

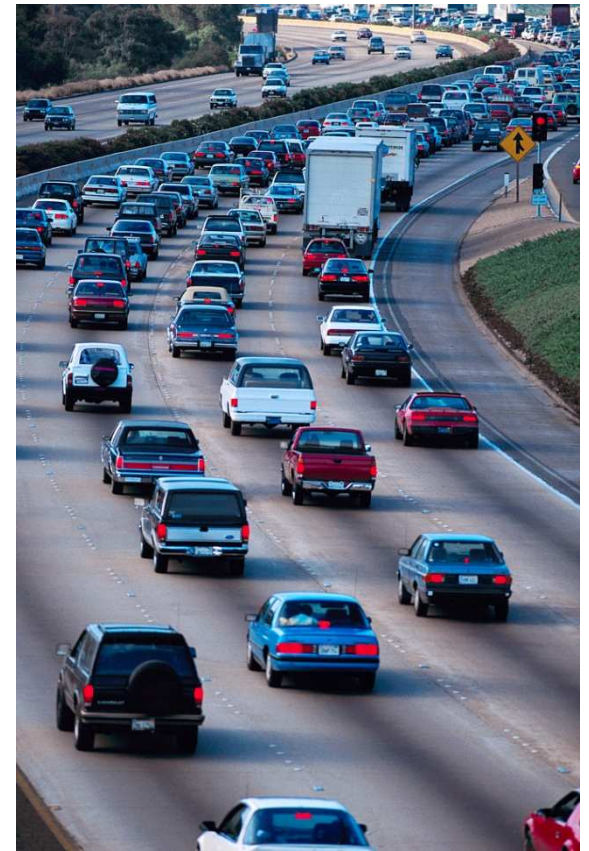
# NCHRP Domestic Scan 08-04

Best Practices in WZ  
Assessment,  
Data Collection, and  
Performance Measurement

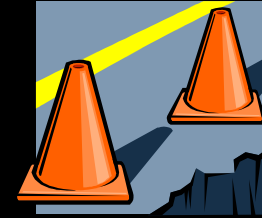


# Scan Purpose

Determine traffic monitoring, data usage, and management practices being applied to address safety and congestion impacts in work zones



# Focus

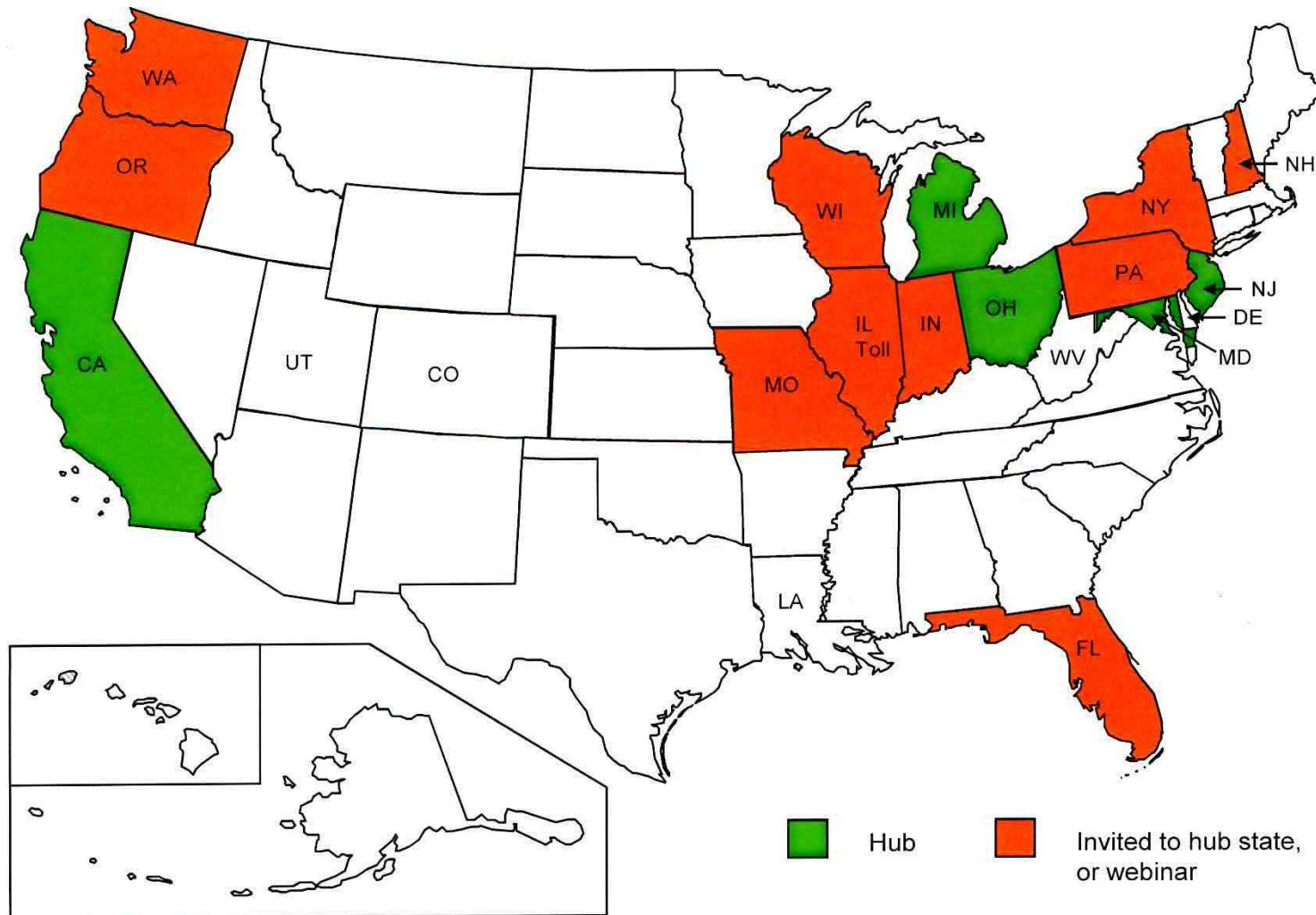


- Safety/mobility performance measures used
- Data collected to compute those measures
- Use of data and measures to assess impacts
- Effect on agency processes and procedures

# Scan Team

- Stuart Bourne (North Carolina DOT); Co-chair
- Chung Eng (FHWA); Co-chair
- Diana Gomez (California DOT)
- David Holstein/Reynaldo Stargell (Ohio DOT)
- Ron Lipps (Maryland DOT)
- Denise Markow (New Hampshire DOT)
- K.C. Matthews (Colorado DOT)
- Tracy Scriba (FHWA)
- Gerald Ullman (TTI)
- Brian Zimmerman (Michigan DOT)

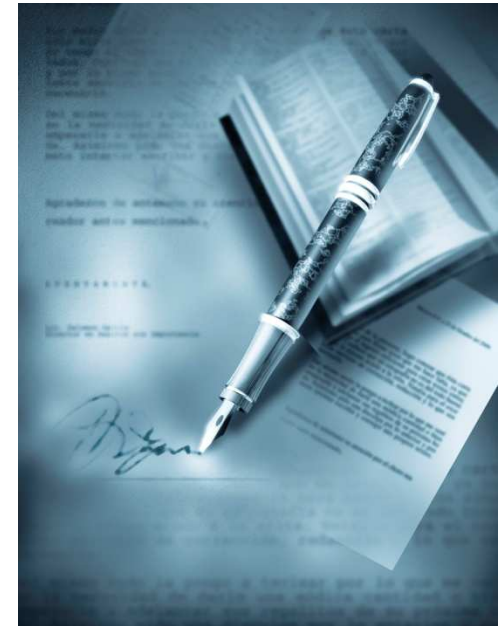
## Scan Team 08-04 host agencies



# Finding – Role of Management

## **Executive management support is critical!**

- Must be willing to commit agency staff time and financial resources to effort
- Requires a systems management mindset



# Finding – Considerations During Project Development Process

- Early consideration of potential impacts
  - Improves selection and timing of mitigation efforts
  - Ensures consideration of mitigation costs
- Capacity analyses/permitted lane closure chart usage is common
- Safety/mobility performance specifications not widely used

# Findings – Work Zone Data Collection

- Quality of data management system is important
- Electronic crash data entry enhances safety monitoring
- Electronic databases to track future and current lane closures are useful



# Findings – Work Zone Data Collection (cont'd)

- TMCs play key role in lane closure management
- Increased availability of low-cost technologies makes data collection more feasible
- Data availability limits the performance measures used

# Findings – Work Zone Performance Measurement

- Must establish measures to make them important
- Most agencies do use some measures
- Most agencies emphasize safety or mobility measures/analyses, but not both

# Findings – Work Zone Performance Measurement (cont'd)

- Safety measures evaluated at program level
- Mobility measures evaluated at project level
- Agencies trending away from lane rental use

# Findings- Use of Measures and Data for Work Zone Improvement

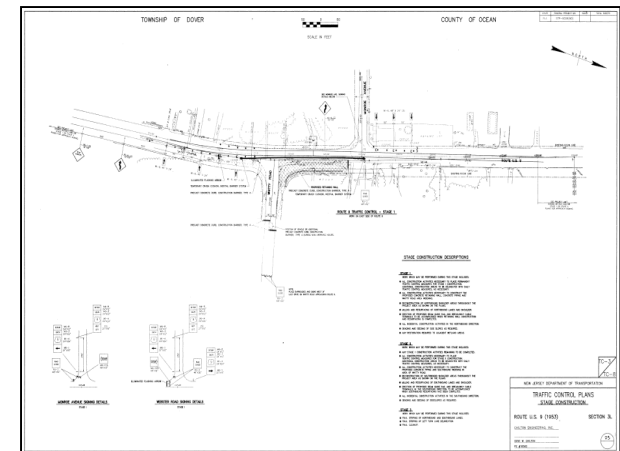
- Measures encourage better monitoring and modification of policies and processes
- Access to real-time data is key to making improvements in current work zones
- More can be done with available data

# Recommendations –Considerations During Project Development

- It is important for agencies to explicitly define where impacts assessment fits in the overall project development process

	Problem Screening	Concept Development	Preliminary Engineering	Final Design	Construction
Planning	Annual Transportation Capital Plan and STP	Planning Funds	Preliminary Engineering Authorization	Final Design Authorization ROW / Utility Authorizations	Construction Authorization
Key Tasks	Conduct Tier 1 Screening Subject Matter Expert Review Check NJDOT Management Systems Prioritize Problem Statements Conduct Tier 2 Screening Conduct Bridge Deck Replacement Screening Conduct Pavement Resurfacing Screening Validate Problem Recommend Preliminary Project Scope CPC Approval and Assignment	Conduct Data Collection Evaluate Deficiencies and Identify Fatal Flaws Evaluate Planning Alternatives Coordinate with Stakeholders Complete Environmental Screening Assess Right of Way (ROW) and Access Impacts Determine Preliminary Preferred Alternative (PPA) Identify Substandard Design Elements Determine NEPA Classification Prepare Construction Cost Estimate Select Designer	Coordinate with Stakeholders Conduct Environmental Analysis for PPA Initiate Roadway Engineering Initiate Structural Engineering Initiate ROW and Access Initiate Utility Engineering Prepare Final Design and Construction Cost Estimates Manage Project Contracts	Manage Project Communications Complete Roadway Engineering Complete Structural Engineering Complete ROW and Access Complete Utility Engineering Complete Environmental Process Prepare Final Design Submission Conduct Construction Contract Documents Manage Project Contracts	Advertise for Bids Award Project Conduct Construction Start-up Conduct Modification Manage Construction Changes Conduct Construction Operations Complete Construction Close-Out Project
Public Involvement	Obtain MPO Approval and Public Input	Execute Public Involvement Action Plan	Execute Public Involvement Action Plan	Execute Public Involvement Action Plan	Keep Public Informed Maintain Community Support
Key Products	Problem Statement Validation Tier 1 Documentation Tier 2 Screening Report Bridge Deck Replacement Screening Report Pavement Resurfacing Screening Report Charter Proposed Project Assignment	Design Communications Report Concept Development Report: Purpose and Need Statement Preliminary Preferred Alternative National Environmental Policy Act (NEPA) Classification Preliminary Engineering Scope Statement	Design Communications Report Preliminary Engineering Report: Approved Environmental Document Approved Design Exception Report Cost Estimates (Final Design & Construction) Approved Project Plan Final Design Scope Statement	Design Communications Report Environmental Reevaluations and Permits Access Permits Acquisition of ROW Construction Contract Documents Supporting Agreements	Design Communications Report Completed Project As-Built Close-Out Documentation
	Division of Capital Investment Strategies & Division of Project Development	Division of Project Development	Division of Project Development	Division of Project Management	Division of Project Management and Division of Construction Services and Materials or Operations

Last approved 10/23/2019 / Last revised 10/23/2019



# Recommendations –Considerations During Project Development

- It is important to scale the transportation management planning effort to the level of impacts that are anticipated



# Recommendations – Work Zone Data Collection

- Quality data is needed!
- Transportation management centers (TMCs) can play a key role:
  - Collection of mobility and safety data
  - Identification of mobility and safety issues that arise
  - Providing public information



# Recommendations – Performance Measures

- Performance measures used must relate to the agency goals and objectives for mobility and safety impacts
- Performance measures must be used rationally





# Recommendations – Work Zone Safety and Mobility Improvement

- Agencies should improve how data is analyzed and utilized to continuously improve agency processes and procedures



# Implementation of Findings

- Conference presentations
- Summary article(s) in pertinent journals
- Webinars
- Research problem statements
- Demonstration workshops
- “Marketing” brochure of scan findings
- “Marketing” video of scan findings