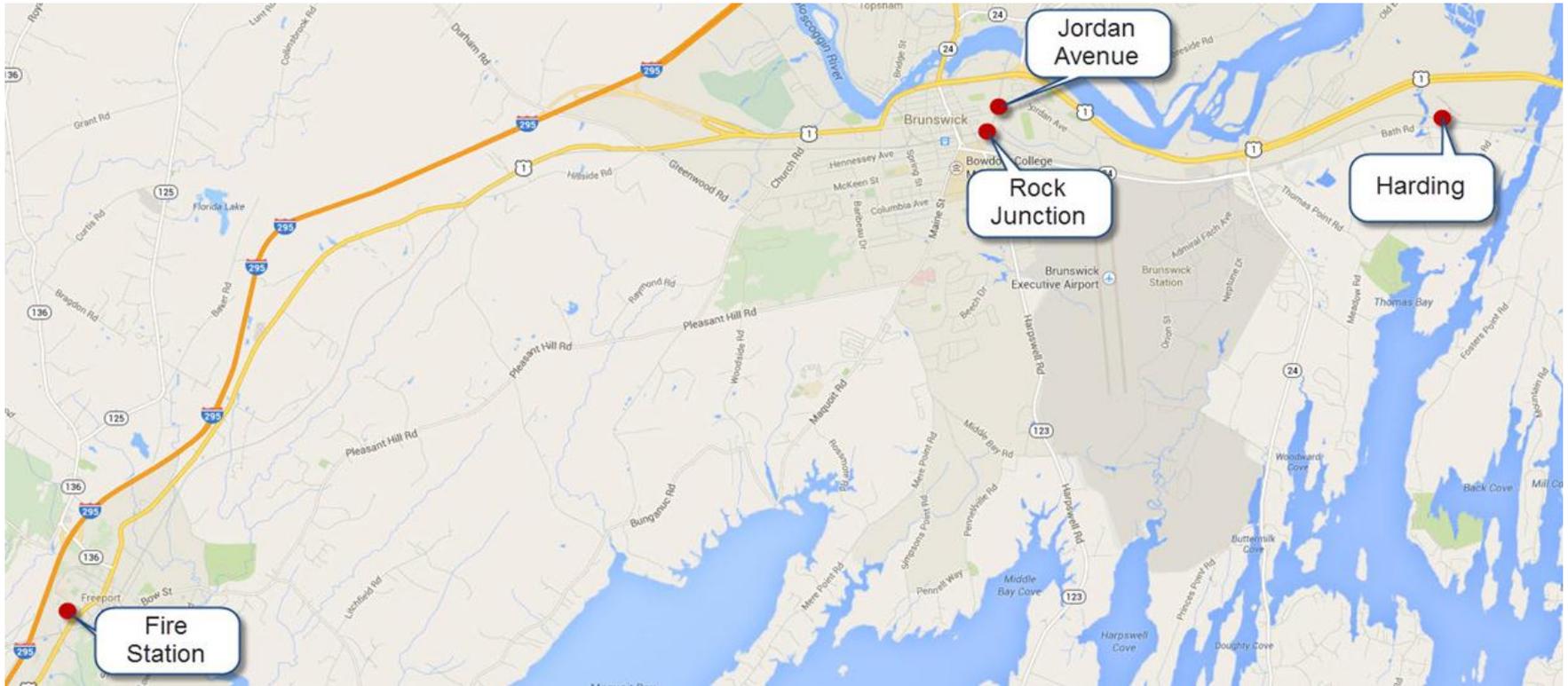
- ❑ Two data collection rounds
 - Sept-Oct 2013: Seven locations
 - May-June 2014: Three additional locations
- ❑ Locations from Freeport, ME to Bath, ME



Temporary Camera Locations



Proposed Sensor/Camera Locations



Examples of Trespass at Fire Station (Freeport)



Examples of Trespass at Rock Junction



Examples of Trespass at Jordan Avenue

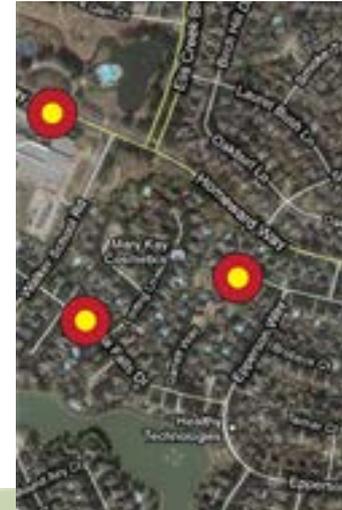


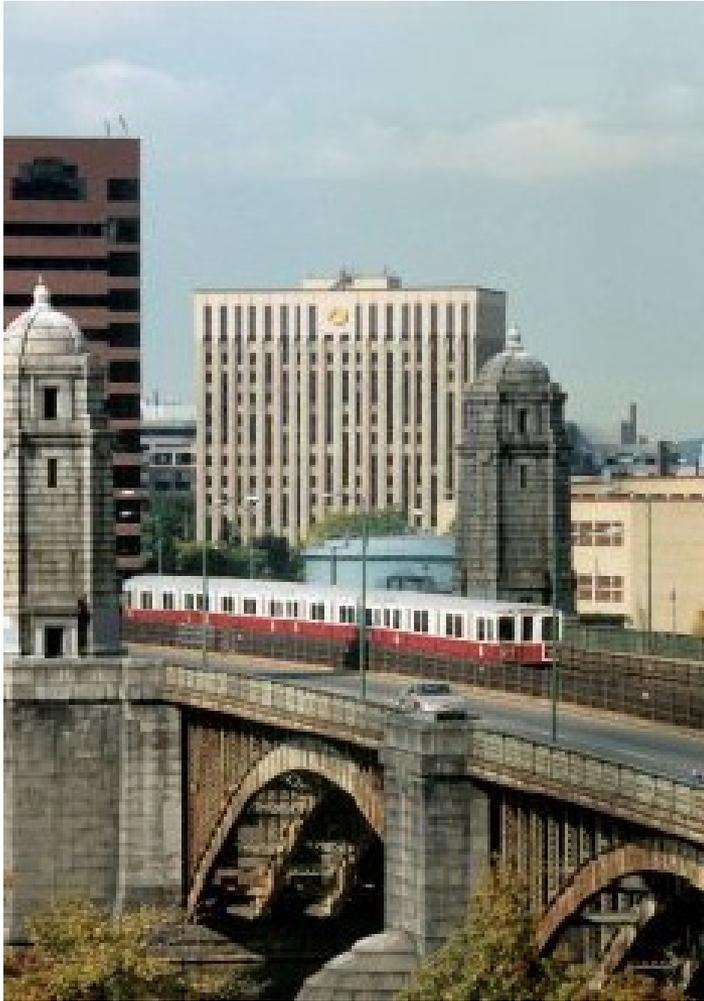
Examples of Trespass at Harding



Next Steps

- ❑ Procurement finalized; System installation to begin August 2015
- ❑ Upgrade Police Department Dispatch Software with Automated Vehicle Location (AVL)
- ❑ Research enhancements (wide area detection, trespass notification)
- ❑ Operate, Maintain, Evaluate system





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**2015
ROW FATALITY &
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