

Congestion Management Process for the KYOVA/Huntington, WV-KY-OH Urbanized Area

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Project Purpose

To create a **Congestion Management Process** that:

- Provides a picture of the state of congestion
- Provides input to development of strategies to alleviate congestion
- Helps decision makers plan for future system improvements
- Provides feedback on effectiveness of projects and strategies
- Provides a knowledge base of information
- Meets Federal requirements

Why required? Why now?

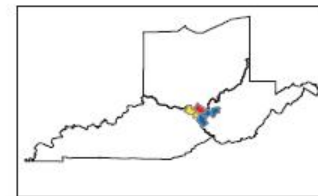
“The transportation planning process in a TMA shall address congestion management through a process that provides for safe and effective integrated management and operation of the multimodal transportation system, based on a cooperatively developed and implemented metropolitan-wide strategy, of new and existing transportation facilities...through the use of travel demand reduction and operational management strategies.

The development of a congestion management process should result in multimodal system performance measures and strategies that can be reflected in the metropolitan transportation plan and TIP.”

23 CFR 450.320(a) and (b).
Metropolitan Transportation Planning,
Final Rule, February 14, 2007.

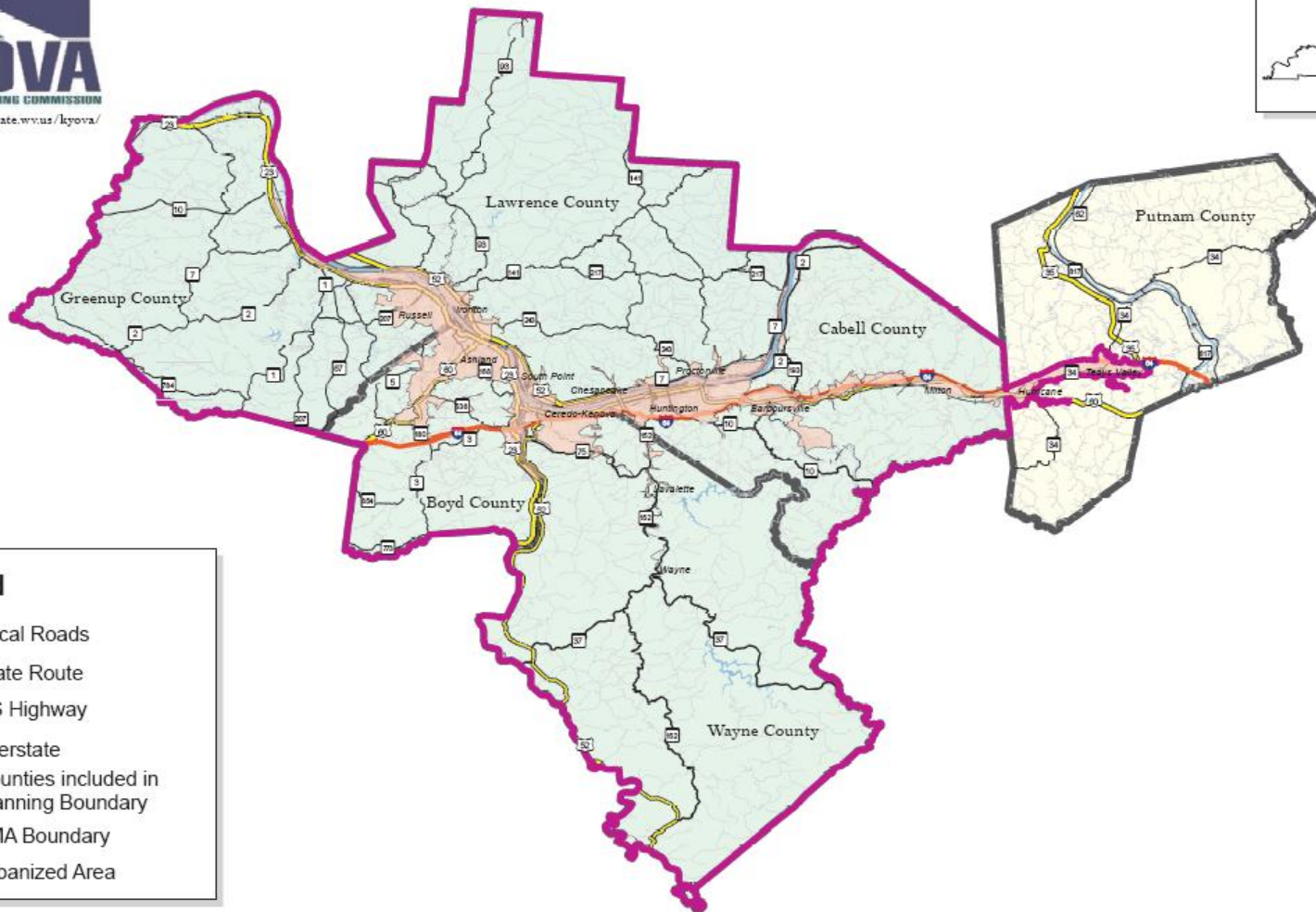
- Transportation Management Area (TMA) – 200,000 population or greater
- 2010 Census – KYOVA/Huntington, WV-KY-OH Urbanized Area designated as a TMA
 - Cabell County, WV
 - Wayne County, WV
 - Putnam County (portion), WV
 - Lawrence County, OH
 - Boyd County, KY
 - Greenup County, KY

TMA Boundary



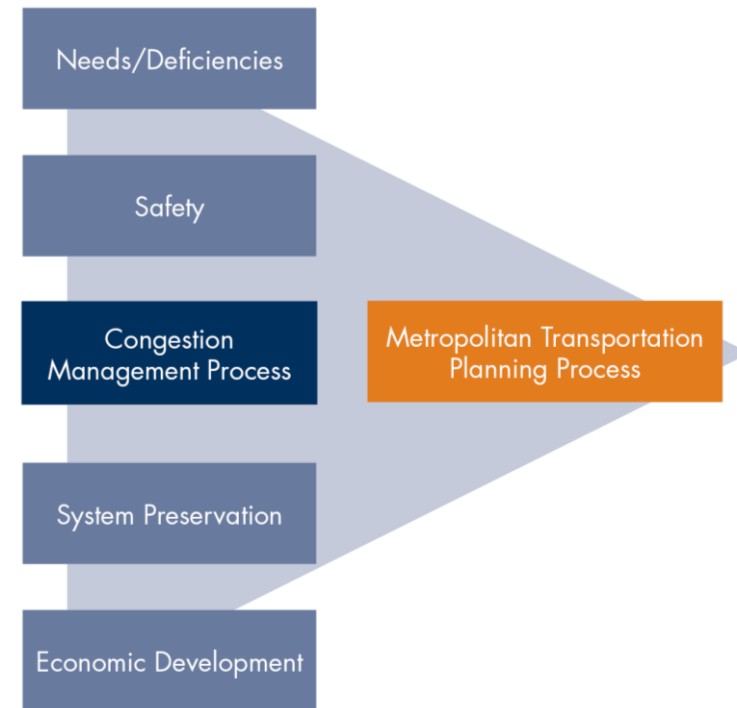
Legend

- Local Roads
- State Route
- US Highway
- Interstate
- Counties included in Planning Boundary
- TMA Boundary
- Urbanized Area



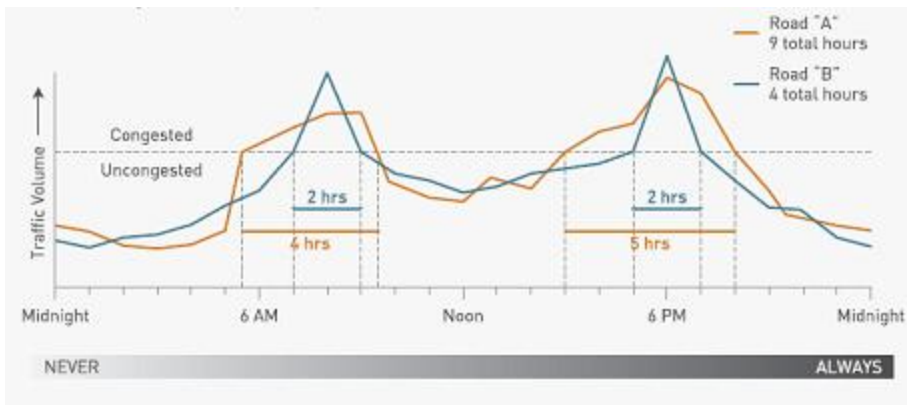
What is a Congestion Management Process (CMP)?

- Systematic process that provides accurate, up-to-date information on transportation system performance
- Assesses alternative strategies for congestion management that meet state and local needs
- Integrated into the **metropolitan planning process**
- Intended to move these congestion management strategies into the funding and implementation stages



Four Major Dimensions of Congestion

- Intensity (How bad?)
- Duration (How long?)
- Extent (How far?)
- Variability (How does it change?)



Source: Atlanta Regional Commission

Two Types of Congestion

Recurring

- Demand exceeds capacity
- System choke points
- Predictable → Reliability

Non-recurring

- Incidents
- Work zones
- Weather
- Can be predictable (to an extent)

CMP Steps

1. Define Regional Objectives
2. Develop CMP Network
3. Develop Performance Measures
4. Collect Data/Monitor System Performance
5. Analyze Congestion Problems and Needs
6. Identify and Assess Strategies
7. Program and Implement Strategies
8. Evaluate Strategy Effectiveness

1. CMP Objectives

Capacity Preservation/Expansion

- Preserving/expanding the I-64 through capacity
- Preserving/expanding the I-64 Interchanges
- Preserving/expanding other regional routes

System Connectivity Enhancement

- Improve/enhance connectivity among major routes

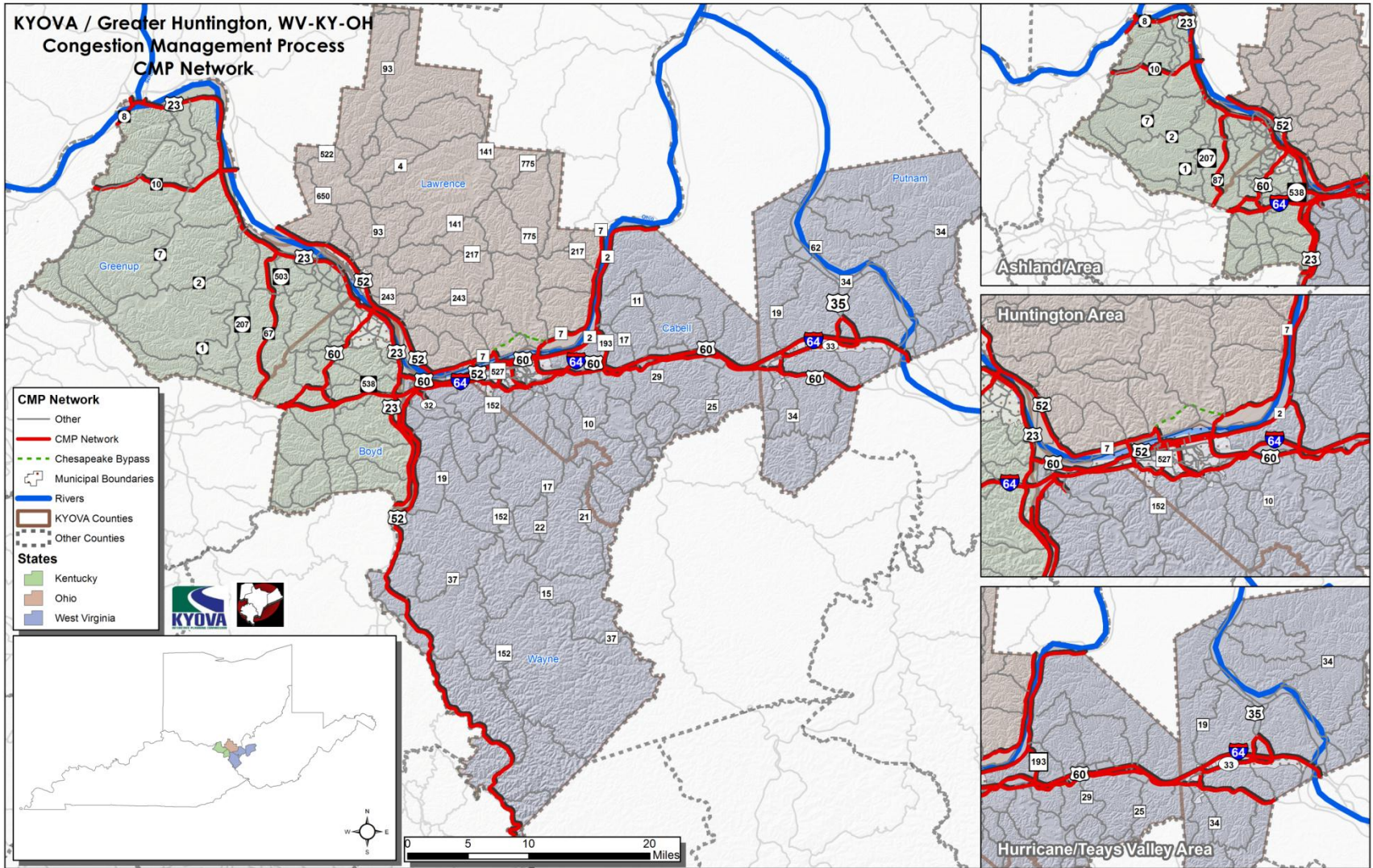
Arterial Operation Improvement

- Improve traffic signals and signal systems
- Implement access management strategies and principles

Enhancement of System Efficiency/Safety

- Improve incident management and response
- Improve truck freight movement
- Increase the use of alternative transportation modes

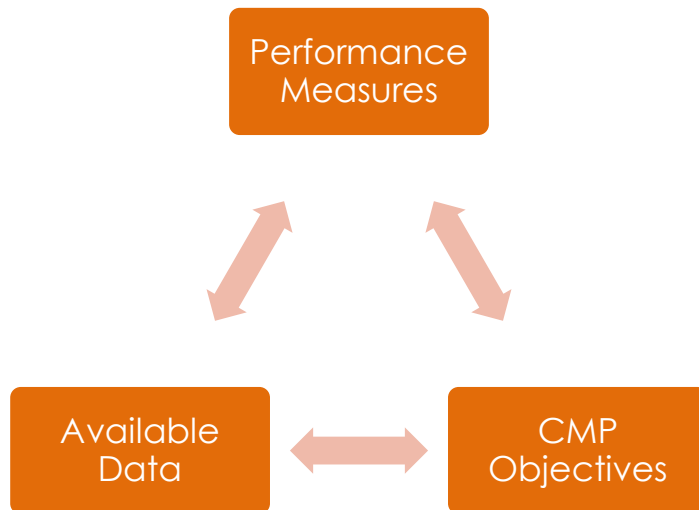
2. CMP Highway Network



3. Performance Measures

Characteristics

- Quantifiable
- Easily Understood
- Practical
- Effective

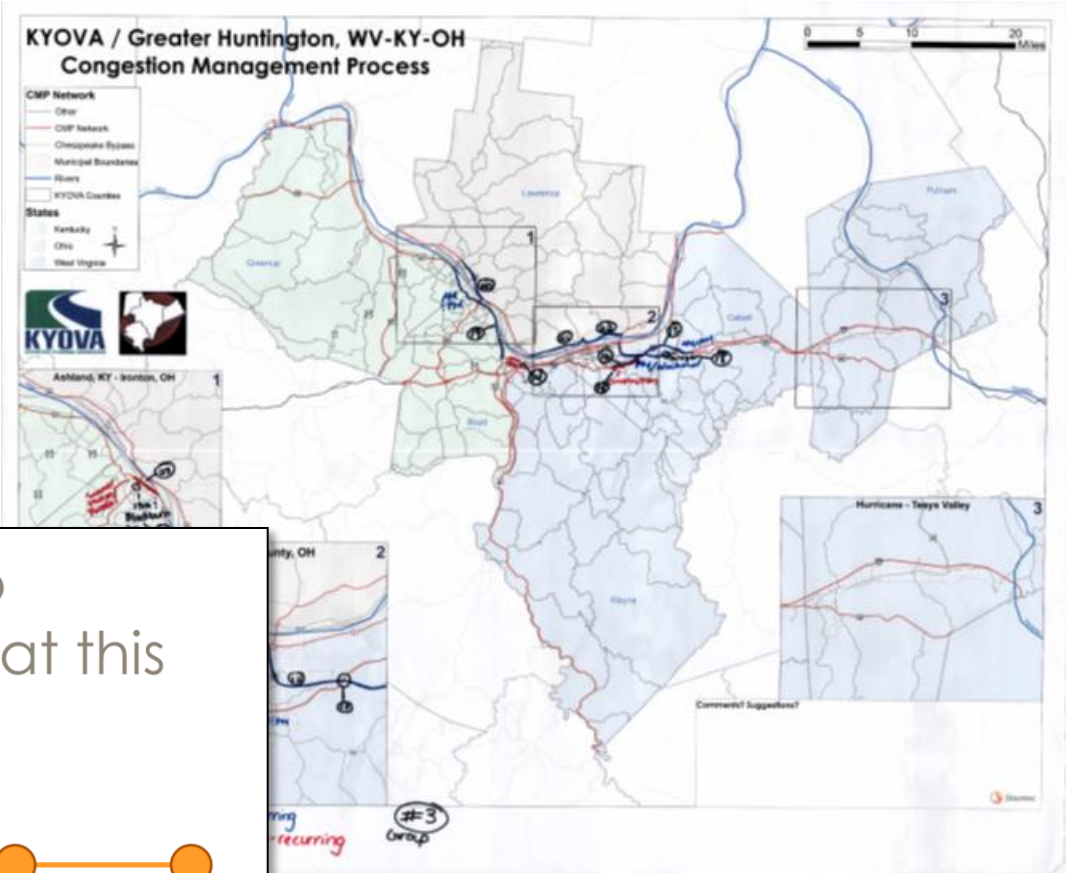
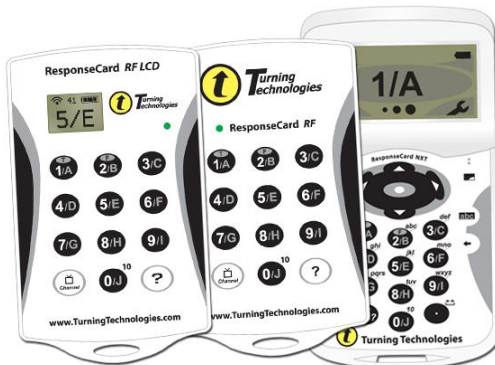


Congestion Dimension	Related Performance Measures
Intensity	<ul style="list-style-type: none"> • Volume-to-Capacity ("V/C") ratio • Level of Service (LOS) • Travel time index (TTI)
Duration	(None selected – congestion confined to traditional weekday A.M., P.M. peak periods)
Extent	<ul style="list-style-type: none"> • Number or share of vehicle miles traveled at LOS E or F • Total delay
Variability/Reliability	<ul style="list-style-type: none"> • Crash rate • Planning Time Index (PTI)
Multimodal	<u>Transit</u> <ul style="list-style-type: none"> • Fixed-route transit coverage • Proportion of CMP network that includes fixed-route transit <u>Bicycle/Pedestrian</u> <ul style="list-style-type: none"> • Bicycle/pedestrian routes/facilities • Proportion of CMP network that includes bicycle/pedestrian routes/facilities

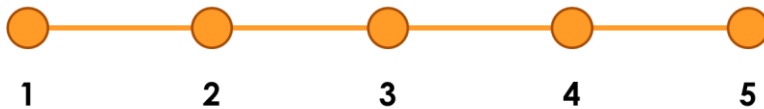
4. Data Collection/Performance Monitoring

- GIS datasets
- Travel demand models
- Travel time data (multiple sources)
- Traffic counts (from State DOTs)
- Crash data
- ITS data
- Transit route coverage
- Planning documents

Problem Area Ranking



How important is it to mitigate congestion at this location?



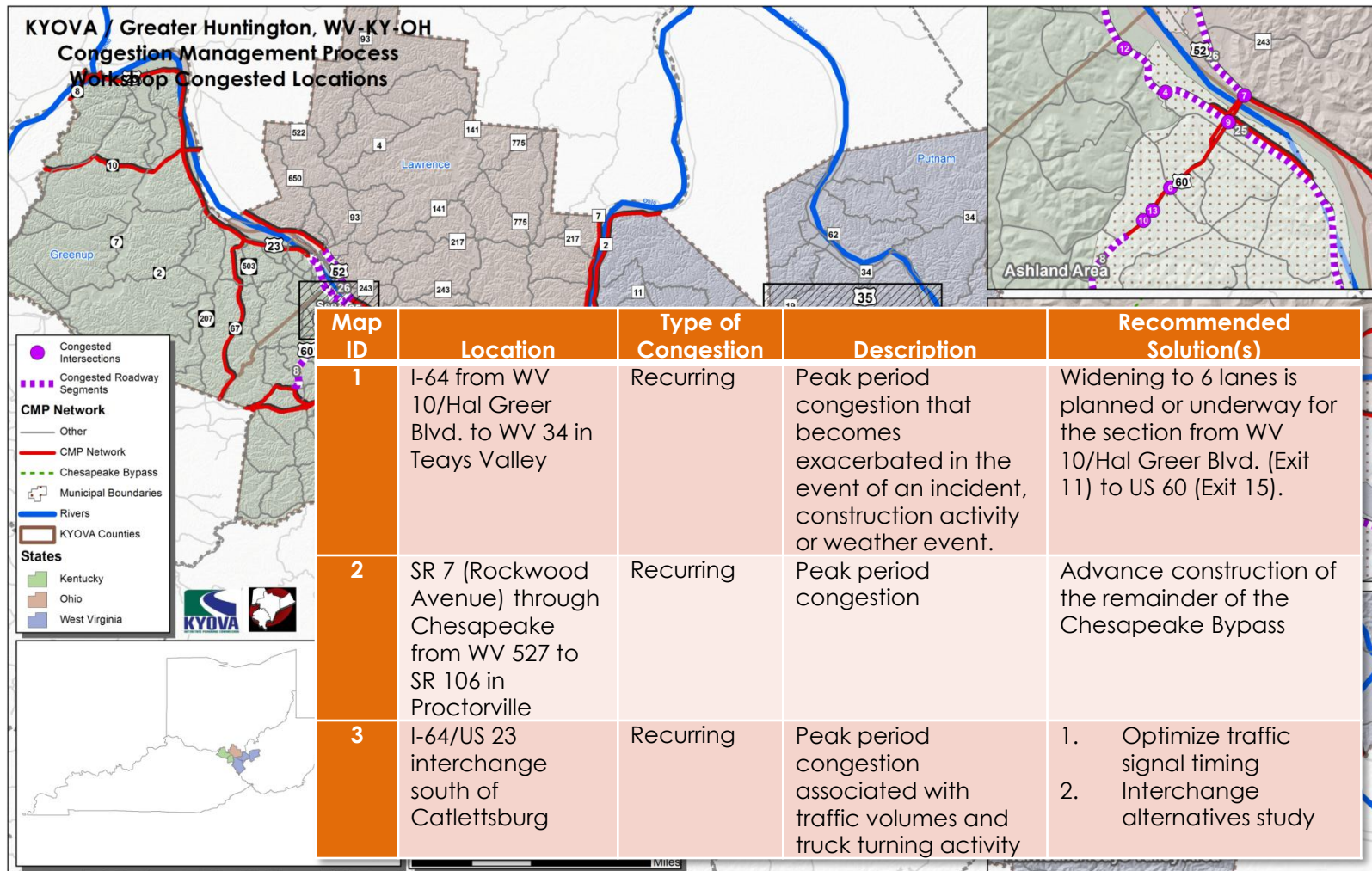
1 Most Important 2 Somewhat Important 3 Neutral 4 Somewhat Unimportant 5 Unimportant

Stakeholder Identification of Congested Locations

Map ID	Name	Location Type	Score/# of Votes					Average Score	Rank	State
			1	2	3	4	5			
5	WV 10/Hal Greer Boulevard from I-64 to 5th Avenue, Huntington	Segment	7	5	2	0	0	1.643	1	WV
21	US 60 (Midland Trail) from Third Avenue to I-64 interchange	Segment	5	6	2	0	0	1.769	2	WV
14	US 60 at East Pea Ridge Road-Farmdale Road, Barboursville	Intersection	4	6	2	0	0	1.833	3	WV
28	8th Avenue at 31st Street (US 60), Huntington	Intersection	4	4	3	0	0	1.909	4	WV
24	US 60 from I-64 (29th Street interchange) to Merritts Creek/WV 193 (Barboursville exit)	Segment	2	4	2	0	0	2.000	5	WV
19	3rd Avenue/5th Avenue intersections with Hal Greer Boulevard and 20th Street	Intersection	4	7	3	1	0	2.067	6	WV
16	US 60 at 5th Avenue (near 31st Street bridge), Huntington	Intersection	3	6	3	1	0	2.154	7	WV
22	I-64/US 60 (29th Street) interchange	Intersection	2	6	2	1	0	2.182	8	WV
1	I-64 from WV 10/Hal Greer Blvd. to WV 34 in Teays Valley	Segment	1	10	0	1	1	2.308	9	WV
15	5th Avenue at 1st Street, Huntington	Intersection	2	5	4	1	1	2.538	10	WV
18	WV 527 (5th Street) from I-64 to 13th Avenue	Segment	3	2	4	3	0	2.583	11	WV
17	US 60 (3rd Avenue) at 3rd Street at-grade railroad crossing	Intersection	1	0	6	4	2	3.462	12	WV
20	3rd Avenue and 5th Avenue railroad crossings between 22nd and 23rd streets	Intersection	1	0	5	4	2	3.500	13	WV
2	SR 7 (Rockwood Avenue) through Chesapeake from WV 527 to SR 106 in Proctorville	Segment	3	5	0	0	0	1.625	1	OH
7	US 52 in Ohio at 12th Street/13th Street bridge approaches	Intersection	4	5	2	1	0	2.000	2	OH
27	US 52 from 17th Street bridge to Walmart entrance	Segment	3	5	2	1	0	2.091	3	OH
26	US 52 from 12th Street/13th Street bridges at Ashland to SR 93 in Ironton, Ohio	Segment	3	3	3	1	0	2.200	4	OH
25	US 23 from US 60 in Catlettsburg to KY 207 in Russell	Segment	6	2	2	0	0	1.600	1	KY
9	US 60 at US 23, Ashland	Intersection	4	3	2	0	0	1.778	2	KY
6	US 60 at Blackburn Avenue and Algonquin Avenue, Ashland	Intersection	3	4	2	0	0	1.889	3	KY
8	US 60 from KY 180 to Rose Hill Cemetery, Ashland	Segment	2	3	3	0	0	2.125	4	KY
4	US 23 at River Hill Drive/Walmart entrance, Ashland	Intersection	1	5	1	1	0	2.250	5	KY
12	US 23 at KY 5, Ashland	Intersection	2	3	2	1	0	2.250	6	KY
3	I-64/US 23 interchange south of Catlettsburg	Intersection	1	3	4	0	0	2.375	7	KY
29	US 23/US 60, Catlettsburg	Intersection	2	3	2	0	1	2.375	8	KY
10	US 60 Berry Street (Paul Blazer High School)	Intersection	1	3	2	1	0	2.429	9	KY
13	US 60 at Highland Avenue, Ashland	Intersection	1	2	2	1	0	2.500	10	KY
23	US 60/23rd Street railroad crossing	Intersection	1	3	4	2	1	2.909	11	KY



6. Identification and Assessment of CMP Strategies



7. Programming and Implementation of Strategies

Congested Location	MAP ID	Recommended Strategies	Est. of Probable Cost ¹ (in \$1,000's)	CMP Objectives										Implementation	Anticipated Benefit
				Capacity Preservation/Expansion			System Connectivity Enhancement	Arterial Operation		System Efficiency/Safety					
				Preserve/Expand I-64 Through Capacity	Preserve/Expand I-64 Interchanges	Preserve/Expand Other Regional Routes		Improve Traffic Signals/ Systems	Access Management	Incident Management/ Response	Truck Freight Movement	Alternative Transportation Modes			
I-64 from WV 10/Hal Greer Blvd. to WV 34 in Teays Valley	1	Widening to 6 lanes is planned or underway for the section from WV 10/Hal Greer Blvd. (Exit 11) to US 60 (Exit 15).	40,000	●								●		KYOVA MTP WVDOT	Reduce congestion
SR 7 (Rockwood Avenue) through Chesapeake from WV 527 to SR 106 in Proctorville	2	Advance construction of the remainder of the Chesapeake Bypass	71,000			●	●					●		KYOVA MTP ODOT	<ul style="list-style-type: none"> Reduce congestion Enhance system connectivity
I-64/US 23 interchange south of Catlettsburg	3	<ol style="list-style-type: none"> Optimize traffic signal timing Interchange alternatives study 	125		●	●		●				●		Ashland TIP Ashland MTP KYTC	Reduce congestion
US 23 at River Hill Drive/Walmart entrance, Ashland	4	<ol style="list-style-type: none"> Signal timing optimization Add second left-turn lane on northbound River Hill Drive approach 	300			●		●						Ashland TIP Ashland MTP KYTC	Reduce congestion
WV 10/Hal Greer Boulevard from I-64 to 5 th Avenue, Huntington	5	See <i>Downtown Huntington Access Study</i>	---					●	●			●		KYOVA TIP KYOVA MTP WVDOT	Reduce congestion Improve safety
US 60 at Blackburn Avenue and Algonquin Avenue, Ashland	6	<ol style="list-style-type: none"> Conduct study to eliminate Algonquin Avenue approach leg Signal timing optimization 	50			●		●	●					Ashland TIP Ashland MTP KYTC	Reduce congestion

8. Evaluation of Strategy Effectiveness



Feedback to beginning of next cycle

Recommendations for CMP Enhancements

- Travel Demand Model Integration
- Develop Decision Support System (DSS)
- More Comprehensive Travel Time Data Coverage
- Incorporate Travel Time Reliability (SHRP 2 Research Implementation)
- Truck Planning/Analysis

Final Report

- Completed July 2014
- <http://www.wvs.state.wv.us/kyova/>

Congestion
Management
Process for the
KYOVA/Huntington,
WV-KY-OH
Urbanized Area

Final Report | July 2014

Prepared for:
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Commission, Huntington, WV
and
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Council, Charleston, WV



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Thank you

