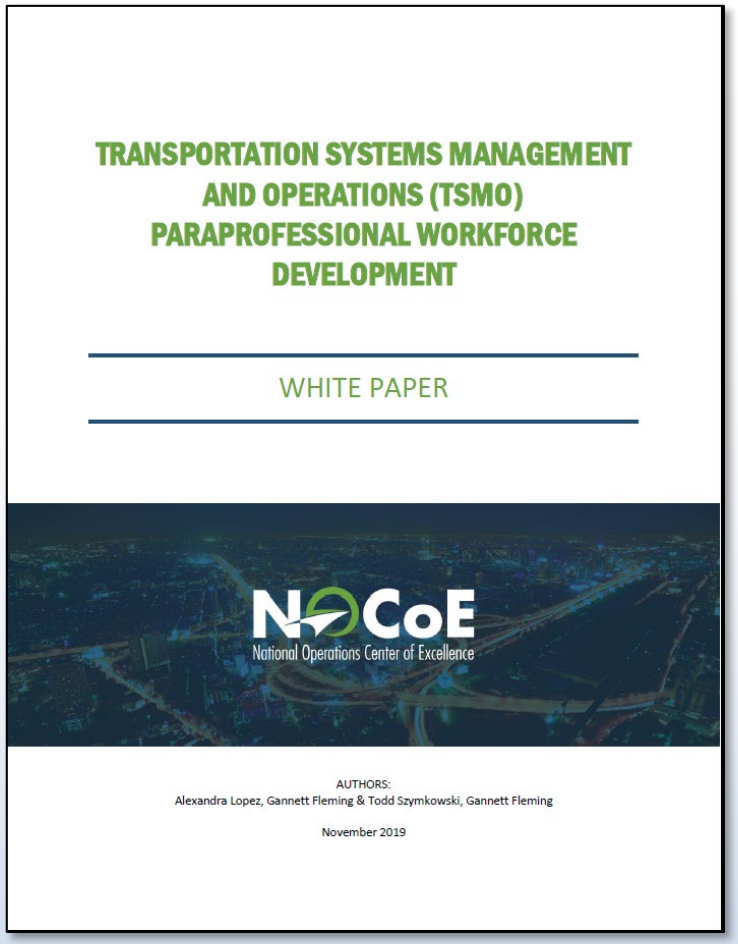

Initial
Approaches to
Paraprofessionals

Background

- Majority of workforce delivering TSMO in the front lines are considered paraprofessional
- NCHRP 20-7(408) only focused on undergraduate and beyond
- Needed to take initial steps in identifying issues and opportunities
- Product => NOCoE commissioned white paper



Defining TSMO Paraprofessionals

- From 2009 - American Society of Civil Engineers (ASCE) Paraprofessional Exploratory Task Committee (PETC)
- Paraprofessionals found in education, engineering, healthcare, and law fields

An engineering paraprofessional is a position supporting an engineering professional. An engineering paraprofessional works under the responsible charge of an engineering professional but may exert a high level of judgment in the performance of their work. Engineering paraprofessionals can comprehend and apply knowledge of engineering principles in the solution of broadly defined problems.

Defining TSMO Paraprofessionals

TSMO Paraprofessional

- *Position supporting the management and operations of transportation infrastructure. A TSMO paraprofessional may exert a high level of judgment in the performance of their work. TSMO paraprofessionals can comprehend and apply knowledge of basic engineering principles in the solution of broadly defined TSMO problems at a cursory level. TSMO paraprofessionals provide traffic management center operations services and a variety TSMO field services.*

Defining TSMO Paraprofessionals

.Two Categories of TSMO Paraprofessionals

TMC Operation Services	TSMO Field Operations
• TMC Operators • TMC Operations Supervisors (non-degreed) • TMC IT Staff	• Safety Service Patrol Staff • OT / ITS Maintenance Staff • Roadway Maintenance Staff • Major Roadway Traffic Incident Support Staff

Recommended Next Steps Consistent with NCHRP 20-7(408)

- Capability Maturity Model (CMM) Framework
- Strategic Management Framework for Recruiting, Developing, and Retaining TSMO-related Staff
- Development of Job Position Descriptions
- Identification of Required Knowledge, Skills, and Abilities
- Scan of Existing Professional Education and Training Programs


Project No. 20-07/Task 408

TRANSPORTATION SYSTEMS MANAGEMENT AND OPERATIONS (TSMO) WORKFORCE GUIDEBOOK

FINAL REPORT

Prepared for
National Cooperative Highway Research Program (NCHRP) Project 20-07
Transportation Research Board
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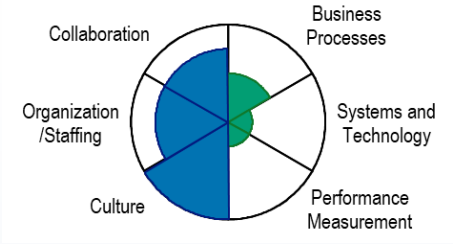
The National Academies of Sciences, Engineering and Medicine

TRANSPORTATION RESEARCH BOARD



Evolution of Existing TSMO Paraprofessional Positions

EXAMPLE – TMC Operator

- Use new data sources such as connected vehicles and internet of things
- Dispatch safety service patrols via automated routing services available in vehicle
- Operation of connected traffic signals
- Operate integrated corridor management techniques
- Virtual and augmented reality work setting
- Disseminate traveler information to connected vehicles
- Integrate artificial intelligence in daily operations
- Coordinate with drone pilots for improved situational awareness

Evolution of Existing TSMO Paraprofessional Positions

EXAMPLE – Safety Service Patrol

- Provide roadside assistance to automated, connected, electric and shared-use vehicles, which may not have a driver operating vehicle
- Use of automated and connected fleet vehicles
- Use of tethered drones to provide additional situational awareness to TMC staff and emergency responders

Key Factors Shaping the TSMO Paraprofessional Workforce

Agile and Diversified Workforce

Privatization of Public Services

Labor Unions

Retention

Training and Career Development

White Paper Recommendations

1. Conduct a market study
2. Conduct a robust CMM evaluation
3. Develop a Strategic Management Framework for Recruiting, Developing, and Retaining including national survey
4. Develop evolving and emerging TSMO paraprofessional position descriptions and KSAs
5. Scan college and technical school courses related to TSMO paraprofessionals
6. Scan training available for TSMO paraprofessionals outside formal college/technical school setting
7. Create repository of information that can be accessed by those involved with supervising TSMO paraprofessionals