NEW YORK STATE ASSOCIATION OF MPOs
TRANSPORTATION SYSTEM MANAGEMENT & OPERATIONS WORKING GROUP
March 14, 2023
Virtual Meeting
2:00 PM – 3:00 PM

MEETING NOTES

Participating

- GTC – Joe Bovenzi (Chair)
- CS – Rich Denbow
- CS – Peter Rafferty
- CDTC – Andrew Tracy (Co-Chair)
- FHWA – Tim Crothers
- NYMTC – John Simpson
- SMTC – Mario Colone
- SMTC – Michael Alexander

1. Planning for Disruptive Mobility Technologies
Peter Rafferty, Cambridge Systematics

Peter Rafferty discussed highlights from *NCHRP 08-127, Emerging Issues: Impact of New Disruptive Technologies on the Performance of DOTs*. The objective of this research is to develop a guide for state DOTs and other transportation planning agencies to understand, predict, plan for, and adapt to the potential impacts of emerging disruptive technologies.

The research is focused on state DOTs and other infrastructure owners and operators, but the preparation for and management of the infrastructure also involves a strong planning element that MPOs should be aware of as they work with the DOT and local jurisdictions.

Peter discussed key points identified by the research effort:

- Rapid advances in key technology areas (e.g., sensors, communications, artificial intelligence, energy storage, nanomaterials, and robotics) have combined to provide the potential to improve the performance and safety of the transportation system as well as agencies' organizational capabilities to manage performance.
- Firms are remixing "core" technologies of the Internet, mobile and cloud computing, artificial intelligence and machine learning (AI/ML), robotics, and 3D printing with new business models to create new forms of work and mobility.

- Disruptions may impact a broad range of performance-based activities. Disruptions to organizational structure and performance are both threats and opportunities, both external (e.g., safety, mobility, equity, and socio-economic status) and internal (e.g., workforce).
- The significance of disruptions differs depending on how they relate to either external factors or internal processes that can support improved performance or organizational management.
- The challenges to DOT performance management cut across a broad range processes and organizational issues, many of which have also been faced in private-sector organizations.
- Among these issues and challenges raised by disruptive technologies are:
    - Cybersecurity issues.
    - Preparing for a variety of disruptive technologies with widely differing characteristics and performance implications.
    - Adjusting to a significant increase in new private-sector influence.
    - Recognizing the limitations of conventional performance measures.
    - Heightened levels of risks and uncertainties.
    - Discontinuities between agency level performance outcome measures and business unit output measures.
    - Addressing a siloed organizational structure that reflects legacy program/product activities, such as planning, design, construction, and maintenance activities, rather than key customer-focused outcomes.
    - Filling workforce capability gaps.

He noted that each type of disruption requires a different type of agency response to improve organizational performance. Responses may range from adjustments in basic priorities and new strategies, such as adjusting performance measures; incorporation of improved data or methods, such as collecting and sharing new data streams; and replacement of existing capabilities, infrastructure, and systems.

The study team developed a guidebook divided into two major sections:

- Understanding New and Potentially Disruptive Technologies: provides tools to define disruptive technologies, identifies potential disruptive technologies, and provides an accounting of how they may affect the performance of DOTs.
- A Playbook to Become a Tech-Savvy DOT of Tomorrow: provides practical steps to help take a DOT from what it is today to what it will become in the future. It outlines guidance for:
    - Developing a vision for the future and establishing a strategy to evolve.
    - Implementing and managing the change needed to become a "DOT of Tomorrow."

For more information, see https://trid.trb.org/View/2265766 and https://www.trb.org/Publications/Blurbs/183103.aspx.

2. Roundtable

CDTC: Andrew reported that CDTC updating its CMP and is aiming to finish it by the end of 2023. They are taking a different approach than their last CMP. In the past, it was an appendix to their MTP. This time, they are doing the CMP before starting the MTP so it can inform the MTP. There will be a focus on specific corridors. He will provide updates at future Working Group meetings.

NYMTC: John reported that they will do another CMP status report by the end of FY2025. It will have a focus on micromobility, microtransit, and mobility as a service. NYMTC is exploring solutions to some of their TSMO and micromobility issues and is starting to bring operations staff into planning committee meetings.

SMTC: Mario reported that they completed a short TMC consolidation study in the Syracuse region to explore the concept of co-locating TMCs. A white paper is available here.

FHWA: Tim references two useful resources:

- Advancing TSMO Through Organizational Structures. Applies concepts of organizational structure to explore ways in which DOTs can mainstream TSMO.
- USDOT Spotlight on ITS for Roadway Safety. Online resources to demonstrate how ITS has been shown to improve safety.

3. Next Meeting/Adjourn

The next meeting is anticipated in June 2023. Details will be provided.