



NCHRP 20-68A US Domestic Scan Program Domestic Scan 18-02

**Leading Practices in Modifying Agency
Organization And Management To Accommodate
Changing Transportation System Technologies**

Findings, Conclusions and Recommendations

NCHRP 20-68A

U.S. Domestic Scan Program

Scan projects selected by AASHTO and the NCHRP 20-68A project panel

- 3-4 scans per year
- Single technical topic of broad interest to many state departments of transportation and other agencies
- Accelerate beneficial innovation through:
 - Information sharing and technology exchange
 - Identifying action items to pursue

Scope for this Scan

The scan will investigate how DOTs are changing their organizations, institutional arrangements, and management practices to improve transportation system performance through adoption of new technologies.

Anticipated Outcomes

The scan report will provide guidance on leading practices for enhancing communications and coordination amongst maintenance, operations, and traffic engineering staff and others, sharing of operational information across the organization and case studies demonstrating these successes from agencies that have been successful in establishing organizations that deal effectively with changing transportation technology.

Scan Team

Michael Lewis
Scan Team Chair
Former Executive
Director
Colorado DOT

Tom Harman
Federal Highway
Administration

Scott Marler
Iowa DOT

John Hibbard
Georgia DOT

Galen McGill
Oregon DOT

Ron Vessey
Washington State DOT Nevada DOT

Gene Donaldson
Delaware DOT

Rob Wight
Utah DOT

Richard Roman
Pennsylvania DOT

Glenn Blackwelder
Utah DOT

William (Bill) Lambert
New Hampshire DOT

Anita Bush
Nevada DOT

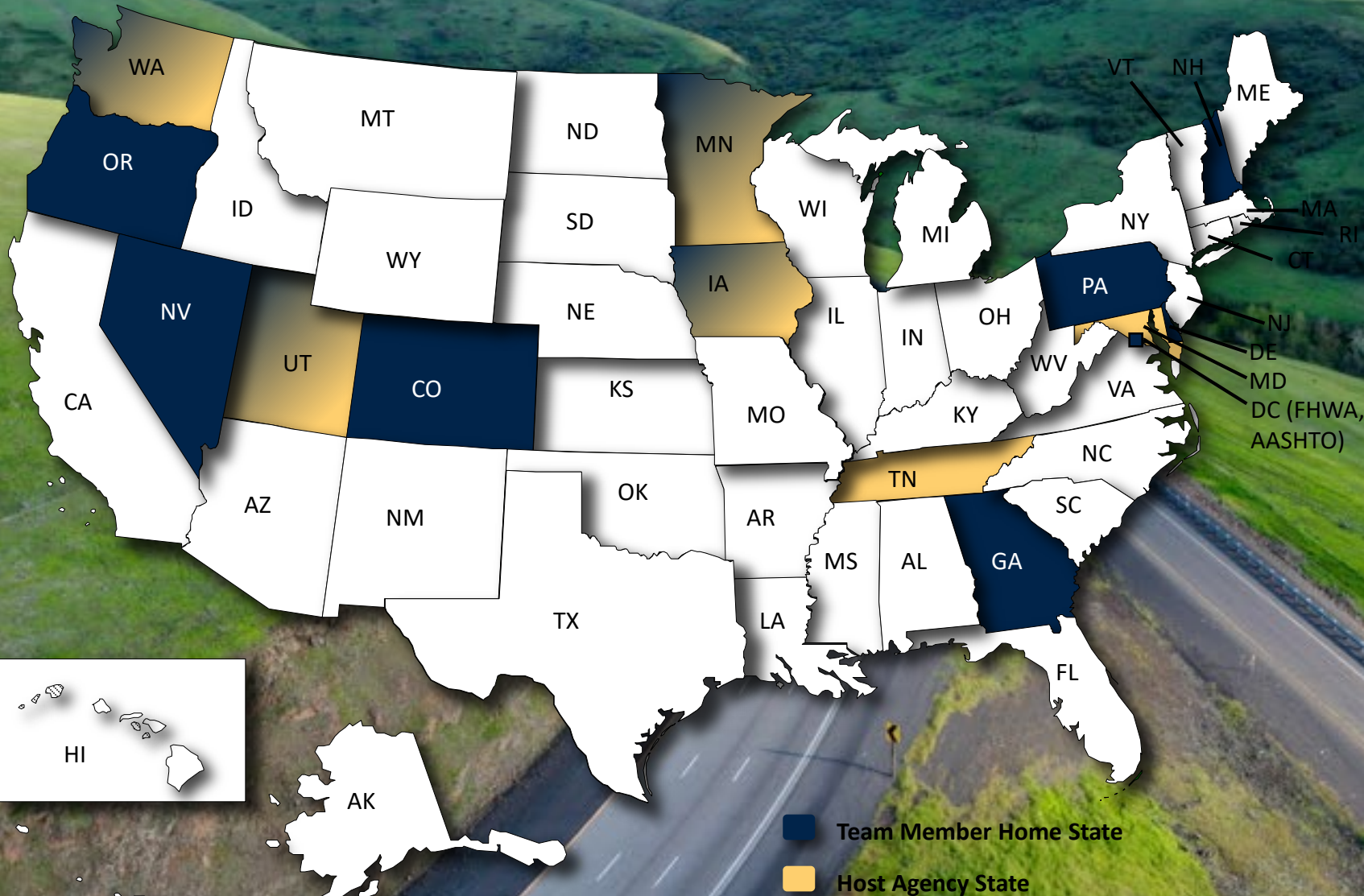
Steve Lund
Minnesota DOT

**Pamela Hutton, P.E. --
SME**

**Marlon Spinks --
AASHTO Liaison
AASHTO**

**Transportation
Management Fellow
(Michigan DOT)**

Scan 18-02 Team & Invited States/Agencies



Summary of Initial Findings

An aerial photograph of a city, likely Seattle, showing a river with a bridge, a dense urban area with many buildings, and a large stadium in the foreground. The image is used as a background for the presentation slide.

Thematic areas for the team's preliminary findings:

- Leadership and cultural traits of highly successful organizations
- People – recruitment, retention, and training
- Organizational structures
- Business process improvements
- Performance management
- Collaboration

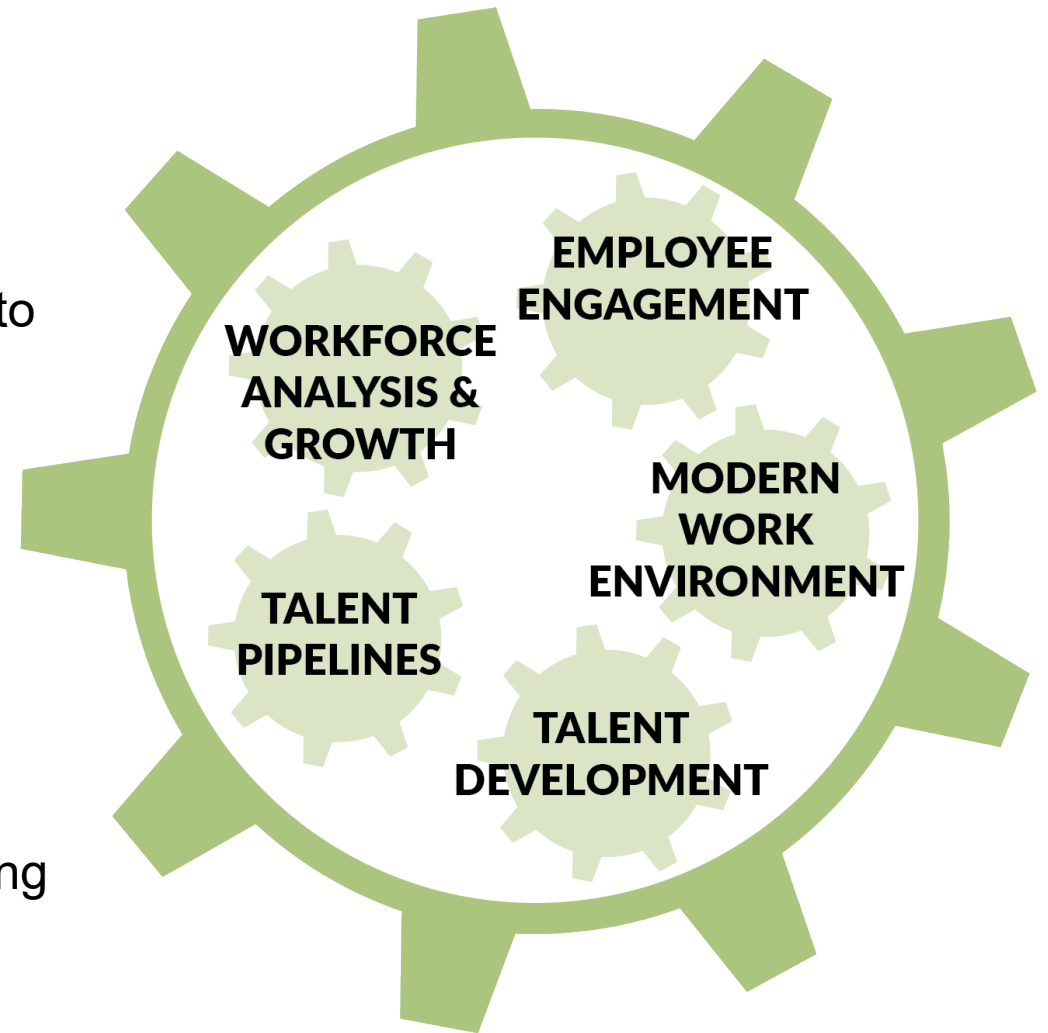
Carlos's Top Ten

10. Travel times will decrease in our urban areas.
9. We will be a national leader in the evolution and development of connected autonomous vehicles during the next few years.
8. First DOT in the country to have real-time full situational awareness of our systems.
7. On July 24, 2021 you will see the first CAV drive from Salt Lake City to St. George without any driver override.
6. UDOT will become the first DOT in the country to go completely paperless.
5. In 2021, our pavements and bridges will be the envy of the nation.
4. Our current culture of trust will lead us to a new level of openness.
3. Our public approval ratings will reach the highest level its ever been: 90%.
2. Every employee will be given the best training and education available.
1. We will be the safest DOT in country with less than 200 fatalities per year.

Workforce Development

Strategies

- **Talent Pipelines** – find the best possible talent for WSDOT
- **Workforce Analysis and Growth** – evaluate systems to achieve and maintain competitive compensation and career path development
- **Employee Engagement** – listen and act on employee feedback
- **Modern Work Environment** – implement initiatives to attract and retain our workforce
- **Talent Development** – invest in our staff through training and other opportunities



Workforce

Infants @ Work



Workforce In Training Plans

CLASS LEVELS AND DURATION (may enter position at any level if requirements have been met):

CLASS LEVEL	CLASS CODE	CLASS TITLE	SALARY RANGE	DURATION OF IN-TRAINING PERIOD
ENTRY		Transportation Engineer 3		18 months and upon completion of the Transportation Engineer 3 training plan. Completion may be accelerated up to 6 months (total of 12 months) if performance evaluation meets standards and at the discretion of the appointing authority.
INTERMEDIATE		Transportation Engineer 4		24 months and upon completion of Transportation Engineer 4 training plan. Completion may be accelerated up to 12 months (total of 12 months) if performance evaluation meets standards and at the discretion of the appointing authority.
GOAL		Transportation Engineer 5		NOTE: Position classification and goal class must match.

In order to gain the necessary skills and knowledge needed for this position, the selected elements of this in-training program must be completed before advancing to the next level. The entire in-training plan from point of entry to the ***goal level will be designated as the trial service or probationary period. Permanent status will be attained at the goal level*** upon successful completion of the training requirements and twelve month trial service period at the goal level. During this training period, the supervisor, the region engineering/technician trainers and those most knowledgeable in the business and technical aspects of this position will work with the employee to assure that the basic skills and knowledge areas detailed below have been completed. ***At any time, management reserves the right to modify this in-training plan including adding and/or removing training courses.***

Training

Proposed Basic and Advanced TSMO Training

Basic Training

- New Employee Training
- Co-op/Intern
- TSMO 101 – On-line Training
- District Awareness Training
- Basic Iowa Operations Academy

Advanced Training

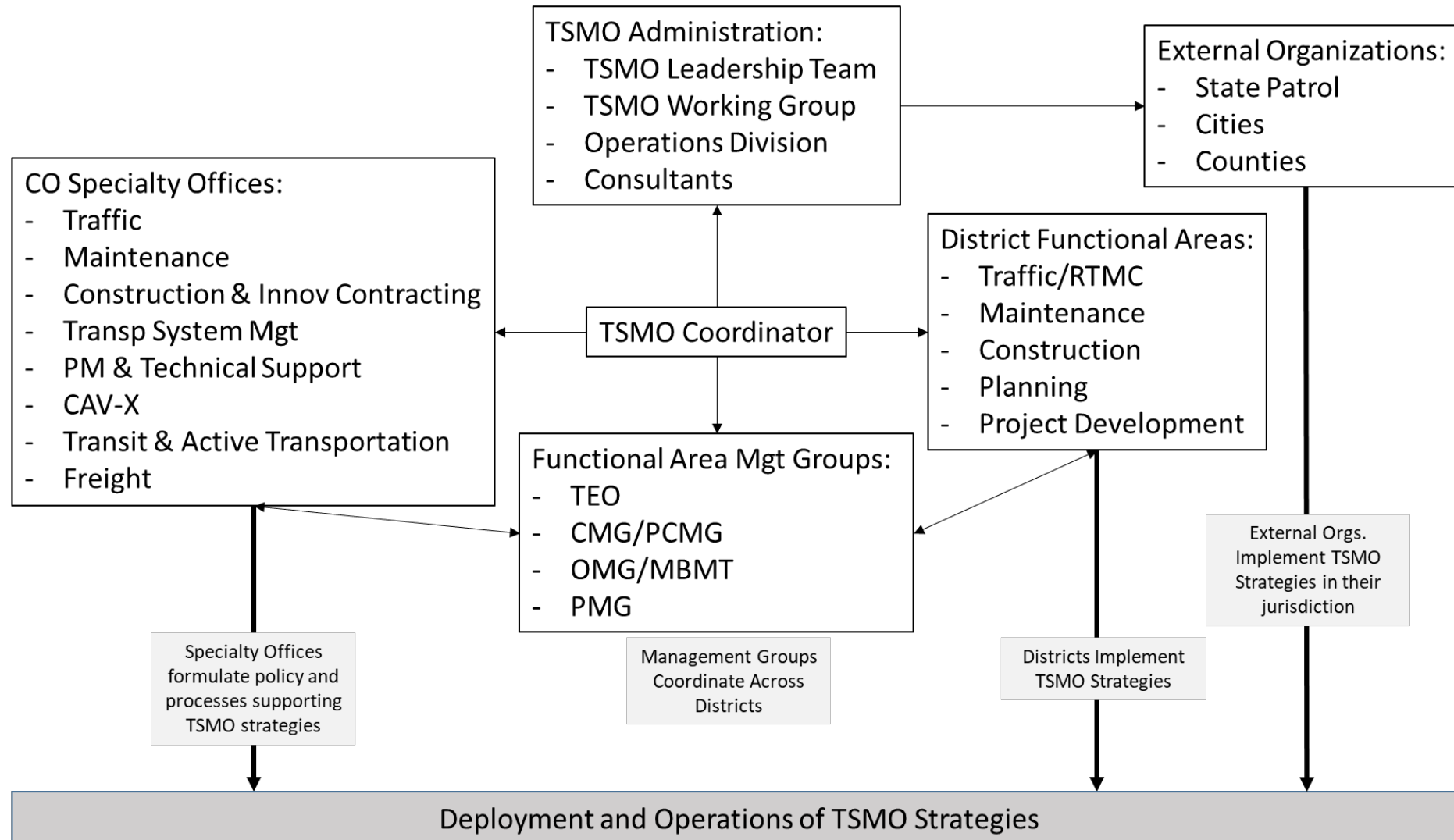
- New Traffic Operations Employee Training
- TMSO 201 – Advanced On-line Training
- District TSMO Practitioner Training
- Advanced Iowa Operations Academy



Organizational Approaches for Innovative Initiatives

- Temporary Re-Assignment of Manager
- Start a Small New Office
- Build Section Within Office
- Shared Services
- Regional / District Coordinators
- Over Time Re-Integrate Some Into Traditional Structure

Proposed TSMO Organizational Model



30+ Industry
Meetings

26 Vendors

21 Proposals
Submitted

9 Proposals
Accepted

Three Under
Contract

AECOM / WSB

Micro Systems / Kratos

Ernst and Young

First Transit

University of Minnesota

Iteris

Traffic Control Corporation

WSB

HDR

Next Steps

An aerial photograph of a multi-lane highway interchange with green trees and grass on the sides. Overlaid on the image are several circular icons representing smart infrastructure: a traffic light, a car, a satellite, a location pin, a battery, a Wi-Fi signal, a pedestrian, and a cloud. A network of lines connects these icons, suggesting a connected system. In the top left corner, there is a yellow arrow pointing right, containing the text 'Next Steps'.

The results of the scan will be provided through:

- Published report (end of 2019)
- Webinar presentations
- Presentations to various AASHTO committees and other applicable groups

Further information on this scan and the NCHRP 20-68A U.S. Domestic Scan program



<http://144.171.11.40/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=1570>
or
<http://www.domesticscan.org/>

Questions?