


The background features a light blue circular pattern with various colored gears (yellow, red, blue, grey) and stylized human figures in grey, some appearing to be working or interacting with the gears. The overall theme is organizational structure and future preparation.

# Preparing your Organization for the Future Workshop

**Western Association of State Highway  
and Transportation Officials (WASHTO)**

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

June 27, 2017

 spy pond partners, llc



# Agenda

## Introduction and Overview

- 1:00 Workshop Welcome and Introductions
- 1:15 Organizational Capabilities Framework
- 1:25 Utah DOT's Learning Organization – Shane Marshall
- 1:45 Resources for Building Organizational Capabilities

## Change Forces

- 1:50 Preliminary Change Forces

## Needs and Implications

- 2:10 Preliminary Needs and Implications
- 2:25 Large Group Exercise: Sharing Experiences
- 2:50 **Break**
- 3:05 Prioritization Summary

## Strategies to Meet Needs

- 3:15 Examples of Strategies
- 3:30 Small Group Exercise: Developing Strategies
- 4:15 Group Presentation and Discussion

## Workshop Wrap-Up

- 4:45 Summary of Workshop Next Steps

# Introduction and Overview

A thin, vertical, light blue line is positioned to the right of the main text, extending from the top of the text area down to the bottom of the slide.



# 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

# Utah Presentation

---



# 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

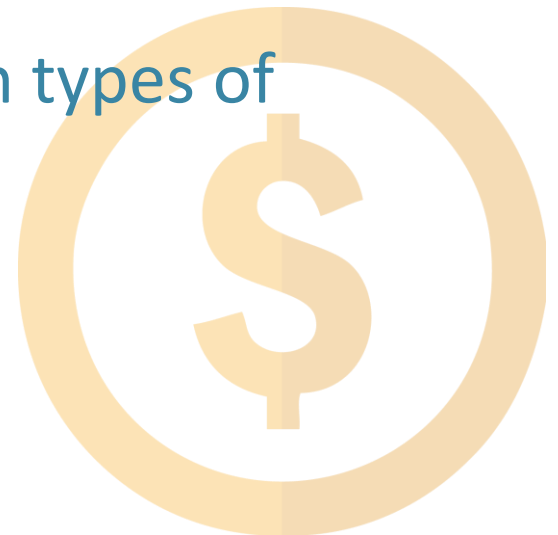
- Connected Autonomous Vehicles
- Transportation Systems Management
- Information Technology
  - (e.g. mobile, cloud, social media, cybersecurity)
- Data Collection Methods
  - (e.g. mobile scanners, remote sensing, drones)





# 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

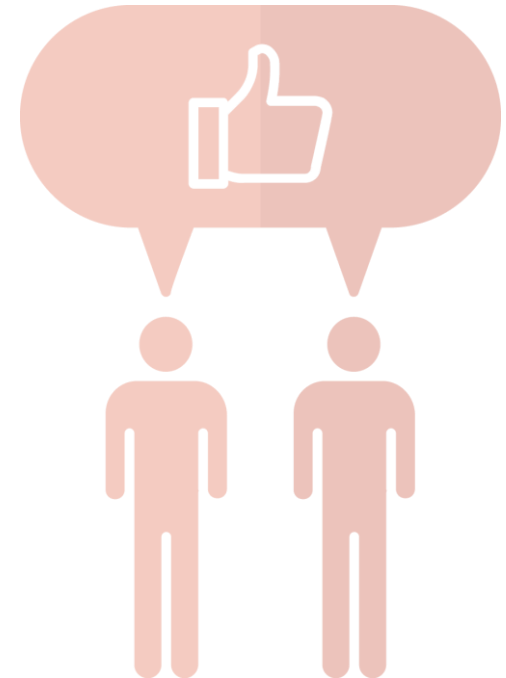




Change Forces

# Public Expectations

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





Change Forces

# Other

- Sustainability principles
- Resilience for coping with extreme weather events



# 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

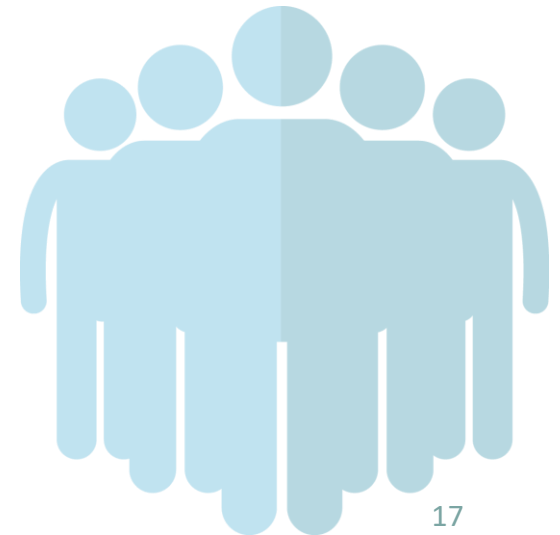






# Attracting and Retaining

- 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





Needs and Implications

# Agility and Resilience

- Adapt to changes in funding and regulatory requirements
- Take advantage of new technologies
- Respond to extreme weather events





# 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



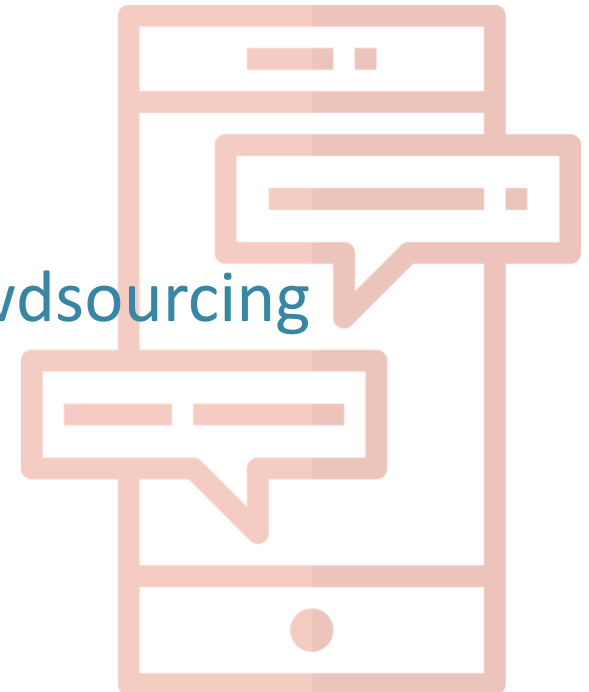


Needs and Implications

# Transparency

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

- Internal process improvements
- 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





# Change Forces & Needs Prioritization

- Use the three sets of “dots” to make your choices
- Use the X dots to pick your top three change forces 
- Use the Y 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 



# Scenario 1 Large Retirement Pool

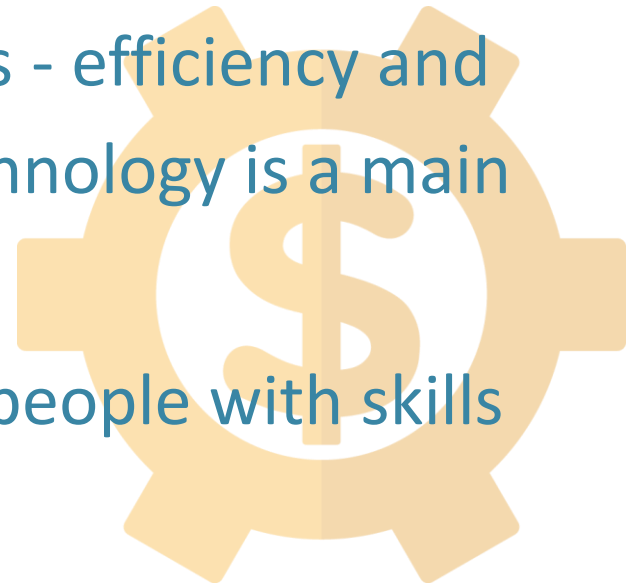
- 40% of the senior leaders are eligible to retire over the next 2-3 years
- Need to retain the knowledge of the employees retiring
- Need to attract people with the appropriate skills to fill in the gaps.
- Agency has had a difficult time attracting and retaining new employees with the right skill set





## 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





Needs and Implications

# Your Scenarios

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

# Strategies to Meet Needs

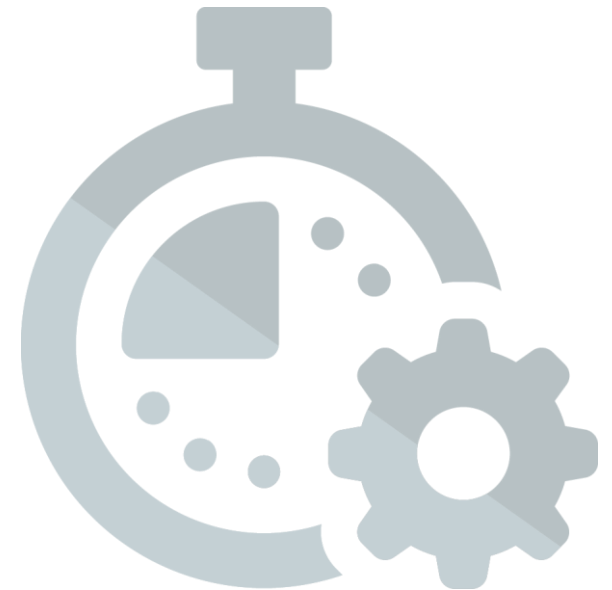
---



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

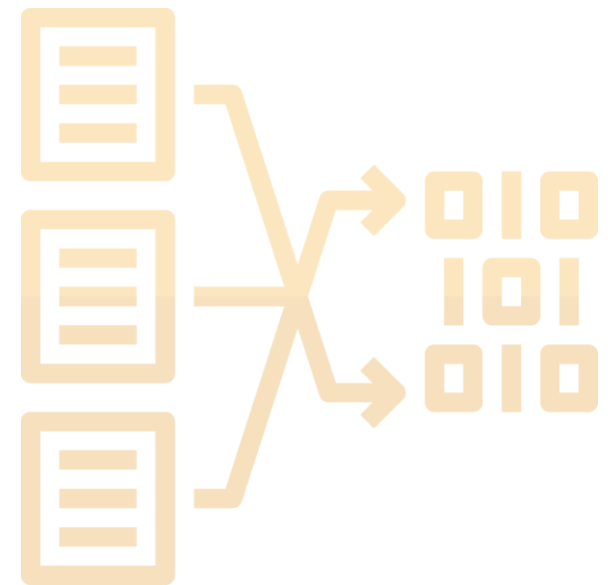




Strategies

# Knowledge Management

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





Strategies

# Information and Data Management

- Governance
- Services and Technologies

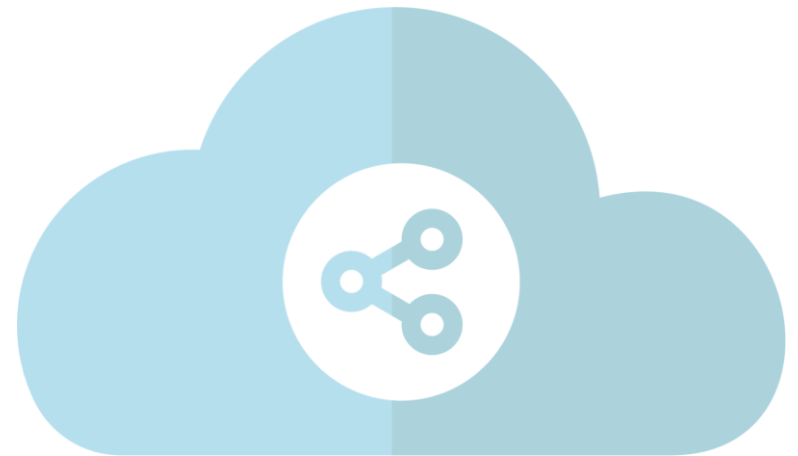




Strategies

# 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

Hyun-A Park

[hpark@spypondpartners.com](mailto:hpark@spypondpartners.com)

Hannah Groshong

[hgroshong@spypondpartners.com](mailto:hgroshong@spypondpartners.com)