MOVE 2050

APPENDIX #11

Capital Region Planning Commission



Transportation System Management and Operations

September 2026

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Capital Regional Planning Commission

2050 Metropolitan Transportation Plan
MOVE 2050

This Plan was prepared as a cooperative effort of the U.S. Department of Transportation (USDOT), Federal Highway Administration (FHWA), Federal Transit Administration (FTA), Louisiana Department of Transportation and Development (LA DOTD), and local governments in partial fulfillment of requirements in Title 23 USC 134 and 135, amended by the IIJA, Sections 11201 and 11525, October 1, 2021. The contents of this document do not necessarily reflect the official views or policies of the USDOT.

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1.0 Transportation Systems Management and Operations

The Capital Region Planning Commission's (CRPC) 2050 Metropolitan Transportation Plan is being developed as the region faces persistent and evolving transportation challenges. Increasing travel demand, recurring and non-recurring congestion, unreliable travel times, safety concerns, freight bottlenecks, and gaps in multimodal connectivity affect the efficient movement of people and goods. These conditions influence regional economic competitiveness, quality of life, system resilience, and access to employment, education, health care, and other essential services.

Transportation Systems Management and Operations, or TSMO, provides a practical framework for addressing these challenges by improving the safety, reliability, efficiency, and resilience of the existing transportation system. As illustrated in **Figure 1-1**, TSMO applies coordinated operations, technology, data, performance management, and institutional collaboration to make better use of existing transportation assets.

Figure 1-1 TSMO Strategies



Historically, congestion in Baton Rouge and the Capital Region has often been addressed through roadway expansion. Although strategic capacity improvements will remain necessary, expansion alone cannot adequately address incidents, work zones, special events, severe weather, fluctuating travel demand, or other causes of non-recurring congestion. Capacity projects are also increasingly constrained by construction costs, available right-of-way, environmental impacts, and limited transportation funding.

The Capital Region should therefore evaluate operational, technological, multimodal, and demand management strategies alongside major capacity investments. This approach will help CRPC and its partners maximize existing infrastructure, improve

travel time reliability, reduce crash exposure, expand travel choices, and obtain greater value from transportation investments.

TSMO is not limited to individual technology deployments. It is an ongoing business practice that connects transportation planning, project development, operations, maintenance, emergency response, and performance management across modes and jurisdictions. When applied at the regional and corridor levels, TSMO can provide lower cost, high impact improvements that support mobility, safety, freight movement, transit service, customer experience, and system resilience.

Figure 1-2 TSMO Objectives



The regional TSMO framework should support the following objectives:

- Improve travel time reliability and reduce recurring and non-recurring delay.
- Improve safety through proactive operations, incident management, and targeted engineering strategies.
- Strengthen freight mobility and the reliability of critical supply chains.
- Improve transit reliability and multimodal access.
- Expand customer focused traveler information and mobility options.
- Improve emergency preparedness and continuity of transportation operations.
- Support data driven planning, programming, and investment decisions.
- Maximize the performance and useful life of existing transportation infrastructure.

The Capital Region also has an established base of transit, multimodal, and travel demand management programs that can be strengthened through the 2050 MTP. Existing efforts include fixed route transit, paratransit, microtransit, elements of bus rapid transit, ridesharing, active transportation planning, and congestion management activities intended to reduce single occupant vehicle travel and improve transportation system efficiency.

CATS has incorporated demand responsive mobility services and has reported average on time performance of 80 percent or better. At the same time, regional transit ridership declined from more than 2.6 million annual riders before the COVID-

19 pandemic to approximately 1.7 million riders in 2025. CATS has responded through a five-year strategic plan focused on safe and reliable service, workforce access, economic development, on time performance, vehicle maintenance, crash reduction, and community engagement. These conditions reinforce the need for sustained improvements to transit reliability, customer information, first- and last-mile access, and regional travel choices.

The recommendations that follow position TSMO, Intelligent Transportation Systems, Travel Demand Management, transit operations, freight operations, and multimodal strategies as core implementation elements of the 2050 MTP. The recommendations are also consistent with the Louisiana TSMO Strategic Plan, including its emphasis on policy, planning, data sharing, emerging technologies, arterial operations, freight management, resilience, and performance monitoring.

1.1 Planning Framework and Policy Direction

CRPC should establish TSMO as a continuing regional practice rather than a stand-alone collection of projects. TSMO considerations should be incorporated into transportation planning, programming, project development, design, operations, maintenance, and system preservation decisions.

A successful regional TSMO program requires more than technology. It requires sustained leadership, clearly defined responsibilities, staff capacity, interagency participation, reliable funding, coordinated procedures, and a culture that supports innovation and continuous operational improvement.

A central policy direction of the 2050 MTP should be:

> **CRPC and its regional partners will consider operational, technological, multimodal, and demand management strategies alongside traditional capital improvements when addressing mobility, safety, freight movement, reliability, resilience, and access.**

This policy does not eliminate the need for roadway capacity projects. Instead, it establishes a disciplined process for determining whether existing infrastructure can be operated more safely and efficiently before, or in conjunction with, major expansion.

CRPC and its partners should implement a planning framework that:

1. Treats TSMO as a regional implementation strategy for mobility, safety, reliability, freight movement, multimodal access, and resilience.
2. Integrates operational performance objectives into planning, project prioritization, corridor studies, design, and programming.

3. Establishes measurable performance outcomes for regional and corridor investments.
4. Supports collaboration among CRPC, LADOTD, local governments, CATS, emergency responders, freight stakeholders, transportation operators, institutional partners, and major employers.
5. Promotes interoperable systems, shared data, coordinated response procedures, and consistent operational practices.
6. Establishes a living implementation framework that can be updated as regional needs, agency capabilities, funding opportunities, and technologies evolve.

1.2 Plan Recommendations

The recommendations are organized into three implementation tiers. This structure distinguishes the institutional and operational actions that should begin early in the MTP period from initiatives that require additional planning, coordination, or technology development.

Tier 1: Program Foundation and Immediate Operational Priorities

Tier 1 recommendations establish the institutional framework and core operational capabilities necessary to support all subsequent TSMO initiatives.

Invest in a Regional TSMO Program

CRPC should formalize TSMO as a regional program that coordinates planning and implementation across jurisdictions, agencies, and modes. The program should align transportation planning, operations, maintenance, safety, resilience, transit, freight, and capital investment decisions.

The Needs Assessment emphasizes the importance of institutional capability and the six dimensions of TSMO capability maturity illustrated in **Figure 1-3**. Participating agencies should periodically assess their capabilities, identify institutional and technical gaps, and use the results to develop a collaborative work program.

Figure 1-3 Capability Maturity Model Dimensions and Subdimensions



Recommended actions include:

- Develop a regional TSMO program framework that defines governance, agency roles, responsibilities, decision making processes, and coordination mechanisms.
- Establish a Regional TSMO Committee or equivalent operations focused working group.
- Identify a designated program lead or coordinator responsible for maintaining the implementation roadmap and facilitating regional participation.
- Invest in staff capacity, training, and professional development across participating agencies.
- Conduct a regional Capability Maturity Model workshop and encourage agencies to complete periodic self assessments.
- Develop a collaborative regional TSMO work plan identifying actions, responsible agencies, target timeframes, resource needs, and performance outcomes.
- Review existing policies, procedures, and project development practices to identify institutional barriers to implementation.
- Incorporate TSMO considerations into CRPC planning guidance, project prioritization, corridor studies, project development, and funding decisions.

Strengthen Regional Coordination and Formalize Partnerships

Many of the Capital Region's mobility, safety, freight, emergency response, and reliability challenges cross jurisdictional boundaries. Effective TSMO implementation will require sustained coordination among CRPC, LADOTD, local governments, CATS, law enforcement, fire and emergency medical services, emergency management

agencies, freight operators, port and aviation interests, universities, major employers, and other institutional partners.

Recommended actions include:

- Establish a regional coordination structure for day-to-day operations, incident management, emergency response, work zones, special events, traveler information, and corridor management.
- Formalize operational agreements, memoranda of understanding, or common procedures where appropriate.
- Define agency responsibilities for collecting, maintaining, sharing, and using operational data.
- Develop common regional mobility, safety, reliability, and resilience objectives.
- Establish coordinated response protocols for incidents that affect multiple routes or jurisdictions.
- Coordinate planned work zones and major construction activities to reduce overlapping closures, detours, and traffic impacts.
- Engage major traffic generators, including state government, universities, hospitals, industrial facilities, large employers, and event venues.
- Coordinate regional TSMO implementation with parish emergency operations centers and state emergency management functions.
- Establish procedures for reviewing operational performance and resolving cross jurisdictional issues.

The stakeholder framework should include, at a minimum:

State and Regional Agencies

- CRPC
- LADOTD headquarters and relevant operations, traffic engineering, ITS, planning, freight, safety, and district functions
- Louisiana State Police
- CATS
- Louisiana emergency preparedness and response agencies

Local Governments and Operating Agencies

- Ascension Parish
- East Baton Rouge Parish and City of Baton Rouge
- East Feliciana Parish
- Iberville Parish
- Livingston Parish

- Pointe Coupee Parish
- St. Helena Parish
- Tangipahoa Parish
- Washington Parish
- West Baton Rouge Parish
- West Feliciana Parish
- Municipal public works, traffic engineering, transportation, planning, and emergency management departments
- Local law enforcement, fire departments, and emergency medical services

Transportation and Institutional Partners

- Port of Greater Baton Rouge
- Baton Rouge Metropolitan Airport
- LSU
- Southern University
- Major hospitals and health care systems
- Large public- and private-sector employers
- Freight carriers, railroads, logistics providers, and industrial facilities
- School systems and major event venues

A detailed stakeholder matrix should identify each organization's anticipated role in planning, funding, implementation, operations, maintenance, data management, emergency response, and performance reporting.

Establish Regional Performance Management and Data Governance

CRPC should establish a unified performance framework connecting transportation planning, real-time operations, investment prioritization, and public reporting. This recommendation consolidates performance measurement, data sharing, emerging data, and investment decision making into one regional strategy.

The framework should help CRPC and its partners:

- Align investments with regional goals.
- Identify locations with concentrated delay, unreliability, and crash exposure.
- Establish defensible priorities.
- Demonstrate the benefits of operational improvements.
- Support federal transportation performance management requirements.
- Communicate results to decision-makers, partner agencies, and the public.
- Adjust strategies based on measured outcomes.

Recommended actions include:

- Establish regional TSMO performance measures for safety, mobility, reliability, transit, freight, multimodal access, resilience, and customer experience.
- Develop baseline conditions and performance targets using available and validated data.
- Establish data governance procedures addressing ownership, quality, access, security, retention, interoperability, and permissible use.
- Create agreements or protocols for sharing historical and near real time data among CRPC, LADOTD, local agencies, CATS, emergency responders, and other authorized partners.
- Use probe data, signal system data, incident records, transit data, crash data, freight data, and customer information to support regional and corridor decisions.
- Develop project warrants and decision support tools for identifying locations suited to operational improvements.
- Incorporate benefit cost and return on investment analyses into TSMO project evaluation where reliable inputs are available.
- Benchmark regional performance over time and against appropriate peer regions.
- Establish a recurring reporting program and regional performance dashboard.

Table 1-1 Recommended Performance Measures

Performance Area	Representative Measures
Travel time reliability	Planning Time Index, Travel Time Index, buffer time, percent of reliable trips
Recurring congestion	Vehicle hours of delay, corridor travel time, peak period speed
Non-recurring congestion	Incident related delay, closure duration, queue duration
Incident management	Detection time, verification time, roadway clearance time, incident clearance time
Traffic signals	Arrivals on green, split failures, detector health, progression quality, travel time
Safety	Crash frequency, crash rate, fatal and serious injury crashes, secondary crashes

Performance Area	Representative Measures
Transit	On time performance, travel time variability, passenger delay, service availability
Freight	Truck travel time reliability, bottleneck delay, access reliability, incident impacts
Multimodal access	First- and last-mile connectivity, bicycle and pedestrian network gaps
Customer experience	Traveler information availability, customer satisfaction, complaint trends
Resilience	System recovery time, communications availability, backup power coverage

Performance targets should be established through a collaborative process after baseline conditions, data quality, operational responsibilities, and available resources have been documented.

Improve Arterial Operations and Travel Time Reliability

Major arterials in the Capital Region experience recurring congestion and unreliable travel times caused by traffic demand, closely spaced access points, signal operations, incidents, schools, special events, work zones, weather, and adjacent development.

CRPC and its partners should establish a regional arterial operations program that builds on existing signal modernization, communications, detection, camera, ATMS, and traffic management investments.

Priority corridors include:

- US 61 / Airline Highway
- US 190
- LA 1
- LA 30
- LA 415
- LA 426
- LA 1026
- Florida Boulevard
- Essen Lane
- Bluebonnet Boulevard
- Siegen Lane
- Pecue Lane
- Nicholson Drive
- College Drive
- Lee Drive
- Acadian Thruway
- Perkins Road
- South Sherwood Forest Boulevard
- O'Neal Lane

- South Range Avenue
- Walker South Road

Recommended actions include:

- Establish a recurring, performance-based regional signal timing and optimization program.
- Maintain accurate traffic signal inventories, timing databases, detection systems, communications, and controller configurations.
- Monitor arrivals on green, split failures, detector health, corridor travel time, queues, and travel time reliability.
- Prioritize basic maintenance and sound traffic engineering before implementing more complex technologies.
- Integrate traffic sensors, cameras, probe data, signal data, and incident information to improve operational awareness.
- Evaluate traffic responsive or adaptive signal control where demand varies significantly and where supporting detection and maintenance capabilities are adequate.
- Coordinate arterial operations with schools, special events, work zones, emergency response, and major detours.
- Evaluate emergency vehicle preemption and transit signal priority based on documented needs, operational feasibility, and corridor objectives.
- Use before and after evaluation to document operational and safety benefits.

Establish a Regional Incident, Emergency Response, and Work Zone Operations Program

Non-recurring congestion can produce substantial delay and safety impacts even where roadway capacity is otherwise adequate. CRPC should support a coordinated regional program that links traffic operations with law enforcement, fire, EMS, emergency management, towing and recovery, work zone managers, and traveler information providers.

Recommended actions include:

- Develop coordinated incident response and roadway clearance procedures.
- Establish agency roles for detection, verification, response, traffic control, clearance, traveler information, and after action assessment.
- Support traffic incident management training and multidisciplinary exercises.
- Improve real time communication among traffic management centers, emergency operations centers, dispatch centers, and field responders.
- Develop regional detour plans for high impact incidents on I-10, I-12, I-110, US 61, US 190, LA 1, and other critical corridors.

- Coordinate construction schedules, lane closures, special events, and incident response plans.
- Deploy queue warning, portable monitoring, dynamic traveler information, and other smart work zone applications where warranted.
- Conduct after action reviews following major incidents, emergency events, and significant work zone disruptions.
- Monitor incident detection, response, clearance, secondary crash, and queue duration measures.

Tier 2: Targeted Multimodal and Corridor Programs

Tier 2 recommendations build on the regional governance, data, performance, signal, and incident management foundations established under Tier 1.

Advance Interstate-Arterial Integrated Corridor Management

Integrated Corridor Management should be advanced as a signature long term TSMO initiative for the Capital Region. Congestion or incidents on the interstate system frequently affect parallel arterials, transit operations, freight routes, emergency response, and local streets. These facilities should be managed as an interconnected network rather than as separate systems.

The initial regional ICM network should consider:

- I-10
- I-12
- I-110
- US 61 / Airline Highway
- US 190
- Florida Boulevard
- LA 1
- LA 30
- Other parallel routes and diversion corridors identified through operational analysis

Figure 1-4 ICM Network Map



Recommended actions include:

- Develop an ICM feasibility study and concept of operations.
- Identify operational objectives, participating agencies, decision making authority, and activation thresholds.

- Define coordinated strategies for incidents, work zones, severe weather, emergencies, and special events.
- Develop preplanned diversion routes and assess the operational and community impacts of redirected traffic.
- Integrate freeway, arterial, transit, freight, traveler information, and emergency response data.
- Coordinate signal timing and traffic control strategies on designated diversion routes.
- Evaluate transit supportive measures during major corridor disruptions.
- Develop consistent public messaging and traveler information protocols.
- Implement ICM through phased pilot deployments before regional expansion.
- Evaluate performance using reliability, delay, safety, incident, and customer information measures.

Expand Travel Demand Management and Commute Alternatives

Travel Demand Management should be elevated as a central implementation strategy for managing peak period demand, reducing single occupant vehicle travel, improving workforce access, and providing alternatives during major construction or operational disruptions.

Recommended actions include:

- Conduct a regional assessment of existing TDM services, participation, geographic coverage, institutional responsibilities, and unmet needs.
- Establish measurable regional objectives for employer participation, ridesharing, transit use, telework, compressed schedules, and other commute alternatives.
- Partner with major employers, government agencies, universities, hospitals, and activity centers.
- Develop employer based transportation programs, including transit pass support, rideshare matching, vanpool assistance, commuter information, and flexible work arrangements.
- Promote shared trip services, microtransit, mobility-on-demand, and mobility-as-a-service where appropriate.
- Support off-peak travel, flexible scheduling, and mode shift strategies during construction and major events.
- Coordinate TDM programs with corridor operations, traveler information, transit service planning, and congestion management.

- Monitor participation, mode shift, vehicle trips reduced, and customer experience.

Support Transit Reliability and Multimodal Access

Transit is a central component of the Capital Region's TSMO and TDM framework. CATS fixed route, paratransit, microtransit, and BRapid initiatives provide a foundation for improving travel choices and access to employment and essential services.

Recommended actions include:

- Improve and expand CATS services based on adopted plans, passenger surveys, operational data, and feasibility studies.
- Prioritize service reliability, on-time performance, vehicle availability, customer information, safety, and passenger experience.
- Advance BRapid elements that improve station quality, stop spacing, fare collection, real-time information, pedestrian access, bicycle access, and transit operations.
- Evaluate transit signal priority on corridors with documented transit delay and sufficient operational readiness.
- Monitor bus travel times and identify recurring delay locations.
- Coordinate transit operations with traffic signal timing, work zones, incidents, special events, and major construction projects.
- Improve first- and last-mile connections through accessible pedestrian, bicycle, micromobility, and demand responsive transportation services.
- Close pedestrian and bicycle network gaps near transit stops, universities, schools, downtowns, libraries, employment centers, and community facilities.
- Encourage major developments to provide safe internal pedestrian and bicycle circulation and connections to surrounding networks.
- Coordinate transit and TDM investments to improve workforce access and reduce single occupant vehicle travel.

Incorporate Freight Operations into Regional TSMO Planning

Freight movement is a major component of the Capital Region's economy and transportation system. The regional freight network includes interstate highways, major arterials, industrial corridors, freight rail, the Port of Greater Baton Rouge, aviation facilities, and intermodal connectors.

The regional freight TSMO program should address the reliability and safety of:

- I-10 and I-12 freight movements
- US 61 / Airline Highway

- US 190
- LA 1 and industrial access routes
- Port of Greater Baton Rouge access corridors
- Intermodal connectors
- Oversize and overweight permitted routes
- Locations where truck traffic interacts with congested urban arterials, rail crossings, work zones, or evacuation routes

Recommended actions include:

- Conduct a regional freight operations assessment with carriers, shippers, ports, railroads, industrial facilities, law enforcement, and roadway operators.
- Identify freight bottlenecks, unreliable corridors, truck parking concerns, access constraints, high crash locations, and recurring incident or work zone impacts.
- Compare documented freight needs with planned TSMO, roadway, bridge, safety, and technology investments.
- Monitor truck travel time reliability, bottleneck delay, crash performance, incident impacts, and access reliability.
- Integrate freight considerations into corridor management, incident response, work zone planning, traveler information, and data sharing activities.
- Coordinate oversize and overweight permitted routes with construction, incident management, bridge restrictions, and emergency detour plans.
- Provide freight focused traveler information where reliable and actionable information can be maintained.
- Evaluate connected freight applications, commercial vehicle communication systems, and truck specific information services through phased deployments.
- Coordinate freight strategies with port access, economic development, land use planning, and industrial growth.
- Consider emerging delivery patterns, e-commerce, alternative fuel trucks, connected commercial vehicles, and automated freight technologies in long range operational planning.

Tier 3: Technology Readiness and Long-Term System Evolution

Tier 3 recommendations should be advanced after the necessary governance, communications, maintenance, data, cybersecurity, and operational foundations have been established.

Expand ITS, Communications, and Emerging Data Capabilities

CRPC and its partners currently use technologies and data sources that can support regional planning and operations. These include probe data, advanced traffic

management systems, communications networks, video monitoring, traffic detection, signal system data, and traveler information platforms.

Recommended actions include:

- Expand the use of current and archived probe data for congestion monitoring, corridor studies, travel time reliability analysis, project evaluation, freight analysis, and performance reporting.
- Continue the operation and refinement of advanced traffic management systems for arterial monitoring, signal operations, incident response, work zones, special events, and performance analysis.
- Expand resilient fiber, wireless, and cellular communications where gaps limit operational effectiveness.
- Provide communications redundancy and backup power for critical operational assets.
- Establish lifecycle planning for software, field devices, detection systems, communications, and traffic management infrastructure.
- Require interoperability and open data considerations where practical and consistent with agency security requirements.
- Use artificial intelligence and machine learning selectively where a defined operational problem, reliable data, appropriate oversight, and measurable benefit have been established.
- Prioritize maintainable and scalable technologies over isolated pilot deployments.
- Evaluate emerging technologies through phased demonstrations with documented performance criteria.

Prepare for Connected, Automated, Electric, and Alternative Fuel Vehicles

Connected vehicles, automated transportation technologies, electric vehicles, and alternative fuels may affect passenger travel, freight movement, roadside infrastructure, emergency response, workforce requirements, and transportation system operations.

Recommended actions include:

- Monitor connected and automated vehicle developments and their implications for regional transportation infrastructure and operations.
- Preserve communications and system interoperability needed for future connected transportation applications.
- Build on relevant regional connected vehicle experience when considering future vehicle-to-everything applications.

- Coordinate transportation electrification planning with utilities, transit providers, emergency management agencies, fleet operators, freight interests, and infrastructure owners.
- Evaluate the resilience and capacity of electrical service supporting critical transportation operations.
- Consider charging access, evacuation operations, emergency response, fleet transitions, and freight needs when planning transportation electrification.
- Monitor alternative fuel and vehicle transition trends as part of corridor, freight, transit, and resilience planning.
- Avoid committing to large scale technology deployment before operational need, maintenance responsibility, cybersecurity, interoperability, and lifecycle cost have been addressed.

Integrate Resilience into All TSMO Actions

Resilience should be incorporated throughout the regional TSMO program rather than treated as a separate technology initiative. The regional approach should address hurricanes, flooding, severe weather, winter weather, major incidents, extended power outages, communications failures, emergency evacuations, and other disruptive events.

Recommended actions include:

- Integrate transportation operations into regional emergency preparedness, response, continuity, and recovery planning.
- Develop operational plans for evacuation sensitive routes and critical interstate-arterial connections.
- Identify transportation assets vulnerable to flooding, wind, power loss, communications failure, and other hazards.
- Provide backup power and redundant communications for critical traffic signals, field equipment, management centers, and emergency routes.
- Integrate available weather, flood, roadway, traffic, and emergency data to support operational decisions.
- Establish dynamic detour and traveler information procedures for flooded, blocked, or restricted routes.
- Coordinate traffic operations with emergency management agencies, law enforcement, fire, EMS, utilities, transit providers, and public works departments.
- Plan for manual or degraded operations when automated systems or communications are unavailable.

- Conduct regional exercises for evacuations, emergency detours, prolonged closures, and multiagency response.
- Monitor system availability, recovery time, route accessibility, communications continuity, and emergency response performance.
- Prioritize projects that produce both daily operational benefits and improved emergency readiness.

Institutionalize Continuous Review and Plan Maintenance

Regional TSMO recommendations should be reviewed periodically because transportation needs, technology, funding, agency responsibilities, and operational capabilities will continue to change during the life of the MTP.

Recommended actions include:

- Establish a recurring review cycle for TSMO recommendations and implementation progress.
- Update the regional TSMO work plan based on performance results, agency capabilities, funding availability, and emerging needs.
- Conduct periodic capability maturity assessments.
- Review performance measures and targets as data quality and operational practices improve.
- Maintain an updated inventory of TSMO assets, systems, programs, policies, and responsible agencies.
- Document completed actions, unmet needs, lessons learned, and changes in implementation responsibility.
- Incorporate findings into MTP updates, Transportation Improvement Program development, corridor studies, congestion management activities, and the Unified Planning Work Program.

Summary of Recommended TSMO and Operations Framework

Table 1-2 summarizes the major recommendation areas presented in Section 1.2 and provides the transition from policy direction to implementation.

Table 1-2 Recommended TSMO and Operations Framework

Recommendation Area	Primary Objective	Representative Actions	Priority
Regional TSMO Program	Establish a coordinated implementation structure	Governance, staffing, capability assessment, policy integration, work program	Tier 1
Regional Coordination	Improve multiagency operations	Agreements, shared procedures, coordinated response, stakeholder participation	Tier 1
Data and Performance	Support accountable investment decisions	Data governance, performance measures, dashboards, benchmarking, reporting	Tier 1
Arterial Operations	Improve reliability and safety	Signal optimization, maintenance, monitoring, responsive operations	Tier 1
Incident and Work Zone Operations	Reduce non-recurring delay and secondary crash risk	Incident procedures, detours, queue warning, construction coordination	Tier 1
Integrated Corridor Management	Coordinate interstate, arterial, transit, and freight operations	Concept of operations, diversion plans, multimodal strategies, traveler information	Tier 2
Travel Demand Management	Reduce peak-period single-occupant vehicle demand	Employer programs, ridesharing, commute alternatives, outreach	Tier 2
Transit and Multimodal Access	Improve travel choices and accessibility	Transit reliability, BRapid, signal priority evaluation, first- and last-mile connections	Tier 2

Recommendation Area	Primary Objective	Representative Actions	Priority
Freight Operations	Improve goods-movement reliability	Freight data, port access, OS/OW coordination, corridor and incident strategies	Tier 2
ITS and Communications	Improve operational awareness and response	ATMS, probe data, fiber, wireless communications, system lifecycle management	Tier 3
Emerging Technologies	Prepare for future operational needs	Connected vehicles, electrification, AI applications, interoperability	Tier 3
Resilience	Improve continuity and recovery	Emergency operations, backup power, communications redundancy, evacuation support	All tiers
Plan Maintenance	Sustain implementation	Periodic review, performance updates, asset inventories, revised priorities	All tiers

1.3 Implementation and Next Steps

CRPC and its partners should use the 2050 MTP to establish a phased roadmap for regional TSMO, TDM, transit operations, freight operations, resilience, and data-driven performance management. The next step is not simply to identify technologies or projects. It is to establish the organizational structure, partnerships, funding mechanisms, responsibilities, and performance framework needed to sustain regional operations over time.

Recommended next steps include:

1. Adopt the TSMO and operations recommendations as a formal implementation element of the 2050 MTP.
2. Establish a Regional TSMO Committee with participation from CRPC, LADOTD, CATS, local governments, law enforcement, fire, EMS, emergency management, freight interests, and major institutions.
3. Prepare a regional TSMO implementation plan identifying lead agencies, supporting partners, near-, mid-, and long-term actions, anticipated funding sources, and performance outcomes.
4. Conduct a regional capability maturity assessment and inventory existing operational policies, assets, systems, communications, data, staffing, and maintenance responsibilities.
5. Develop regional data governance, data sharing, and performance monitoring procedures.
6. Establish baseline performance conditions and a recurring reporting framework.
7. Advance near-term operational improvements, including traffic signal optimization, incident coordination, work zone management, traveler information, transit reliability, and employer based TDM.
8. Develop an ICM feasibility study and concept of operations for the I-10 / I-12 / I-110 system and supporting arterial network.
9. Establish a recurring review cycle to maintain alignment with regional needs, technologies, operating capabilities, and funding conditions.

Phased Implementation Strategy

Phase 1: Program Foundation, Years 1-2

Primary activities:

- Establish the Regional TSMO Committee.
- Define governance and agency responsibilities.
- Conduct a capability maturity assessment.
- Inventory regional systems, assets, data, agreements, and staffing.
- Develop interagency agreements and common operating procedures.
- Establish a performance measurement and reporting framework.
- Develop a TSMO project pipeline and funding strategy.
- Initiate high priority signal optimization and incident management improvements.

Potential funding sources include MPO Planning funds, the Unified Planning Work Program, state planning and operations resources, and local matching contributions.

Phase 2: Core Operational Deployments, Years 2-5

Primary activities:

- Expand regional signal optimization.
- Improve ATMS integration and regional monitoring.
- Enhance incident and emergency response systems.
- Develop coordinated traveler information.
- Implement targeted smart work zone strategies.
- Improve transit reliability and evaluate transit signal priority.
- Expand communications and detection where operational gaps are documented.
- Complete ICM planning and initiate pilot implementation.
- Develop freight operational assessments and targeted corridor strategies.

Potential funding sources include STBG, CMAQ where applicable, HSIP, the Carbon Reduction Program, FTA programs, LADOTD programs, and local matching funds.

Phase 3: Advanced Regional Operations, Years 5 and Beyond

Primary activities:

- Expand integrated corridor management.
- Strengthen regional traffic management center partnerships.
- Implement advanced transit priority applications.
- Expand freight corridor operations.
- Improve regional communications redundancy.
- Implement resilience and evacuation technologies.
- Advance selected connected vehicle and data analytics applications.
- Evaluate artificial intelligence and predictive tools for defined operational needs.

Potential funding sources include PROTECT, the Carbon Reduction Program, FTA programs, eligible formula funds, state programs, and federal discretionary grants available at the time projects are advanced.

Priority Funding Approach

CRPC should combine federal formula funds, discretionary grants, state programs, MPO planning funds, transit funds, and local contributions into a coordinated regional program rather than relying on a single source.

Funding should be matched to project purpose and eligibility. Planning funds should establish an institutional and analytical foundation. Formula and state funds should support scalable core deployments. Discretionary opportunities should be pursued for projects that demonstrate regional significance, readiness, measurable benefits, interagency support, and consistency with program requirements.

Table 1-3 Priority Funding Sources

Funding Source	Best Use	Potential CRPC Applications
STBG	Flexible transportation capital and operational improvements	Signal modernization, ATMS, communications, data platforms, corridor operations
CMAQ, where eligible	Congestion and emissions-related improvements	Signal optimization, transit priority, TDM, traveler information, traffic-flow improvements
HSIP	Safety-focused infrastructure and operations	Queue warning, wrong-way detection, intersection safety, emergency preemption, incident strategies
Carbon Reduction Program	Strategies that reduce transportation emissions	Signal coordination, transit operations, traveler information, multimodal and freight technologies
MPO Planning and UPWP Funds	Planning, governance, policy, and performance management	TSMO program plan, committee support, data governance, benefit-cost analysis, performance framework
PROTECT	Transportation resilience	Backup power, resilient communications, flood response, evacuation-route operations
FTA Programs	Transit capital, planning, and technology	CAD/AVL, passenger information, transit-priority systems, mobility management

Funding Source	Best Use	Potential CRPC Applications
LADOTD Programs	State and regional operations	Incident management, ITS, ICM, policy development, traffic operations, performance monitoring
Local and Partner Contributions	Matching funds and locally owned assets	Signal maintenance, communications, staffing, data, operations, equipment lifecycle support

Funding eligibility should be confirmed at the time each project is programmed.

Initial Regional Investment Priorities

CRPC should focus first on maximizing the value of existing traffic signals, communications, ATMS, cameras, detection, emergency operations, and traveler information investments.

The recommended initial priorities are:

1. Regional TSMO Program and Governance Structure
2. Regional Traffic Signal Operations and Performance Program
3. Regional Incident and Emergency Response Coordination
4. I-10 / I-12 / I-110 Integrated Corridor Management Planning
5. Traffic Management Center Coordination and Performance Management
6. BRapid and CATS Transit Reliability Improvements
7. Regional Operations Performance Dashboard
8. Freight Corridor Operations and Port Access Reliability
9. Regional Communications and System Resilience
10. Smart Work Zone and Construction Coordination
11. Traveler Information Improvements
12. Regional Evacuation and Continuity-of-Operations Planning

These priorities build on regional investments cited, including the modernization of approximately 470 traffic signals, more than 176 miles of fiber communications, 178 detection devices, 88 cameras, emergency vehicle preemption systems, and traffic management center upgrades. These quantities should be verified against final MOVEBR and agency documentation before publication.

1.4 Conclusion

The CRPC 2050 Metropolitan Transportation Plan provides an important opportunity to establish a safer, more reliable, resilient, and multimodal transportation system for the Capital Region. TSMO and TDM should be positioned as core regional business practices that guide how CRPC and its partners plan, operate, maintain, and invest in the transportation network.

The recommendations in this chapter emphasize improving the performance of existing infrastructure while strategically advancing capital improvements where they are needed. They recognize that roadway expansion alone cannot address incidents, work zones, special events, severe weather, changing travel demand, freight disruptions, or travel time variability.

By formalizing a regional TSMO program, strengthening interagency coordination, improving traffic signal and corridor operations, expanding transit and travel choices, integrating freight needs, using data to guide investment, and preparing for disruptive events, CRPC and its partners can deliver practical, measurable improvements to obtain greater value from existing and future transportation investments.

Implementation should begin with the foundational actions needed to sustain long-term success, including governance, staff capability, operational agreements, data management, performance measures, traffic signal optimization, and incident coordination. These early steps will position the region to advance more integrated and complex initiatives, such as interstate-arterial corridor management, transit priority strategies, freight operations, smart work zones, resilient communications, and emerging technologies.

Through sustained collaboration, accountable investment, and continuous performance monitoring, CRPC and its partners can create a transportation system that is more reliable, customer focused, adaptable, and prepared to meet the Capital Region's future mobility needs.