

Development of the Regional Operations Plans for the Central RTMC Region (Districts 2, 3, 9) – Lead Charge



Transportation Engineering
and Safety Conference
December 6, 2018



TSMO

- **TSMO Overview**
- ROP Overview
- Regional Operations Needs and Issues
- Prioritization Criteria / Rankings
- Recommended Projects
- Maintenance of the ROP
- Required Steps-Lessons Learned

What does TSMO mean to PennDOT and Partners?

Transportation Systems Management & Operations

TSMO Purpose

A way to address **reliability, mobility,** and **congestion** by using **various strategies** rather than just trying to **build our way out.**

TSMO Vision

A **less congested,** more **reliable** network

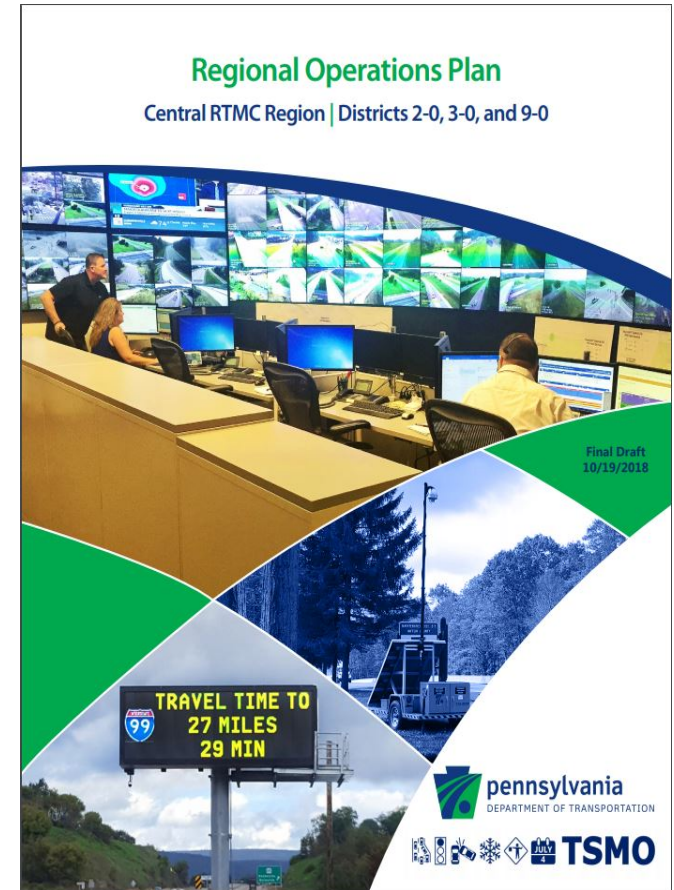
TSMO Mission

Move people and goods, from Point A to Point B, as **efficiently, safely,** and reliably as possible.

Regional Operations Plan-ROP

Planning document with a “**wish list**” of TSMO driven projects that will increase safety and reduce congestion.

The **ROP complements the TSMO Program Plan to identify the approach to traffic operations at the regional level and sets the stage for regional implementation of the TSMO Program Plan.**



Identify 5 Areas Congestion

Rural Congestion Perspective



Goals

- Improve safety
- Reduce Congestion which means improved traffic flow
- Urban/Rural

*FHWA National Congestion
Perspective/Causes*

Recurring Congestion



Bottlenecks

Poor Signal Timing

Unplanned Events



Traffic Incidents



Inclement Weather

Planned Events



Work Zones



Special Events

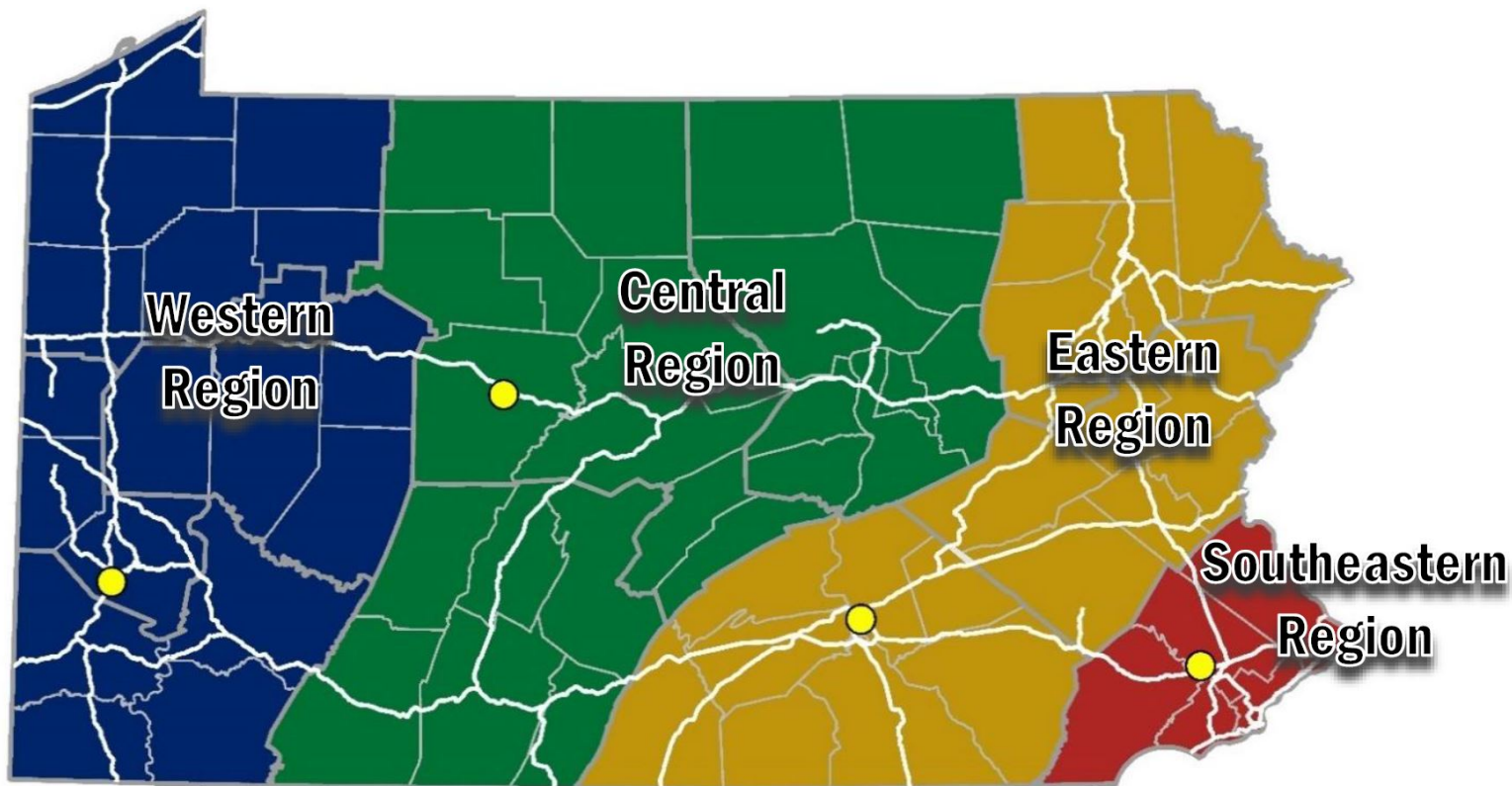
TSMO Solutions (6) different causes of congestion

Matrix

TSMO Solution	Causes of Congestion					
	Bottlenecks	Traffic Incidents	Inclement Weather	Work Zones	Poor Signal Timing	Special Events
Integrated Corridor Management	X	X	X	X	X	X
Hard Shoulder Running	X	X				X
Managed Lanes	X	X	X			X
TIM Teams		X				
Freeway Service Patrols		X		X		X
Smart Work Zones				X		
Traffic Signal Enhancements					X	
Transit Signal Priority					X	
Traveler Information		X	X	X		X
Ramp Metering	X	X				X
Bridge De-icing			X			
Commercial Vehicle Operations						
Dynamic Lane Assignment	X	X		X		X
Junction Control	X	X		X		X
Queue Warning	X	X		X		X
Variable Speed Displays		X	X	X		
Dynamic Rerouting		X		X		X
RWIS			X			
Dynamic Curve Warning		X				
Traffic Management Center Operations	X	X	X	X	X	X
Traffic Incident Detection		X				
DMS		X		X		X
CCTV	X	X	X	X		X

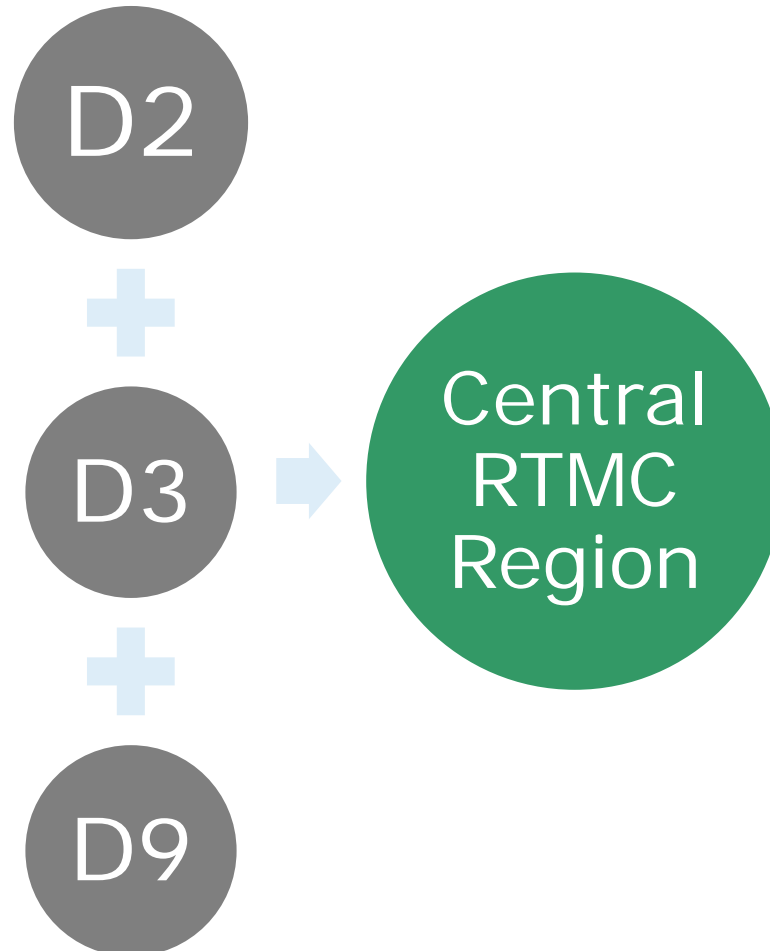
Regional Operations Plans (ROPs): Four Regions

- TSMO Regions within Pennsylvania



Each Region will have its own ROP

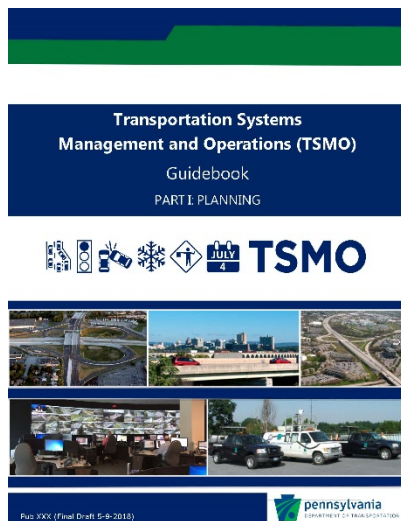
- Prior Each District-Generated
- Current ROP is based on entire region





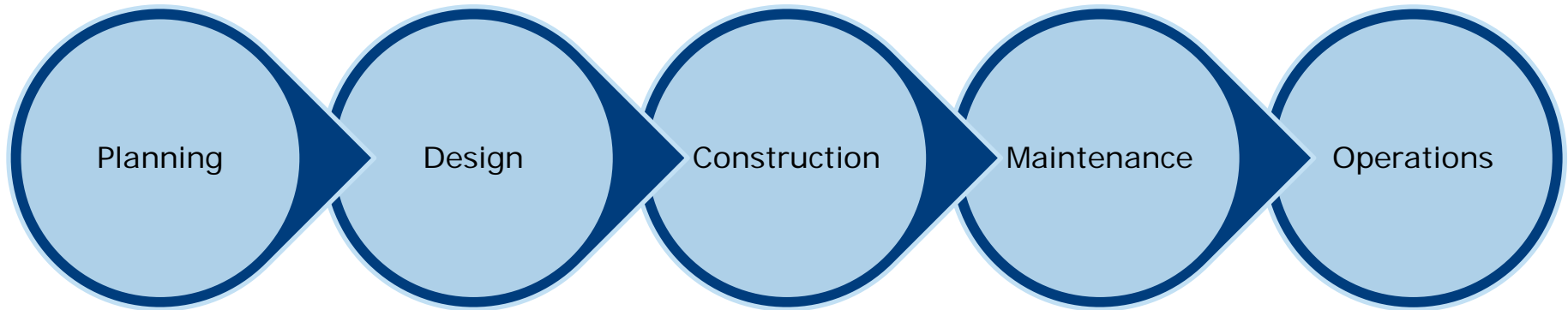
24x7 Nerve Center for the Central Region

- Complements the TSMO Program Plan
 - **Regional Approach to Traffic Operations**
 - **Regional Implementation of TSMO Strategies**
- TSMO Guidebook
 - Meet federal requirements to ITS planning (23 CFR 940)
 - Integrate/mainstream ITS and operations planning into the overall transportation process, per **FHWA guidance**

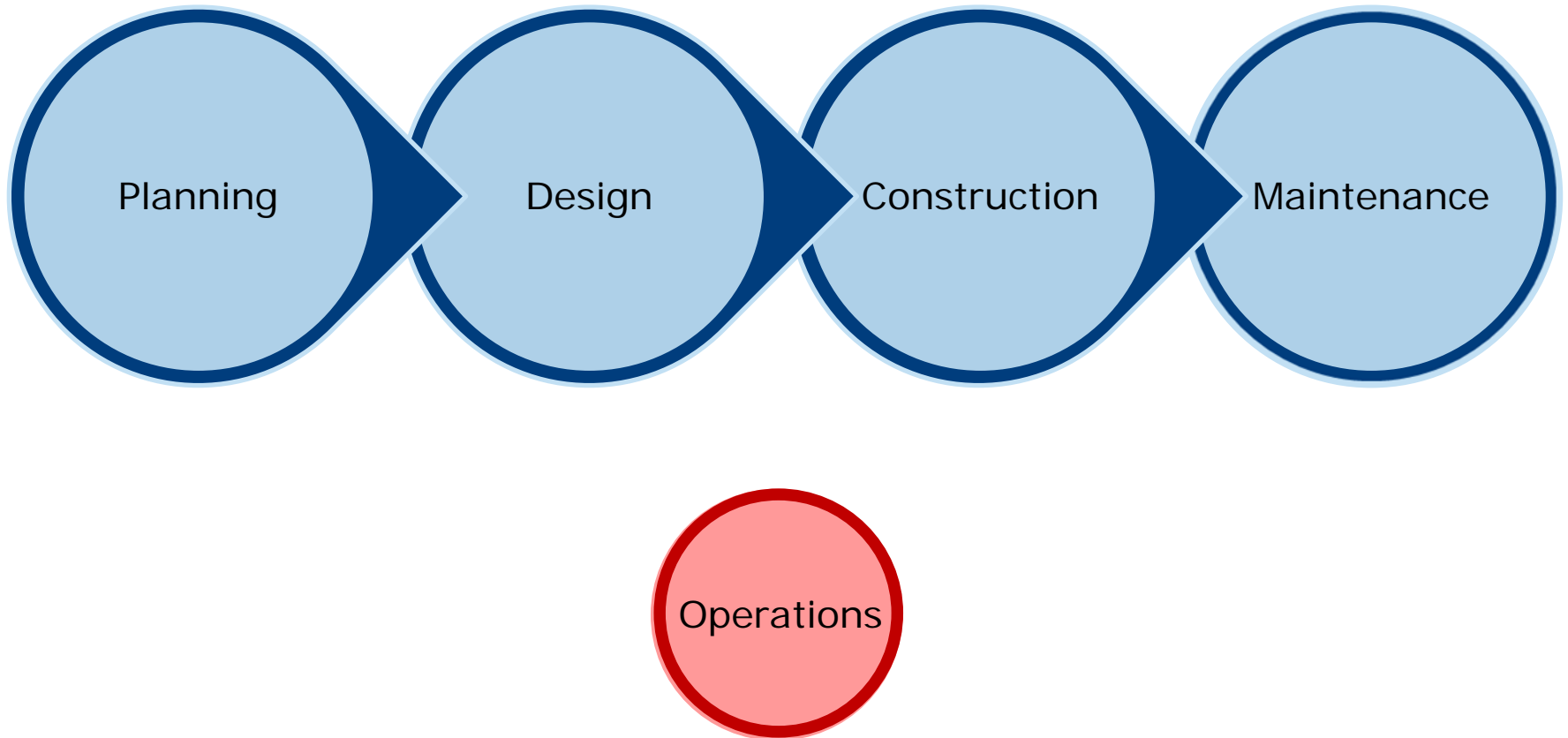


Goal is to integrate operations of our transportation system into a project life cycle

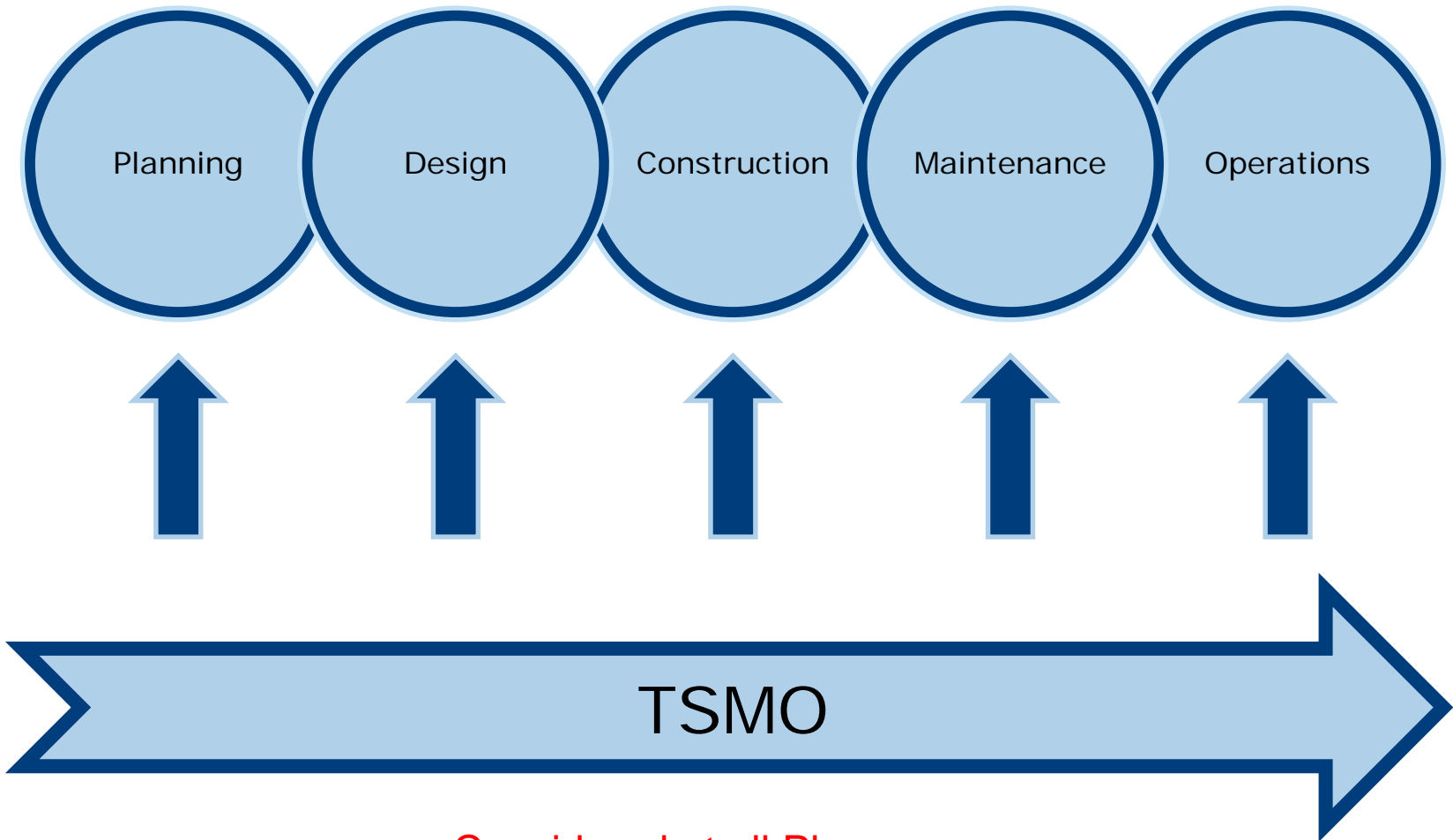
Project Life Cycle – Perceived (Operations Included)



Project Life Cycle – Reality (Operations Not Included)



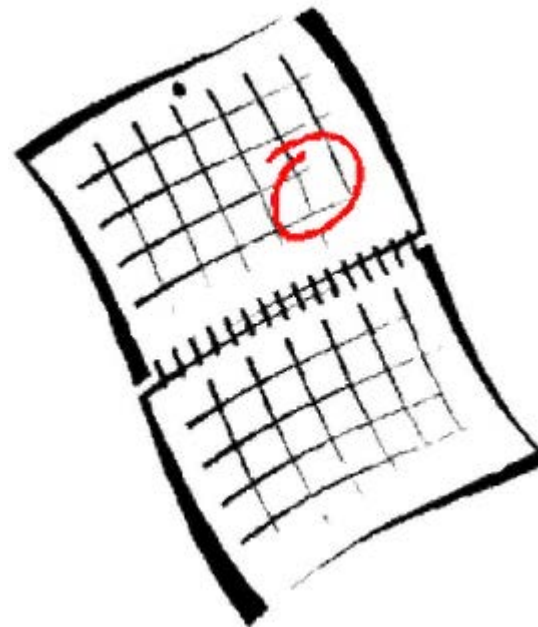
Project Life Cycle – Ideal (Seat at the Table)



Considered at all Phases

- TSMO Overview
- **ROP Overview**
- Regional Operations Needs and Issues
- Prioritization Criteria / Rankings
- Recommended Projects
- Maintenance of the ROP
- Lessons Learned

- 4 Steering Committee Meetings
- 3 round of Stakeholder Meetings at each District in the Region (D2, D3, and D9)
- Start: January 2018
- Finish: December 2018



- Composition
- JACOBS
 - PennDOT BOMO
 - PennDOT Center for Program Development and Management
 - PennDOT Districts 2, 3, and 9
 - FHWA
 - PA Turnpike
- Purpose
 - Met **prior** to each stakeholder round to **review and refine** message and material to be presented to stakeholders



- **Composition**

- PennDOT BOMO
- PennDOT Center for Program Development and Management
- PennDOT Districts 2, 3, and 9
- Metropolitan Planning Organizations (MPOs) and Rural Planning Organizations (RPOs)
- National Weather Service, State College (NOAA)
- Transit Organizations
- PA Turnpike
- PA State Police

- **Purpose**

- **Provide input** in breakout sessions by reviewing OneMaps on each phase of the ROP development

- Held on March 1, 2018 at PennDOT District 2-0
- Provided **overview** of material to be presented at first stakeholder meetings
- **Discussed relevance** of needs identified in previous ROPs
- Discussed PennDOT **One Map tool**

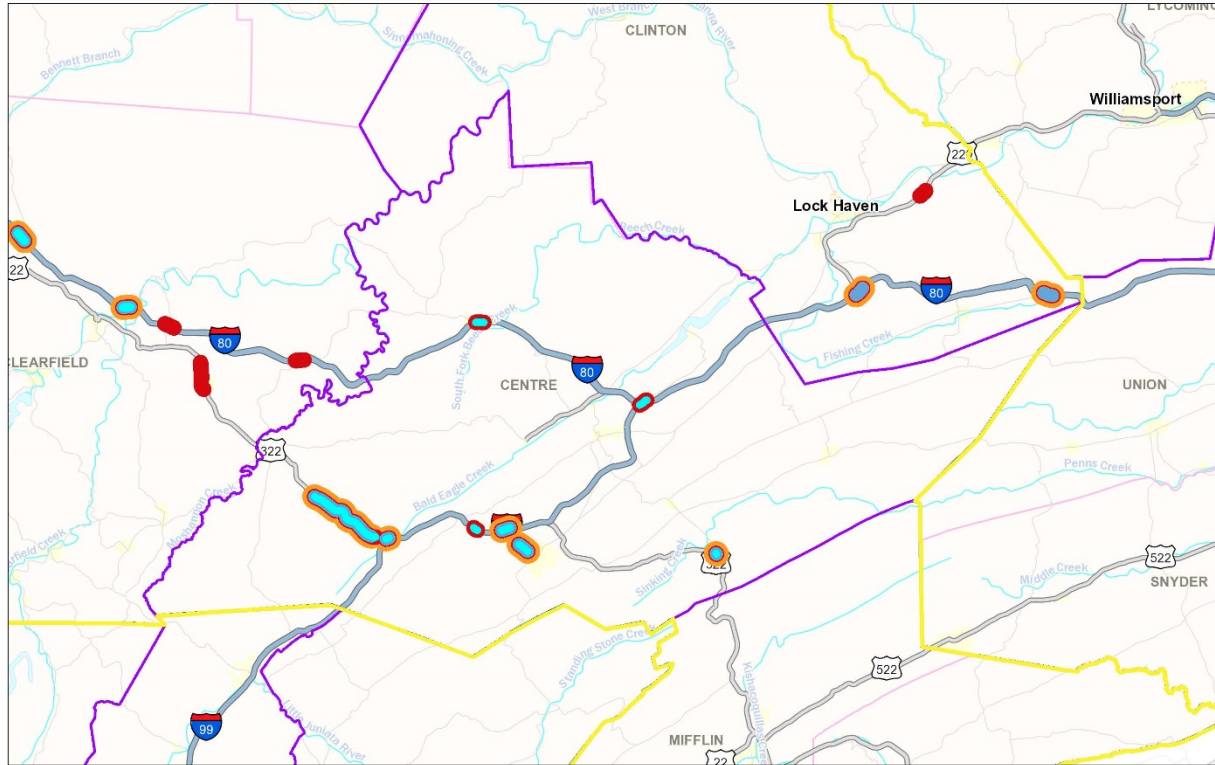


- TSMO Overview
- ROP Overview
- **Regional Operations Needs and Issues**
- Prioritization Criteria / Rankings
- Recommended Projects
- Maintenance of the ROP
- Lessons Learned

- Held in March-April 2018
- Provided overview of...
 - TSMO
 - **Previous District ROP**
 - **Process for current ROP**
- Introduced PennDOT **One Map tool**
- Breakout sessions discussing initial maps of One Map data
 - **Bottlenecks**
 - **Crash clusters**
 - **Special events**



Bottlenecks Centre County



March 6, 2018

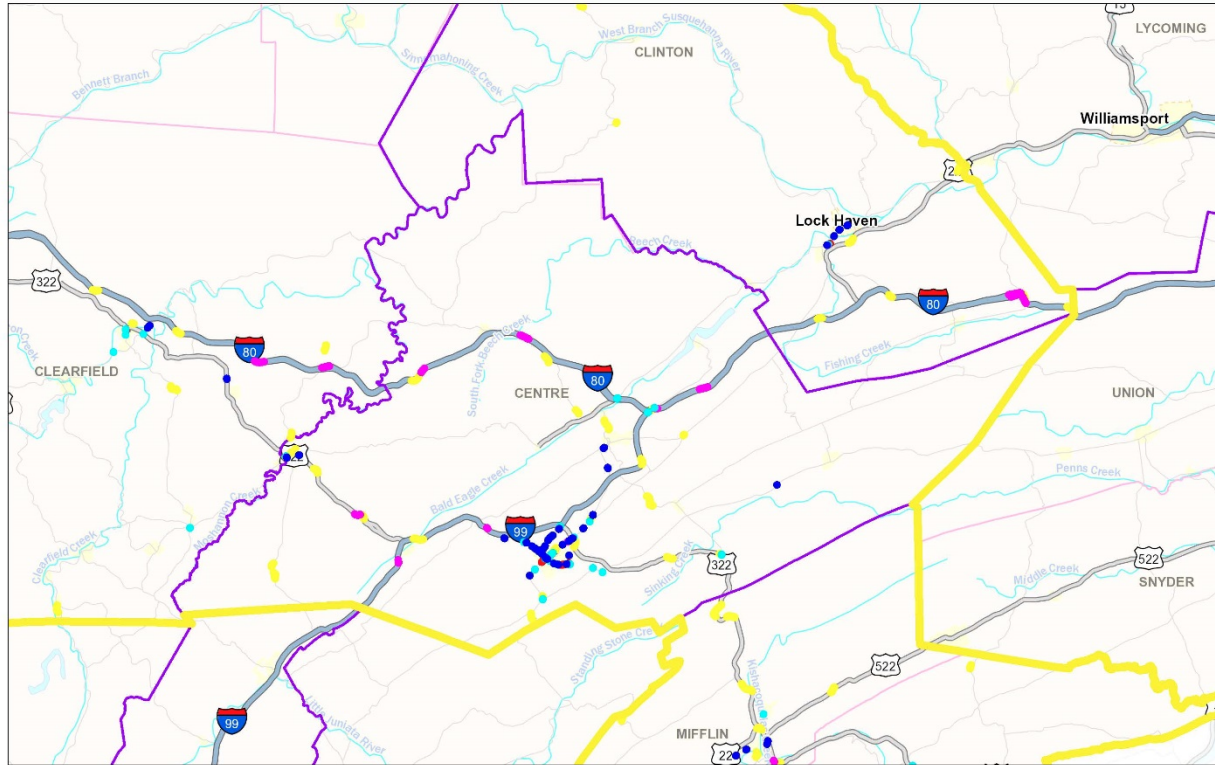
- Bottlenecks - Centre County Top 10
- Bottlenecks - SEDA-COG Top 10
- Bottlenecks - North Central Top 10
- Bottlenecks - D2 Top 10
- Bottlenecks - D2 Top 25
- Bottlenecks - Central Top 50
- Planning Organizations
- Engineering Districts
- DISTRICT
- District 02



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Crashes Centre County

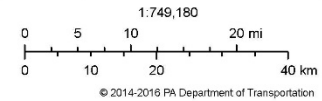


March 7, 2018

- Statewide Rear-End Crash Clusters 2016
- Statewide Intersection Crash Clusters 2016
- Statewide Winter Related Crash Clusters 2016

- Statewide Curved Road Crash Clusters 2016
- Crash Rate per 100 Miles > 500 and AADT > 5000
- Planning Organizations

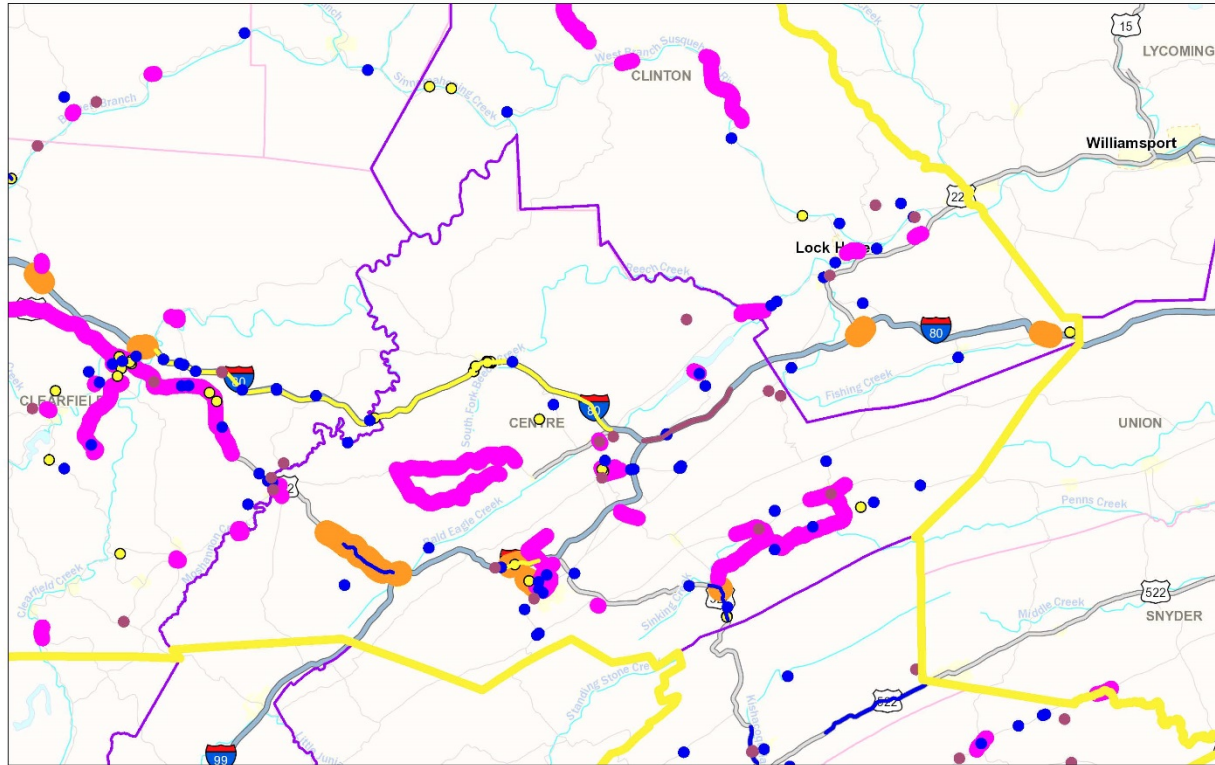
- Engineering Districts
- DISTRICT
- District 02



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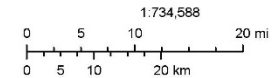


Planned Events Centre County



March 7, 2018

- MPMS - TIP - Future Development
- MPMS - TIP - In Development
- MPMS - TIP - Active
- RCRS Special Events
- Bottlenecks - Central Top 50
- Planning Organizations
- Engineering Districts
- DISTRICT
- District 02



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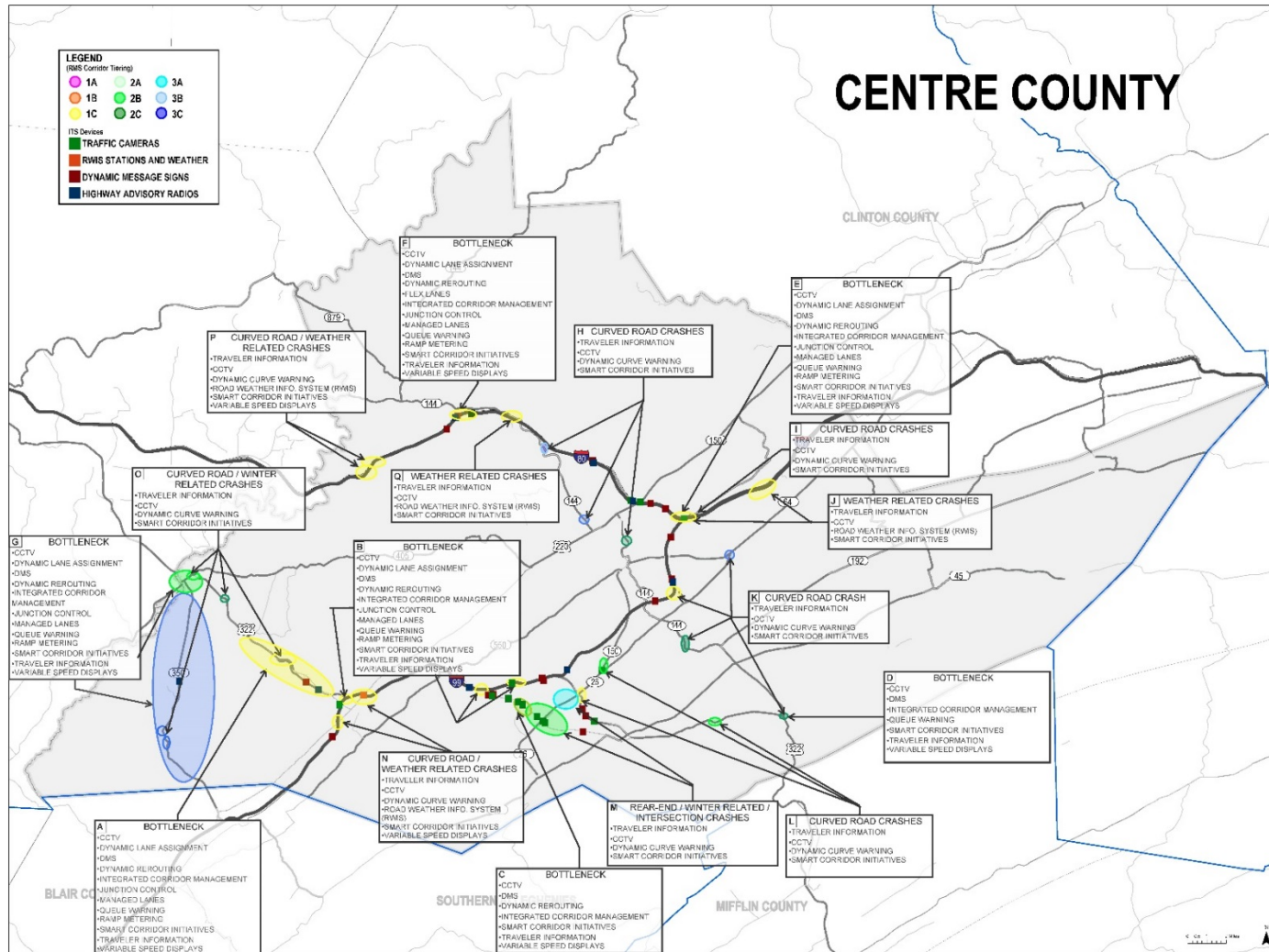
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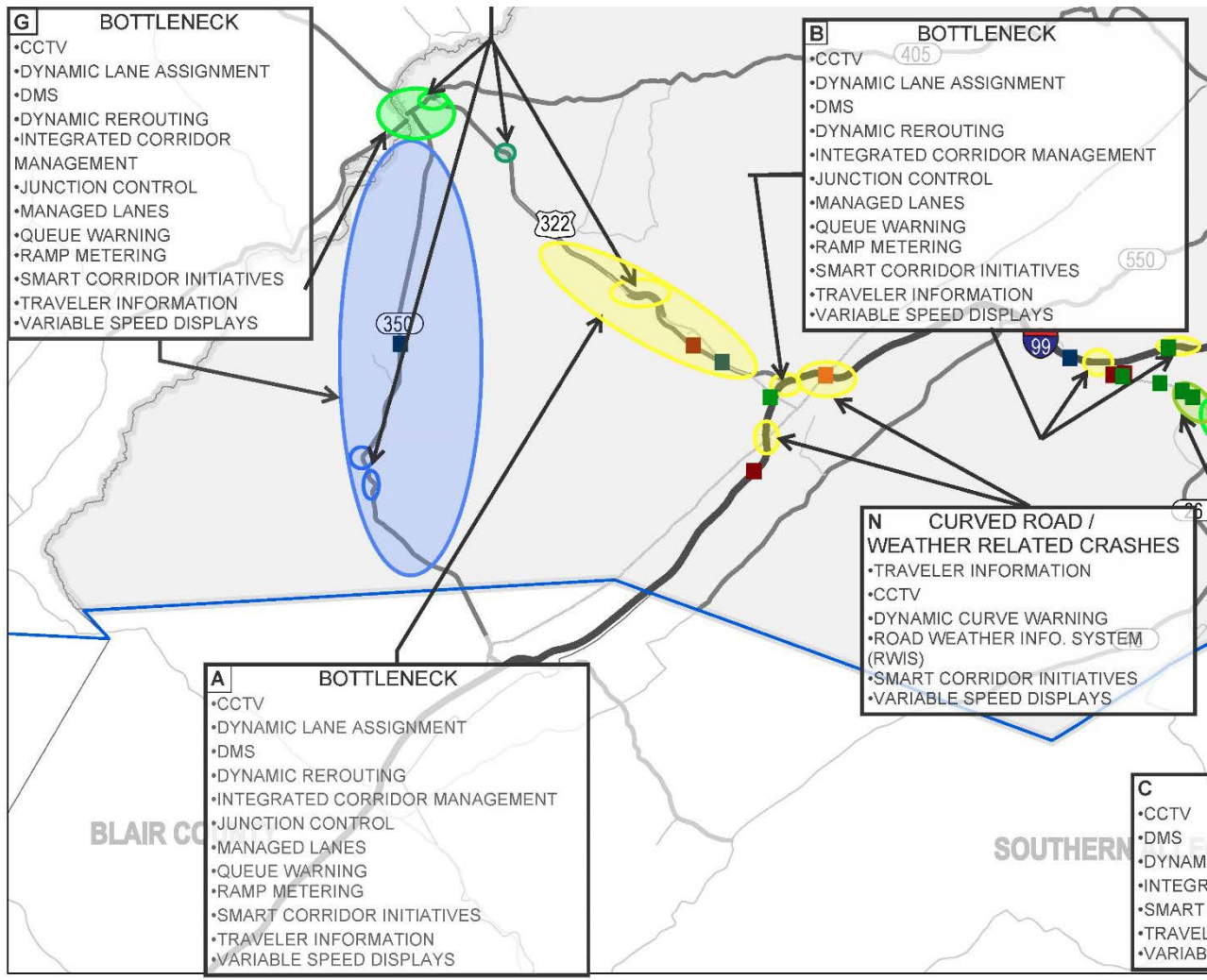
- Held on May 11, 2018 at PennDOT District 2-0
- Provided **overview of material** to be presented at second stakeholder meetings
- Discussed identified **regional issues and needs**
- Provide **update** to group on **emerging technologies**



- Held in May-June 2018
- Discussed **tools and strategies** from the TSMO Guidebook
- Discussed **role of traffic signal improvements** and **connected vehicle technologies** in the ROP process
- Breakout sessions **discussing regional issues** and needs developed based on One Map data and stakeholder input







LEGEND
(RMS Corridor Tiering)

● 1A	● 2A	● 3A
● 1B	● 2B	● 3B
● 1C	● 2C	● 3C

ITS Devices

- TRAFFIC CAMERAS
- RWIS STATIONS AND WEATHER
- DYNAMIC MESSAGE SIGNS
- HIGHWAY ADVISORY RADIOS

- Held on August 2, 2018 at PennDOT District 2-0
- Provided **overview** of material to be **presented** at **final stakeholder meetings**
- Discussed **initial list of projects** and the **prioritization criteria** for project ranking



- **Comparative Need**

- Data taken from PennDOT One Map
- Top Bottlenecks
- TomTom Travel Time Ratio
- Crash Cluster Rates

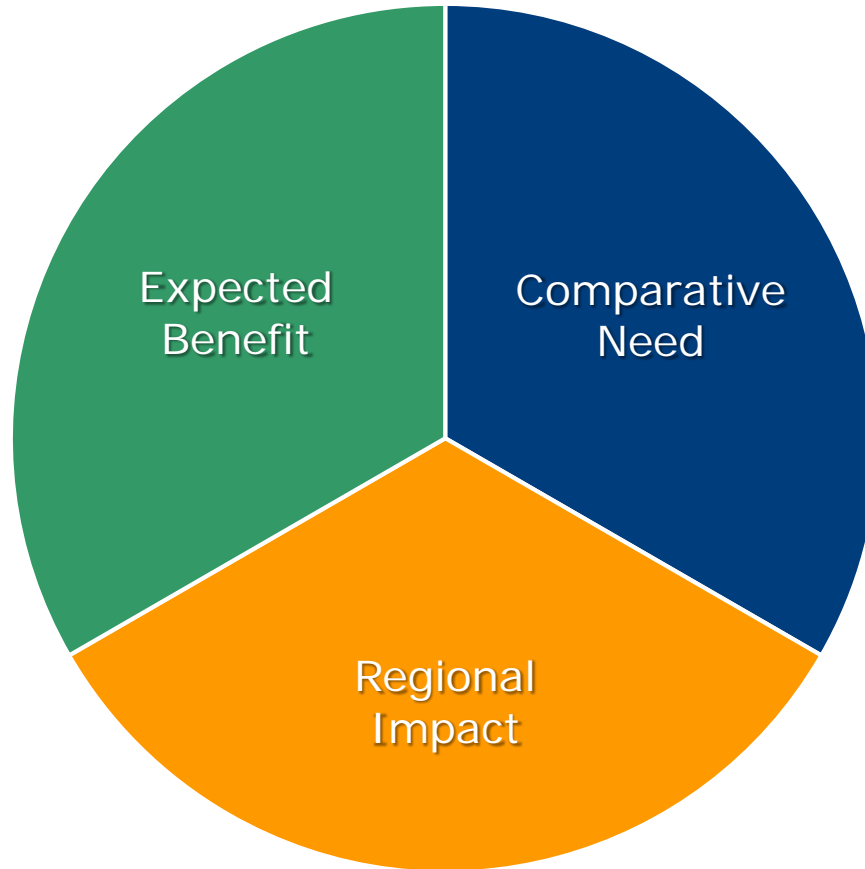
- **Regional Impact**

- TSMO Roadway Tiering – considers ADT, NHS, Limited Access
- Significant Corridors – For D2: SR 255, SR 3014

- **Expected Benefit**

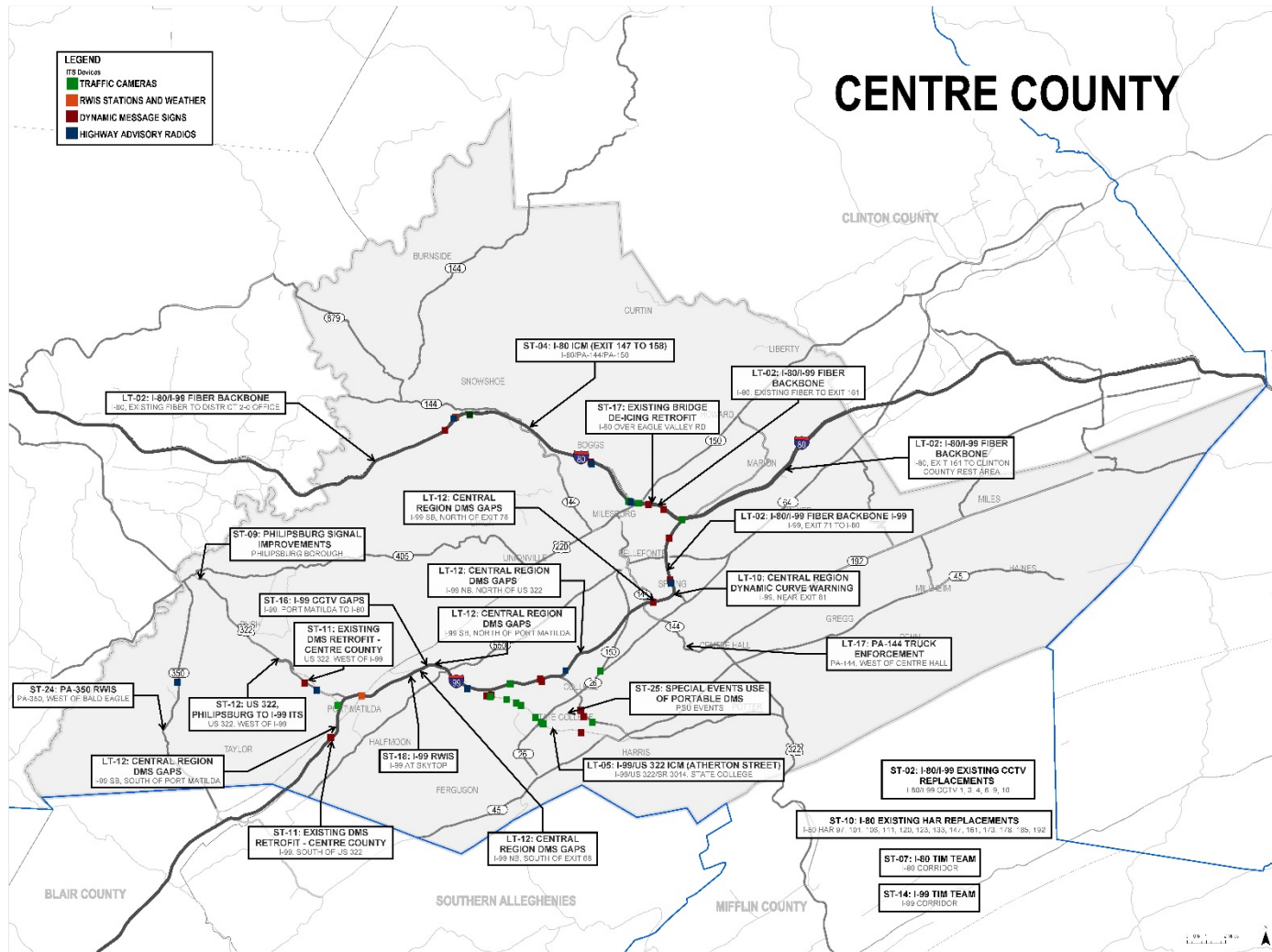
- Qualitative benefit of each potential upgrade – Engineering judgment and stakeholder input

Overall Weighting

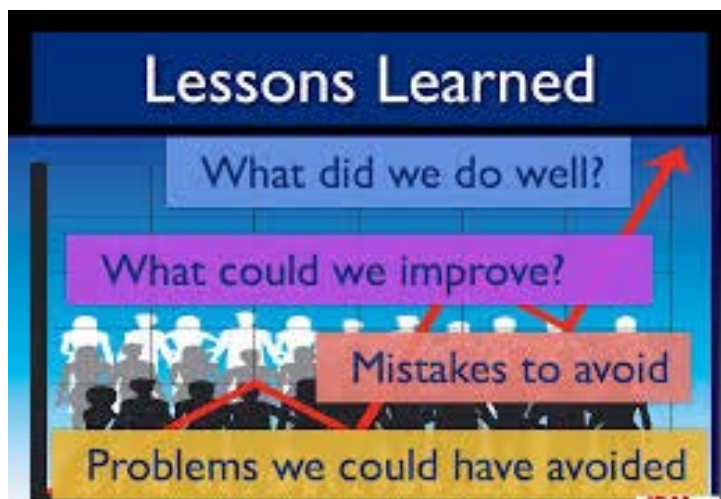


- Held in August 2018
- Discussed **potential ROP** projects
- Discussed **prioritization and ranking** of projects
- Discussed **how** ROP will be **incorporated** into planning cycle in the future





- Held on October 9, 2018 at PennDOT District 2-0
- **Refined final** list of projects to be included in **ROP document**
- Discussed future ROP **coordination and maintenance** of the document
- Discussed Required Steps-lessons learned



- 25 short-term projects
- 17 long-term projects
- Project Types
 - DMS, CCTV, and RWIS
 - Integrated Corridor Management
 - Regional Fiber Backbone
 - Dynamic Curve Warning + other safety improvements
- Costs
 - District 2 = \$32.6 M
 - District 3 = \$30.5M
 - District 9 = \$21.2M
 - **Central RTMC Region Total = \$84.3M**

Agenda

- TSMO Overview
- ROP Overview
- Regional Operations Needs and Issues
- Prioritization Criteria / Rankings
- Recommended Projects
- **Maintenance of the ROP**
- Lessons Learned

- Complete ROP update – 4 years
- Interim update – 2 years
- Align with TIP update schedule → publish ROP updates early in year prior to TIP



TSMO

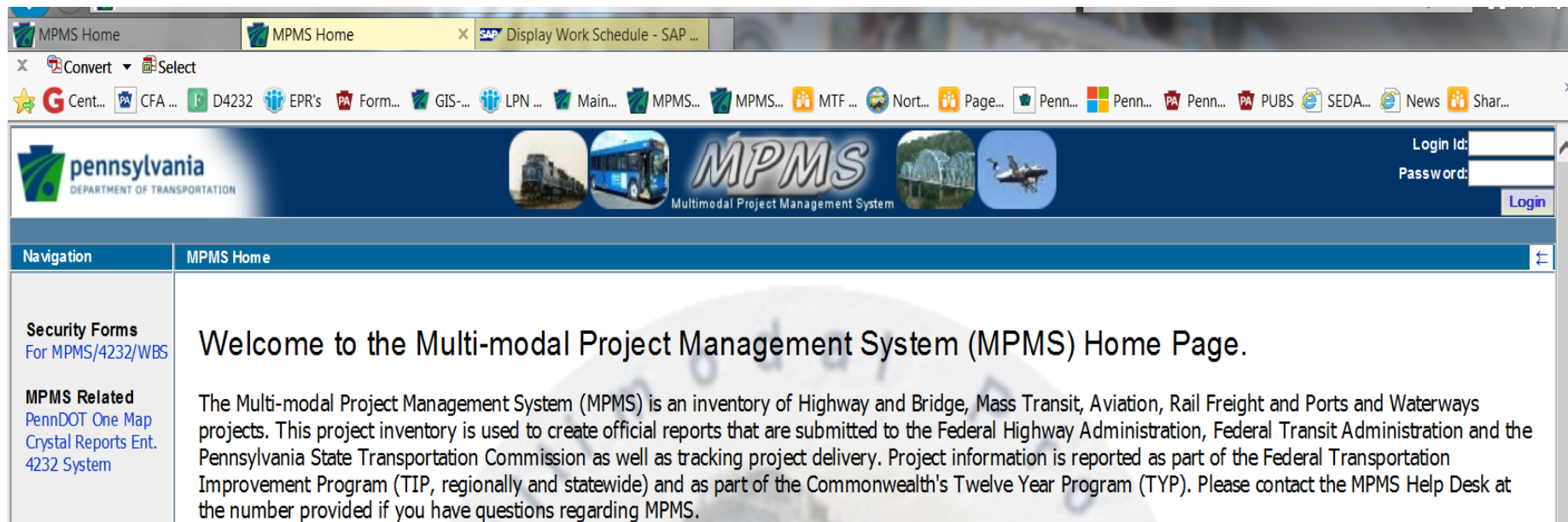
Agenda

- TSMO Overview
- ROP Overview
- Previous ROP Overview
- Regional Operations Needs and Issues
- Prioritization Criteria / Rankings
- Recommended Projects
- Maintenance of the ROP
- **Lessons Learned**

- Executive buy-in from the inception
- Strong relationships with planning partners-S
- Consider assigning MPMS number
- Align ROP with fiscal year
- Separate ROP Working Groups (Safety, MPO, Maintenance, 911 Centers, Executive)
- District Executive Briefing-Buck Stops Here



- Preliminary Design
- Final Design
- Utility
- Right of Way
- Construction
- Includes description, milestone dates, costs



The screenshot shows a web browser window displaying the MPMS Home Page. The browser's address bar shows the URL 'MPMS Home'. The page header features the Pennsylvania Department of Transportation logo on the left, the MPMS logo in the center, and a login form on the right. The navigation menu includes 'MPMS Home'. The main content area contains a welcome message and a detailed description of the system.

Navigation | MPMS Home

Security Forms
[For MPMS/4232/WBS](#)

MPMS Related
[PennDOT One Map](#)
[Crystal Reports Ent.](#)
[4232 System](#)

Welcome to the Multi-modal Project Management System (MPMS) Home Page.

The Multi-modal Project Management System (MPMS) is an inventory of Highway and Bridge, Mass Transit, Aviation, Rail Freight and Ports and Waterways projects. This project inventory is used to create official reports that are submitted to the Federal Highway Administration, Federal Transit Administration and the Pennsylvania State Transportation Commission as well as tracking project delivery. Project information is reported as part of the Federal Transportation Improvement Program (TIP, regionally and statewide) and as part of the Commonwealth's Twelve Year Program (TYP). Please contact the MPMS Help Desk at the number provided if you have questions regarding MPMS.

