


The background features a light blue gradient with a pattern of semi-transparent gears in various colors (red, yellow, blue, grey) and stylized human figures in grey, some appearing to be in motion or working together.

Future of the Workforce | Preparing your Organization for the Future Workshop

**Mid-America Association of
State Transportation Officials
(MAASTO)**

NCHRP 20-24(95) Ensuring Essential Capability
for the Future Transportation Agency

 spy pond partners, llc

July 12, 2017



Agenda

Introduction and Overview

- 1:30 Workshop Welcome and Introductions
- 1:40 Organizational Capabilities Framework
- 1:50 Lessons from Michigan DOT - Laura Mester
- 2:10 Resources for Building Organizational Capabilities

Change Forces

- 2:15 Preliminary Change Forces

Needs and Implications

- 2:40 Preliminary Needs and Implications
- 3:00 Prioritization Exercise
- 3:05 Break**
- 3:20 Prioritization Summary

Scenarios

- 3:25 Share Scenarios of Change Forces and Implications
- 3:30 Large Group Exercise: Sharing of Experiences

Strategies to Meet Needs

- 3:45 Examples of Strategies
- 3:55 Small Group Exercise: Developing Strategies
- 4:25 Group Presentation and Discussion

Workshop Wrap-Up

- 4:45 Summary of Workshop and Next Steps

Introduction and Overview



Project Overview

Ensure organizational capabilities to meet an increasingly complex set of external forces.

Research objectives are:

1. **Describe emerging issues** and societal and technological trends likely to influence the ability of DOTs and other government transportation agencies to develop and maintain the essential capabilities they need to fulfill their missions
2. **Engage senior agency leadership** and others in discussion of the leadership challenges these issues and trends represent
3. **Provide guidance on strategies** agencies may pursue—for example through active management of their workforces and knowledge bases—to understand and meet these challenges



Organizational Capabilities Framework

Change Forces

Technology Advancement

CAVs, IT, data collection

Legislation and Regulation

New regulations, funding instability and uncertainty, new funding arrangements

Workforce Evolution

Changing demographics, increased expectations for non-traditional work arrangement, increased competition for specialized skills, reduced tenure lengths/increased workforce transitions

Shift to O&M Focus

Shift away from capital intensive focus, multi-modal emphasis

Public Expectations

Increased customer focus, increased public information requests, more available options for engaging with stakeholders

Other

Sustainability principles, resilience for coping with extreme weather events

Needs

New Skills

Project/contract management, systems engineering, data, federal rules and regulations. Interpersonal, collaboration, communication and adaptability

Attracting and Retaining

Understand new generation of workers, provide an attractive work environment

Agility and Resilience

Changes in funding and regulations, new technologies, extreme weather event

Technology Adoption

Improved efficiency and decision support, collaboration, compatibility across systems, young employees

Transparency

Communication, process improvements, communications expertise, social media & crowdsourcing technologies

Operations Focus

Build new skills, shifting responsibilities, and strengthening partnerships

Strategies

Organizational Management

Organizational Structure, Lean Business Processes, Performance Management, Change Management, Organizational Culture

Workforce Management

Workforce Planning, Recruiting and Retention, Succession Planning, Employee Engagement, Professional Development and Training

Knowledge Management

Social and Learning Communities, Knowledge Codification and Dissemination, Learning Organization

Information & Data Management

Governance, Services and Technologies

Partnerships

Public/Private Partnerships, Innovative Contracting, Data Sharing Agreements

Lessons from Michigan DOT



Resources for Building Organizational Capabilities

- General Resources
- Infographics
- NCHRP/TCRP Reports
- Active Research
- Foresight Series (NCHRP Report 750 Series: Informing Transportation's Future)

Change Forces



Change Forces

Technology Advancement

- Connected Autonomous Vehicles
- Transportation Systems Management
- Information Technology
 - e.g. mobile, cloud, social media, cybersecurity
 - rate of new tech and obsolescence of recent tech
 - BYOD (bring your own device)
- Data Collection Methods
 - (e.g. mobile scanners, remote sensing, drones)





Change Forces

Legislation and Regulation

- New regulations impacting planning, programming and reporting
- Funding instability and uncertainty
- Legislation allowing (or not) certain types of funding arrangements





Workforce Evolution

- Changing age demographics of the workforce
- Increased expectations for non-traditional work arrangements (remote working, flex hours and scheduling, etc).
- Increased competition for specialized IT skills
- Reduced tenure lengths / increased workforce transitions





Change Forces

Shift to Operations and Maintenance Focus

- Shift away from capital intensive focus
- Multi-modal emphasis

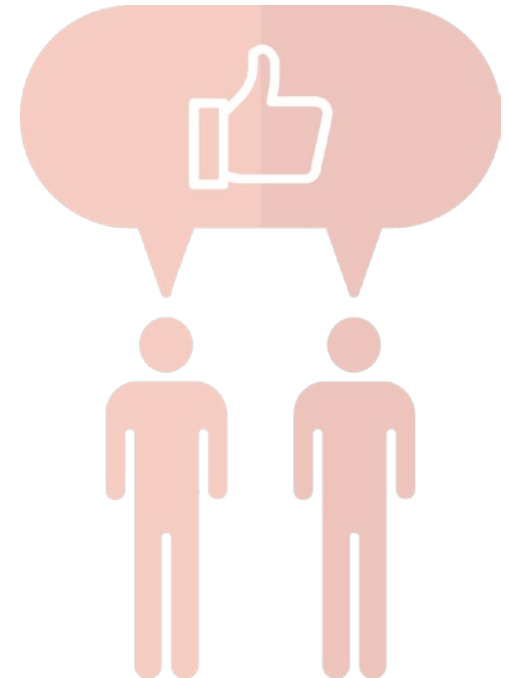




Change Forces

Public Expectations

- Increased customer focus
- Increased public information requests
- More available options for engaging with stakeholders
- Accountability





Change Forces

Other

- Sustainability principles
- Resilience for coping with extreme weather events
- Shift to electronic information
- Public health (active transportation, air quality, access to medical facilities, etc.)



Needs and Implications



Needs and Implications

New Skills

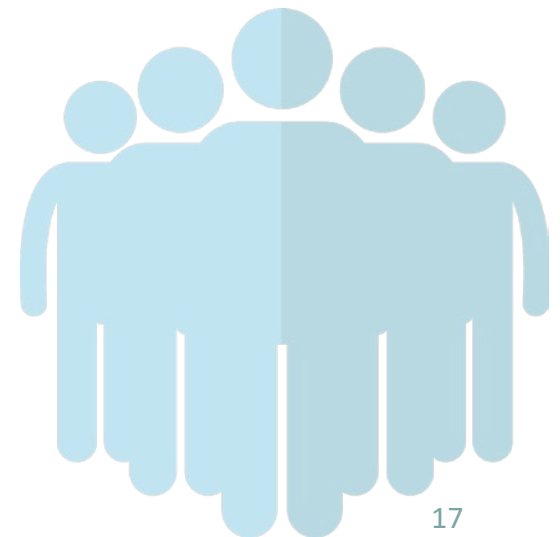
- **Hard skills**
 - Project and contract management
 - Systems engineering
 - Data analytics and data management skills
 - Understanding of federal rules and regulations
- **Soft skills**
 - Interpersonal
 - Collaboration
 - Communication
 - Adaptability





Attracting and Retaining

- Understand what motivates the new generation of workers
- Provide an attractive work environment
- What worked in the past will not work in the future
 - Decline of pension benefits
 - Increased competition for specialized skills
 - Shorter tenures of younger workers





Agility and Resilience

- Adapt to changes in funding and regulatory requirements
 - Scalability of people resources given funding
- Take advantage of new technologies
- Respond to extreme weather events
- Harmonize records and information management





Technology Adoption

- Take advantage of improved efficiency and decision support
- Ensure that they can effectively collaborate with other organizations
- Maintain compatibility across systems
- Respond to expectations from younger employees who are accustomed to using social, mobile and cloud technologies
- Improve job classifications for tech-related positions

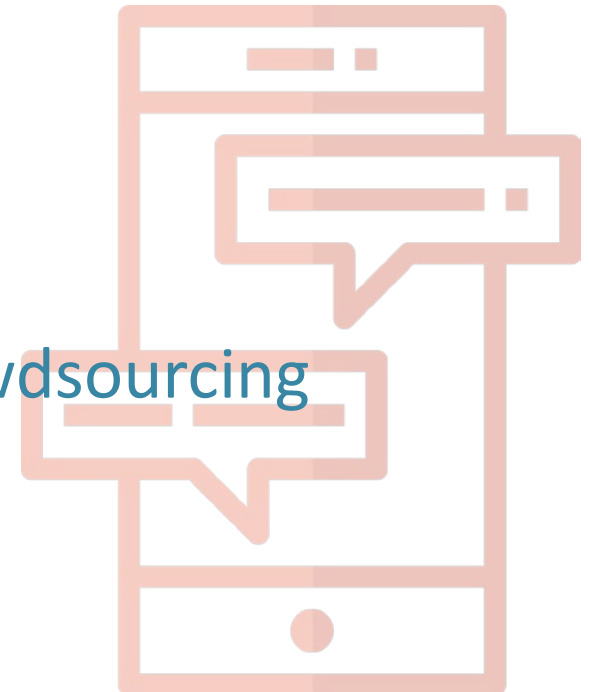




Transparency

Improve ways of tracking and communicating how decisions are made – which may require

- Internal process improvements
- Improve communications
 - New communications expertise
- New uses of social media and crowdsourcing technologies





Needs and Implications

Operations Focus

Continue adapting to the shift from Capital to Operations & Maintenance through

- Building new skills
- Shifting organizational responsibilities
- Strengthening partnerships (other agencies, other modes, commercial entities, other jurisdictions, etc.)








Needs and Implications

Other

- Promote systems thinking



Change Forces & Needs Prioritization

- Use the three sets of “dots” to make your choices
- Use the red dots to pick your top three change forces 
- Use the green dots to pick your top three needs 
- Use the blue dot for the need that you feel is the most important immediate one to address ASAP 

Break



Change Forces & Needs Prioritization Summary

Scenarios



Scenario 1 Downsizing Agency, Doing More with Less

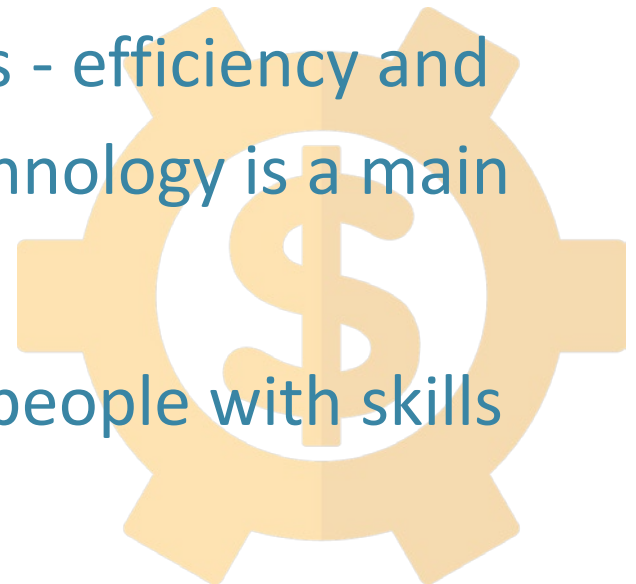
- During each budget cycle, agency has to set aside and not fill positions as they become vacant
- Need to retain the knowledge of the employees retiring and leaving
- Need to rearrange positions to be more cross-functional
- Agency has had a difficult time doing more with fewer resources





Scenario 2 System Replacement

- Updating a legacy financial system
- Older system is no longer compatible with the latest technology
- System used by multiple divisions - efficiency and effectiveness in adopting the technology is a main priority
- Seeking training techniques and people with skills to operate the new technology





Scenario 3 Information Requests

- Experiencing a major increase in the number of public information requests
- Want to maintain transparency and build relationship with communities
 - Hard time keeping up with the requests
- Concerns about releasing certain data where the accuracy may in question.
- Need better data management and community engagement practices





Your Scenarios

- Share with the group some of the situations that you are encountering

Strategies to Meet Needs



Strategies

Organizational Management

- Organizational Structure
- Lean Business Processes
- Performance Management
- Change Management
- Organizational Culture





Strategies

Workforce Management

- Workforce Planning
- Recruiting and Retention
- Succession Planning
- Employee Engagement
- Professional Development and Training





Strategies

Knowledge Management

- Social and Learning Communities
- Knowledge Codification and Dissemination
- Learning Organization





Strategies

Information and Data Management

- Governance
- Services and Technologies

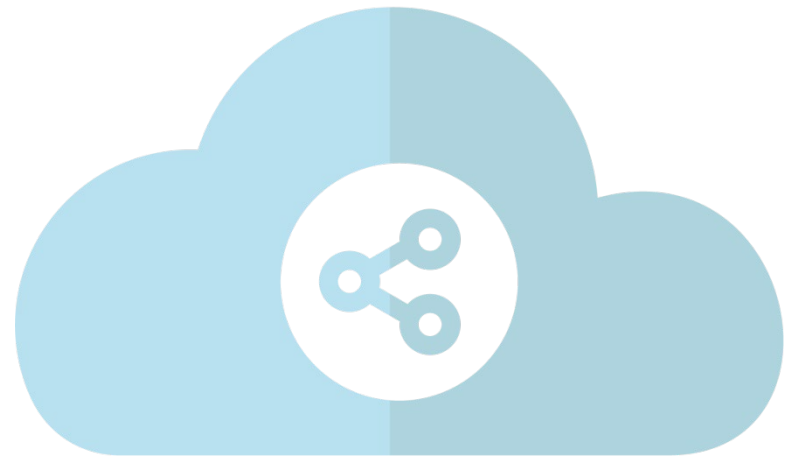




Strategies

Partnerships

- Public/Private Partnerships
- Innovative Contracting
- Data Sharing Agreements





Strategies

Small Group Exercise Developing Strategies

- Organize into four needs groups
 - New Skills + Attracting and Retaining,
 - Agility and Resilience + Transparency
 - Technology Adoption
 - Operations Focus
- Develop strategies to meet the needs
- Assign scribe and reporter
- Group Presentations and Discussion

Workshop Wrap Up & Next Steps



Wrap Up and Next Steps

Research Product Priorities

What would be the most valuable to you and your agency?

- **Descriptions of change forces, implications and strategies** – with pointers to a limit set of curated references
- **Checklists or flowcharts** that help a DOT pinpoint key areas of concern and strategies that are relevant to them.
- **Overall guidance** on how to build organizational capabilities for the future – step by step instructions
- **Set of scenarios** describing representative situations that would lead a DOT to consult the guidebook – with links to case studies that present examples of how an agency approached a particular issue or strategy.
- **Implementing a living portal** to provide easier access to the information and keep it fresh



Wrap Up and Next Steps

Workshop Summary

- Valuable input on framework
- Prioritized needs
- Building library of scenarios
- Built strategies
- Input on what would be the most valuable products of the research



Wrap Up and Next Steps

Next Steps

- Workshops at all regional AASHTO meetings
 - WASHTO
 - NASTO
 - MAASTO
 - SASHTO
- Summarize workshop results
- Develop recommendations for research products
- Build research products

Thank you

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