Technical Memorandum

Joint TMC Co-Location White Paper Evaluation

August 2022

SMTC

Contents

Introduction and Overview

As part of the 2020-2021 Unified Planning Work Program, the Syracuse Metropolitan Transportation Council (SMTC) agreed to assist the New York State Department of Transportation (NYSDOT) with an examination into the feasibility of establishing a new single, co-located Transportation Management Center (TMC) for NYSDOT and other agencies to potentially manage traffic operations more efficiently throughout the SMTC's planning area. The Federal Highway Administration defines a TMC with the following.

> *The Transportation Management Center (TMC) is the hub or nerve center of most freeway management systems. It is where the data about the freeway system is collected and processed, fused with other operational and control data, synthesized to produce "information," and distributed to stakeholders such as the media, other agencies, and the traveling public. TMC staff uses the information to monitor the operation of the freeway and to initiate control strategies that affect changes in the operation of the freeway network. It is also where agencies can coordinate their responses to traffic situations and incidents.*
>
> *The role of a TMC often goes beyond the freeway network and the particular responsible agency, functioning as the key technical and institutional hub to bring together the various jurisdictions, modal interests, and service providers to focus on the common goal of optimizing the performance of the entire surface transportation system. Because of its critical role in the successful operation of a freeway management system (and perhaps the broader surface transportation network), it is essential that the TMC be planned for, designed, commissioned and maintained to allow operators and other practitioners to control and manage the functional elements of the freeway management system, and possibly beyond.*[1]

Or stated a different way, TMCs "use software and applications to obtain, process, and act on data, such as maps, with roadway sensor or weather data, incident management logs, dispatch tools, device management tools, and instant messaging and email tools.[2]" Variations exist when referring to facility co-location as it could be a physical co-location of involved parties in a single facility, or it could mean a virtual co-location where communication channels and technology/software are shared among groups. In this planning effort, a physical co-location was identified at the outset as a strong possibility to plan for.

Several years ago, the NYSDOT identified the construction of a new TMC as a potential transformative project for the region. At that time they identified the possibility that the new facility could be co-located with a variety of other non-NYSDOT agencies for an overall better transportation network and real time incident situational awareness and response. All involved agencies are sharing information, often with a delayed response via email or phone calls. By having all groups under one roof, information can be shared and disseminated more efficiently with much less delay.

The construct of any TMC typically falls into 4 categories: centralized, distributed/decentralized, virtual, and hybrid. In the Syracuse Metropolitan Planning Area, member agencies are operating and maintaining

[1] FHWA, Freeway Operations and Management – Transportation Management Centers
[2] FHWA. (2018). *Human Factors Guidelines for Transportation Management Centers*.

standalone centralized TMCs or traffic operations centers. NYSDOT's existing TMC is predominantly for the Interstate system in Onondaga County, the City of Syracuse TMC currently covers several corridors and over 150 City owned traffic signals with more to come online and, although Onondaga County does not have an operations "center" for traffic management, they utilize various Intelligent Transportation Systems technologies such as cameras and sensors that relay with office workstations. Other transportation infrastructure owners, the New York State Thruway Authority, and the Central New York Regional Transportation Authority (Centro), also incorporate traffic management into their daily operations. For example, within the SMTC's planning area the Thruway Authority operates and maintains 5 Variable Message Signs and 6 cameras. Device operations are centralized out of the headquarter office in Albany.

Additional NYSDOT and City of Syracuse details are provided in the Case Studies section.

Table 1: TMC categories[3]

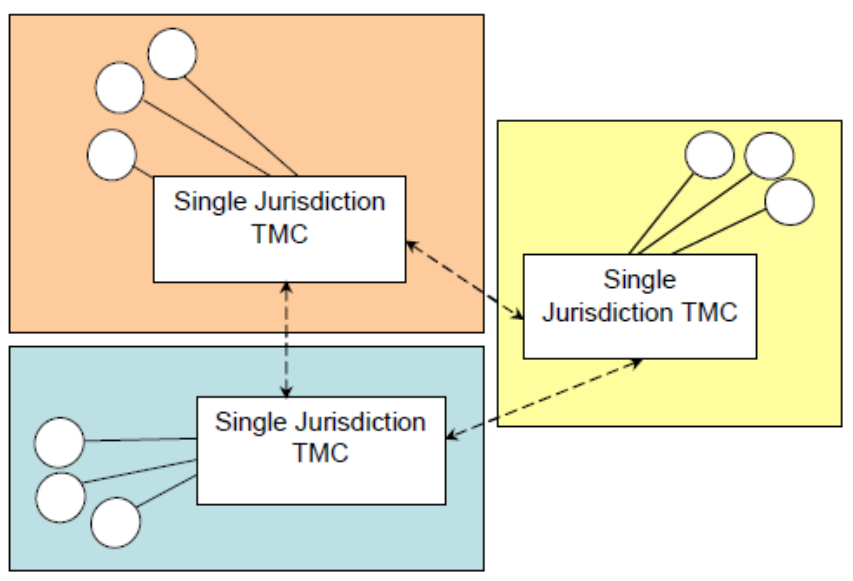
Type of TMC	Description
Centralized	All systems reside in one location or datacenter (typically the TMC facility). This includes domain authentication services, email, applications, shared files and field devices.
Distributed/Decentralized	Systems and staff reside in multiple locations/TMCs and certain functions or capabilities are distributed or shared between various centers. Arrangement provides agencies with the ability to maximize resources, increase efficiency, improve working relationships, and share costs.
Virtual	The software and system application are available and are accessible from any location, so no physical TMC facility is necessary. There is still the need for physical communications to its field devices and between centers, but this is done in a virtual manner.
Hybrid	This is a combination of virtual and another model such as distributed or centralized. This can be a melding of performing certain functions in a centralized manner, as one example, and other functions as virtual.

The types of TMCs can also be thought of by the level of municipal/agency involvement and support; single, multiple, regional or district. The FHWA publication *Transportation Management Center Business Planning and Plans Handbook* provides an extensive overview of each type of TMC and presumed advantages and disadvantages of each. These are provided in full below.

[3] FHWA. (2014). *Guidelines for Virtual Transportation Management Center Development*.

Single Jurisdiction

The geographic service area of a single-jurisdiction TMC is limited to the political boundaries of the owning jurisdiction. However, in metropolitan areas with multiple jurisdictions, TMCs may coordinate their operations with other TMCs through telephone, email, or through dedicated communications lines and networks.



Advantages:

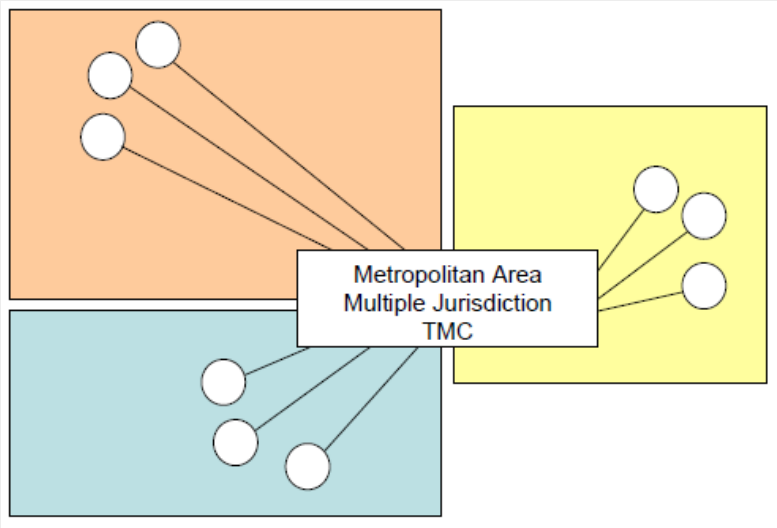
An advantage of single-jurisdiction TMCs is that they can typically be deployed within existing office facilities. Since the geographic area also is limited, operators usually possess more first-hand knowledge of the limited number of field devices that are managed from the TMC. Other advantages, in some respects, include the limited number of stakeholders with whom TMC activities must be coordinated. Single-jurisdiction TMCs do not require extensive funding, project management, staffing, or maintenance agreements with other municipalities or agencies, as they work within the existing departmental structures.

Disadvantages:

Traffic congestion, air quality, and other issues that have impacts beyond localized areas often require the efforts of more than an individual jurisdiction. Unfortunately, in a single jurisdiction arrangement, particularly in a large metropolitan area with multiple adjacent jurisdictions, the single-jurisdiction TMC may be focused on the individual jurisdiction's mission, and not on the collective mission of the region.

Multiple Jurisdiction

In large metropolitan areas with multiple cities or counties, jurisdictions have coordinated and participated in the construction, operations and maintenance of a common TMC facility. The multi-jurisdictional TMC controls ITS field elements in multiple jurisdictions, irrespective of political boundaries. Consequently, the number of miles of roadway, number of ITS elements, and the number of stakeholders is significantly larger than would be found in a single jurisdiction TMC arrangement.



Advantages:

Significant institutional and system benefits are realized when multiple jurisdictions cooperate in the implementation, management, and operations of a TMC.

Efficiency and Cost Savings – Multi-jurisdictional TMCs eliminate duplication and overlap in procurement, installation, and integration of technical systems that would be required of individual jurisdictions when operating on their own. Furthermore, compatible systems (such as traffic signal systems, detection or traveler information technologies) allow agencies to share costs for new purchases and upgrades, as well as streamline maintenance requirements and resources.

Resource Utilization and Availability – A multi-jurisdictional TMC covering a large geographic area is more cost efficient because only one facility must be staffed and operated. Multi-jurisdictional TMCs are in a position to share and draw upon the technical expertise, strengths, and resources of partner agencies.

Improved Working Relationships – The collocation of staff of multiple jurisdictions into a common facility facilitates information exchange, elevates trust and understanding, and strengthens partnerships, thus facilitating enhanced collaboration and coordination of operations.

Systems Coordination – The collocation of staff from multiple jurisdictions into a common facility, and management emanating from one physical location facilitates and encourages coordinated traffic management across jurisdictional boundaries.

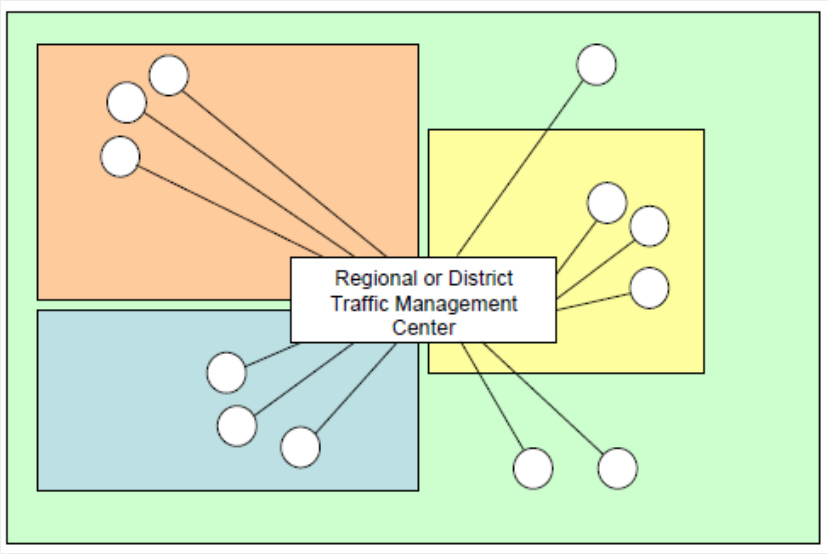
Hours of Operation – The pooled resources of multiple agencies can enable extended hours of service that might be unfeasible for a single-jurisdiction TMC. The extended hours provides an improved level of service to the traveling public. The TMC is prepared to respond to incidents, construction activities (many of which occur at night), and planned special events.

Disadvantages:

Implementation of a multi-jurisdictional TMC carries with it a significant, sometimes cumbersome, process of garnering buy-in on operational parameters and processes and formalizing intergovernmental agreements with each of the participant agencies. Agreements are necessary to define the overall operation of the transportation system, as well as operational, resource sharing, personnel, systems, and institutional integration arrangements of the partner agencies. Documenting and formalizing agreements may require compromise, on the part of each agency, in terms of how facilities are operated. This model is further complicated by the addition of private contractors.

Regional or District

The regional or district TMC business model expands upon the multi-jurisdictional model in that it encompasses additional non-metropolitan areas such as rural county or state facilities outside the metropolitan area, in addition to the multiple jurisdictions within the metropolitan area. The mission of a Regional or District TMC may include not only urban arterial traffic management, but also the operations and management of suburban, urban freeway, and rural highway and interstate facilities.



Advantages:

Many of the advantages of the Multiple Jurisdictions TMC model are seen in the Regional or District TMC model. Again, a primary advantage of this business model is that there is an efficiency of cost when a single TMC can serve a large geographic area, and combine resources for capital, staffing, and operations expenses. Without the resources of the large Region or District TMC, it may be impractical to dedicate human resources to the exclusive monitoring and operating of rural ITS field elements. Other advantages include:

Regional traffic management can occur more easily, thus benefiting the traveling public when the entire network is managed in a comprehensive and integrated manner as opposed to having each agency being responsible for just their facilities.

Integrated control of multiple ITS systems are more easily achieved when one TMC is managing a regional or district operation.

A Regional or District TMC may utilize staff from different jurisdictions that have responsibilities within the region or district geographic area, drawing upon the technical expertise and strengths of partner agencies. Projects supported by a Regional or District TMC, and inherently by multiple jurisdictions throughout the region are more likely to receive federal approval and funding because of the multi-lateral, regional support of the project. A Regional or District TMC is well-suited to serve as a central repository, synthesizer, and clearing house for work zone, maintenance, and construction information for dissemination to traveler information systems.

Disadvantages:

Like the multi-jurisdictional TMC model, implementing a district or regional TMC carries with it a significant, sometimes cumbersome, process of garnering buy-in and formalizing intergovernmental agreements with each of the participating agencies, if there are in fact multiple agencies participating. While the integrated control of multiple ITS systems are more easily achieved when one TMC is managing a regional or district operation, such an arrangement does require that intergovernmental agreements, memorandum of understanding, or a concept of operations be worked out ahead of time defining how the different agencies within this larger region are to operate. Legal questions as to liability must also be addressed up front in these written agreements.

TMC Functions and Benefits

Some of the basic operational functions of a TMC include monitoring, managing events, providing service, and support. A more expansive listing of common TMC functions is shown in Table 2, of which several are institutionalized in the existing NYSDOT and Syracuse centers.

- **Perform Monitoring**: One of the most common activities undertaken in a TMC is to monitor the transportation facilities that are part of TMC's domain. Monitoring is normally visual and can also be aural. It is common to monitor conditions through the use of a computer workstation graphic display environment. Operators use displays of video images and computer-generated graphics; radio broadcast information (i.e., a police band radio scanner) and operational data reports. Monitoring may be defined as "to watch, keep track of, or check usually for a special purpose or event".
- **Manage Events**: Events are a broad category that includes randomly occurring events (e.g., vehicle crashes, debris on the roadway), planned events (i.e., an expected event for which a schedule has been established, such as a sporting event, lane closure for construction, etc.), and recurring random events (e.g., recurring congestion). Management of these events can involve numerous operator activities (e.g., incident verification and management, coordination with emergency services, adjust ramp meter rates, activate lane signals, utilize CMS / HAR).
- **Provide Services**: Some TMC functions provide services to their constituency on the highways on such a regular basis that these services fall outside of the category of event management. The utilization of Advanced Traveler Information Systems (ATIS) within a TMC may very likely include functions that are service oriented. Another example of this type of function is the provision of service patrols, to aid motorists with events such as breakdowns and "out of gas" events.
- **TMC Support**: Support activities that facilitate the operation of the TMC tend to be more "institutional" than operational. The activities of hiring, managing, training, record keeping, interpersonal and interagency communications, and the general upkeep and improvement of the TMC are essential to the operation, but generally are incidental to real time operation.[4]

Table 2: Common TMC Functions[5]

Typical TMC Function	Description
Provide travel information	Involves reporting highway conditions, delays, accidents, scheduled construction or other events, and preferred routes. The information may be disseminated through various means, including dynamic message signs, highway advisory radio, the internet, and telephone traveler information systems.
Records management	Involves archiving and retrieving data about the operations and maintenance activities of the TMC. Activities include entering or recording data, generating and storing reports, and facilitating data warehousing.
Congestion management	Involves identifying and responding to recurring congestion resulting from peak travel periods, as

[4] FHWA. *Freeway Management and Operations Handbook, Chapter 14 – Transportation Management Centers*.
[5] FHWA. (2014). *Guidelines for Virtual Transportation Management Center Development*.

Typical TMC Function	Description
	well as non-recurring congestion associated with incidents. Responses may include activating ramp meters, posting messages to dynamic message signs, traveler information sites (e.g. 511, wireless apps, etc.), HARs, adjusting signal timing plans among others.
Failure management	Involves identifying, responding to, and repairing failures of transportation system-related field equipment.
Incident management	Involves detection, verification, response, and clearance of events including multi-car accidents, vehicle breakdowns, and accidents resulting from road debris or weather conditions.
Special event management	Involves accommodating non-recurring events (such as sporting events, parades, motorcades, and construction) that are expected to have significant impact on the transportation system.
Traffic flow monitoring	Involves viewing traffic data and video images in real time to evaluate traffic conditions for delays and hazards.
Emergency management	Involves coordinating the response of emergency service providers (such as police, fire, EMS, and towing agencies) to emergency conditions (such as incidents, disabled vehicles, and signal malfunctions).
Provide/coordinate service patrols	Involves identifying, verifying, and responding to requests for roadside assistance.
Reversible and HOV lane management	Involves reconfiguring reversible lanes and HOV lanes, by manipulating gates and lane-use signals and visually verifying their status, to manage roadway capacity.
Traffic signal system management	Involves implementing appropriate traffic signal timing plans to optimize arterial street traffic flow, and responding to signal malfunction reports.
Transit vehicle monitoring	Involves monitoring and evaluating transit vehicle operations to ensure schedule adherence and to identify and minimize delays.
APTS system management	Involves monitoring and evaluating the performance of public transit vehicles and systems to improve system performance, and providing transit information to improve service to users.
Environmental and Roadway Weather Information Systems monitoring	Involves monitoring weather related data (such as pavement temperature and surface conditions, visibility, and wind speed and direction) collected by remote sensors. The data are used to detect and forecast environmental conditions (such as icy

Typical TMC Function	Description
	roads or dense fog) that may affect travel on the roadway system.
Over-height vehicle management	Involves the detection of and response to over-height vehicles to prevent accidents and damage to overhead structures.
Rail crossing management	Involves monitoring railroad train operations and crossing control equipment such as signals and gates, and implementing appropriate response plans in the event of equipment malfunctions at crossings.

Public involvement

As this planning effort focused on research and discussions with member agencies (i.e., Working Group) and other public agencies (i.e., stakeholders), no formal Public Involvement Plan was created. However, discussions were held with the Working Group at various points throughout the planning effort and a questionnaire was distributed to the Working Group, which is summarized in the section below.

A Working Group was formed with the primary infrastructure owners to assist with guiding the development of the overall planning effort and to provide input. The Working Group consisted of representatives from NYSDOT Region 3, Onondaga County, and the City of Syracuse.

Staff communicated via phone and/or email with representatives from the Niagara International Transportation Technology Coalition (NITTEC), Greater Buffalo Niagara Regional Transportation Council, Genesee Transportation Council, Main Office NYSDOT, NYSDOT Region 1, NYSDOT Region 4, and NYSDOT Region 8. Additionally, site visits to NYSDOT Region 3 in Syracuse, Onondaga County, and City of Syracuse facilities occurred in November 2021:

- Onondaga County Emergency Management Center, November 5th
- City of Syracuse TMC, November 15th
- NYSDOT Region 3 TMC, November 17th.

Case Studies

As mentioned, in the SMTC's planning area NYSDOT and the City of Syracuse operate their own single centralized TMCs. Throughout the remainder of New York State essentially all NYSDOT "Regions" have a functional TMC.

Region	Location	TMC	Co-Located
Region 1	Capital District	Yes	Yes
Region 2	Mohawk Valley	Yes	
Region 3	Central New York	Yes	
Region 4	Genesee Valley	Yes	Yes
Region 5	Western New York	Yes*	
Region 6	Central Southern Tier	Yes	
Region 7	North Country		

Region	Location	TMC	Co-Located
Region 8	Hudson Valley	Yes	Yes
Region 9	Southern Tier	Yes	
Region 10	Long Island	Yes	
Region 11	New York City	Yes	Yes

*All traffic management and incident related items handled by NITTEC.

A closer look into the TMCs found in the Albany, Buffalo, Rochester, and Hudson Valley areas, in addition to NYSDOT Region 3 (Syracuse) and the City of Syracuse, are provided below.

The purpose of the Case Study research was to obtain generalized information on existing operations facilities such as those noted below. SMTC staff assembled information through agency communications (phone calls, emails), web research, and site visits in the case of NYSDOT Region 3, Onondaga County, and the City of Syracuse.

- Presumed benefits of a TMC
- Number and location of TMCs in New York State
- Type of facility (single agency or co-located)
    - If co-located, with what agency
- Staffing levels (municipal and/or consultant)
- Attributable costs, as available (i.e., personnel, software, technology, construction of space)
- Traffic operations activities undertaken.

The selected examples give a cross-section of co-located TMCs in other Upstate locations. In most cases, co-location with the NYS Police is common.

Capital Region

The Capital Region TMC is a partnership between NYSDOT Region 1 and the New York State Police, with additional coordination happening with the Thruway Operations Center (TSOC) and the Capital District Transportation Authority, the area's provider of public transportation. The State Police provide the location: Troop G headquarters in Latham, NY and the facility has been in use since 1998. "The TMC is a focal point for regional traffic incident management, utilizing traffic cameras and road sensors, and it is the originator of NYSDOT regional 511 video and message feeds. The TMC enables State Troopers, DOT HELP Trucks, and other emergency personnel to respond swiftly to crash scenes and other highway problems."[6] The role of the TMC has expanded over the past several years to serve as a key player in emergency operations, including facilitating NYSDOT response to all incidents.

Location: Latham, NY

Co-located: State Police

Staffing: 15

Hours of Operation: 24/7/365

Costs: $5,850,000 over 4 years

Per the 2020-2023 NYSDOT Statewide Transportation Improvement Program, $5,850,000 is programmed on the Transportation Improvement Program for TMC and ITS projects, operations, and engineering support, plus support of the HELP Program in the amount of $1,800,000.

[6] Capital District Transportation Committee. (2020). *Regional Operations and Travel Reliability White Paper.*

Source: Capital District Transportation Committee (cdtcmpo.org)

Buffalo-Niagara Region

Source: *Buffalo News*

Location: Buffalo, NY

Co-located: No

Staffing: 17

Hours of Operation: 24/7/365

Costs: $2,500,000 per year

The Niagara International Transportation Technology Coalition (NITTEC) is the leading entity in the Buffalo-Niagara region, in terms of ITS (Intelligent Transportation Systems). NITTEC was formed in 1995 to include international border crossings and Southern Ontario with Western New York into the planning for a regional bi-national transportation network. NITTEC began operating the Traffic Operations Center in 1997 in Buffalo, NY and is the only bi-national coalition in the country.

Like a Metropolitan Planning Organization, it has a small staff (17 people) that answers to a Policy committee. It's well-funded, with an annual budget of $2.5 million, but not independent. Funding comes from a combination of State, Federal, and given its proximity to Canada, Canadian sources. NITTEC's mission is to improve mobility, reliability, and safety on the regional bi-national multimodal transportation network through information sharing and coordinated management of operations.

NITTEC provides real-time traffic and roadway information to improve traffic flows and enhance emergency assistance for motorists using the transportation system, 24 hours, 7 days a week. As a regional traffic operations facility, NITTEC oversees NYSDOT and NYS Thruway Authority facilities and performs many operations functions:

- Traveler information
- Border Traffic Management
- Traffic and Congestion Management
- Incident Management
- Special Event Planning and Management
- Transportation System Monitoring
- Emergency Management

- Weather System Monitoring
- Construction Coordination

Rochester Region

Source: SWBR

Location: Rochester, NY

Co-located: State Police, Monroe County DOT, Monroe County Airport Authority

Staffing: 16

Hours of Operation: 24/7/365

Costs: $13,920,000 over 4 years

The Regional Traffic Operations Center (RTOC) in Monroe County, NY was completed in 2002. Located adjacent to the Greater Rochester International Airport, this facility houses staff from NYSDOT Region 4, the New York State Police, the Monroe County Department of Transportation, and the Monroe County Airport Authority. Staffing levels for NYSDOT and Monroe County at the RTOC consist of 14 NYSDOT personnel and 2 from Monroe County.

Personnel at the facility "monitor road conditions in real time through a network of traffic cameras, program Dynamic Message Signs to display traffic alerts, and manage Monroe County's Computerized Traffic Control System (CTCS). The CTCS monitors traffic flow conditions and automatically adjusts traffic signal timing patterns to better manage intersection throughput."[7] The joint facility "houses dispatch facilities for state and county signal and highway maintenance crews, including workshops where signal components are maintained and repaired. Lastly, the presence of the State Police at the RTOC facilitates coordination between transportation system operators and one of the key law enforcement and incident response agencies in the region."[8]

According to a NYSDOT Region 4 statement from February 2021, the facility has necessary resources "to help make informed decisions when it comes to closing down roadways, making decisions quickly when there are emergencies on our highway system and overall being able to send help out to people when they need it."[9] Being co-located with various entities affords several benefits such as working closely "with

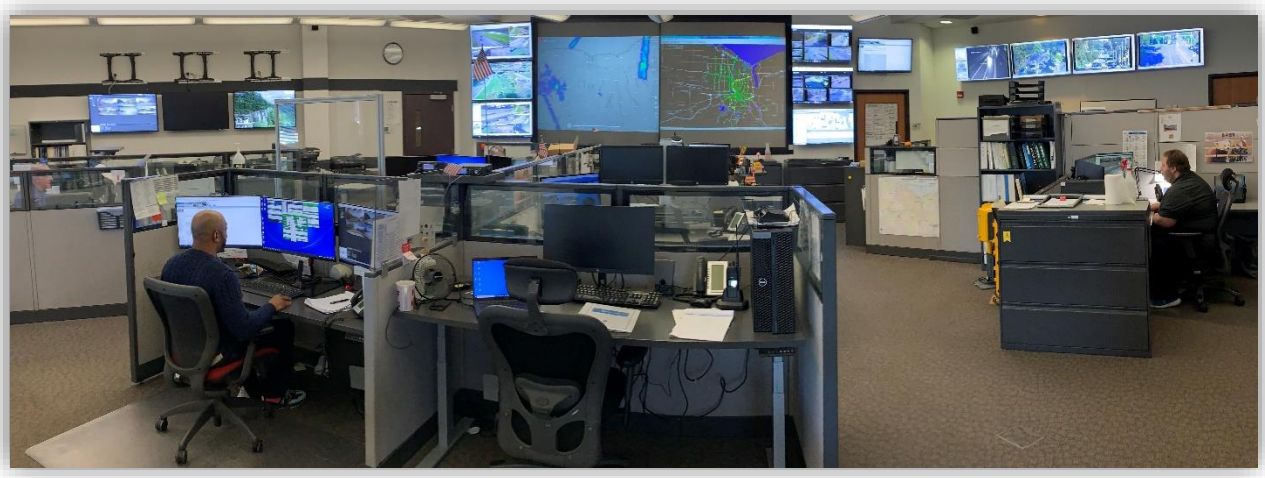
[7] https://www.gtcmpo.org/22

[8] ibid

[9] https://www.whec.com/rochester-ny-weather/news10nbc-takes-you-inside-the-dots-regional-operations-traffic-center/6014448/

regard to incident management, construction and maintenance, and speed zones and safety control activities."[10]

Per the NYSDOT 2020-2023 Statewide Transportation Improvement Program, $13,920,000 is programmed over 4 years ($3,480,000 annually). Funding covers Monroe County staffing, NYSDOT operations, and consultant staffing costs. Additionally, $2,420,000 is programmed for the area's HELP roadside assistance.



Source: Monroe County (https://www.monroecounty.gov/dot-signalops)

[10] Genesee Transportation Council. (2011). *Intelligent Transportation Systems (ITS) Strategic Plan for Greater Rochester.*

Hudson Valley

Source: NYS Office of General Services (ogs.ny.gov)

The Hudson Valley Transportation Management Center (HVTMC) is a multi-agency cooperation between NYSDOT Region 8 and the New York State Police. Completed in 2004, the facility is in Hawthorne, NY. The function of the HVTMC is to improve the operation of the highway system through teamwork and technology, thereby improving the mobility of travelers and goods in the Hudson Valley.[11]

Location: Hawthorne, NY

Co-located: State Police

Staffing: 30

Hours of Operation: 24/7/365

Costs: $26,060,000 over 4 years

The TMC performs several key functions:

- Incident Response: The facility will perform duties related to logistical and emergency support, communications, dispatch, and monitoring. Response also includes dissemination of information directly to motorists and transit travelers.
- Traveler Information: Information will be disseminated through Variable Message Signs (VMS) and Highway Advisory Radio (HAR), but an emerging role of the TMC in widespread information dissemination to the public will be to pass this information to the public via the World Wide Web and other Information Service Providers like: cable TV, e-mail, pagers and telephone mailboxes.
- Traffic Management: Some typical duties include monitoring the operation of the transportation system, traffic signal control and coordination, communicating to dispatching services, and

[11] https://www.hudsonvalleytraveler.com/

disseminating information to Variable Message Signs (VMS), media and broadcasting services when conditions of the system change.

- Video Surveillance: Through Closed Circuit TV (CCTV) video surveillance of the highway, the TMC operator can determine the type of assistance that may be needed at the trouble location and whether emergency personnel should be summoned. TMC operators detect and verify incidents, areas of congestion and field conditions due to special events.[12]

The 2020-2023 NYSDOT Statewide Transportation Improvement Program assigns a total of $26,060,000 to the Region 8 TMC for on-going costs to operate the TMC, including staff, salaries, office expenses, supplies, materials, and equipment. Additionally, the 4-year capital program lists $23,200,000 for the area's HELP truck assistance.

Source: Hudson Valley Traveler

[12] https://www.hudsonvalleytraveler.com/

NYSDOT Region 3

Source: SMTC

Location: Syracuse, NY

Co-located: No

Staffing: 18

Hours of Operation: 24/7/365

Costs: $12,400,000 over 4 years

NYSDOT operates the Region 3 TMC from the Syracuse State Office Building in downtown Syracuse, NY. No other agencies are directly involved with operations of the facility. However, video on limited basis and other lines of communication are shared with state and local emergency management services. The facility opened in 2004 with 4 operators, a shift leader, and a TMC manager. Since then, the number of TMC personnel has grown considerably to 9 operators, 2 shift supervisors, 1 network engineer, 3 field technicians, an operations manager, an assistant manager, and a TMC manager. The 56 closed-circuit TV cameras (CCTV) and 26 variable message signs (VMS) situated along or adjacent to the Interstate system within the Syracuse Metropolitan Planning Area are monitored and controlled through the TMC. Vehicle sensors are generally configured to store historical data, while a limited map implementation uses the vehicle sensors along I-481 to allow the TMC to monitor congestion information along that corridor from I-81 to I-690. The NYSDOT Region 3 TMC also covers locations in Jefferson County and in proximity of Watertown, NY.

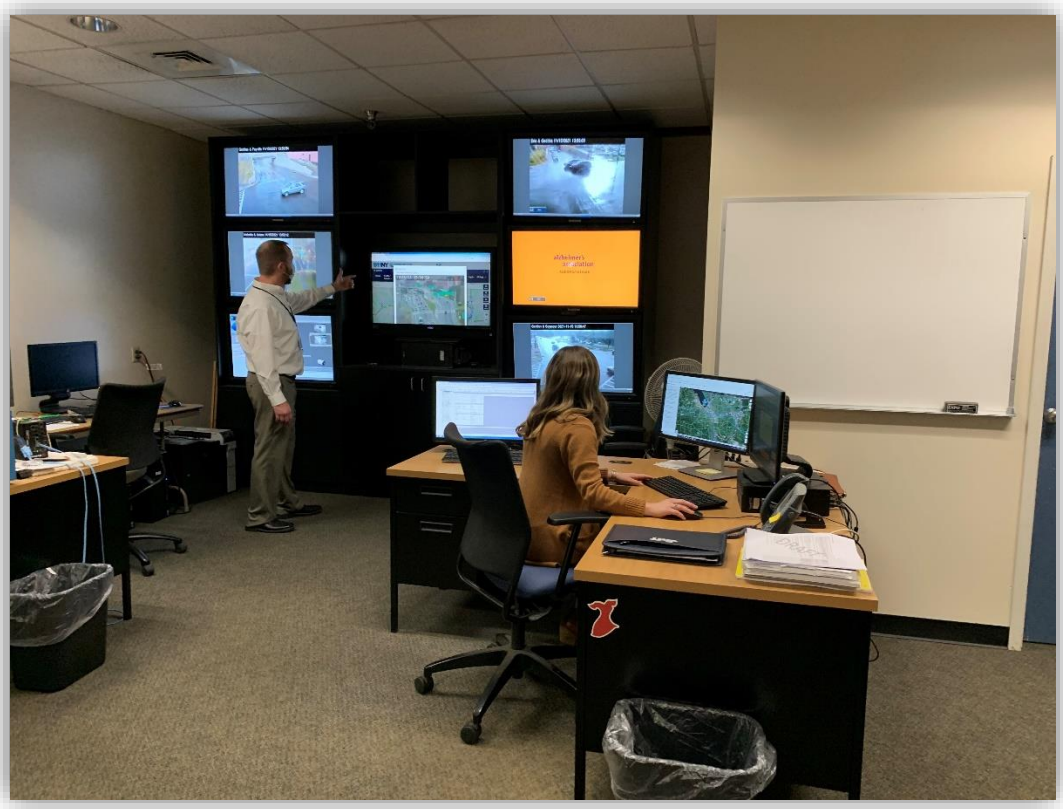
The SMTC's 2020-2024 Transportation Improvement Program programs $7,388,000 for operations and maintenance functions of the State TMC and related ITS functions within the SMTC planning area over 5 years. When looking at the current 4-year Statewide Transportation Improvement Program, $12,400,000 is programmed throughout Region 3's 6 county area for TMC/ITS operations and maintenance and

consultant services. Funding covers new and replacement ITS equipment including modems, VMS, pixel boards, fans, power supplies, batteries, radios; tools and hardware for its equipment; monthly TMC operating expenses including cellular modems, cable modems, computer equipment, servers, monitors and office supplies; and covers preventative maintenance, routine inspections, and emergency repairs for ITS field equipment.

The transportation center would continue to cover the Interstate system and likely expand coverage depending on priorities and funding availability to other non-interstate arterial roadways in NYSDOT Region 3. The State TMC also coordinates the area's HELP truck program at a current cost of $1,560,000.

Source: SMTC

City of Syracuse



Source: SMTC

The City of Syracuse's TMC, previously called the Traffic Control Center, is sited in the Department of Public Works building. The TMC measures approximately 22' by 28'. Within this space there is direct access to a restroom and a server room. The facility operates Monday through Friday, 6AM to 6PM with two operators splitting the time and a TMC manager at separate workstations. Each workstation has 3 monitors and could potentially need a 4th monitor.

Location: Syracuse, NY

Co-located: No

Staffing: 2

Hours of Operation: 6AM-6PM, M-F

Costs: $718,000 over 3 years

TMC operations are handled by consultants who are overseen by the City's Director of Special Projects. Prior to 2021, some degree of monitoring and observation activities were covered by city personnel. The City's lead traffic signal technician has a separate workstation within the TMC.

Functions currently in place at the TMC are traffic flow monitoring and traffic signal system management. Relative to any necessary signal adjustments, these are currently done in-field by the traffic signal operator. Efforts are underway to automate this process. Additional functions may be undertaken as efforts advance. The signal interconnect system currently monitors 164 signalized intersections. Plans are in place to expand coverage to another 46 signals through a federal transportation funded capital project. Once the additional 46 signals are connected to the signal interconnect system, 66% of the City's traffic signals will be covered (210 of 315 3-color traffic signals). The remaining 105 intersections are isolated intersections and will be maintained/operated independently from the TMC. At this time, the City does

not have any plans to integrate the remaining the intersections into the central control or communication system. There are 4 active cameras throughout the system with an additional 12-16 cameras to come online soon. Other related infrastructure includes fiber optic and wireless communication system connecting the traffic signal system and other City offices and TransSuite software in the TMC.

The SMTC's 2020-2024 Transportation Improvement Program programs $718,000 to provide operating assistance for a few years. As funding allows its intended purpose is to enter into an agreement with an engineering firm to enable ITS strategic implementation and maintain and upgrade when necessary to new equipment and software.

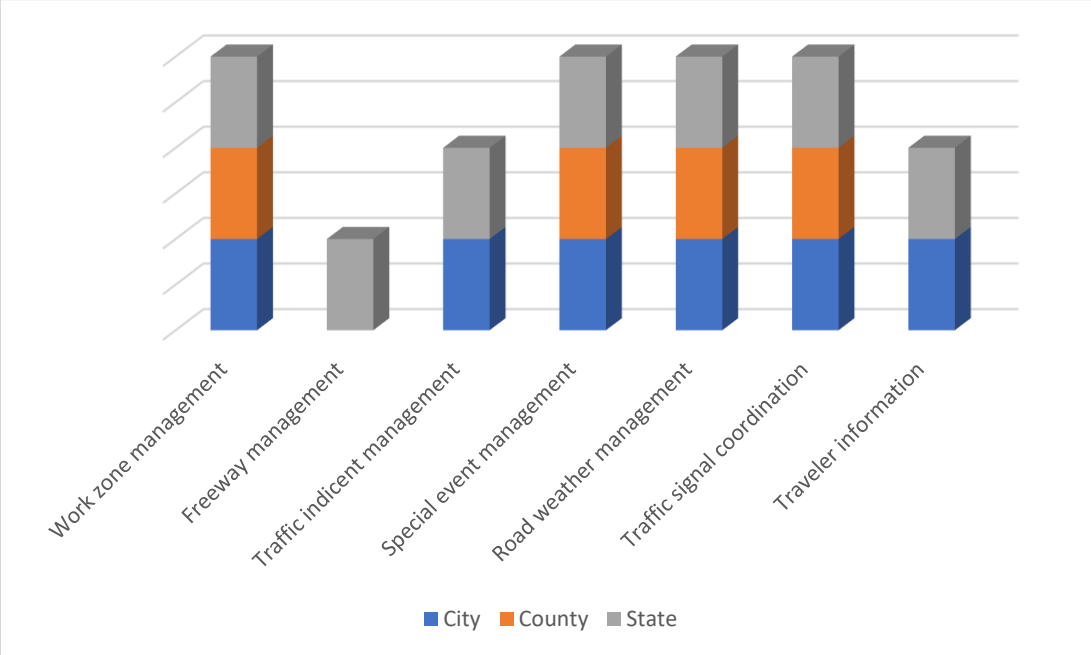
Questionnaire summary

The 26-question form focused on an agency's use, importance, and priority of Transportation Systems Management and Operations (TSMO) techniques, ITS, and TMC deployments within the Metropolitan Planning Area. Additional improvements to traffic operations or stated desires for a joint TMC were identified through this task. Select highlights from the questionnaire are provided below. Please refer to Appendix 2 for additional information.

TSMO

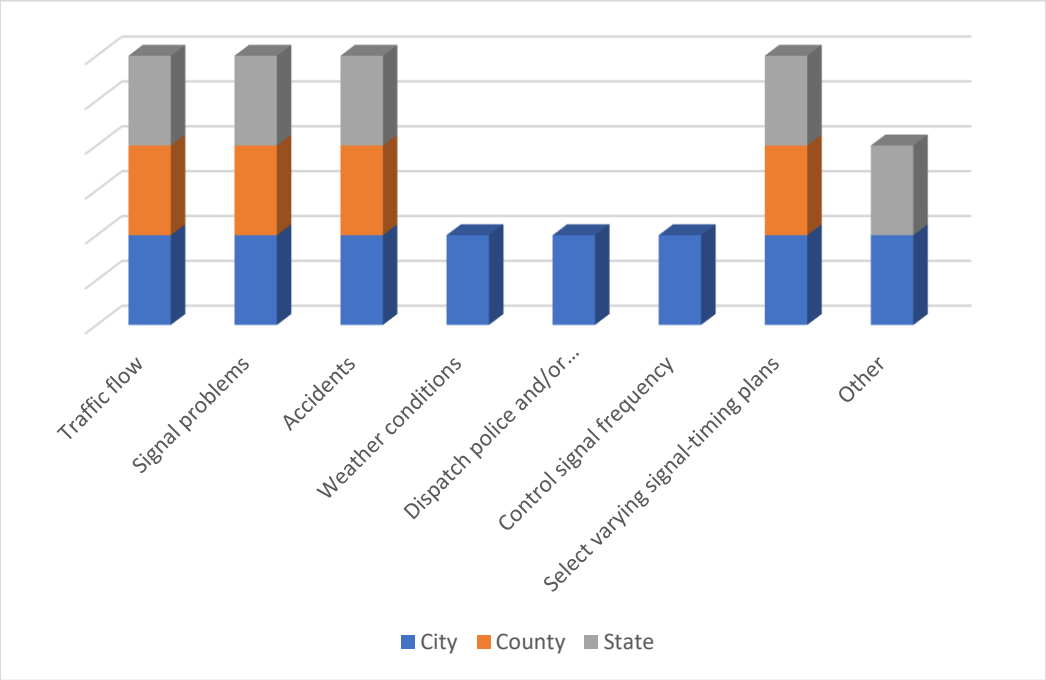
The first question asked respondents to identify TSMO activities/techniques that are currently in use at their agency. Nearly all agencies noted use of each of the seven activities/techniques: work zone management, freeway management, traffic incident management, special event management, road weather management, traffic signal coordination, and traveler information. Given their ownership of interstate facilities, freeway management is only undertaken by NYSDOT. See figure 1.

Figure 1: TSMO activities/techniques currently in use



With current activities/techniques identified, a question then asked respondents to identify what they would like to monitor and/or manage that they are not already. Of the seven options, the City was the one entity that indicated they would like to manage and monitor weather conditions, dispatch police and/or maintenance vehicles and, control signal frequency. The two Other responses were "operations related to transit and municipal fleet" and "room to improve what we do."

Figure 2: Future items to monitor/manage



Collectively, when asked the importance of TSMO operations, the 3 agencies rated the importance as an average of 2.7 out of 5, indicating that it has some value, but is not presently a high priority. Overall reliability of the existing transportation system in the planning area is highly efficient, which may have impacted responses.

ITS

The questionnaire was also an opportunity for SMTC staff to assemble an ITS device inventory by agency. See table 3[13]. Of the 803 traffic signals noted, 461 (57%) are owned by NYSDOT, 240 (30%) by Syracuse, and 102 (13%) by Onondaga County. 610 signals (76%) are connected to a TMC or office workstation. It is envisioned that additional signals will be connected by member agencies as existing capital projects advance over the next few years.

Table 3: ITS device inventory

ITS device type	Number
Traffic signals	803
Connected signals	610
Cameras	114
Dynamic or Variable Message Signs	143
Highway Advisory Radio	2
System sensors	0
Fiber optic corridors	1

Cameras are used to support several activities. The County is the only entity currently that uses cameras for signal timing plan development and adjustment. Again, this could change pending implementation of a few existing capital projects. For example, the City continues to advance their signal interconnect

[13] The SMTC maintains an ITS device inventory interactive map available via the SMTC's website at https://smtcmpo.org/data/interactive-maps/

projects that also incorporate software and technology upgrades to relay signal timing and phasing plans to numerous traffic signals.

Figure 3: Camera activity

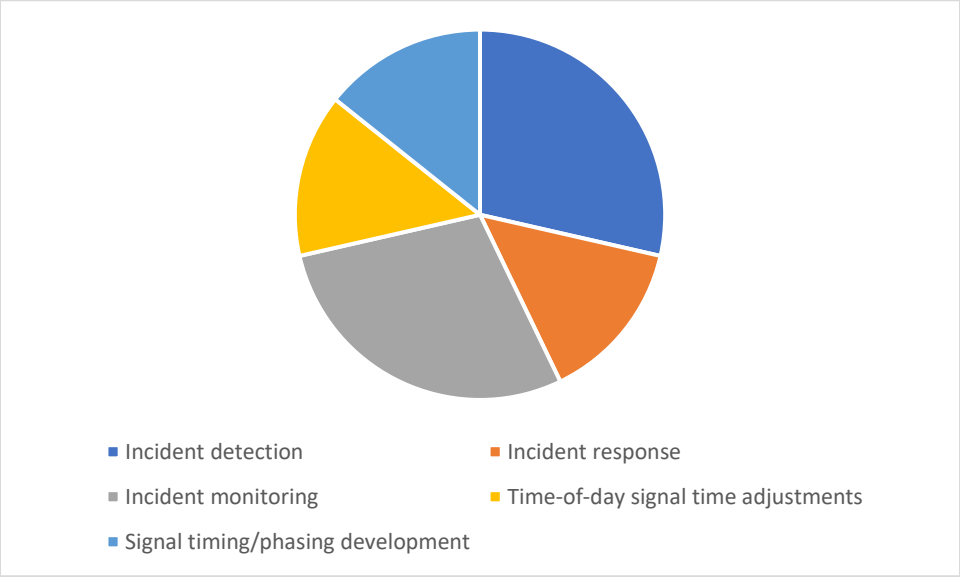


Table 4: Camera activity by entity

Camera activity	City	County	State
Incident detection	X		X
Incident response			X
Incident monitoring	X		X
Time-of-day signal time adjustments		X	
Signal timing/phase development		X	

TMC

Regarding questions specific to the operation of a TMC, 13 questions were asked. Each agency noted they would be interested in co-locating a TMC with the State, County and/or the City, which ultimately is the priority purpose behind developing this technical memorandum; is there interest. If a co-located TMC was to come to fruition, there may be facility location requirements to consider. The City indicated that a TMC must be within the city boundaries, while NYSDOT would need to be "near" a radio tower as their system presently is dependent on a radio network. Regardless of the outcome of facility co-location, the City and NYSDOT have identified the need to closely coordinate with each other throughout the upcoming Interstate 81 Viaduct Projects anticipated with construction taking place between 2023 and 2028.

Funding and Implementation

Facility size and related operations needs were discussed with the Working Group and identified through the questionnaire. Additional efforts to identify site/facility needs and design, along with agency expectations is necessary and beyond the scope of this planning effort. Presuming a physical co-location of NYSDOT, Onondaga County and City of Syracuse was to advance, a facility for planning discussions only was presumed to consist of the following.

Facility criteria:

- Facility size: between 1,000 square feet and 25,000 square feet. 25,000 square feet would be inclusive of an agencies signal shop, such as NYSDOT's.
- Agency or consultant operators: combination; primarily consultant
- Conference room or meeting spaces: at least 1
- Dedicated management offices: Yes
- Hours of operation: 24/7, 365 days for NYSDOT. City and County would generally focus Monday through Friday in the morning and evening commute times.

SMTC staff obtained relevant cost information for NYSDOT facilities for 1) capital for building or significantly renovating, 2) ITS/technology equipment costs (equipping a TMC with ITS technology systems needed such as ITS operator workstations, video wall), and 3) annual operations & maintenance (costs to provide light, heat, telephone service, security, and other standard building facilities costs. Cost does not include the communications costs associated with running ITS field devices or any NYSDOT or contractors operations staffing.). See table 5 for information by NYSDOT Region.

Capital costs ranged from $0 to $35M. In many cases, a Region TMC is located directly in a New York State building that did not require an extensive full buildout. The ITS/technology costs have a significant cost variability as well; approximately $0.010M to $15M. Lastly, for operations & maintenance costs, NYSDOT information reflects a range of $0 to $0.800M annually depending on the Region.

Although costs are dated, these are the most relevant available for this planning task and serve as a starting point for future discussions. Actual cost estimating would be identified in future activities outside of this white paper.

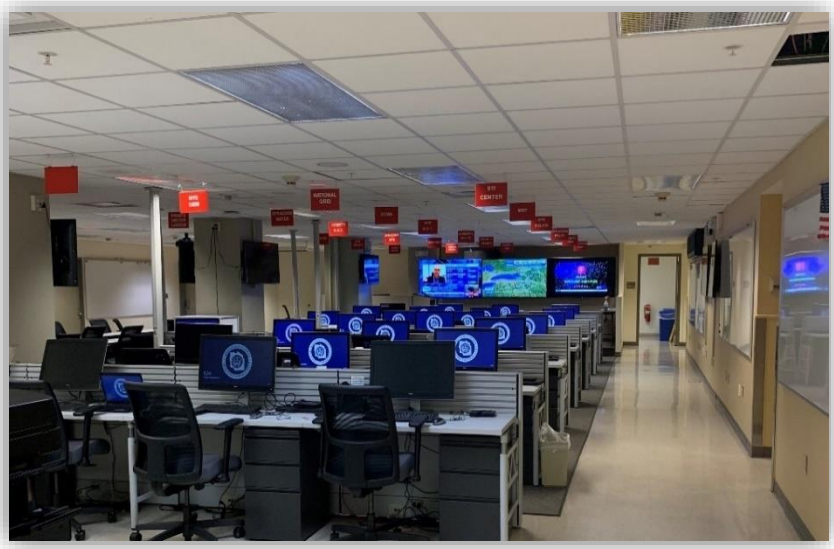
Table 5: Summary of Regional TMC Capital, Operations & Maintenance Costs

Region	Capital Cost	ITS/Technology Equipping Cost	Annual Building O&M Cost
1	$0.750M	$2.5M	$0 (paid by State Police)
2	$0.000 M	$0.070 M	$0.010 M
3	$0 (Located in State Office Building)	<$0.040M	$0 (included as part of the Syracuse State Office Building overall costs)
4	$5.90 M	$0.780M	$0.060M
5	$0.100 M (renovated space located in NFTA facility)	$0.250M	$0.250M

Region	Capital Cost	ITS/Technology Equipping Cost	Annual Building O&M Cost
6	$0 (Located in State Office Building)	$0.130M	$0.005M
7	$0 (Located in State Policy facility)	$0.010M	$0.002M (State Police pay for all but phones)
8	$35M	$3.5M	$0 (costs covered via Office of General Services budget)
9	$0 (located in NYSDOT facility)	<$0.015M	$0.057M
10	$10.5M	$3M	~$0.800M
11	$10.0M	$15.70M	$0.500M

Source: NYSDOT

Remodeling costs of an existing facility were not generally available from NYSDOT; however, it would be expected that remodel costs would be lower than entirely new construction.



A prime site that is worthy of consideration may already exist in the community, the Onondaga County Emergency Management Center. The Emergency Management Center is in the sub-basement of the Onondaga County Civic Center and shares facility space with the County's Department of Emergency Management. The expansive Emergency Management Center for the most part is absent of activity on a day-to-day basis. The center was activated in 2020 during the height of the COVID-19 pandemic; however, prior to that, it was used sparingly. Adjacent to the Emergency Management Center is the County's 911 back-up, which could be envisioned as an important partner or collaborator in a co-located facility.

The entire space consists of multiple offices, 2 conference rooms, several storage rooms, a restroom, an array of small workstations, and even a functional kitchen. Discussions have occurred at the county level to potentially relocate the Department of Emergency Management and the Emergency Management

Center to another location. If that move occurs, the space could be reconfigured and remodeled as appropriate for a joint TMC between interested parties. This would be a considerable cost savings to agencies compared to constructing an entirely new buidling. Recent examples from other states for new TMC construction range between between $7 and $8 million dollars. Reconfiguring an existing space would require further specifications to be worked out; however, the space currently has most, if not all, necessary features such as workstations, computers, monitors, furniture, offices, conference rooms, and storage rooms.

Source: SMTC

Conclusion

The planning effort undertaken is intended to be the first step in advancing the concept of a joint TMC in the SMTC Metropolitan Planning Area. If a joint TMC is advanced, as previously noted, a facility that combines the State and/or the County with the City would be unique in Upstate New York. Existing agency co-locations in the various Upstate New York TMCs generally consist of NYSDOT along with the NYS Police. Several additional facility criteria items such as which agency would have management and oversight responsibility, number of employees (e.g., managers, operators), number of workstations, and number of shifts require further input from the City, County, and State. Preliminary responses are documented in Appendix 2. Beyond the facility criteria noted above, other facility considerations as 'next steps' include:

- Shared or dedicated workstations for operators
- Agency separate network for security reasons
- Server room space needs (e.g., a larger server room may be necessary to accommodate fiber networks if running adaptive signal controls)
- What programs do you intend to run?
    - Several programs don't "speak" to each other and may require dedicated desktop computers
- Amount of diskspace per operator (e.g., number of monitors on each desk, etc.)
- Facility security needs (e.g., parking, building and room access)

Agency interests will dictate how, and if, the concept is moved forward. Should it be determined to continue moving the concept along, the next step is likely to develop what's known as a Concept of

Operations. A Concept of Operations "defines what the center accomplishes, and how it goes about accomplishing it."[14] A Concept of Operations generally focuses on the following topics:

- Systems
- Operational facility needs
- Integration and testing
- Coordination
- Performing or procuring Operations and Maintenance
- Training and documentation
- Operational procurement and contracting.

Should agencies decide to advance the co-location idea, SMTC staff will reach out to our partners at the Federal Highway Administration for their direction and involvement.

[14] FHWA. (1999). *Transportation Management Center Concept of Operations*.

Appendix 1

Scope of Work

Syracuse Metropolitan Transportation Council
Technical Analysis Scope of Work (approved May 19,2021)
Joint TMC Co-Location White Paper Evaluation

Overview

As part of the 2020-2021 Unified Planning Work Program, the Syracuse Metropolitan Transportation Council (SMTC) agreed to assist the New York State Department of Transportation (NYSDOT) with an examination into the feasibility of establishing a new single, co-located Transportation Management Center (TMC) for NYSDOT and other agencies to potentially manage traffic operations more efficiently throughout the SMTC's planning area. TMCs "use software and applications to obtain, process, and act on data, such as maps, with roadway sensor or weather data, incident management logs, dispatch tools, device management tools, and instant messaging and email tools.[1]"

In the Syracuse Metropolitan Planning Area, member agencies are operating and maintaining standalone traffic operations centers. NYSDOT's existing TMC is predominantly for the Interstate system in Onondaga County, the City of Syracuse TMC currently covers several corridors and over 150 City owned traffic signals with more to come online and, although Onondaga County does not have an operations "center" for traffic management, they utilize various Intelligent Transportation Systems technologies such as cameras and sensors that relay with office workstations. Relative to NYSDOT operations, the transportation center would continue to cover the Interstate system and likely expand coverage depending on priorities and funding availability to other non-interstate arterial roadways in NYSDOT Region 3. As the area's public transportation provider, the Central New York Regional Transportation Authority may have an interest with potential technology interfacing or communication tie-ins, such as re-routing buses based on emergency notifications from other agencies.

This project will seek to identify new management partnerships and synergies between the State, County, and City to potentially provide expanded coverage to the traveling public throughout Onondaga County.

Tasks are outlined below to assist the SMTC in completing this effort.

Tasks

Task 1: Public Involvement

As this planning effort is centered on research and discussions with various agencies into the relevancy of establishing a joint TMC, no formal Public Involvement Plan will be created. However, additional public agencies interested/involved in traffic management and operations such as the Onondaga County Department of Emergency Management, Onondaga County Sheriff's Department, and the New York State Troopers, may be invited to participate on the Working Group or asked for input at various stages throughout the planning effort as part of a broader stakeholders group.

1.1. Working Group

The SMTC will invite the following agencies to participate on a Working Group:

- Central New York Regional Transportation Authority;

[1] Federal Highway Administration. (2018). *Human Factors Guidelines for Transportation Management Centers*.

- City of Syracuse;
- NYSDOT;
- New York State Thruway Authority;
- Onondaga County Department of Transportation; and
- Others as deemed appropriate through working group input.

It is anticipated that up to 3 Working Group meetings will be held through the course of this planning effort. The Working Group will not vote on approval or disapproval of project-related products and documents.

1.2. Agency Discussions

In addition to larger Working Group meetings, SMTC staff will meet separately (in-person or virtual) with Working Group member executive and/or senior staff to gain insight into agency priorities of traffic management and technology enhancements.

The SMTC will prepare a meeting summary from each meeting (Working Group, agency, and Stakeholder) and include in the project documentation. At time of writing, all Working Group and Stakeholder meetings, if identified, are envisioned to be held virtually due to current COVID-19 restrictions. Decision for in-person or virtual meetings and outreach will be considered if restrictions are relaxed and adequate safety procedures and protocols can be established.

1.3. Transportation Systems Management and Operations Questionnaire

Commensurate with task 1.2, the SMTC will create a short questionnaire focused on an agency's use, importance, and priority of Transportation Systems Management and Operations (TSMO) techniques within the Metropolitan Planning Area. The questionnaire will be used to guide individual conversations with participating agencies. Additional improvements to traffic operations or stated desires for a joint TMC will be identified through this task. Through the questionnaire, staff will document how TSMO is implemented now and could be done in the future through a joint TMC operation.

Task 2: Background research and case study examples

SMTC staff will research items relating to TMCs, such as those below, and will also develop several case studies. Case studies will include examples from Upstate New York State communities (e.g., Buffalo, Rochester, Albany, others) along with examples from outside the state with similar weather and population characteristics of the SMTC Metropolitan Planning Area. Summaries of the existing NYSDOT and City TMCs, along with a discussion on the use of ITS equipment at other agencies will be included in this task.

- Benefits of a TMC
- Number and location of TMCs in New York State
- Type of facility (single agency or co-located)
    - If co-located, with what agency
- Staffing levels (municipal and/or consultant)
- Attributable costs, as available (i.e., personnel, software, technology, construction of space)
- Traffic operations activities undertaken.

Task 3: Order-of-magnitude costs estimation

Utilizing information from Tasks 1 and 2, staff will seek to estimate planning level, order-of-magnitude costs related to a common work plan of a co-located TMC. For example, capital cost of building new or retrofitting an existing building/space and an annual budget for maintenance and operation of facility. SMTC staff, through Working Group input, will identify a few approaches between interested parties such as:

- A fully operational co-located City, County, and State facility.
- State and City or County co-location.
- New State facility with communication, software, and technology tie-ins with City or County.

Cost information will be developed in consultation with NYSDOT (Region and Main Office) and shared/discussed among the Working Group.

Task 4: Implementation plan and funding opportunities

Taking information from Task 3, Task 4 will lay the foundation for interested agencies to further advance the joint TMC co-location concept beyond the conceptual planning stage. A discussion on applicable funding opportunities and next steps will be included in this task.

Schedule and deliverable

Tasks will be summarized in a draft White Paper to the Working Group members for their review and comment. Comments will be incorporated in the draft White Paper prior to bringing forward through the SMTC Planning and Policy Committees.

SMTC anticipates that all work will be completed within 8 months from scope of work approval.

Appendix 2

Questionnaire

TSMO, ITS, TMC Agency Questionnaire

In the broader TMC co-location planning effort underway by SMTC staff, this questionnaire has been created to gain better understanding on the current, and potential use and implementation of TSMO strategies, ITS, and TMC deployments by various member agencies.

Transportation System Management & Operations (TSMO)

USDOT defines TSMO as an integrated set of strategies to optimize the performance of existing infrastructure through the implementation of multimodal and intermodal, cross-jurisdictional systems, services, and projects designed to preserve capacity and improve security, safety, and reliability of the transportation system.

1. What TSMO activities/techniques are currently in use at your agency? Select all that apply.

- [ ] Work zone management
- [ ] Freeway management
- [ ] Traffic incident management
- [ ] Special event management
- [ ] Road weather management
- [ ] Traffic signal coordination
- [ ] Traveler information
- [ ] Other

2. What facilities do you focus on?

- [ ] Interstate
- [ ] Major arterials
- [ ] Other corridors

3. If not already, what do you wish to monitor/manage? Select all that apply.

- [ ] Traffic flow
- [ ] Signal problems
- [ ] Accidents
- [ ] Weather conditions
- [ ] Dispatch police and/or maintenance vehicles
- [ ] Control signal frequency
- [ ] Select varying signal-timing plans
- [ ] Other

4. How important is TSMO to your operations, currently?

☆ ☆ ☆ ☆ ☆

Intelligent Transportation Systems (ITS) device inventory

Please provide the number of devices for each device type, as applicable.

5. Traffic signals

6. Connected signals (to TMC or office workstation)

7. Cameras

8. Dynamic or Variable Message Signs

9. Highway Advisory Radio (beacons and transmitters)

10. System sensors

11. Fiber optic corridors

12. If cameras are used, do they support any of the following? Select all that apply.

- [ ] Incident detection
- [ ] Incident response
- [ ] Incident monitoring
- [ ] Time-of-day signal time adjustments
- [ ] Signal timing/phasing development

Transportation Management Center (TMC) related

13. If your agency has an existing TMC, what agencies does the TMC currently interface with and in what capacity?

14. How do you currently coordinate with the City/County/State?

15. If you see any issue/incident on another agency's facilities, do you know how to contact their TMC or appropriate personnel?

- ○ Yes
- ○ No

16. Do you currently coordinate things like construction schedules across agencies?

- ○ Yes
- ○ No

17. Would your agency be interested in co-locating a TMC with the State, County and/or City?

- ○ Yes
- ○ No
- ○ Maybe

18. How about other agency partnerships such as Onondaga County 911, Sheriff's Office, Emergency Management, City Police or Fire Departments?

- ○ Yes
- ○ No

19. If your agency has a dedicated signal shop, would you want to co-locate with them?

- ○ Yes
- ○ No

20. What functions would you want to see combined in a new TMC - either internal to your agency/municipality or across organizations?

21. Do you have space (square footage) requirements for a hypothetical new TMC?

22. Do you have location requirements for a hypothetical new TMC?

23. Do you have a staff level in mind for a hypothetical new TMC?

24. Would you be interested in having another agency provide signal coverage during "off" hours? For example, NYSDOT Region 4 in the Rochester area covers for the Monroe County DOT during evening hours.

- ○ Yes
- ○ No
- ○ Maybe

25. If you did not co-locate, would you be interested in periodic cross-agency TSMO/ITS/TMC personnel meetings to discuss what you're doing (e.g., coordination, information exchange)?

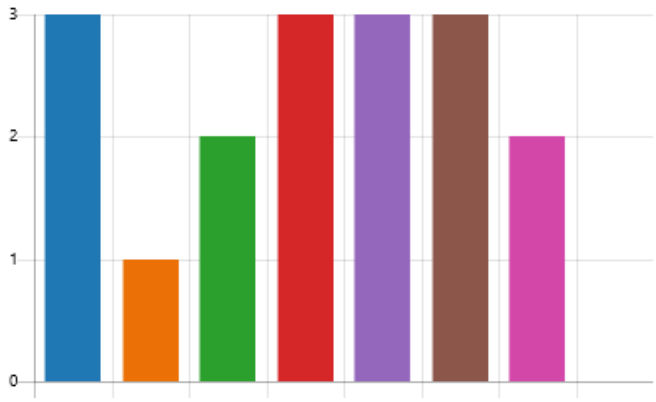
- ○ Yes
- ○ No
- ○ Maybe

26. Any other thoughts, comments you'd like to note regarding the TMC co-location concept?

1. What TSMO activities/techniques are currently in use at your agency? Select all that apply.

More Details

Work zone management	3
Freeway management	1
Traffic incident management	2
Special event management	3
Road weather management	3
Traffic signal coordination	3
Traveler information	2
Other	0



2. What facilities do you focus on?

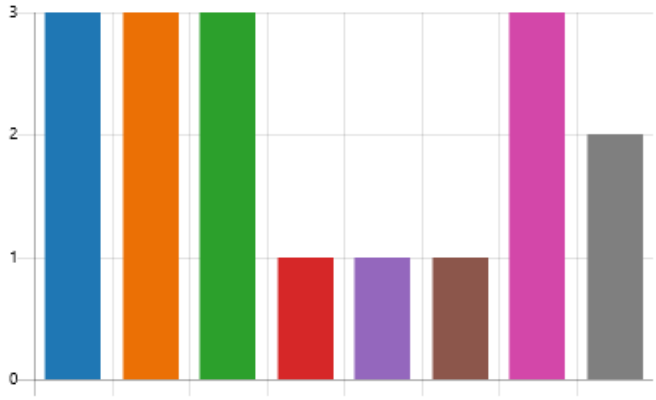
More Details

Interstate	1
Major arterials	3
Other corridors	2

3. If not already, what do you wish to monitor/manage? Select all that apply.

More Details

Traffic flow	3
Signal problems	3
Accidents	3
Weather conditions	1
Dispatch police and/or mainte...	1
Control signal frequency	1
Select varying signal-timing pl...	3
Other	2



4. How important is TSMO to your operations, currently?

More Details

3

Responses

★★★☆☆

2.67 Average Rating

5. Traffic signals

More Details

3

Responses

240
461
102

6. Connected signals (to TMC or office workstation)

More Details

3

Responses

159
420
31

7. Cameras

More Details

3

Responses

11
72
31

8. Dynamic or Variable Message Signs

More Details

3

Responses

0
139
4 portable signs with remote access

9. Highway Advisory Radio (beacons and transmitters)

More Details

3

Responses

0
2
0

10. System sensors

More Details

3

Responses

0
0
0

11. Fiber optic corridors

More Details

3

Responses

1
0
0

12. If cameras are used, do they support any of the following? Select all that apply.

More Details

Incident detection	2
Incident response	1
Incident monitoring	2
Time-of-day signal time adjus...	1
Signal timing/phasing develo...	1

13. If your agency has an existing TMC, what agencies does the TMC currently interface with and in what capacity?

3

Responses

NYSDOT Reg 3 TMC, COS dispatch, DPW signals, NWS
Onondaga County 911 Center (daily for traffic incidents/response), City of Syracuse (as needed)
N/A

14. How do you currently coordinate with the City/County/State?

More Details

3

Responses

Phone and email

Phone and email

E-mail & telephone

15. If you see any issue/incident on another agency's facilities, do you know how to contact their TMC or appropriate personnel?

More Details

Yes	3
No	0

16. Do you currently coordinate things like construction schedules across agencies?

More Details

Yes	1
No	2

17. Would your agency be interested in co-locating a TMC with the State, County and/or City?

More Details

Yes	3
No	0
Maybe	0

18. How about other agency partnerships such as Onondaga County 911, Sheriff's Office, Emergency Management, City Police or Fire Departments?

More Details

Yes	3
No	0

19. If your agency has a dedicated signal shop, would you want to co-locate with them?

More Details

Yes	2
No	1

20. What functions would you want to see combined in a new TMC - either internal to your agency/municipality or across organizations?

More Details

3

Responses

Open concept similar to emergency management center, with sub areas for each agency.

Internal - ITS/Signal Maintenance in same building with TMC. External - incident management and response. We work the closest with the 911 center. There is a potential to work much closer with the city due to I-81.

Off hour monitoring of County owned intelligent traffic signal systems.

21. Do you have space (square footage) requirements for a hypothetical new TMC?

More Details

3

Responses

1k office, 3k shop (not including storage/laydown)

25000 for NYSDOT only

Room for three workstations

22. Do you have location requirements for a hypothetical new TMC?

More Details

3

Responses

Must be within city of Syracuse, served by transit and within close (walking) proximity to amenities like goods and services for workers.

North Syracuse

No

23. Do you have a staff level in mind for a hypothetical new TMC?

More Details

3

Responses

No

35 for NYSDOT only (TMC, ITS and Signals)

Onondaga County will likely have 4 employees trained to work part time in the TMC.

24. Would you be interested in having another agency provide signal coverage during "off" hours? For example, NYSDOT Region 4 in the Rochester area covers for the Monroe County DOT during evening hours.

More Details

Yes	2
No	1
Maybe	0

25. If you did not co-locate, would you be interested in periodic cross-agency TSMO/ITS/TMC personnel meetings to discuss what you're doing (e.g., coordination, information exchange)?

More Details

Yes	3
No	0
Maybe	0

26. Any other thoughts, comments you'd like to note regarding the TMC co-location concept?

More Details

2

Responses

A very worthwhile effort.

NYSDOT is dependent on a radio network so location would need to be near radio tower. It would be ideal if there was room for a command post that could be used during a major event. Conference rooms and private offices would also be beneficial for management.

Appendix 3

Working Group Summary

Syracuse Metropolitan Transportation Council
100 Clinton Square
126 N. Salina Street, Suite 100
Syracuse, New York 13202
Phone: (315) 422-5716
Fax: (315) 422-7753
www.smtcmpo.org

Meeting Summary

JOINT TMC CO-LOCATION WHITE PAPER EVALUATION

Working Group meeting
Via Zoom
July 11, 2022
10:00 a.m.

Attendees

Neil Burke, City of Syracuse - DPW
Dave Cooper, Onondaga County – DOT
Marty Voss, Onondaga County – DOT
Julie Baldwin, NYSDOT
Ryan Meagher, NYSDOT
Thomas Bardenett, SMTC
Mario Colone, SMTC
Jim D'Agostino, SMTC

Meeting Agenda: Review of Draft Document

Mr. Mario Colone opened the Working Group meeting for the *Joint TMC Co-Location White Paper Evaluation* at 10:00 a.m. He noted the use of a PowerPoint presentation for purposes of the meeting. The goal of this meeting is to foster a discussion between the main entities.

Mr. Colone mentioned there are primarily 3 entities involved in this planning effort: NYSDOT, County, and City. The Thruway Authority may be involved in the future, but they are not involved in the conversation at this time. Mr. Colone described the current state of Transportation Management Centers in use in the area. He noted that NYSDOT and the City currently operate separate "single jurisdiction TMCs." This system in place currently seems to work well as there is coordination and communication between the 2 agencies when necessary. Mr. Colone noted based on conversations with NYSDOT, the State is running into space issues with their TMC. Also, the City's set up is practical for its current needs but would have difficulty being able to accommodate more staff easily. He further noted that regarding space, the County's Emergency Management Center (EMC) is very spacious that could satisfy some of the needs and desires of NYSDOT. The EMC is also in the same space as the County's Department of Emergency Management. The EMC is only activated when needed. The County Executive has indicated the office may be moving in the near future.

Mr. Colone stated that as part of the overall effort, four case studies were observed across Upstate NY (Buffalo, Rochester, Albany, Hudson Valley) in addition to discussion of NYSDOT Region 3 and the City of Syracuse. The Regional Traffic Operations Center in Monroe County is co-located between NYSDOT Region 4, NYS Police, Monroe County, and the Monroe County Airport Authority. He mentioned the Syracuse area would be unique if it was to co-locate the City, County, and State all in one facility. Mr. Colone noted we have some questions we are still looking to provide answers on. The size of a desired facility is one

question. In the questionnaire, NYSDOT indicated a wish for 25K sf while the City indicated around 1K sf for office space. Mr. Jim D'Agostino reiterated that the purpose of this project was to see whether a joint TMC was feasible and if it was beneficial. The answer to both is yes. The next step is really to see if the member agencies involved want to pursue this, and if so, who will take this on and move it forward. The SMTC can be part of this discussion and help coordinate, but the member agencies need to be the main driver on this effort.

Mr. Neil Burke noted this is what he was looking for, really confirming that this is a feasible project. The City would be happy to pursue co-location if the other agencies are as well. He mentioned the City has the smallest operation of the 3 entities.

Mr. Colone asked the County reps if the existing County EMC space is still a viable option for documentation purposes. Mr. Marty Voss said that as far as he was aware, yes, but would need to confirm. Regarding the City, Mr. Colone inquired if the City's position of having a joint TMC located in the city is still true. Mr. Burke said yes, the City has that requirement. The City would need to be near their infrastructure trunk. Mr. Voss stated the EMC site makes sense due to all of its location benefits. There has been discussion about County 911 using the space but need to make sure the space is still available. Mr. Burke mentioned the City would like to move sooner rather than later as part of the I-81 project. It might be beneficial to use this opportunity to coordinate in a close manner. Mr. Voss gave a hypothetical example of a weekend in the winter with a snowstorm and basketball game at the same time. This would help coordinate many of these efforts to streamline our responses. The County would like to work with the City on this. Mr. Voss noted this may be a good opportunity to pursue federal funding.

Mr. D'Agostino asked if there is support moving this project forward through the SMTC Committee structure. There were no responses against from attendees. Mr. Colone asked if there were any other items NYSDOT would like to discuss. Ms. Julie Baldwin mentioned that she thinks it would be beneficial to note that this would be a unique set up in the State and that may be a beneficial thing. Also adding a bulleted list that may lay out what type of facility we may be able to expect depending on what type of facility we pursue. For example, just a TMC vs a TMC and a sign shop. Mr. Ryan Meagher indicated NYSDOT would like to combine their sign shop with the TMC. The downtown site may complicate that desire. Also, he has some concerns over the existing technology systems working together but, that is an IT issue to consider in the future.

Next Steps

Mr. Colone asked that comments be submitted by next week so that we can incorporate them into the document prior to the Planning Committee mailing.

The meeting concluded at 10:40 a.m.