

SEPTA's Optimizing Track Outage Planning on a Busy Multi-Modal System

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Key Presentation Take-Aways

- **Safety First, including Quick Reference Diagrams**
- **Planning & Communication is Essential for Success**
- **Balancing Customers vs. Track Time**
- **Handle Service Substitution Well**



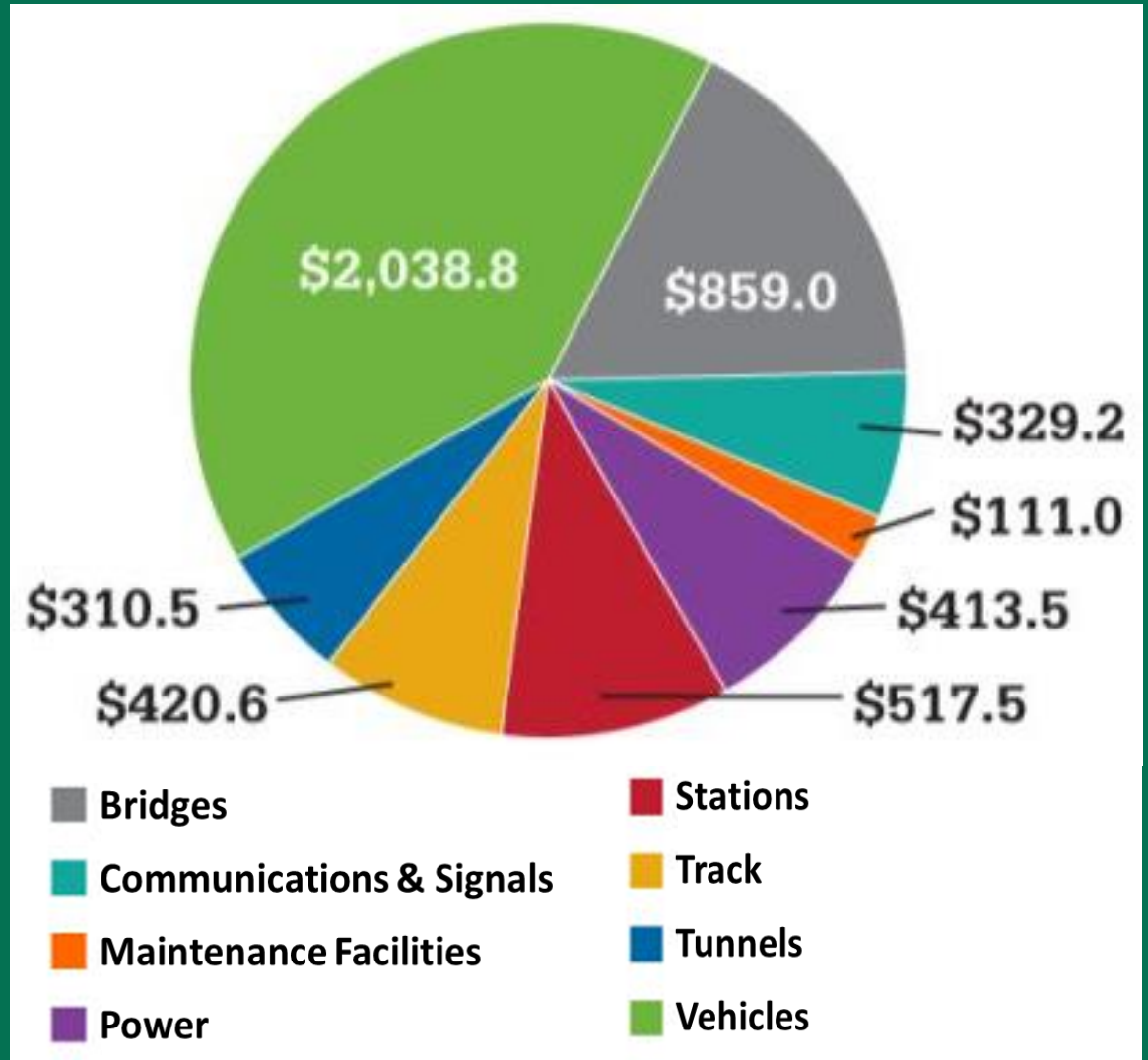
Southeastern Pennsylvania Transportation Authority SEPTA Rail Network

- 6th largest public transportation agency in the country
- 1.2M passenger trips per day
- Coverage Area: 2,200 Miles
- Vehicles: 4,000
- Employees: 9,300
- Modes Operated:
 - Heavy Rail
 - Commuter (Regional) Rail
 - Light Rail (Trolley)
 - Bus and Trackless Trolley
 - Paratransit (CCT)



SEPTA is an Older System

- Legacy Agency in Dense Operating Environment
- 2nd Most Dense Downtown in U.S.
- \$5 Billion SOGR Backlog



Core Objectives

PROMOTE SAFETY



MAXIMIZE PROUDCTIVITY OF WORK CREWS



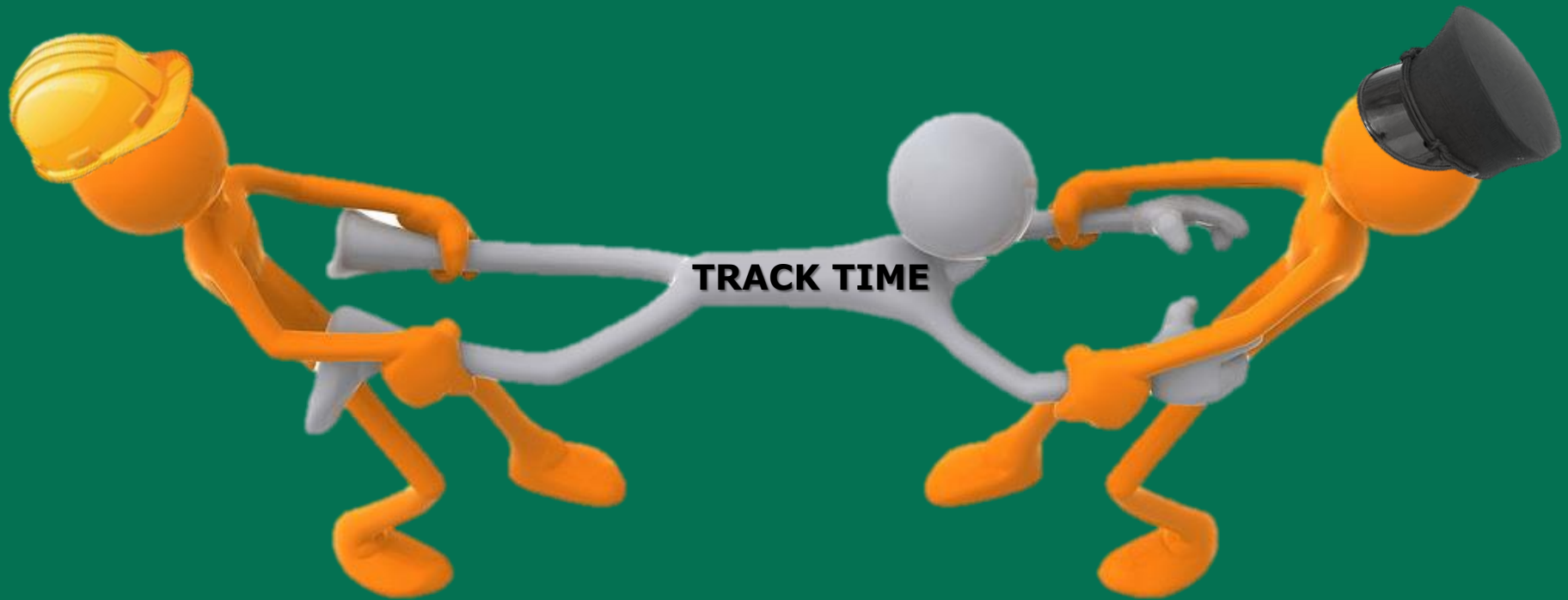
PRESERVE OTP



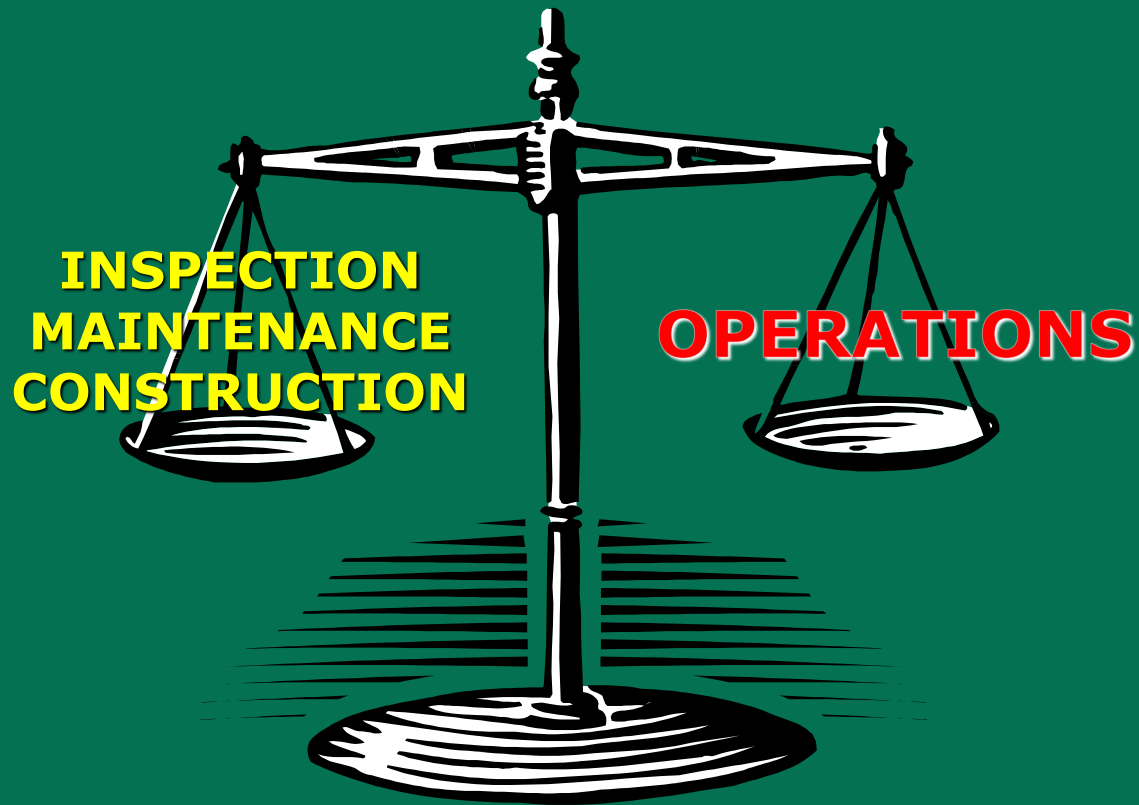
MINIMIZE CUSTOMER INCONVENIENCE



Tug of War for Track Time



Focus and Goal

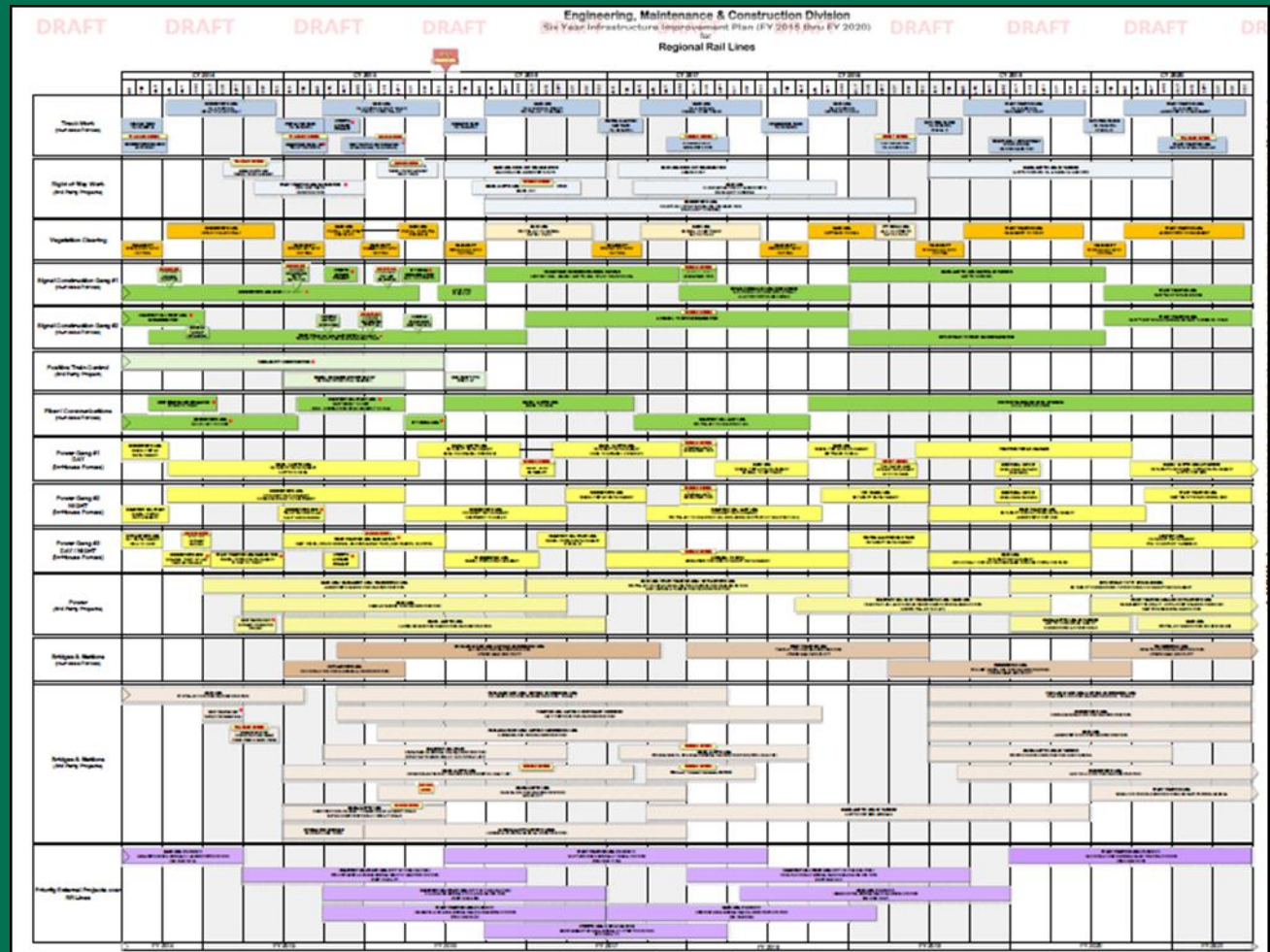


**BALANCE SEEMINGLY COMPETING OBJECTIVES OF
MAINTENANCE/CONSTRUCTION AND
OPERATIONS**

Starts with Long Range Planning

5-YEAR PLAN

- Key Construction & Large-Scale Maintenance
- Carefully Balanced
- Minimize Outages on a Given Line Over Time
- Labor Support Limitations
- Small Changes Can Cause Big Ripples



Outage Preparation

- **Major Project-Driven Operational Impacts**
- **Starts with 90-Day Look-Ahead and Special Events Calendar**
- **Outages Should be Uncomplicated for the Customer**
- **Community Notifications and “Sell” the Work to Customers**
- **Utilize Test Trains/Trolleys (and Buses) when Needed to Develop Schedule Adjustments and Alternate Service Plans**
- **Plan for Overall Safety**
 - Customers
 - Employees
 - General Public



Temporary Infrastructure Changes

TEMPORARY BARRICADE & TIE BUMPER (OUT OF VIEW IN FRONT OF TRAIN)
AND TEMPORARY TRACTION POWER SECTIONALIZATION



- **Temporary Infrastructure Changes Utilized to Reduce Outage Impacts on Train Operations**
- **Reduces Length of Busing and Amount of Stations Affected by Outage.**
- **Find Innovative Solutions to Construction Challenges**

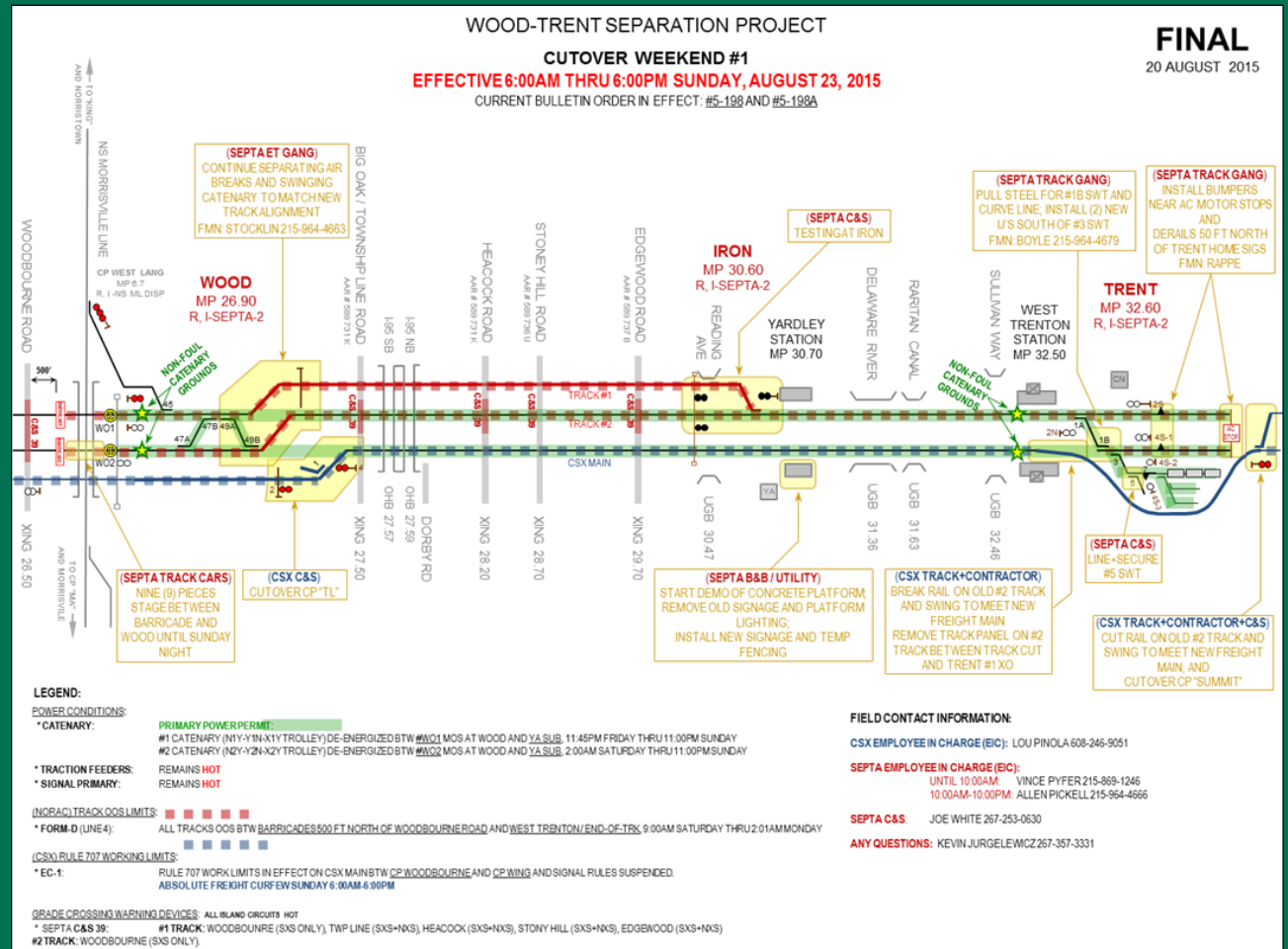
Weekly Project Coordination Meetings

- **All Capital and MoW Groups**
- **Add Work Generated from Field Inspections into the Outage Plan**
- **Address Special Safety Needs of the Work Force**
- **Immediate Work Details Finalized**
 - Table Top Exercise
 - Hour-by-Hour Schedules
 - Final Go/No-Go Times
 - Establish Primary and Secondary Objectives
 - Project Specific Outage Summary Diagrams



Quick Reference Outage Summary Sheet

- Job Briefings are Foundation for Safety
- No Changes to Game Plan Without Reconvening During Outage
- Maximize Outages on Particular Line
 - Include Other Agencies, Such as Bridge Insp (DOT)
 - Short-Term Maintenance Initiatives



Example of Our Unique Quick Reference Sheet

Outage Oversight

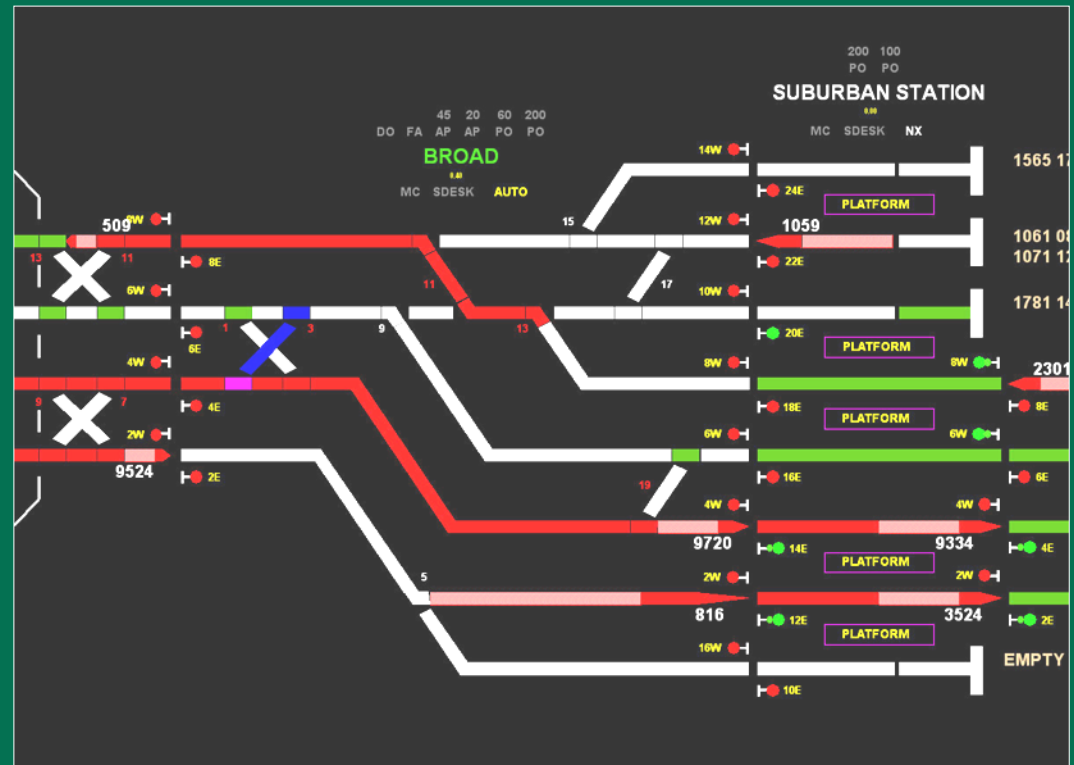
- **Job Briefings - Foundation for Safety**
 - No Changes to Game Plan Without Reconvening During Outage
- **Transportation Supervision**
- **Supplemental Schedules/Public Timetables for Major Outages**
- **Employee “Ambassadors” for Customer Support in Field**
- **Additional Support:**
 - Position Signal Maintainers at Important Interlockings
- **EM&C Internal Safety Presence**
- **Thank Riding Customers**



Bus Substitution for Project Work

After Action Review

- Overall Safety
- Any Reported Injuries
- OTP
- Customer Feedback
- Actual Production
- Review CTC Playbacks
- Make Adjustments as Needed



Still-Frame Example for CTC Playback

Wrap-Up

- **Safety is the Foundation**
- **Planning and Communication**
- **Track Usage Coordinator is Independent**
- **Innovative Approaches to Construction**
- **Learn from Mistakes and Build Upon Successes**
- **Team Work**