NOCoE
National Operations Center of Excellence

Peer Exchange Report

National Operations Center of Excellence Regional Collaborations Peer Exchange

Purpose And Overview

NOCoE's Regional Collaborations Peer Exchange hosted transportation professionals from city/county, regional, and state agencies with experience and interest in creating collaborative solutions for transportation system management and operations. The peer exchange was held in-person at AASHTO's office in Washington, DC, as a two-day exposure to the topic. Subject matter experts from specific programs with experience in the topic were invited to speak and attend.

Agenda

TUESDAY, NOVEMBER 15, 2022

Time	Topic	Speakers
8:00 am – 8:30 am	**Continental Breakfast / Coffee**	
8:30 am – 8:45 am (15 min.)	**Welcome and Introduction** • Welcome • Agenda Review • Roundtable Introductions	• Welcome from Faisal Saleem, NOCoE • Douglas Noble, ITE • All
8:45 am – 9:30 am (45 min.)	**Module 1 – Many Moving Parts: An Example** 1. Seattle and the Puget Sound Metro Area *Format: 10-15 min. presentation(s) followed by discussion.*	• Dongho Chang, Washington State DOT
9:30 am – 10:30 am (60 min.)	**Module 2 – Traffic Management 1** 1. Tuscaloosa and Huntsville, AL TMCs 2. New England Compass ATMS (NH / VT / ME) *Format: 10-12 min. presentation(s) followed by discussion.*	• Phillip Day, Alabama DOT (remote from Huntsville TMC) • Nicholas King, New Hampshire DOT
10:30 am – 10:45 am	**Break**	

10:45 am – 11:45 am (60 min.)	**Module 3 – Rural Initiatives** 1. North/West Passage 2. I-80 Coalition 3. Feedback for National Rural ITS Steering Committee *Format: 10 min. presentation(s) followed by discussion.*	• Dave Huft, South Dakota DOT • LaShonn Ford, Nevada DOT • Douglas Noble, ITE
11:45 am – 12:45 pm	**Lunch Break**	
12:45 pm – 1:30 pm (45 min.)	**Module 4 – MPO Role** 1. Orlando *Format: 10-15 min. presentation(s) followed by discussion.*	• Eric Hill, MetroPlan Orlando
1:30 pm – 2:30 pm (60 min.)	**Module 5 – Coalition Building** 1. Leadership (agency/elected officials) 2. How to create *Format: 10-15 min. presentation(s) followed by discussion.*	• Joey Sagal, Maryland Transportation Authority
2:30 pm – 3:45 pm	**Break**	
3:45 pm – 4:45 pm (60 min.)	**Module 6 – Traffic Signal Management** 1. North Carolina DOT 2. MARC Operation Green Light *Format: 10-15 min. presentation(s) followed by discussion*	• Meredith McDiarmid, North Carolina DOT • Ray Webb, Mid-America Regional Council
4:45 pm – 5:00 pm	**Day Wrap Up**	

* All times shown are Eastern Standard Time.

WEDNESDAY, NOVEMBER 16, 2022

Time	Topic	Speakers
8:00 am – 8:30 am	**Continental Breakfast / Coffee**	
8:30 am – 8:45 am (15 min.)	**Welcome and Introduction** • Welcome for the Day • Agenda Review	• Douglas Noble, ITE
8:45 am – 9:30 am (45 min.)	**Module 7 – Leveraging Circumstances** 1. Pope's Visit 2. New Orleans Preparation and Recovery: Hurricane Ida *Format: 10-12 min. presentation(s) followed by discussion.*	• David Adams, PennDOT • Frank Cavataio, PennDOT • Allen Yrle, City of New Orleans • Scott, Boyle Louisiana DOTD
9:30 am – 10:30 am (60 min.)	**Module 8 – Traffic Management 2** 1. KC Scout 2. Maryland CHART / RITIS *Format: 10-15 min. presentation(s) followed by discussion.*	• Mark Sommerhauser, Missouri DOT • Jason Dicembre, Maryland SHA
10:30 am – 10:45 am	**Break**	
10:45 am – 11:45 am (60 min.)	**Module 9 – Information Dissemination** 1. Public Information / Social Media *Format: 10-15 min. presentation(s) followed by discussion.*	• Jennifer Nesossis, Virginia DOT
11:45 am – 12:45 pm	**Lunch Break**	
12:45 pm – 1:30 pm (45 min.)	**Module 10 – FHWA Resources** 1. Resources and Support from FHWA *Format: 10-12 min. presentation(s) followed by discussion.*	• Ralph Volpe, FHWA
1:30 pm – 2:30 pm (60 min.)	**Module 11 – Making Them Last** 1. Leadership (agency/elected official) 2. How to sustain *Format: 10-15 min. presentation(s) followed by discussion.*	• Steve Levine, Transcom
2:30 pm – 3:00 pm	**Wrap Up** **Action items for NOCoE and participants**	

* *All times shown are Eastern Standard Time.*

Sessions

INTRODUCTION

The Regional Collaborations peer exchange was conducted in-person over two days at the American Association of State Transportation officials (AASHTO) offices in Washington, DC. The peer exchange included representatives of local agencies, metropolitan planning organizations (MPOs), state departments of transportation (DOTs), and the Federal Highway Administration (FHWA). The meeting had an introductory session followed by 11 content sessions organized around the topic of collaboration in a regional context. Each session had a short period for the participants to discuss challenges in the topic area and various resolution(s) they have found.

MANY MOVING PARTS: AN EXAMPLE

Summary

Dongho Change, the state traffic engineer for the Washington State DOT (WSDOT) spoke on the approach to regional collaboration in the Seattle and the Puget Sound Metro Area in the context of the state DOT's emphasis areas of diversity, equity and inclusion, workforce development, and resiliency. A resilient transportation system being defined as sound, safe, and smart. He noted that the number of highway collisions have been declining, but their severity has been going up resulting in societal costs of $16.4 billion annually to the state, four times the current state DOT budget.

Consideration of all users of roadways is now a requirement in the state code for state DOT projects that are $500,000 or more. As an example, the Westlake Avenue project converted two travel lanes to dedicated transit lanes to improve transit schedule reliability. Post conversion there were no congestion issues and transit ridership increased more than 25 percent.

To support the emphasis on overall safety, the agency is seeking legislative authority in the 2023 session to implement automated speed enforcement on state highways to improve driver behavior and reduce risk in work zones. Revenue in excess of costs would go to Washington Traffic Safety Commission to support driver education programs.

A 2017 crash on southbound I-5 at the I-90 interchange created a dramatic congestion impacts across the downtown and brought to the forefront the need for better collaboration between agencies. WSDOT launched a partnership with state patrol, transit providers, Seattle DOT, private partners, and the University of Washington creating the *Washington State Virtual Coordination Center (VCC) for Multimodal Integrated Corridor Management* with a budget of $8.5 million. The partnership is being implemented in three waves of development and deployment from late 2020 through 2023, with feedback loops to learn and improve the process(es) as the work progresses. Wave 1 creates shared situational awareness, Wave 2 enables collaborative planning and response, and Wave 3 will implement a communications dashboard across partner organizations. Currently, the project is in the operational testing and evaluation phase.

Discussion

- The governor has become a champion as a result of the I-5 incident and has made investment in the VCC program collaboration/communications a priority. As a result of a substantial increase in funding by the legislature, they are now interested in the performance of the transportation system due to their investments. Therefore, it is important to conduct before/after assessments to show outcomes of VCC.
- Staffing for the VCC program is by in-kind participation from the collaborating agencies taking people from normal duties, which is a challenge. As part of the budget package, there is a priority to fund increased staffing to make the VCC sustainable in the long-term. Currently, there is funding for traffic mitigation, but that is part of the safety reset looking at speed management. Some work will impact operations and they are trying to find the balance to analyze impacts and mitigate them.
- The software for the VCC is being developed by the University of Washington and the code is publicly accessible to other agencies including WSDOT. The agency is working to ensure that platform adds value.
- The Puget Sound Regional Council (as the MPO) is more focused on sustainability versus adding capacity. Their focus is on improving safety and reconnecting communities by funding smart growth projects and using light rail and transit services as the backbone of connecting land uses. The MPO is reasonable with new projects if all of the newly deployed systems will be sustained in the long term.
- Various metro area regional collaborations groups have formal agreements between parties, some more focused on roles and responsibilities, others more about fiscal resources. The WSDOT inter-agency agreements currently have funding clause(s) which may be a barrier to participation since several jurisdictions do not know their following year(s) budget situations. The agreement with WSDOT for the VCC development is a lump sum entry with partners expected to come in with a contribution, long term the VCC will be more university led.
- At the staff level the transit agencies, City of Seattle, and WSDOT would come together on a bi- weekly basis to review potential locations for improvements; issues were elevated to decision- makers from there. This has been replaced with a formal group versus just staff working together.

TRAFFIC MANAGEMENT 1

Summary

Tuscaloosa and Huntsville, Alabama Traffic Management Centers

Alabama DOT (ALDOT) is split into five regions, and further broken into areas to better work with local jurisdictions. The North Region has experienced increases in traffic on I-565 along with significant freight traffic. Phillip Day shared that TSMO in the region includes E911 partnerships with 12-13 counties with the others reporting automatically through email. The ALGO website pushes out information and every TMC in the state has their own Twitter handle.

There are agency agreements in place for the TSMO activities with the University of Alabama linked to the university's transportation engineering program and Alabama Transportation Institute, as well as city of Tuscaloosa, and, in addition, to the University of Alabama at Huntsville (UAH).

On the UAH campus ALDOT was provided with free space for the TMC and state TSMO activities which the university's transportation program has leveraged to provide value to students and in return, faculty collaboration (from both campuses) on research for ALDOT. ALDOT provides the university program with data, students have daily access to the TMC, signal cabinets, as well as a communications platform to engage students.

With staffing being a big challenge for the agency, ALDOT views the direct connection to the universities as a source to assist with and help create a pipeline for staffing. ALDOT has a *Professional Civil Engineer Trainee* program that allows students to be hired and gives them the opportunity to learn real-world TSMO. The agency brings networking opportunities with consultants to meet and talk with students. The agency also supports Handshake which is platform for students to find co-op and internships at the agency including a few students that were a good fit to help at the TMC.

One drawback is the timeline to bring new staff on board; it takes on average four to six weeks to process an application through the personnel office and into the system. Then, ALDOT needs to request that the student be hired which is followed by a background check process that can take a long time. Given these timeframes, salary schedules, and an aggressive job market this presents hiring challenges for the agency.

Discussion

Originally the partnership(s) with the University started with a consultant (Gresham Smith) to get the program started. A subsequent decision was made to bring the work in-house due to budget constraints, and strong preference for state employees to do the work wherever possible. Maryland State Highway Administration (MDSHA) shared that they have a similar perspective. In the District of Columbia, if there is work being performed by consultants/contractors that can be done by staff, the agency must report to elected leadership where/why it is being contracted out as part of the budget process. On the other hand, North Carolina DOT requires a certain percentage of consultants to work as contractors. New York State DOT primarily hires consultants.

With respect to turnover concerns MDSHA has found that it is not as great an issue with the TSMO function primarily staffed with state employees. It was acknowledged by the group that knowledge management is important because turnover is not going away.

Summary

<u>New England Compass Advanced Transportation Management System/Traveler Information System</u>

New England Compass is a tri-state agreement between New Hampshire, Vermont, and Maine that defines how the partnership will work. New Hampshire DOT (NHDOT) is the sponsor and manager of the project taking on the upfront costs for project that are then reimbursed by the other two states. Nicholas King of NHDOT shared that during the period of the agreement NHDOT is the contracting party with the vendor and takes the lead in facilitating final system design review and approval, acceptance testing, and scheduled maintenance/software updates. The program is federally funded for four years and can be renewed for four additional years.

Vermont and Maine agencies have other defined primary or support roles and they can choose the programs in which they want to participate. Each state has a link through a developer portal to their specific facilities. They meet daily through Confluence software platform to discuss issues to make

sure everyone is on the same page operationally with no misunderstandings. The relationship between Vermont and Maine agencies has gone smoothly.

If any of agencies seek to modify the shared system there is a written justification process that includes citation of purpose, costs, benefits, and impact to present operations that is provided to NHDOT for distribution to the Change Control Board (CCB). Before the CCB may authorize the modification, all parties must concur, and concurrence is not intended to be unreasonably withheld. The CCB covers the following activities:

• New England Compass Modules

• Software Development for systems outside New England Compass

• Additional New England Compass Procurements

• System (IT) Security Activities

• Device Control and Connectivity

• ArcGIS Online Hosting of Traveler Information System

Discussion

- The state agencies entered a tri-state agreement before entering into terms of engagement; in retrospect the terms of engagement should have come first.
- During the period of the agreement both Vermont and Maine lost their transportation agency administrator and NHDOT lost their commissioner. The turnover at the leadership and staff levels led to frustration with continually needing to defend the tri-state agreement to new agency executives.
- A challenge is that there is no playbook for how to run things and people are retiring. Working to figure out how to keep the all the tacit knowledge.
- The New England Compass ATMS allows viewing of CCTV camera feeds through their portal and center-to-center viewing of cameras from other states. However, bandwidth overwhelms the network so the system crashes, so the external feed capability is not used. Instead, the agency just uses the external view of the traveler information system where all cameras are available.
- Successes have been based on communications tools providing benefits to travelers with more reliable, more accurate, more data available (e.g., speed data). Motorists can sign up for push communications for traffic delays and location accuracy. The Compass ATMS helps support the 511 system.
- Observations from the group are that other agencies are having similar issues with succession planning. At AZTECH they are using an on-call contract for most positions, so if there is turnover, the contractor can take over and train the next employee. Also, AZTECH uses a “wiki” that kept the notes in one place to use as a reference.

MODULE 3 – RURAL INITIATIVES

Summary

North/West Passage Transportation Pooled Fund Study

The North/West Passage Transportation Pooled Fund Study has been active since 2003. The study is currently funded at $30,000 per year each by the seven states from Washington to Minnesota along I-90 and I-94. Dave Huft of the South Dakota DOT and chair of the study steering committee shared that the states have five common challenges: vast rural expanses, mid-size urban areas, commercial and recreational travel corridors, extreme weather conditions, and road closures.

The Study is guided by a steering committee that focuses on delivering content to meet the vision to: *"Develop effective methods for sharing, coordinating, and integrating traveler information, operational activities, and emerging technologies across state and provincial borders."* The program delivers through webinars and the work of an operations task force and a freight task force to establish and maintain relationships, share knowledge and experience, and support implementation of project results to improve practice. For FY 2023 the Study has two consultants supporting projects on:

• Benefits of Traveler Information Provided by DOTs

• Practices for Expanding DOT Traveler Information Coverage

• Communicating Route Restrictions to Third-Party Mapping/Navigation Providers

• Situational Data Exchange

• Activity to Support the Work Zone Data Initiative

The benefits include establishing contacts with DOT peers to build relationships, a forum to exchange data, information, and lessons learned, working on projects collaboratively, a well-maintained website, and project documentation with support from consultants. There have been challenges in maintaining continuity over time with competing responsibilities, retirements, and staff transitions. Multi-state deployments are difficult in the context of how multiple agencies actually deploy systems collaboratively.

Discussion

- Where is the Study on communications of route restrictions through third parties?
  There are discussions going on with both commercial firms and automakers interested in accessing content through a data exchange.
- Is the goal to evolve into something similar to the Eastern Transportation Coalition?
  Pooled fund studies have an end defined end date. A number of them have gone on into second and third versions continuing with new work in the same geographic and topical area. The current approach is to begin another one to continue working on this through different pooled fund studies. This Study is more like a working group versus executive level organization. Dave Huft mentioned that the Study steering committee is open to collaborating with other corridor coalitions and learning if becoming an organization something similar to the Eastern Transportation Coalition would be beneficial.

- Are MPOs or key cities involved?
  The MPOs are not directly involved in all the work, just occasionally. A few states do not even have TMCs given the very rural nature of the program. There is a plan for each state to have a TMC, which will definitely need coordination with local leadership.

Summary

I-80 Coalition

The I-80 Coalition started in 2010 as a winter operations coalition involving Caltrans (District 3), Nevada DOT (Headquarters, District 2, and District 3), Utah DOT, Wyoming DOT, and Nebraska DOT. LaShonn Ford of Nevada DOT shared that the original purpose was to improve winter operations throughout the corridor with state DOT notifications, TMC coordination during weather events, communication regarding long-term closures, proactive communications with freight, and improving the consistency of traveler info across state lines. The I-80 Coalition was a multi-state agreement (versus a pooled fund) originally funded through an FHWA Multi-State Corridor Operations and Management grant and when that concluded the group lapsed over time as champion(s) moved on. In 2020 the I-80 Coalition was restarted with a new grant award that expanded the scope from winter operations to all aspects of maintaining and operating I-80 across the five states. In the intervening years the member state DOTs have advanced their programs with connected vehicle applications, new 511 systems and rural ITS applications (Nebraska DOT), new traffic operations center (Utah DOT), and expansion of traffic incident management among other items.

Freight mobility is a priority, so they are engaging the freight industry representatives and associations with a task group for direct feedback and in updates to the state DOT's freight action plans. With 511, mobile apps, and radio communication between drivers being the most used tools and services to access weather and routing options, the I-80 Coalition is looking to increase confidence in data they are sharing. A challenge being examined is that all the information is not in one place or available in a standard format to exchange.

The I-80 Coalition will be collaborating with the I-15 Mobility Alliance since the two groups have common stakeholders and overlap in some rural areas.

Discussion

- Staffing challenges. Turnover at state DOTs is high, so they meet quarterly with other coalitions and states in a peer exchange format to share information. Communication on a regular basis is helpful. Staff are all state employees as part of their regular duties (not contracted out).
- Membership costs. Nevada DOT pays for membership to the I-80 Coalition and the I-15 Mobility Alliance separately. New Hampshire mentioned that their new administrator came in and took them out of the Eastern Transportation Coalition (membership fees too high). The Eastern Transportation Coalition membership is a flat fee, not based on state mileage.
- 511 statistics, is it fading in urban areas? Usage seems to be the highest used in rural areas. For freight, it is a necessity since specific needs of freight are typically not well covered on third party applications. Nevada DOT is currently updating their 511 system, so the agency is working with third party vendors to make sure they expand the use by travelers. Each state in the I-80 Coalition has their

own 511 system. Faisal Saleem mentioned there may be a benefit to make all different 511 systems share data. LaShonn Johnson mentioned that it is hard to work on these data collaborations, it is probably easier to make them all go to third party providers.

- Third party agreements. Nevada DOT has agreements with Waze/Google for 511. Through these agreements, they receive as well as push data. For road closures, Google takes them to navigate through dirt roads, representative(s) are not available to communicate corrections. In New Hampshire they have a Waze management that takes care of misinformation and removes it from Google. While North Carolina has an agreement with Waze (not Google, hard to deal with them).
- How to deal with the issue of DOTs who were previously the data owner, now they are the customer? At Nevada DOT they have only their internal information technology staff which built out the traveler information system that uses the traffic management data dictionary (TMDD) and the data is available in a standard format.

National Rural ITS Steering Committee

Douglas Noble (ITE) shared that the National Rural ITS Steering Committee's overall mission is, "In concert with the US DOT ITS JPO, NRITS Steering Committee's mission is to assist the rural transportation community in facilitating ITS technology solutions to transportation-related access and mobility issues and to improve opportunities for travelers to make complete trips." Their focus is on technology-enabled assets and applications for real-time monitoring and information exchange on roads in non-urbanized, sparsely populated areas, including tribal areas and small communities which provide safety, emergency services, inter-urban connections, and economic support. Additional information can be found in the National Rural ITS 2023-2025 Strategic Plan.

The Steering Committee's program, supported by ITE with funding from ITS-JPO, includes a session track with the ITE Annual Meeting, website (www.nrits.org), webinars, workshops, and white papers. The Steering Committee has an interest in collaborating with the NOCoE on website content.

In the brief following discussion, it was noted that maintenance of ITS devices in rural areas is a challenge in the context of staff versus device location and associated travel time. Although the Steering Committee does not currently have a National Park Service representative, it is a group that they are interested in adding.

MPO ROLE

Summary

Metropolitan planning organizations (MPOs) are facilitators; they do not own transportation facilities. However, they can be the focal point for operations collaboration in a region. Central Florida includes half of Florida's population and substantial tourism-related land uses which leads to a significant transportation footprint. Eric Hill of Metro Plan Orlando shared how his organization transitioned to regional transportation systems management and operations program involving collaboration for the I-4 corridor and other interstates with Florida DOT and two other MPOs.

At the start of the coalition there was a question of who pays? Metro Plan Orlando has been supporting the costs using grants and staff under a memorandum of understanding. In addition, the University of Central Florida helps support as a partner organization that is home to the National Institute for Con-

gestion Reduction (NICR). The MPO hosts regular meetings of a working group that advances established goals and objectives. The working group conducted an agency survey of their interests in knowledge transfer, funding, and advancing/prioritizing TSMO.

A NICR grant supporting study of the feasibility of a regional TSMO program has completed two products: 1) a literature review and 2) the *Framework for a Regional TSMO Program and Equity Considerations*. The equity considerations piece was important to link TSMO to community culture(s) (i.e., how to explain to the community that an ITS camera is not there to watch the community).

They also conducted peer exchange(s) with their partners around the subject of a regional TSMO program including content on peer programs, potential framework, and discussion toward consensus on a strategic plan. They used the capability maturity model to gather information on what is being done and what is needed to move forward. The result of the work was the creation of a TSMO rubric built around transportation efficiency and multimodal systems, economic development and cost efficiency, equity and livability, safety, and environment and resiliency. The value is to strengthen and guide regional transportation operations collaboration and coordination through agreed upon vision, direction, and commitment.

Discussion

- Washington State DOT has been engaged in a broader conversation about who needs to be included or excluded from the partnership(s). There is a need to make sure partnerships do not exclude other modes of transportation... TSMO to be broader in terms of how to serve communities.
- Douglas Noble mentioned an in-progress project to reframe TSMO and incorporate equity. Important to understand we are moving people and goods; we are not simply moving vehicles.
- An observation was made that everything in the transportation system should be part of TSMO efforts, i.e., all modes. However, most DOTs are not getting beyond auto trips to the next level. Reframing what TSMO means in the context of a region is key.
- How to handle “big brother” concerns and to get a consistent message out? In Orlando they rely on stakeholders (community advisory committee), social media (website), and TSMO master plan that includes a standalone event about TSMO.
- To state DOT participants: do you leverage MPOs as conveners?
    - Maryland – Yes, especially in the Baltimore area, they are part of every transportation decision.
    - North Carolina – Most of the state is still rural relatively, but MPOs participate in strategic deployment plans.

COALITION BUILDING

Summary

From the perspective of experience with the development of the Maryland state operations program to his current role as the chief operating officer for the Maryland Transportation Authority, Joey Sagal observed that the policy-makers, CEOs, and like people are the leaders key to getting coalitions started. In Maryland, their mission to improve safety and mobility is driven by ITS technology and teamwork. The program has found that data tells a story and showing data to elected officials is key to justifying program needs. In 2021, Coordinate Highways Action Response Team (CHART) handled over 130,000 events saving approximately $1.8 billion in delay and fuel costs –all of which are tracked in the annual Mobility Report.

Open transparency and communication are important for a successful coalition, e.g., Maryland has law enforcement on the floor in their TMC, not in adjacent room. The history of coalitions in Maryland has supported the expansion of systems, programs, and devices that support CHART (e.g., DMS, CCTV, TSMO systems, patrol hours, etc.). As a results of the on-going improvements in the program, 95% of Maryland road closures are reported.

In 2021 the TSMO function transitioned to an Office of Transportation Mobility & Operations of which CHART is the core element. The office is funded through a mix of funding sources (planning and operations), but the money is not competing with money for other traffic improvements (roundabouts, etc.). Recently the agency completed a new statewide operations center that addressed functionality needs, program areas, partners, and collaboration space.

Maryland is currently working from their TSMO Strategic Plan (2018) for vision and goals and TSMO Master Plan (2020) for projects and program of work. The impacts of the evolution of the CHART program and the collations it encourages are:

- Enhanced and more frequent coordination and collaboration among offices, districts, shops, etc.
- Changes to scoping/project development process including increased engagement with operations staff at districts and shop level, plus better resources for planning.
- Increase in operations and management burden of work relative to other programs and agencies.

Discussion

- How did Maryland get to the point beyond interpersonal relationships? This goes back to agency administrator, state traffic engineer, etc. to have all parts of the organization working together to achieve the goals to mainstream operations as a core agency practice from executive leadership and across human resources, project development and design, planning and programming, transportation management, construction, and maintenance functions.
- Connection to university program and research resources (University of Maryland) as a partnership is easy since it is a state institution.
- Branding continues to be a good outcome from the initiative creating CHART; the “CHART” became nationally known . People have collaborated with Maryland to reuse it.

- In addition, several items of the CHART program were adopted from the Georgia HERO program. Sharing between programs is important, especially since all those programs were built over the years with federal dollars.

TRAFFIC SIGNAL MANAGEMENT

Summary

North Carolina DOT

North Carolina has 8,900 traffic signals, 3,900 of which are in municipal systems. Meredith McDiarmid, of North Carolina DOT shared that the agency has a partnership program with municipalities to reimburse costs for the installation, repair, operations, maintenance of state-owned traffic signals ("Schedule C"), and associated system communications and operations ("Schedule D") in the municipalities. The agreements cover a one year period, renewable up to five years as needed, and reimbursed as quarterly lump sum payment from a set cost item schedule.

To qualify for reimbursement for traffic signals, the municipalities must maintain to a level-of-service C or better in the areas of maximum emergency response times, an operational performance review checklist, and system component repairs.

Municipalities do not need to have a TMC per se; if they have whatever they consider necessary at their control center, that is enough. To qualify for Schedule D support, 80 percent of these traffic signals are monitored and actively controlled by a system, the timing plans are evaluated at least every 18 months (annually if traffic growth is greater than five percent), the control center is staffed morning and afternoon peak hours, and 80 percent of system detectors are operational. Municipalities need to have a certain percentages of state signals maintained by the City to be eligible for this funding/agreement. Compensation tables are based on this percentage.

Currently the gap in funding versus need is NCDOT's biggest concern. The available funding is underestimated by about half and the agency is working on a proposal to receive additional funding.

Discussion

- As systems get smarter, there is a need for specialists; not all municipalities have staff with this knowledge.
- How do jurisdictions justify an increase in funds? The increase is due to the costs of doing business nowadays (inflation and technology costs that did not exist in the previous systems).
- There is a traffic signal retiming group within the NCDOT, which is focused on systems not maintained by municipalities.
- What is the required response time by NCDOT? There are maximum response times based on issues that can cause safety concerns.
- Due to the distances and associated response times across North Carolina, it is important that municipalities maintain the signals within their jurisdiction. There are written agreements with NCDOT and all municipalities that are resigned every year. Only a few signals are within cities that are still maintained by NCDOT when appropriate (for example, when part of regional state highway corridors).

- If a city comes through the MPO and gets a grant for signal retiming, whose budget receives the funds to update signal timing? If they (the municipality) receive a grant, the grant stays with the agency to do what they desire, NCDOT does not get it. If it passes through NCDOT, the municipality would still have project oversight.
- Is there a systemic way to replace signals with other traffic control options (such as roundabouts)? This is an approach NCDOT is working on.

Summary

MARC Operation Green Light

Mid-America Regional Council, the Kansas City MPO, takes on a number of non-traditional roles such as 911 system, homeland security grant coordination, emergency medical and hospital plans, interoperable communication systems, and Operation Green Light (OGL) operations and construction. Ray Webb shared that the mission of OGL is to monitor and manage the existing transportation system through safe and efficient traffic signal operations to reduce travel time, fuel consumption, and air pollution. There are 27 funding partner cities and agencies plus Kansas DOT (non-operating partner), and the two FHWA division offices in Kansas and Missouri for OGL. There are formal agreements in place outlining responsibilities such as funding, insurance details, etc.

The program manages 755 signalized intersections with traffic signal timing / real-time operations, and shared regional communications network, regional traffic signal software, and traffic camera server. OGL is funded through a combination of Missouri and Kansas DOT monies, state transportation block grants for local shares, and CMAQ/STP funding (depending on year and projects)

OGL is working to create Synchro software signal timing models for every location in the system. Communications are an important component that takes a significant portion of OGL funding and time. OGL is working with Kansas City Scout's freeway management system to better respond to traffic incidents. In the US-71 corridor OGL is testing traffic responsive signal control in a pilot program to evaluate future potential deployments. In 2023, OGL will be enhancing fiber optic communication, controllers, vehicle detection, and CCTV in various communities in the region.

Discussion

- Are there security concerns due to different agencies being in the same system? Kansas City has never had an issue, but the agencies need to ensure shared passwords and things like that are eliminated to reduce hacking risk.
- For the development of traffic signal timing plans: what is the process? Are they developed centrally? Kansas City has their own traffic signal system and MARC uses center-to-center communications to operate with them.
- How do you determine which intersections to retime? The approach is very reactive to individual requests (if someone calls, we retime it), or in other cases when there has been some time since the last updates were made –There is no formal process. Missouri has traffic data, Kansas does not.

  Metro Plan Orlando mentioned that they started using Wejo data, but sample sizes were small. Also, the Wejo data did not cover underserved communities due to older vehicles which is an equity issue. Orlando is on a 3-year cycle to come back and check corridor signal timing.

- What is the relationship between Operation Green Light and other programs in other regions? Is there a collaboration? The responsibilities vary for each jurisdiction, and they change at the jurisdiction boundaries.

LEVERAGING CIRCUMSTANCES

Summary

Pope's Visit to Philadelphia

The 8th World Meeting of Families of the Catholic Church was held over 6 days in September of 2015 with the planned attendance by the Pope announced the prior November. As David Adams and Frank Cavataio of Pennsylvania Department of Transportation (PennDOT) shared, with 25 different agencies involved the planning process coordination meetings began immediately with different groups on monthly and weekly basis. The weekly PennDOT meetings included representatives from the state police, transit agency (SEPTA), MPO (DVRPC), World Meeting of Families, Go Ground (event ground transportation management firm), Pennsylvania Turnpike, FHWA, Pennsylvania Emergency Management Agency (PEMA), and the National Guard. In addition, there were meetings of an interagency committee for overall coordination , traveler information, and incident management planning.

Planning process documentation was established on a secure SharePoint site. The Transportation Management Plan (TMP) development process began in June through mid-September when final FHWA approval was received. The TMP development included modeling of I-95 to estimate traffic impacts based on periodic closure of Interstate highways, regional highways, and downtown street segments based on Pope's overnight stay. The TMP had several detailed traffic control plans with specific resource and quantities lists for the a few segments that were completely closed and the other segments just partially closed. In addition, the TMP established a number of overall traffic management strategies, including 24/7 service patrols, construction and oversize load restrictions, dynamic message signposts across three regional zones, and papal visit specific 511 information.

PennDOT area command was staffed at PEMA and PennDOT district(s) activated its Incident Command Center with the regional TMC heavily staffed during the visit on 12 hour shifts. RITIS meeting (developed by the University of Maryland) was used as the virtual meeting platform and collaborative decision tool supporting coordination, document sharing, situational awareness, active mapping, and probe speed data.

Attendance was approximately 1 million people each day. Travelling by train was the way to get in and out of the city during the visit. Overall successful operations occurred with only slight delays. There were no other big events (such as sports events) the same weekend. There were a number of minor plan changes during the event and there was an unrelated fatal crash during the visit period.

Some PennDOT observations following internal after-action review on elements that worked well were the coordination with police and city staff, presence of Pennsylvania Turnpike and Go Ground at regional TMC, and advance staging of resources pre-event, as well as advance planning of staff coverage. There were some issues with portable DMS signs in programming their operation and early placement. A tabletop exercise would have been helpful to game potential event issues. The regional TMC was still same configuration since 2011 and needed to be updated, but there was no more space to grow. Construction of the new TMC started in 2020 designed with room for partner agencies in the

back of the operators' space and offices on the outside.

Discussion

- The Pope's visit showed flaws in the existing TMC and helped identify solutions the agency incorporated into the design the new TMC.
- Did the agency look into a remote or backup TMC for situations where something goes wrong with primary operations? During the pandemic this capability was developed, and they can go fully remote now.
- With respect to security how did PennDOT coordinate with Pope's team? The Pope's team was always involved with the U.S. Secret Service security discussions for information sharing.
- Although it was not done a tabletop exercise conducted in advance would have given more people more preparation prior to the event.

Summary

<u>New Orleans Preparation and Recovery: Hurricane Ida</u>

Emergency operations events in southeast Louisiana including hurricanes, tornadoes, ice storms, coastal and river flooding as well as major vehicular crashes. Unlike a (somewhat) random event such as a tornado, there typically is more time to prepare for an impending Hurricane. However, the situation during a hurricane can rapidly change from being in a clear area to being in the forecast path.

Scott Boyle of the Louisiana Department of Transportation and Development (LADOTD) shared that Hurricane Ida had a maximum wind speed recorded of 149 miles per hour (Category 4) and created significant wind related damage as the storm center passed to the immediate west of New Orleans. He noted that unlike some other hurricanes LADOTD did not implement contraflow operations for evacuation. Preparation, response, and recovery involved LADOTD, City of New Orleans, Louisiana State Police, the Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP), and the National Weather Service.

Everyone in the agency district(s) are involved in the response including maintenance staff, call center, emergency operation leads, and record keeping (to support cost allocation and reimbursements). Staff may be required to perform other duties as necessary including, but not limited to, emergency/disaster support activities on 12 hour shifts until conclusion of event. There was daily reporting of man hours, equipment, and material usage. During the course of the event LADOTD provided real time road/bridge operational updates in MyDOTD and through 511.

Scott Boyle described the aftermath immediately after the storm and the beginning of the recovery ranged from downed trees, standing water on roadways, traffic signal electrical damage, homes without power in some areas for over two months to traffic signals not working (utilized STOP signs) at select locations. Even now many static signs are still missing. The human element was challenging as well with the recovery taking over 30 straight days and staff having their own personal issues to address on top of their work responsibilities. The agency held an after event meeting to discuss what worked and what didn't as well as techniques to improve setup time for each contraflow site.

Allen Yrle for the City of New Orleans Department of Public Works discussed the three phases of preparation and recovery within the City. Pre-storm the City prepared by securing materials and equipment at all job sites and facilities, and relocated vehicles to high ground (Superdome or Mississippi River Dock). During the storm approach and through the storm personnel responded to calls until conditions were deemed unsafe, then everyone hunkered down. Normally, the City and LADOTD talk weekly but during the lead up to the storm and during, talked much more frequently.

As the storm cleared multiple teams across many agencies scour the roads identifying hazardous conditions – downed power lines, trees, poles, etc. – the appropriate agencies then clear the roads. Office staff assessed and documented damage at signalized intersections and prepared contract documents for major signal repairs. Sign shop units were assigned to major roadways across the City to repair or replace any damaged, leaning, or missing signs. Fortunately, some preplanning for the storm season resulted in sufficient signs in stock. Other units were assigned to respond to complaints received (based on priority). One month after Ida – approximately 2,000 signs and supports replaced or repaired. The signal shop performed basic signal repairs that were prioritized as power was restored throughout the City as well as monitoring and inspecting contractual work.

Discussion

- During Hurricane Florence flooding in North Carolina (multiple weeks post event) there were a lot of people going around barricades, so NCDOT went back to update legislation to increase fines and adjust the legal text (see this link for the legislative steps, this link for the bill mark up, and this link for the enacted law).
- People going around barricades is also an issue for LA DOTD during hurricanes as well as for ice storms, but don't have anything as defined.
- What was behind the Governor's Office decision to not start contraflow? There was a level of uncertainty with a changing forecast and variation in storm speed. The various local elected officials did not believe there was enough time to implement to get everyone out and off the roads before the storm hit.
- Are there any toll facilities in the affected area? Yes, in Grand Isle on LA Route 1; tolls were suspended and not reinstated for months.
- What is the shared engagement with neighboring states and people's post evacuation return? LA DOTD has a yearly partnering meeting in May with Mississippi with their DOT, emergency management agency, and state patrol. Over the past 10 years there really are not new issues although it is a very detailed meeting, mostly used to introduce new staff and to cover institutional knowledge. Preliminary coordination with Arkansas and Texas was done at the Governor's Office level.
- With a recent hurricane in North Carolina, the NCDOT really tried to control reentry of people especially in the City of Wilmington which was isolated. This is a high tourism community and people wanted to go back home or come in to check on rental properties. Some routes were available (open), but NCDOT didn't advertise or promote in communications. There was an issue with the Wilmington Mayor encouraging people to return. In response, NCDOT (with the state patrol) would state travel information was only good for 30 minutes. With today's social media (Facebook, etc.) people were

posting open routes, so the agency revised the process to not to post frequent updates which worked well for a faster recovery.

TRAFFIC MANAGEMENT 2

Summary

Kansas City Scout

Kansas City Scout (KC Scout) is a partnership of Kansas DOT (KDOT) and Missouri (MoDOT). Kansas City is about half in each state and has very independent suburbs and municipalities with their own agencies (fire/EMS responders, highway patrol, transportation, etc.). The metropolitan area is characterized by varying traffic patterns, a large number of interstates and outer loop freeways, and a strong and diverse MPO (Mid-America Regional Council, MARC).

Mark Sommerhauser of Missouri DOT shared that KC Scout began as a jointly funded regional ITS Strategic Deployment Plan, with a simple bi-state agreement to establish cost share with MoDOT as the lead agency for both the initial ITS field construction and future TMC operations. The Board of Directors has two members from each state DOT, a member from MARC, and two non-voting members from FHWA.

The initial program in 2001 was a $20 million ITS deployment and the development of KC Scout Traffic Management Center (at MoDOT's Lee's Summit Kansas City District Office) to provide for coordinated traffic operations along freeways throughout the Kansas City region. The TMC began operation in 2003 on 60 core miles weekdays from 6:00 a.m. to 7:00 p.m. and transitioned to 24/7, 365 days a year operations during the summer of 2005.

Regional coordination responsibilities include Operation Green Light cross jurisdictional signal timing led by MARC as well as the KDOT and MoDOT statewide 511 and traveler information systems. Although KC Scout is physically on the Missouri side of the border, they make extra effort to reach out to Kansas agencies as well as connecting to both highway patrol and fire departments for incident response. KC Scout maintains consistent branding as Kansas City's source of traveler information with their public website (www.kcscout.net) that shows real-time traffic information (with good reviews).

KC Scout TIM training is complicated with all municipalities involved and the need to tie in the KDOT, MoDOT, and highway patrols. KC Scout has taken lessons learned on urban areas to rural areas. Mark Sommerhauser walked through an example incident on I-70 in a more rural part of the metropolitan area; points were shared DMS messages, what they were expecting to see (crash?), where (exit 161?), and what will they see (lane closure?). Due to KC Scout's quick video detection to identify a vehicle broken down in a middle lane of the interstate, the incident was detected in 30 seconds (by camera) and response on scene in less than three minutes.

Summary

Maryland CHART / RITIS

Jason Dicembre of Maryland SHA (MDSHA) provided an overview of their TSMO program. Although TIM with their emergency response technicians (CHART), emergency operations, and regional traffic operation centers are elements for which the agency is widely known, it is only a subset of what the

agency is doing. MDSHA provides traffic Monitoring through CCTV and probe vehicle data sharing as well as traveler information using the MD 511/CHART website and dynamic message signs. MDSHA's on-line MView provides shared cameras (not only DOT cameras) and incident information. MDSHA is expanding its traffic management functionality with signal timing adjustment and TSMO systems.

MDSHA has three regional centers co-located with police departments. The agency has revised the organization with designated managers for each region rather than a director responsible for all elements of the program. In the Western Region based out of Frederick, MD the agency has been successful creating good relationships with the police department. However, there is still resistance to enhanced collaborations with law enforcement in other regions, even with the Western Region's successful work.

The Maryland State Police (MSP) partnership on incident management is based on the state's "Move It" law, if there are no injuries, MDSHA DOT staff can move vehicles from travel lanes. There is a dedicated MSP liaison and MSP assigned TIM unit.

Regionally MDSHA participates in a number of incident/emergency management partnerships, e.g., Metropolitan Area Transportation Operations Center (MATOC) which is shares coordination across the District of Columbia, Virginia, and Maryland.

MDSHA transportation data feeds with the University of Maryland's Center for Advanced Transportation Technology (CATT) Regional Integrated Transportation Information System (RITIS, https://ritis.org), a data warehouse for transportation analysis, monitoring, and data visualization. A current research project with the university is investigating whether event duration ca be predicted with TMC data and to estimate queues. Findings with current data indicate the answer is yes.

The agency is beginning to implement enhanced freeway incident traffic management plans with pre-engineered detour plans to adjust signal timing from TMC. Additional coordination is needed since some of the signals that need to be adjusted/retimed are managed by county agencies. The TMC ATMS assigns a severity score that shows when signal timing adjustments are needed. If a County's signal, MDSHA can alert County that their signal needs timing adjustment(s).

Discussion

- Does the agency use predictive analytics for potential incident sites? – Not at this time.
- Is there any connection with trauma centers? – Not yet.
- Signal operations are handled by regular TMC operators, not ones specialized in signals. The gency is working on creating a position for specialized operators.
- Is there a shared computer-aided dispatch (CAD) system with state police Maryland? – No, although it was noted that Nevada DOT does.
- Uniform data sharing is a challenge in Maryland. Currently working on making CAD data uniform. The next plan piece of integration will be center-to-center communications.

INFORMATION DISSEMINATION

Summary

Jennifer Nesossis of Virginia DOT (VDOT) provided perspective on social media and communications from a transportation agency public affairs/information officer perspective. There are 3.9 billion social media users at all platforms. People spend about 1.5 hours per day on social media channels. Important to remember to keep in mind what can make a transportation-related post compelling – more compelling than a picture of a funny cat! Most people are just scrolling through social media – the opportunity is there to make the information compelling so people will react to the post(s).

Start with research on what channels to use (Twitter[now X], Facebook, Instagram, LinkedIn, NextDoor, and Reddit) and how each may fit into that agency's public information program. Expand your message through advertising and integrated campaigns across platforms. Important to note that there is no need to create too many social media channels if there isn't have content to post in all of them.

In order of usage: Twitter > Facebook > Instagram > LinkedIn > NextDoor > Reddit. Twitter is the channel where people go the most to complain. Seventy five percent of people have a more positive vision of a brand if they respond to a tweet. People that complain about a pothole and get a response on Twitter from VDOT start to see the agency in a better light. VDOT uses the different social media channels as follows:

- Twitter: For traffic incidents, public involvement meetings, projects, transportation safety messages (funny messages). Look at trending hashtags as a way to reach your audience (Taylor Swift issue to buy tickets – VDOT used that to convey safety messages "skip out the bad blood on the roads")
- Facebook: Most people are on mobile devices, think about that when deciding the format and content of messages. More editorial content (news articles, surveys). People on Facebook typically take more time to click and read articles or take surveys and provide feedback. VDOT usually posts content first on Twitter and depending on the response, then pushes the content out on Facebook as well.
- Instagram: In the past, it was mostly used to show photos of finished projects or how beautiful Virginia roads can take people to their destinations. Most liked photo of the month was a cat arrested for drinking tequila for national tequila day instead of all the nice bridges, roads...
- LinkedIn: Predominately career focused – largest age range of users. Mostly used for job openings, awards, projects that can attract new hires, etc. Audience usually does not spend much time scrolling, they go there for a reason (average of 7.5 minutes per day)
- NextDoor: Used to cultivate ongoing relationships with the community. One in three households use NextDoor. At VDOT, they share information that can affect the entire state. They also frequently provide information about major highway projects. Also share projects specific information to neighborhoods.
- Reddit: Is a useful way to monitor comments and sentiment about VDOT. The agency shares major projects, surveys, projects specific to certain areas. Then and now photo series are a great way to attract people, they love to see their hometown, personal connection to photo, create sense of community. "VDOT having an official Reddit account is weirdly nice."

How to create engagement and gain trust of the public? The end goal is to create a sense of community instead of how many likes. VDOT responds to every message to create two-way dialogue. For example,

Iowa DOT and VDOT started exchanging tweets and now support each other! Making fun of ourselves is a great way to get people to relate to us. Adding humor in general makes people feel more relaxed and feel like they can interact with VDOT. There are a few websites that let you customize memes. (Copyright issues? There is usually a little tag that gives credit to the website.) Social media is a great way to spread the word about social campaigns (slow down move over, etc.). VDOT uses paid advertising when they want to reach a more targeted audience.

Discussion

- How is VDOT dealing with the new authenticated accounts (Blue checkmarks) on Twitter? The difficulty when social media platforms change their significant rules like Twitter. They have seen several major corporations and brands pull out from Twitter, which is concerning to VDOT. The great thing about these platforms is that they are free. If these companies start charging for service, VDOT may not continue to use them since it would be difficult to justify using taxpayer dollars.
- How big is your team? If you leave, how do you maintain the same voice? – Currently, Jennifer is the only person doing the social media engagement statewide at the agency. A few Districts have their communications staff managing accounts, but it is mostly her. She reviews District contents, but each District knows their own community and knows how to reach out to them. If she left, the agency would have other communications officers that would know how to help with transitions. The agency has developed a best practices document for reference.
- Know how to reach out to each region: some people are harsh, making fun of other states, while others are not. Be mindful of using the same tone.
- How much coordination is there with other offices (operations or freight)? Jennifer Nesossis meets with social media managers from other agencies, makes connections, and works on sharing each other's posts, collaborating, etc.
- How well is VDOT reaching out to communities that may not have access to the internet, cell phone, etc.? The agency hired a company to conduct a survey of how people receive information in the state. She has information on demographics of people that see their posts, so she has an idea of age, gender, how they are connecting (mobile vs. desktop). They know that more rural areas focus more on physical papers and TV (non-cable).

FHWA RESOURCES

Summary

FHWA's Ralph Volpe from the Resource Center Operations Technical Service Team gave an overview of the funding and programmatic resources available from USDOT. He noted that drivers today are smarter than a few years ago, have more access to information, and there are more travel choices than there used to be only a few years ago. FHWA views the following as key challenges in TSMO to address moving into the future:

- Protecting our cyber-infrastructure
- Building a workforce capable for more efficient operational strategies/tactic deployments

- Integrating freight and mobility-options into systems management and operations
- Understanding system users needs and expectations
- When measuring/monitoring performance recognizing the output measures lead into the outcome measures
- Recognizing, understanding, and integrating the various travel choices available
- It is about the complete trip, including both the first mile and the last mile
- Getting the most from our technological operational assets
- Maintaining a strategic focus

Resources are the efforts of personnel, the processes of how TMCs are operated, organizational agreements, etc. as well as funding. General fiscal resources available for TSMO are familiar to many in discretionary programs and formula distributed funds, although some of the individual programs have been renamed/updated with most recent transportation legislation:

- Federal-aid Highway Program where the state DOT receives funding and discusses with FHWA the projects and programs to distribute funds throughout the state for:
  - Project development and deployment
  - Planning and programming processes with the
    - Metropolitan Planning Program
    - State Planning and Research Program
  - Formula Distributed funds in the
    - National Highway Performance Program (NHPP) for interstate highways including intermodal connectors
    - Surface Transportation Block Grants (STBG)
    - Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation Formula Program (PROTECT) as combined formula and discretionary funds
  - Special Programs
    - Congestion Mitigation and Air Quality (CMAQ)
    - Highway Safety Improvement Program (HSIP)

Mode specific funds are available through the other US DOT modal administrations as well as the National Highway Freight Program (NHFP). The ITS Joint Program Office has grants has had deployment grants available through the ITS4US, Work Zone Data Exchange, and Open Source Solutions for ITS program areas.

Discretionary grant programs include:

- ATTAIN – Advanced Transportation Technologies and Innovation (Mobility Options) funded at $60 million per year until FY 2026; up to 80 percent match (up from 50 percent).

- SMART – Strengthening Mobility and Revolutionizing Transportation funded at $100 million per year, Stage 1 up to $2 million (planning) and Stage 2 up to $15 million (implementation).
- CRP – Congestion Relief Program provides grants to advance innovative, integrated, and multimodal solutions to reduce congestion and the related economic and environmental costs in the most congested metropolitan areas with an urbanized area population of at least 1 million.
- Every Day Counts Program focuses on bringing innovations into regular practice, e.g., crowdsourcing data. EDC-7 topics include nighttime visibility lighting for safety, emergency vehicle preemption, and other related topics. (Doug Noble is an association liaison to the group). Implementation funds are available through the:
  - STIC – State Transportation Innovation Councils, $100,000 per year per state.
  - AID – Accelerated Innovation Deployment (AID) Demonstration Program which provides grants of up to $1M to support the pilot/demonstration of innovations on projects, in areas such as planning, financing, operations, pavements, structures, materials, environment, and construction. This program is more competitive.

Private-public partnerships help with the overall understanding of buy-in and the involvement of private partners lends support to initiation and completion of projects, or support for ongoing programs. The Regional Concept for Transportation Operations (RCTOs) establishes the planning for TSMO resources along with partnerships, relationships, understanding key process, institutional efforts, and physical facilities.

Where are TSMO funds? Ralph Volpe noted that many TSMO efforts have safety, congestion, or air quality benefits, hence STBG (flexible), CMAQ, HSIP funding sources may be applicable for TSMO projects to achieve a combined set of goals. Benefit-cost analysis is always key and one of the first things FHWA asks to see; consider benefits in multiple areas. In addition, leadership buy in is very important and FHWA usually meets with agency leaders before meeting with technical staff. An example with ICM grants – several locations received planning grants, but not many moved forward with implementation grants... an instance of both planning and implementation grants was completed in Tennessee.

FHWA offers technical assistance through a variety of sources including division office specialists in ITS/operations and planning as well as the Resource Center Operations Technical Service Team. Headquarters FHWA staff in the Office of Operations, their website (https://ops.fhwa.dot.gov/), National Highway Institute and Peer Program, National Operations Center of Excellence, Turner- Fairbanks Highway Research Center, and the ITS Joint Program Office all offer supporting resources and points of contact. In addition, many ongoing task orders include workshops and technical assistance.

Focus on improving operations through collaboration is important to provide understanding of:

- Data! More Data! And Big Data! – Understanding its many uses
- Integrate Technological Advances, while maintaining standards
- Minimize risks associated with procuring and sustaining operational assets
- Importance of reliable and efficient goods movement
- Deploy Performance-based Operational Strategies Systematically

- Recognize traveler expectations, mobility needs, and their traveling experience
- Keep people and goods moving safely, efficiently to support a healthy economy
- Transportation designated as a "Lifeline" infrastructure

Discussion

- Ralph Volpe restated the importance of reaching out to talk to the FHWA Resource Center whose purpose is to help jurisdictions/agencies.
- A participant observed that ITS is the "stuff" that supports TSMO – devices, software, cameras, DMS, etc.; consider which funding sources are appropriate for equipment, installation versus on-going operation and upgrades.
- Part of the purpose of this peer exchange on FHWA's part is to see how the agency can help state, metropolitan, and other agencies with information on regional collaborations. FHWA will use the action list developed at the end of the peer exchange to understand where agencies need assistance.

MAKING THEM LAST

Summary

Steve Levine, Executive Director of TRANSCOM, shared an overview of his organization, their short-term and long-term activities sample cases of benefits of regional collaboration and cooperation, and observation about key issues to consider in developing sustainable regional collaborative initiatives.

TRANSCOM is a coalition of 16 transportation and public safety agencies in the New York – New Jersey – Connecticut metropolitan region. The original concept came from the Port Authority of New York and New Jersey Trans-Hudson Study that found major incidents and construction required a regional approach. TRANSCOM was formally created in 1986 to provide a cooperative, coordinated approach to regional transportation system management supporting one regional economy and one customer base in a region of 24 million.

TRANSCOM was initially developed as an administrative unit of the Port Authority and in 1999 became 501(c)3 non-profit organization under the direction of member government agencies. The organization is governed by a board of trustees (unanimous decisions required) and supported by committees for executive management, technology and operations, finance, construction coordination, and other technical topics. Key elements enabling the organization are the multi-year membership agreement, by- laws, annual operating and capital budget process, operations and maintenance agreements with the member agencies and administrative procedures (available to peer exchange participants).

TRANSCOM's primary mission is regional operations through 24/7 incident management, construction coordination, and implementation of ITS systems as well as being a real-time data source for member agencies. Benefits of regional operation achieved through TRANSCOM's cooperative model provides essential elements for regional coordination and decision making with accurate data from ITS technology and strong working relationships among agencies.

The NY – NJ – CT metro region has a wide array of operational challenges including:

- An active construction program such as the Brooklyn-Queens Expressway Triple Cantilever Project and multi-agency (NYSDOT, MTA, and City of New York) projects in the Bronx and Queens.
- Emergency highway construction and transit service disruptions due to aging infrastructure.
- The region's population has grown to 24 million.
- The Port of New York and New Jersey became the busiest port in America (per Maritime Executive, September 25, 2022)
- In 2022, 2.4 million packages were delivered daily in New York City (per Daily News, October 11th, 2022)
- More frequent occurrences of adverse weather to highway operations and transit service which has impacted both commuters and freight traffic
- American Transportation Research Institute (ATRI) listed the intersection of Interstate 95 and SR 4 in Fort Lee, New Jersey as the most congested bottleneck for trucks in America

TRANSCOM systems incorporate an event entry and sharing tool (TREX shared by member agencies), data feeds to/from state 511 systems and agency apps, and the data fusion engine / SPATEL tools that can share current/historical travel time, events, transit status, roadway weather integration, evacuation across public agencies, local municipalities, MPOs, private organizations, universities, and others. TRANSCOM also takes the responsibility for inputting transit disruptions into the 511 system. TRANSCOM provides travel times to member agencies, which they can then use on their DMS, etc. Member agencies are good at respecting each other's restrictions/closures.

Regional construction coordination is addressed through an annual meeting with participating agencies (and other group meetings throughout the year), supported by a multi-agency data base, the identification of major projects and potential conflicts, geographic and project specific task forces, and includes police and transit agency representatives. There is specific construction coordination during major incidents. Additionally, motivating inter-agency cooperation are changes in direction, scope, and scheduling of projects, weighing the trade-offs between modifying and not modifying projects, and tracking cooperation.

Steve provided a walkthrough of three sample case studies 1) major incident on July 3, 2022, in the Lincoln Tunnel, 2) regional construction coordination with the Restore NJ 495 project, and 3) response to adverse weather with Winter Storm Harper, January 18-19, 2019.

Looking forward, TRANSCOM has establish the following regional goals and with specific supporting objectives for 2023-2025:

- Regional Goal 1: Regional Coordination and Collaboration: Coordinate and collaborate as a region to ensure a seamless, safe, reliable, and efficient daily journey for our region's customers.

- Regional Goal 2: Organizational Sustainability: Create and advocate for a financially and operationally sustainable coalition that is structured and resourced to facilitate regional goals and system objectives.
- Regional Goal 3: Performance Measurement and Management: Understand and articulate regional travel patterns, system reliability, and the value of regional transportation system operations, and advocate them accordingly.
- Regional Goal 4: Planning for the Future: Prepare for the future needs of our region's members and their customers by assessing emerging trends and encouraging innovation to address future transportation improvements.

Current short-term and long-term activities include core operational elements supporting mitigation interagency impacts of major construction projects and interagency response to adverse weather. On the technical side TRANSCOM is working on security updates, migration of systems to the cloud, and investigating alternative sources of crowdsourced data that can provide traffic volumes and origin-destination information. In administration the organization is working through 2 CFR 200 procurement regulations and the conduct of hybrid and/or virtual meetings.

Steve Levine shared his perspective on key issues to consider in developing sustainable regional collaborative initiatives. There are benefits to developing a multi-year program because it is necessary for ongoing success for dedicated funding because systems may become stagnant and no longer meet agency needs. The organization must develop a knowledgeable understanding of federal grant regulations, especially in the context of procurement of technology. With any chosen organizational structure – agreement, MOU, by-laws, etc.) secure sustaining agency participation. There need to be regional champions and development of new leaders within participating agencies as their staff transitions. Dedicated staffing is very important to nurturing success in TSMO collaborations as is mentoring staff to prepare for emerging technologies and applications.

Discussion

- In the TRANSCOM structure, who is in charge? – Agencies are in charge of their own roadways. TRANSCOM brings people together to identify issues where they overlap. Because of the proximity, sometimes one agency does not know what triggers a response from another agency. There are other agencies (e.g., TRANSTAR in the Houston metropolitan area) that can actually make decisions when two agencies conflict.
- An impact of COVID was increasing package deliveries and truck traffic.

Next Steps

Day 1 Wrap Up

At the close of Day 1 of the peer exchange there were a number of closing comments by participants on the following:

Traffic Management:

- Purdue University: suggestion to reach out to Prof. Darcy Bullock, they have several open source resources (Bluetooth data – ATSPMs)
- AZTECH: They wanted to have a regional system – pushed data from controllers to system and put it into the ATSPM system. But each jurisdiction does not want to see other jurisdictions data – what they had to work on was separating out the data by jurisdiction.
- Georgia DOT has an interesting project (RTOP): some of them may have integrated ATSPM.
- For a full ATSPM, you need to have a good system detection for each lane. Better data, better outcome.

Safety:

- Metro Orlando: emphasis on pedestrian safety – slow vehicles down, signal timing to prioritize pedestrians. Sometimes travel times for vehicles increase, and it is ok – emphasis of signal timing program is to eliminate pedestrian fatalities.

Program Risk:

- Northwest Passage and I-80 Transportation Pooled Fund Study. One thing to keep in mind is – what is the level of risk of programs like these? Shared risk? Local jurisdictions (take risk from state DOT), universities (take risk from state DOT), etc.?

NOCoE will meet the AASHTO, ITE, ITS America, and FHWA representatives to review the Regional Collaborations peer exchange findings and work on next steps as well as potential products. Based on participants' feedback, it is anticipated that the following priority topics and questions need to be further explored:

- Leadership transition support resources: Investigate the concept of a *continuity folder* (aka cheat sheet, or playbook) that easily tells the story describing who does what as a knowledge base for team members. Develop resource documents, for example, to support the concept for several topic areas including funding strategies. Explore whether this could be a possible NCHRP, TCRP project.
- Use cases and regional context of 511, especially in relationship to 3rd party providers.
- Branding (of individual) regional collaborations. How does a region create a recognizable brand that resonates with the public and decision-maker as well as staff.
- Planning role of MPOs in TSMO. Training TSMO staff on why MPO role(s) are important and those roles place in planning for TSMO.
- Tools and techniques on how to build relationships and partnerships.

- Documenting lessons learned in regional collaborations, what has worked, what has not.
- Mechanism for sharing data, products, and resources from regional coalitions to other coalitions or to other regional area interested in creating a coalition through one source.
- Issues of staffing across coalition member agencies.
- Regional versus state-to-state collaborations; what are the elements that work on a small scale?
- Using CMM to understand where agencies stand in progress/status. Performing CMM evaluations regularly to track progress and adjust program.
- Expanding partnerships/mechanisms to do so (e.g., data warehouse)
- Leveraging university relationships and research capabilities into existing and conceptual regional collaborations (e.g., UAH and UMD and VDOT from the agency side).
- Strategic plan for implementation that informs funding strategy (i.e., to highlight what, why, and how to get the program in place)
- Work and good practices on equity considerations in TSMO need to be shared. This includes social media and how information is reaching the public.
- Social media and the identifying the TSMO/TMC role. With respect to traveler information, what is the public information officer role? Where does social media fit? Is it a subset of traveler information?
- Conceptual idea to create and include a module on funding/budget programming for TSMO in the Operations Academy curriculum.
- Balancing complete streets and TSMO.
- Use of data to support case for return on investment.
- Importance of freight part of operations since it has a large economic impact.
- Renew focus on equity between modes AND how it impacts underserved communities Recommend resource sharing on this topic (for all modes) on this topic. (Note: ITE is working on a web resource on *Improving Equity in Transportation Operations*.)
- Partner with Department of Energy on EV and CAV content, e.g., in Metro Orlando sharing the information with underserved communities on new technologies with the grants going through Center for Urban Transportation Research (CUTR) rather than Metro Orlando.

This is summary of the wide-ranging cross section of topics discussed during the course of peer exchange that merit further exploration and potential addition in some form of product by the NOCoE or one of its partner organizations.