Hampton Roads Congestion Management Process

Hampton Roads Certification Review
August 14, 2024

Congestion Management Process (CMP)

Part I (March 2020)

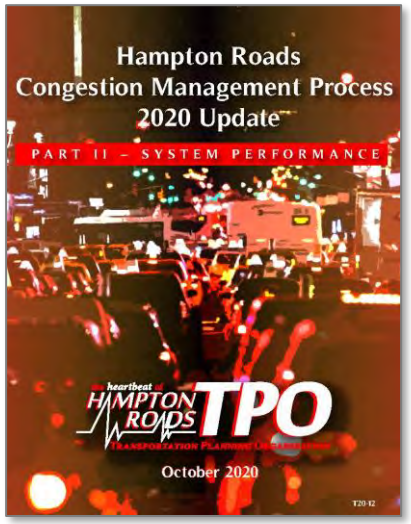
- Introduction
- System Monitoring

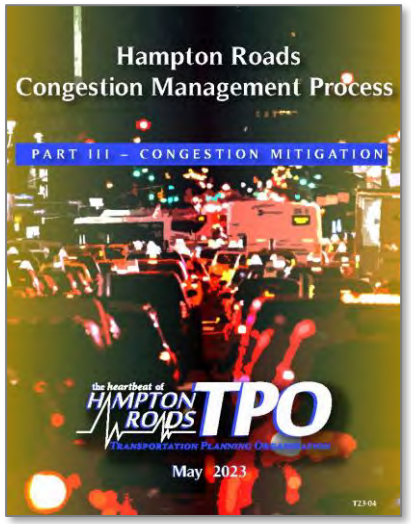
Part II (October 2020)

- System Performance
- Ranking of CMP Congested Corridors

Part III (May 2023)

- Future and Ongoing Roadway Projects
- Application of Mitigation Strategies to CMP Congested Corridors
- Next Steps



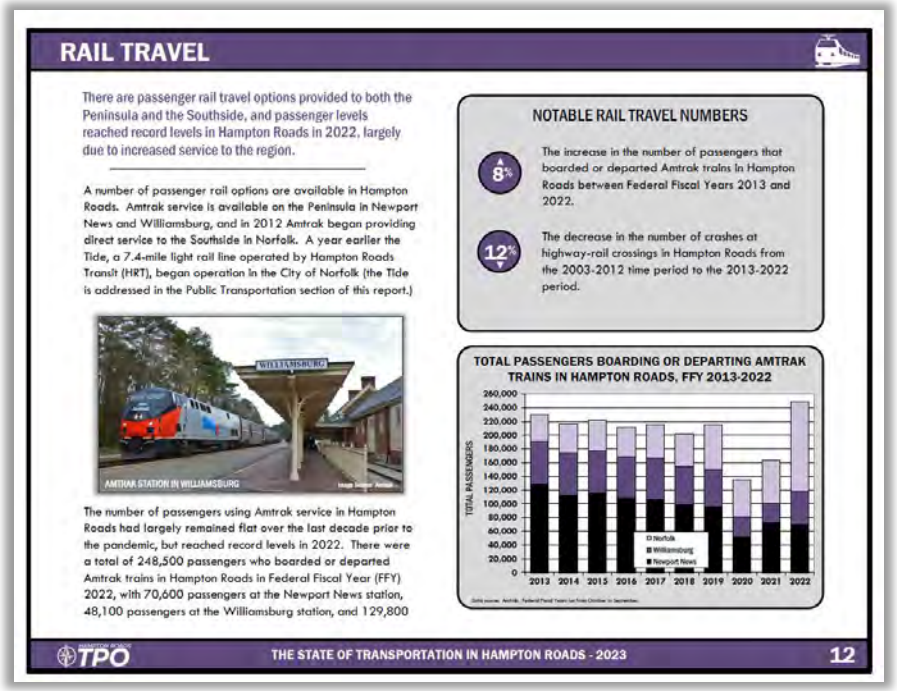


CMP Elements

1. Develop regional objectives for congestion management
2. Define the CMP network
3. Develop multimodal 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

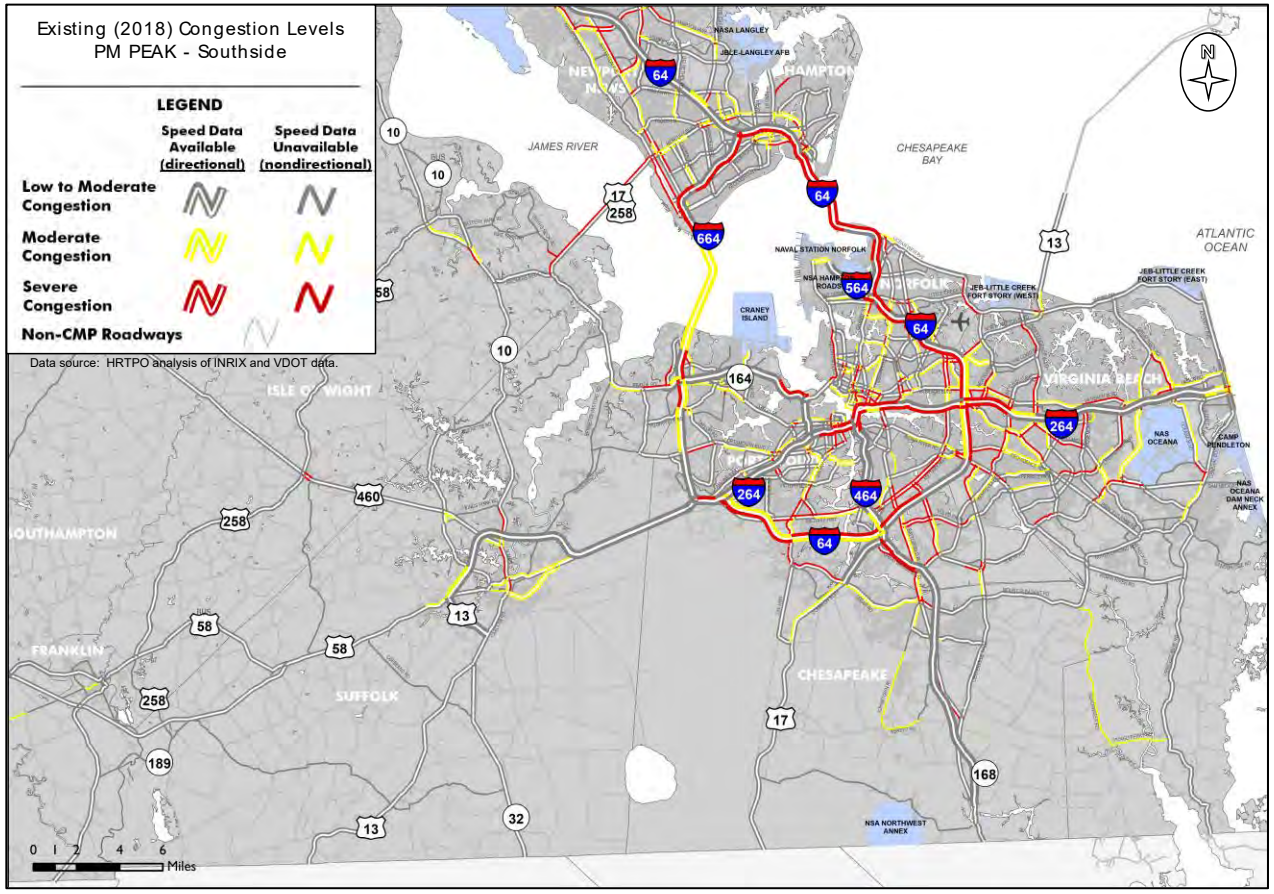
System Monitoring

- **HRTPO Regional System Monitoring Efforts**
  - **State of Transportation**
  - **HRTPO Annual Roadway Performance Report**
  - **Regional Performance Measures and Targets**
- **Regional Roadway Travel and Trends**
- **Bridges and Tunnels**
- **Recently Completed Roadway Improvements**
  - **Benefits of Selected Roadway Projects**

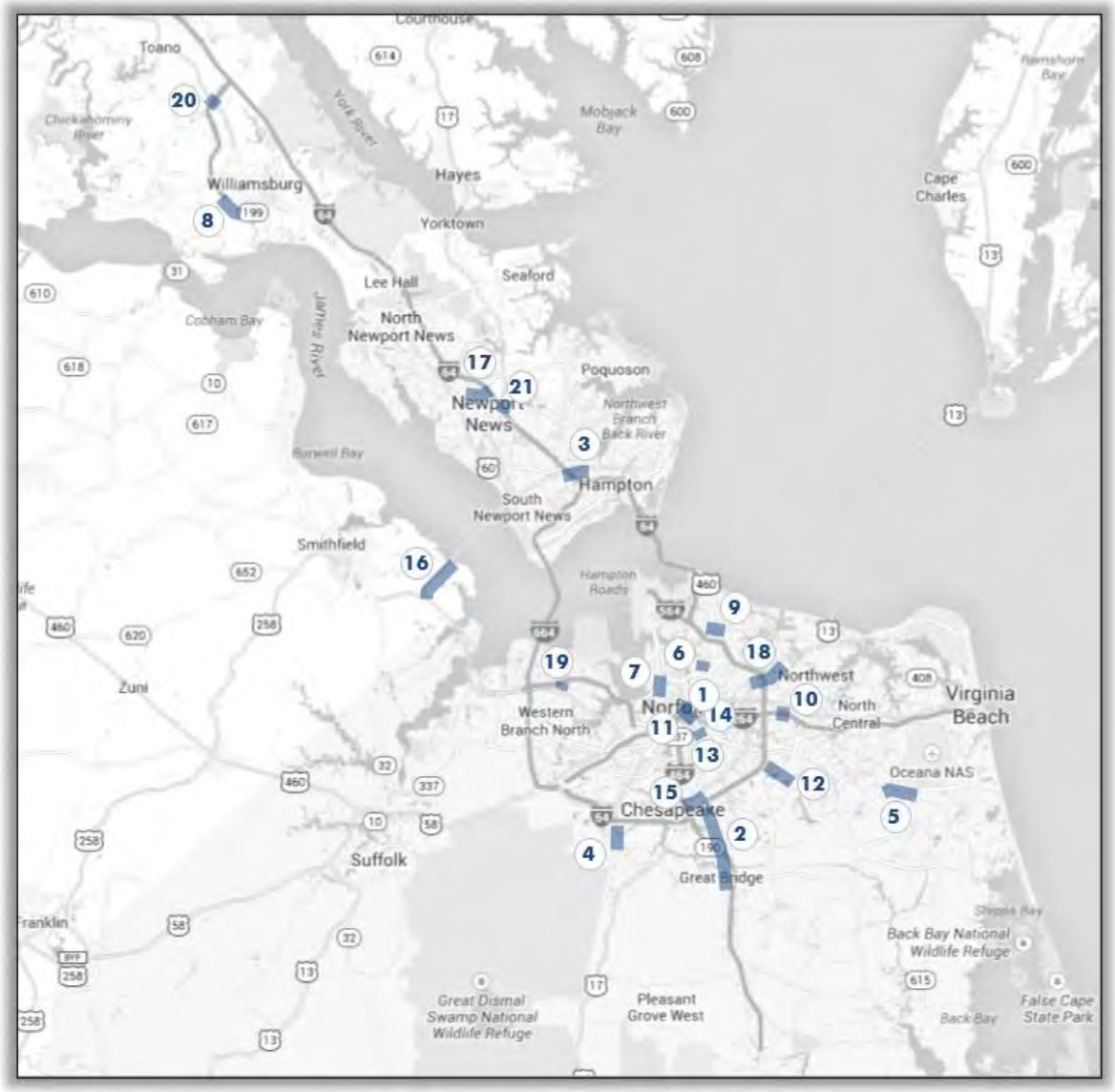


System Performance

- CMP Roadway Network
  - 1,600 miles, 5,500 lane-miles
- Congestion Analysis
  - Data and Methodology
  - Regional Congestion Levels
  - Selected Corridor Travel Times
  - Roadway
    - Congestion Levels
    - Congestion Duration
    - Total Delay
    - Travel Time Reliability
    - Freight Movement



Ranking of CMP Congested Corridors - Arterials



CMP Segment Scoring Criteria

Congestion (45%)

1) Congestion Level (20%)
2) Total Vehicle Delay (15%)
3) Congestion Duration (10%)

Travel Time Reliability (15%)

1) Level of Travel Time Reliability (10%)
2) LOTTR Duration (5%)

Freight (15%)

1) Existing Weekday Truck Volume (5%)
2) Total Truck Delay (5%)
3) Truck Travel Time Reliability (5%)

Safety (15%)

1) Segment Potential for Safety Improvement (10-15%)
2) Intersection Potential for Safety Improvement (0-5%)

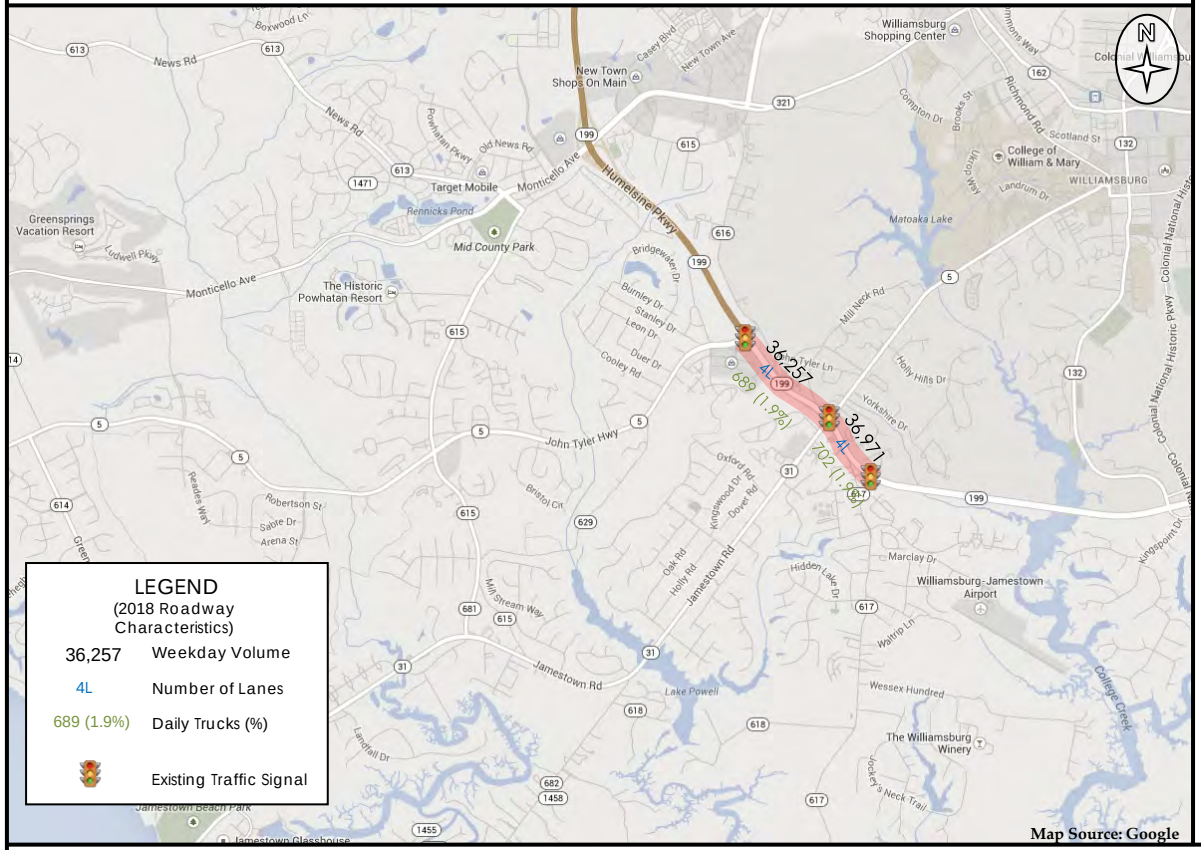
Roadway Type (10%)

1) National Highway System/STRAHNET/ Roadway Serving the Military (10%)

Application of Strategies to CMP Congested Corridors

Example Arterial

FIGURE 29 - CMP 2022 CONGESTED CORRIDOR - ARTERIAL #8
Route 199 Between John Tyler Hwy (Route 5) and Brookwood Dr
James City County and City of Williamsburg



Corridor Summary

Corridor Length	0.90 Miles
Speed Limit	45 mph
Roadway Class	Principal Arterial
Regional Transit Program Route Classification	WATA Route 6: Jamestown

Recent Projects

- Upgraded signal and installed second left-turn lane on Westbound Route 199 at John Tyler Highway (completed in 2013)

Future Projects

- None

					Eastbound (2018)												Westbound (2018)											
					SLOWEST SPEED (mph)		HIGHEST TRAVEL TIME INDEX		# CONG 15-MIN INTERVALS		TOTAL DELAY (Hrs/Mi)		CONG LEVEL		CMP Segment Score		SLOWEST SPEED (mph)		HIGHEST TRAVEL TIME INDEX		# CONG 15-MIN INTERVALS		TOTAL DELAY (Hrs/Mi)		CONG LEVEL		CMP Segment Score	
FACILITY NAME	SEGMENT FROM	SEGMENT TO	Length (Mi)	2018 # Lanes	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
ROUTE 199	JOHN TYLER HWY (RTE 5)	WILLIAMSBURG CL	0.23	4	25	15	1.43	2.39	1	13	25	127	SEV	SEV	30	68	27	23	1.28	1.48	0	5	19	60	MOD	SEV	13	24
ROUTE 199	JAMES CITY CL (WEST)	JAMESTOWN RD	0.24	4	25	15	1.43	2.39	1	13	25	127	SEV	SEV	32	70	27	23	1.28	1.48	0	5	19	60	MOD	SEV	15	26
ROUTE 199	JAMESTOWN RD	JAMES CITY CL (EAST)	0.16	4	41	41	1.16	1.17	0	0	6	15	LOW	LOW	11	13	38	33	1.24	1.41	0	2	7	32	LOW	SEV	11	20
ROUTE 199	WILLIAMSBURG CL	BROOKWOOD DR	0.27	4	41	41	1.16	1.17	0	0	6	13	LOW	LOW	9	11	38	33	1.24	1.41	0	2	6	30	LOW	SEV	9	18

Application of Strategies to CMP Congested Corridors

Example Arterial

	Congestion Management Strategies	Applicable Strategy?
Strategy #1 Eliminate Person Trips or Reduce	**GROWTH MANAGEMENT/ACTIVITY CENTERS**	
	1-1 Land Use Policies/Regulations/Smart Growth	IN USE
	CONGESTION/VALUE PRICING	
	1-2 Road User Fees	YES
	1-3 Parking Fees	-
	TRANSPORTATION DEMAND MANAGEMENT (TDM)	
	1-4 Outreach/Marketing for TDM/Transit Services	IN USE
	1-5 Telecommuting/Remote Access	IN USE
	1-5 Employee Flextime Benefits/Compressed Work Week	IN USE
Strategy #2 Shift Trips from Auto to Other Modes	**PUBLIC TRANSIT CAPITAL IMPROVEMENTS**	
	2-1 Exclusive Right-of-Way - New Rail Service	-
	2-2 Exclusive Right-of-Way - New Bus Facilities	YES
	2-3 Ferry Services	-
	2-4 Fleet Expansion	YES
	2-5 Improved Intermodal Connections	-
	2-6 Improved/Increased Park & Ride Facilites & Capital Improvements	YES
	PUBLIC TRANSIT OPERATIONAL IMPROVEMENTS	
	2-7 Service Expansion	YES
	2-8 Traffic Signal Preemption	YES
	2-9 Improved Transit Performance	YES
	2-10 Transit Fare Reductions Plan/Reduced Rate of Fare	YES
	2-11 Transit Information Systems	YES
	BICYCLE AND PEDESTRIAN MODES	
	2-12 Improved/Expanded Bicycle Network	YES
	2-13 Bicycle Storage Systems	YES
	2-14 Improved/Expanded Pedestrian Network	YES
Strategy #3 Shift Trips from SOV to HOV	**HIGH OCCUPANCY VEHICLES (HOV)**	
	3-1 Add HOV Lanes	-
	3-2 HOV Toll Savings	-
	TRANSPORTATION DEMAND MANAGEMENT (TDM)	
	3-3 Rideshare Matching Services	IN USE
	3-4 Vanpool/Employer Shuttle Program	IN USE
	3-5 Trip Reduction Program	IN USE
	3-6 Parking Management	IN USE
Strategy #4 Improve Roadway Operations	**TRAFFIC OPERATIONAL IMPROVEMENTS**	
	4-1 Geometric Improvements	YES
	4-2 Intersection Channelization	YES
	4-3 Intersection Turn Restrictions	YES
	4-4 Intersection Signalization Improvements	YES
	4-5 Innovative Intersections and Interchanges	YES
	4-6 Coordinated Intersections Signals	IN USE
	4-7 Roadway Environment	YES
	4-8 Traffic Calming	-
	4-9 Intelligent Transportation Systems/Trans. Operations Center (TOC)	IN USE
	4-10 Reversible Lanes	-
	4-11 Freight Policies and Improvements	YES
	4-12 Transportation Security	YES
	4-13 Active Traffic Management (ATM)	YES
	4-14 Incident Management, Detection, Response & Clearance	YES
	4-15 Construction/Work Zone Management	YES
	4-16 Elimination of Bottlenecks	YES
	4-17 Ramp Metering	-
	4-18 Part-Time Shoulder Use	-
	4-19 High Occupancy Toll (HOT)/Express Lanes	-
	4-20 Access Control and Connectivity	IN USE
	4-21 Median Control	IN USE
Strategy #5 Add Capacity	**ADDITION OF GENERAL PURPOSE LANES**	
	5-1 Freeway Lanes	-
	5-2 Arterial lanes	YES
	5-3 Interchanges	-
	5-4 Improve Alternate Routes	YES

FIGURE 29 - CMP 2022 CONGESTED CORRIDOR - ARTERIAL #8
Route 199
Between John Tyler Hwy (Route 5) and Brookwood Dr

Observations & Possible Causes of Congestion

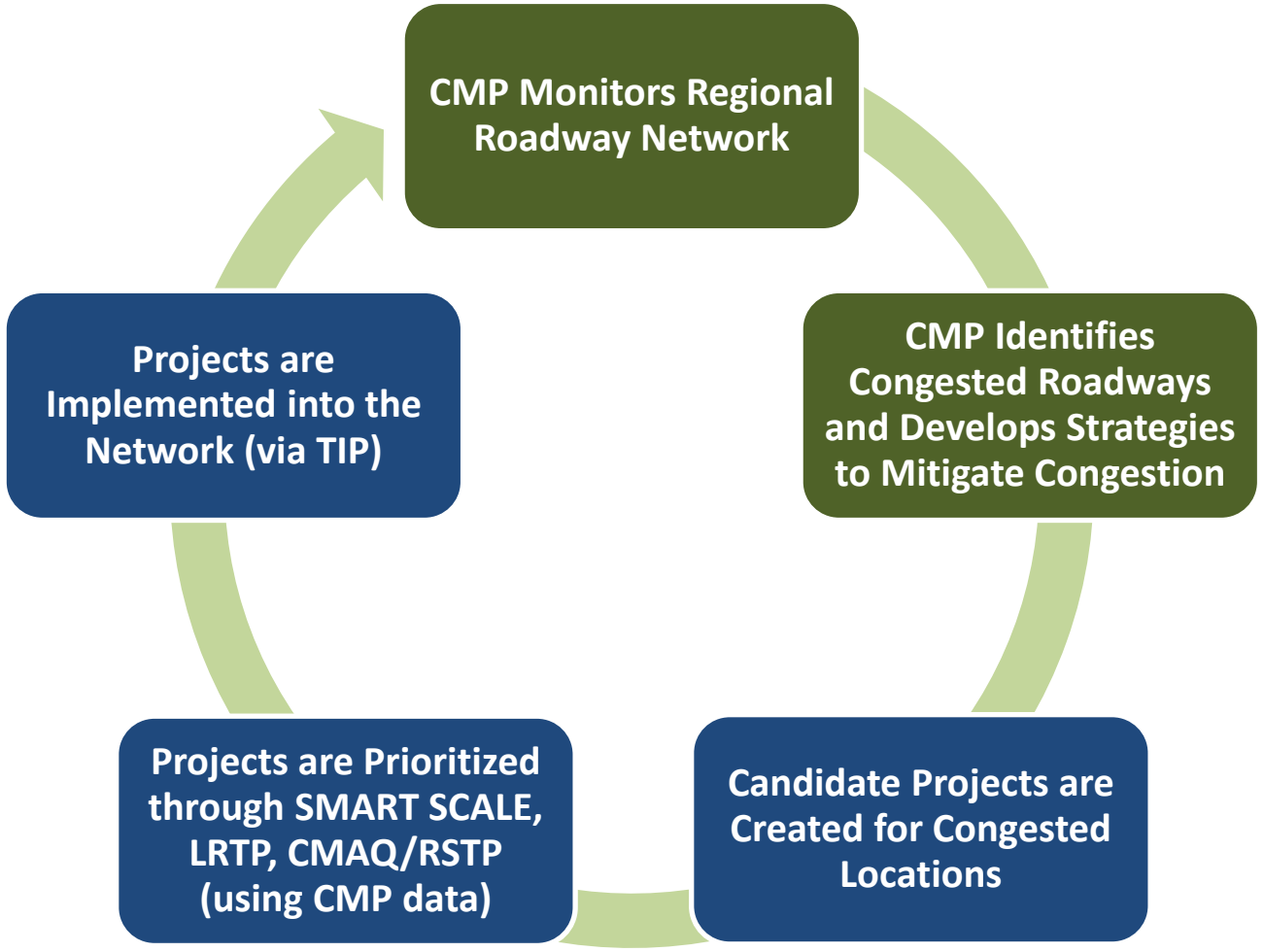
- Heavy PM Peak Hour traffic volume/congestion (1,626-1,741 vehicles in westbound (WB) peak direction from Brookwood Dr to John Tyler Hwy).
- Heavy traffic congestion at the Jamestown Rd intersection during the PM Peak Period.
  - o High number of through vehicles for eastbound (EB) Route 199 approach at Jamestown Rd. This traffic often backs up beyond the turn bays.
  - o High number of vehicles turning left from WB Route 199 to SB Jamestown Rd. Left-turn demand is higher than the allocated green time.
  - o Heavy through volumes for the SB Jamestown Rd approach at Route 199. There is only one lane on SB Jamestown Rd south of the Route 199 intersection.

Potential Congestion Mitigation Strategies

- Continue to promote TDM, public transit, and active transportation strategies in order to reduce traffic volume in this corridor.
- Evaluate and consider adding dual left-turn lanes for the EB and WB Route 199 approaches at the Jamestown Rd intersection. This would require adding a 2nd receiving lane for SB Jamestown Rd south of the Route 199 intersection, either through new construction or changing the existing northbound (NB) lane uses and restriping the pavement.
- Consider extending the turn bays on EB Route 199 beyond the typical peak period length of the queue.
- Evaluate and consider adding 2nd through lane for SB Jamestown Rd approach at the Route 199 intersection. This would also require adding a 2nd receiving lane for SB Jamestown Rd south of the Route 199 intersection.
- This corridor is being studied as part of the VTrans Project Pipeline effort. The goal of this effort is to develop focused alternatives, projects and investment strategies that can be considered for funding in SMART SCALE, Revenue Sharing, Interstate, and other programs. Any recommendations from the Project Pipeline study, which is expected to be completed in 2022, should be considered for this corridor.

Integrating the CMP into the Planning Process

- **Data from the CMP is input into the Project Prioritization Tool to assist with the evaluation and scoring of projects.**
- **Encourage locality staff to use the information included in the CMP when developing project proposals for the most congested areas.**
- **Roadway data is updated continuously to assist with regional planning efforts and future CMP updates.**



Integrating the CMP into the Metropolitan Planning process

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