

# Southwestern Pennsylvania Commission's Regional Operations Plan (ROP) Update



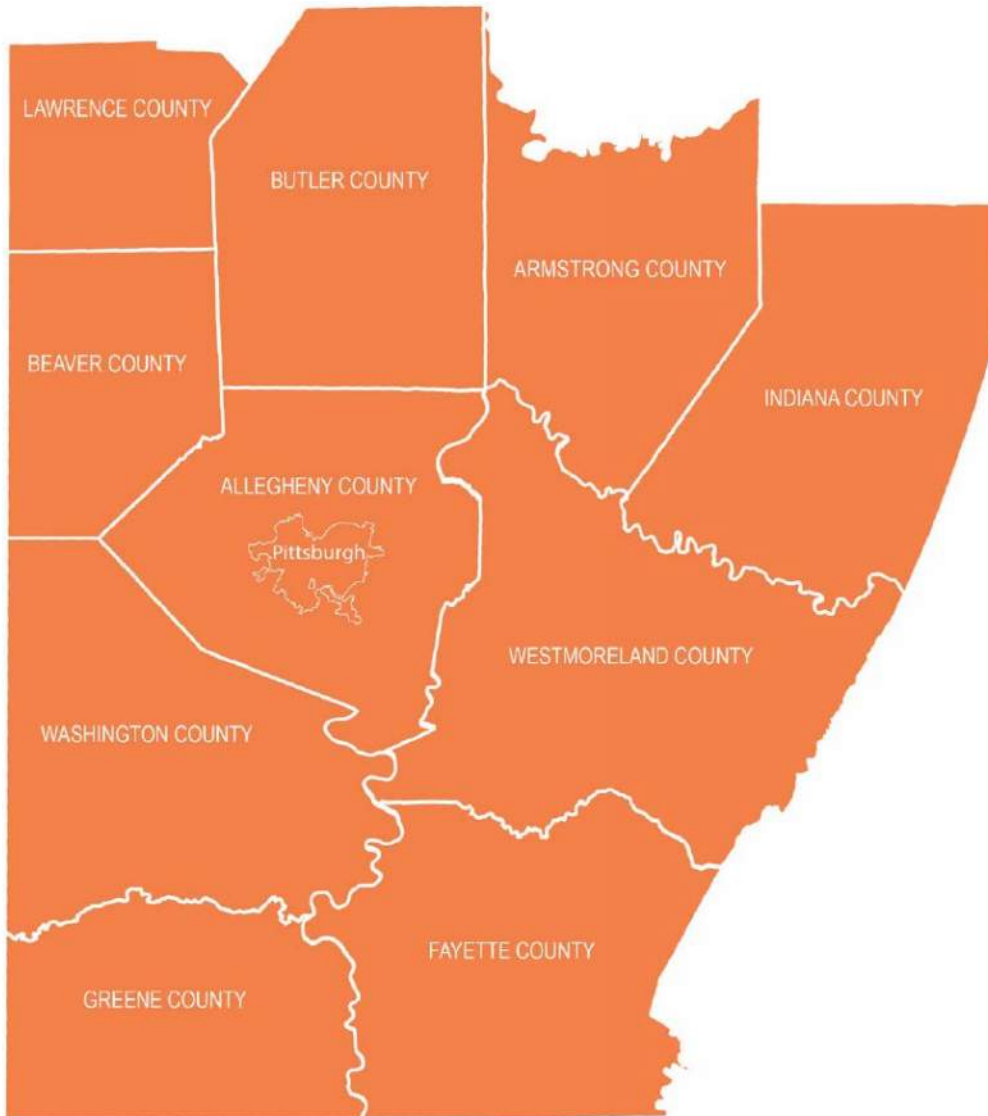
## 2019 MASITE Annual Conference

**Joshua Spano**  
Senior Transportation Planner, SPC

**Adam Smith, P.E., PTOE**  
Senior Traffic/ITS Engineer, Jacobs Engineering

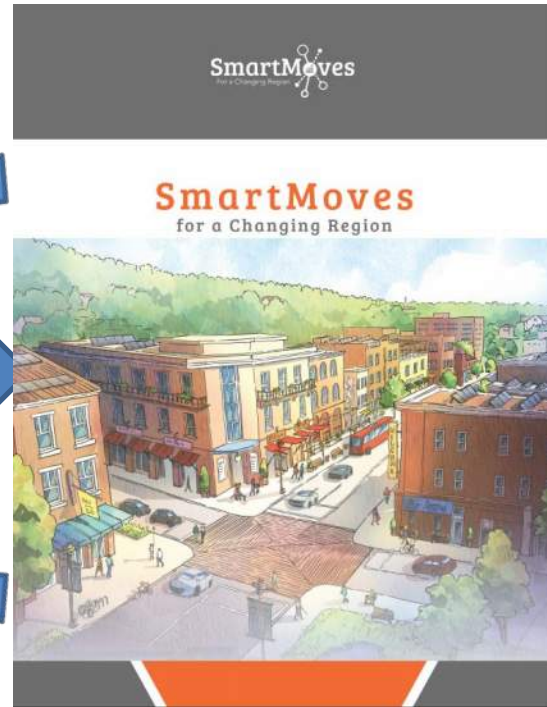
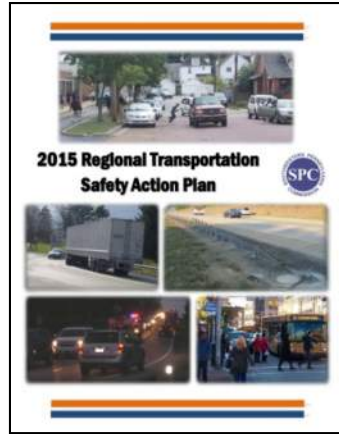


# Southwestern PA Region



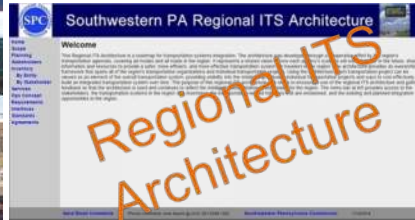
- 10 Counties
- >7,000 square miles
- 2.6 million residents
- 548 municipalities
- 132 School Districts
- 3 PennDOT Districts
- 10 Transit Agencies

# Planning Framework



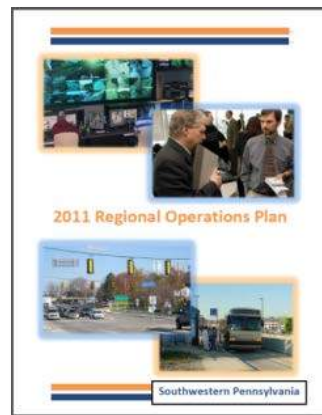
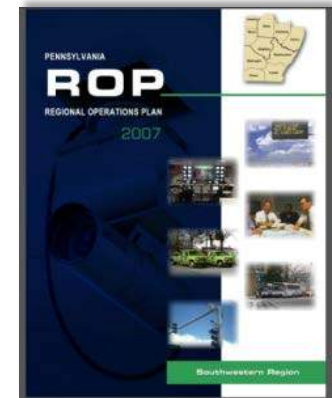
PLANNING WORK PROGRAM

TRANSPORTATION IMPROVEMENT PROGRAM (TIP)



# SPC Region ROP History

- Sept 2005 – PennDOT Transportation Systems Operations Plan (TSOP)
- June 2007 – SWPA ROP established
- June 2011 – SWPA ROP Update 1 completed
- June 2015 – SWPA ROP Update 2 completed
- June 2019-Update 3 completed.



## ROP Steering Committee

- PennDOT Central Office
  - PennDOT District 10
  - PennDOT District 11
  - PennDOT District 12
- Port Authority of Allegheny County
  - Allegheny County
  - City of Pittsburgh



## ROP Stakeholder Group

- District 10 Maintenance
- District 11 Maintenance
- District 12 Maintenance
- Pennsylvania Turnpike Commission
- City of Pittsburgh
- Bike Pittsburgh
- Healthy Ride (Bikeshare)
- Port Authority of Allegheny County
- Town and Country Transit
- Westmoreland County Transit Authority
- Freedom Transit
- Fayette Area Coordinated Transit
- Indiana County Transit Authority
- Butler Transit
- New Castle Area Transit
- Mid Mon Valley Transit Authority
- Beaver County Transit Authority
- Allegheny County Airport Authority
- Pennsylvania Emergency Mgt. Agency
- Port of Pittsburgh Commission
- Pittsburgh Parking Authority
- University of Pittsburgh
- Carnegie Mellon University
- Cranberry Township
- Allegheny County
- Armstrong County
- Beaver County
- Butler County
- Fayette County
- Greene County
- Indiana County
- Lawrence County
- Washington County
- Westmoreland County



# SPC ROP Goals and Objectives

## What is the mission of the ROP?

From our Long Range Plan:

“The region’s transportation system will be actively managed and operated to allow the system to function at its full potential.”

- Mitigate Recurring Congestion
- Maintain Mobility During Planned Events
- Minimize the Impact of Unplanned Events
- Provide an Efficient Multimodal Transportation System



# SPC ROP Goals and Objectives

## How do we achieve these goals?

Encourage modal shift



Incorporate intelligent transportation systems



Improve management of incidents and events

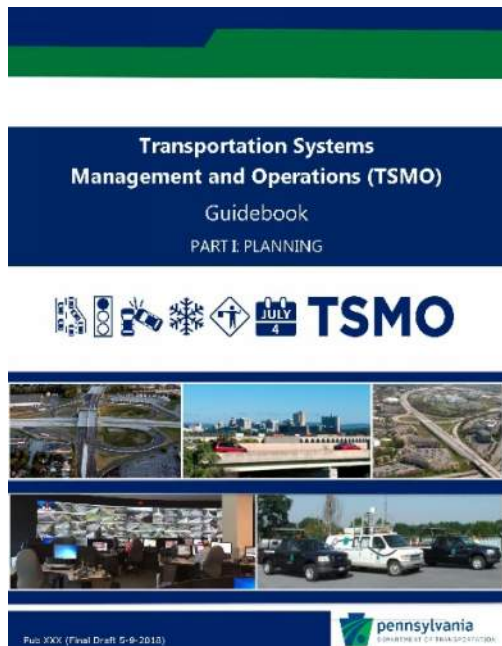


# TSMO Integration

*“We can’t build our way out of congestion”*

PennDOT has developed a series of documents related to TSMO policy and implementation...

- Program Plan
- Strategic Framework
- TSMO Guidebook Part 1: Planning (Pub. 851)



**Integrate operations planning into the overall project development process, per FHWA guidance**

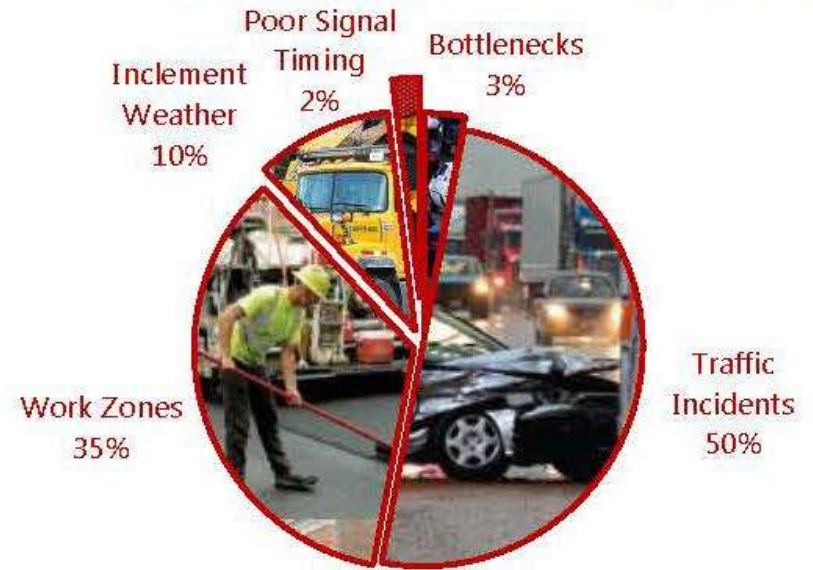


# TSMO Integration

## Urban Congestion Perspective



## Rural Congestion Perspective



Source: FHWA

**Different strategies for different types of congestion...**

# TSMO Integration

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						
Traffic Management Center Operations	X	X	X	X	X	X
Traffic Incident Detection		X				
DMS		X		X		X
CCTV	X	X	X	X		X

# Stakeholder Process

1

Determine  
Transportation  
Needs and  
Operations  
Issues

2

Determine  
applicable TSMO  
strategies for  
confirmed  
issues and  
needs

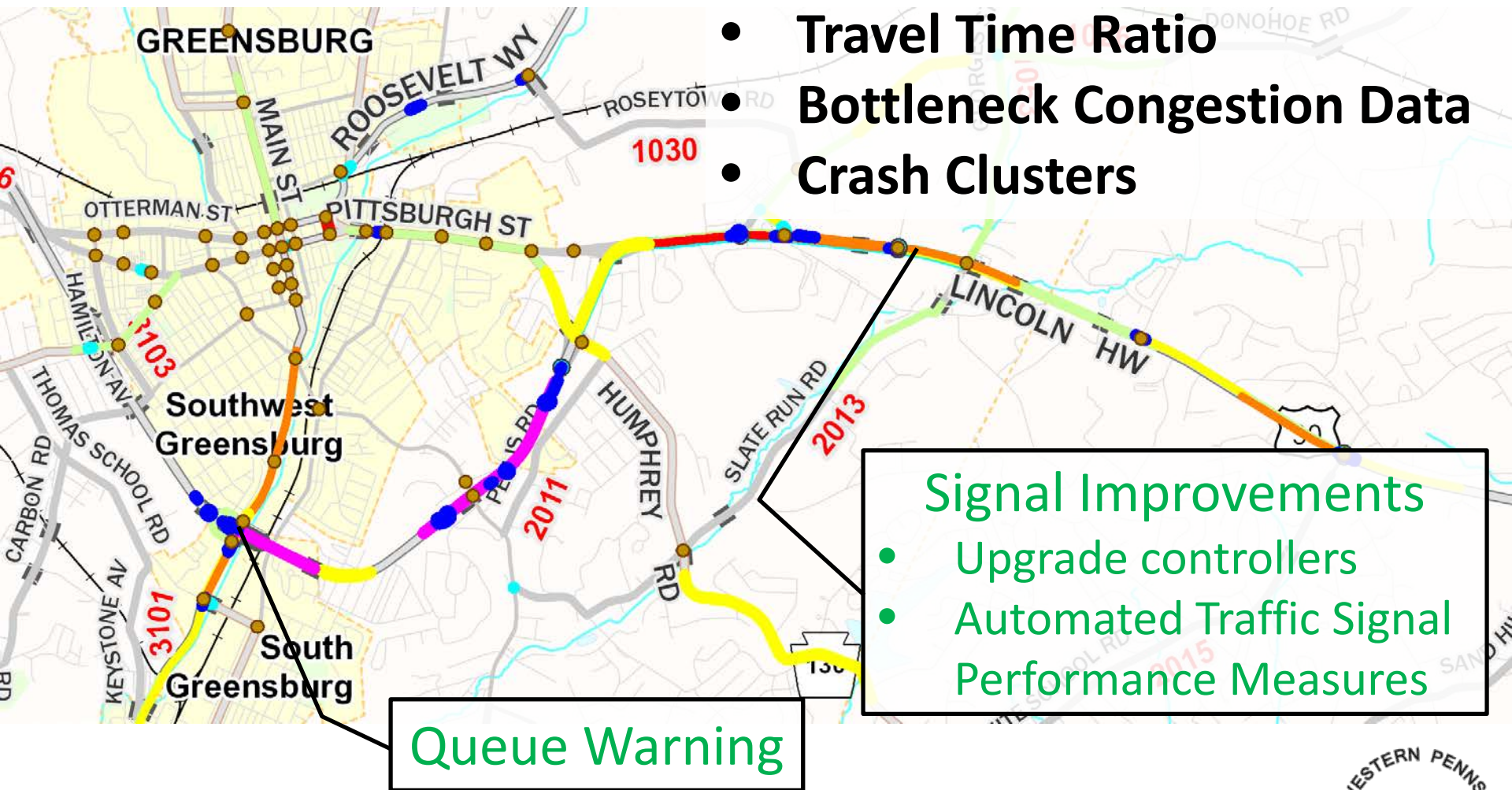
3

Develop  
projects based  
on the identified  
TSMO strategies

4

Prioritize  
projects

# PennDOT OneMap Example



# Project Summary

## TS.01: Greensburg Operational Improvements

FOCUS AREA: Traffic Signals

PRIORITY: High

PROJECT DESCRIPTION AND SCOPE: Upgrade signal controllers for US 30 traffic signals in vicinity of Greensburg to allow for Automated Traffic Signal Performance Measures. Also install Queue Detection for US 30 at US 119 ramps.

STAKEHOLDERS: PennDOT 12-0

ESTIMATED SCHEDULE: 1-3 years

ESTIMATED COSTS:

\$\$  
(\$500k-\$2M)

Life Cycle: 10-15 years

PROJECT TYPE: Deployment

LEVEL OF EFFORT: Moderate

TECHNOLOGY COMPONENTS (if applicable): Traffic Signal Systems; Queue Detection System; DMS System

PREREQUISITES AND DEPENDENCIES: N/A

PERFORMANCE MEASURES: Improved Travel Time Ratio; Reduction in Rear End Crashes; Reduced Bottleneck Delay Surrogate

BENEFITS: Improved traffic flow and reduced congestion along an important signalized corridor within the region. Also provide warning to drivers as they approach a congested interchange.

OTHER CONSIDERATIONS AND ISSUES: N/A

## 44 Projects

## 20 Studies and Initiatives

- Traffic Signals
- Traffic Incident Management
- Traveler Information
- Operational Teamwork/Institutional Coordination
- Freeway and Arterial Operations
- Freight Management
- Multimodal Connectivity

# Multimodal Focus

Maximizing our existing roadway capacity requires a focus on more efficient modes

The SPC ROP included a number of bike, pedestrian, and transit projects and studies, unlocking the full power of TSMO



Canberra Transport Photo. Cycling Promotion Fund. 2012.

# Multimodal ROP Projects



- **Bike trail maintenance**
- **On-street bike infrastructure**
- **E-assist bike share**
- **Smart Parking Systems**
- **Transit Signal Priority**
- **Bus lanes, queue jumps, etc.**

# Dedicated Bus Lane Example

*Passenger movement*

BUS LANE: 0

SOV LANE: 0

Duration: 0 sec.

Passenger Movement

Duration: 18 seconds

Bus Lane: 210

Personal Vehicle Lanes: 5



# Benefits of Multimodal Focus



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**For more on Transportation Safety and  
Operations in Southwestern PA...**

[https://www.spcregion.org/trans\\_ops.asp](https://www.spcregion.org/trans_ops.asp)

