

# 2014 FRA Rail Program Delivery



## ***AMTRAK's Engineering Organization for Design and Construction***

Joseph D. Rago P.E., Deputy Chief Engineer for Capital Construction

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# 2014 FRA Rail Program Delivery



## Discussion:

### Amtrak Engineering

### Coordinating Your Projects with Amtrak

# Amtrak Engineering

## Amtrak Engineering – Bruce R. Pohlot, Chief Engineer

- Electric Traction
- Communication and Signals
- Structures
- Track
- Maintenance
- Section Improvements
- Capital Construction – Joseph Rago, PE

# Electric Traction

## Deputy Chief Engineer

- **Design**
  - Catenary and third rail systems
  - Frequency Conversion
  - Substations
  - SCADA
- **System Maintenance**
  - Lineman training
  - System Compliance
- **Standards and Guidelines**
  - Develops and maintains standards and guidelines consistent with Industry practice`

### NEC, Keystone Line System Overview

Miles of Transmission - 953

Miles Catenary - 1563

Traction Power Substations 74

Frequency Converters - 6

# Communication and Signals

## Deputy Chief Engineer

- **Design**
  - Communication Systems
  - Signal Systems
- **System Maintenance**
  - Infrastructure
- **Standards and Guidelines**
  - Develops and maintains standards and guidelines consistent with Industry practice

NEC + various Amtrak  
owned or controlled  
territories

System Overview:

- 195 Interlockings
- 2319 Switch machines

# Structures

## Deputy Chief Engineer

- **Design**
  - Bridges
  - Tunnels
  - Stations
  - Facilities
- **System Maintenance**
  - Infrastructure
- **Standards and Guidelines**
  - Develops and maintains standards and guidelines consistent with Industry practice

### NEC + various Amtrak owned or controlled territories System Overview:

- Undergrade Bridges - 1400
- Moveable Bridges - 14
- Culverts - 1157
- Stations – 382
- Tunnels – 18.5 miles
- Facilities – 6,530,000 Sq-Ft

# Track

## Deputy Chief Engineer

- **Design**
  - Track
  - Interlocking
  - Survey
- **System Maintenance**
  - Infrastructure
- **Standards and Guidelines**
  - Develops and maintains standards and guidelines consistent with Industry practice

**NEC + various Amtrak  
owned or controlled  
territories**  
**System Overview:**

Mainline Track Miles – 3012

Mainline turnouts – 1952

Total Route Miles - 952

# Maintenance

## on most Amtrak-owned properties

### Deputy Chief Engineer

- **System Maintenance**
  - Structures
  - Communication and Signals
  - Track
  - Electric Traction
- **Manpower and Resources**
  - Establish safety practices for Engineering
  - Leads training programs for roadway workers
  - Supports 3<sup>rd</sup> party construction



# Section Improvements

**Organization formed 2011 in response to FRA grants**

**Deputy Chief Engineer – Al Fazio P.E.**

- **Planning and Integration**
  - Program Management and Reporting
  - Track
  - Signal
  - Overhead catenary
  - Power distribution
  - Structures

**Overview:** (\$1.2 billion)

- Program Management of New Jersey HSR Improvement Program
- Harold Interlocking
- Gateway
- Moynihan

# Capital Construction

Deputy Chief Engineer- Joseph Rago, P.E.

- **Project Management of Amtrak's Capital Projects (internal)**

- Schedule Development
- Construction Cost Estimating
- Procurement
- Document Control
- Construction Management

**Overview:** (\$1.5 billion)

- Wilmington Station
- Fire and Life Safety Program NY Zone
- ADA program

- **Individuals and Corporations (I&C) (external)**

- Manage Access to Amtrak-owned or controlled property
- Coordinate with multiple Amtrak departments and business units on proposed projects

# 2014 FRA Rail Program Delivery



## Coordinating Your Projects with Amtrak

- Engineering Process
- Project Coordination – What needs to happen

# Engineering Process

- **Externally sponsored projects**  
on Amtrak-owned or controlled property are typically routed through Individuals & Corporations (I&C) – Amtrak review design, provide estimate, perform the work
- **Agreements prepared with supporting estimates**
- **Work performed by Operating Division**

# **Project Coordination – What needs to happen?**

- **Contact Amtrak as early as possible in the process**
- **Identify stakeholders and interested parties in addition to Amtrak (e.g. NJTransit, SEPTA, MARC)**
- **Assemble design professionals with transportation experience as well as familiarity with local codes to assist in the grant preparation**