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# Concepts for Rural TMC/TOC Operations

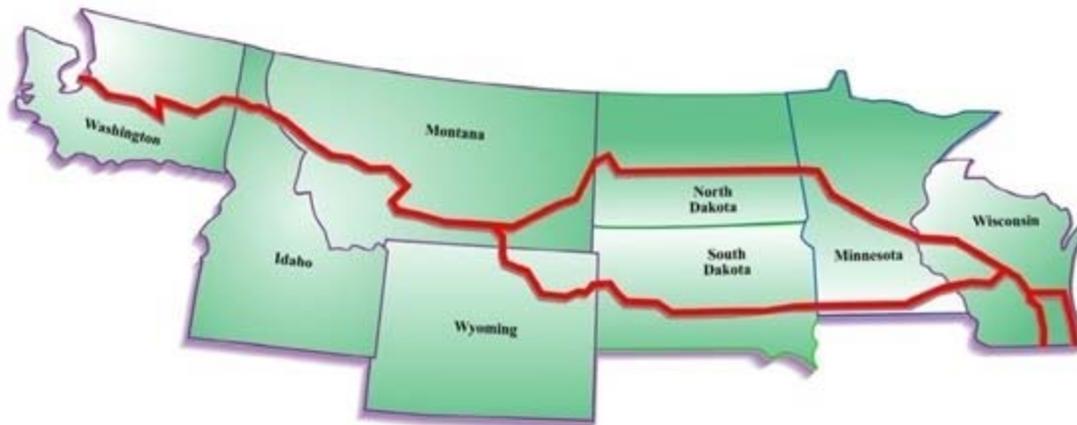
*National Rural ITS Conference  
Branson, Missouri*

Session C3: Traffic Management Centers – Exploring New Operational Concepts  
August 26, 2014

- North/West Passage **introduction**
- Project **background**
- Key **research findings**
- **Needs** for rural TMC/TOC operations
- Rural TMC/TOC **operational concepts**



- North/West Passage
  - Transportation Pooled Fund 5(093) since 2003
  - States from WA to WI along I-90/1-94
  - States share common challenges
    - Commercial and recreational travel corridor
    - Extreme weather conditions
    - Road closures and transportation management

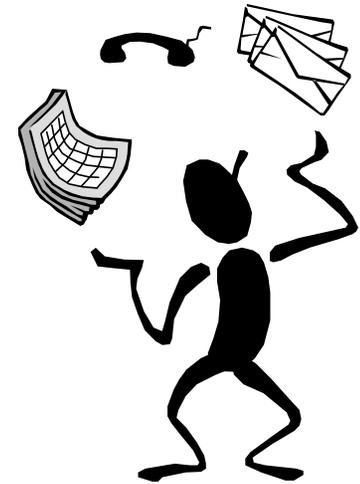


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- North/West Passage (continued)
    - Develop effective **methods for sharing, coordinating, and integrating** traveler information and operational activities across borders
      - Major event descriptions
      - Traveler information web site
      - Con ops for C2C communication
      - Support page for TMC/TOC operations staff
      - Operational guidelines for coordinating traveler information
      - Googlemap of corridor resources
      - Operational test and evaluation of coordination
      - Seasonal operations webinars
      - Operations task force

# Project Background

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- Montana, North Dakota and South Dakota do not currently have TMC/TOC facilities
  - States use operations staff to manage major events
- Challenges being without TMC/TOC facilities
  - Unavailable 24/7
  - Unable to designate position vs. person as POC
  - Unclear and often multiple POCs for other states
  - Less formal and inconsistent operating procedures



# Project Background

- Project 8.2: Concept for Rural TMC/TOC Operations
  - Define the **unique needs** of a rural TMC/TOC operational concept
  - Determine what **existing guidance or models** could be used to support the enhancement of TMC/TOC operations among North/West Passage states
  - Project focused on **research and peer exchange**



# Research Findings

- Targeted materials related to TMC/TOC
  - Development/establishment
    - Needs assessment, operational concepts, design
  - Operations
    - Hours of operation, services
  - Staffing
    - Skill sets, position descriptions
  - Performance
    - Effectiveness, benefits
- Here's what we found...



# Research Findings

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- Development/establishment
  - [Transportation Management Center Concepts of Operation](#) (FHWA, 1999)
    - Assist with planning, designing, deploying, or operating and maintaining TMCs (freeway/arterial/transit)
    - Focused on supporting development of a con ops that can be used for outlining functions, building consensus, training and clarifying interactions
  - [Freeway Management and Operations Handbook](#) (FHWA, 2003, 2006, 2011)
    - Chapter 14 specifically provides a high-level overview of TMC services and processes for planning, designing, commissioning, and managing a TMC – urban or rural

# Research Findings

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- Development/establishment (continued)
  - [Enhancement of Statewide Operations Concept of Operations Study](#) (Montana, 2007)
    - Documents proposed concept of operations and implementation plan
    - Rationale, functions, administration and next steps for developing center
  - [Traffic Operations Center Concepts for South Dakota](#) (2006)
    - Assessed overall traffic operations and identified improvement projects
    - Presented concept for statewide TOC in Pierre with regional centers in Sioux Falls and Rapid City

# Research Findings

- Operations, staffing and performance
  - [Handbook for Developing a TMC Operations Manual](#) (TMC PFS, 2005)
    - Assistance for developing a guide to daily operations (e.g. traffic management, emergency contacts, security policies, job responsibilities, public contacts, interagency coordination)
    - Supplemental [primer](#) with Q&A on TMC operations
  - [TMC Staffing and Scheduling for Day-to-Day Operations](#) (TMC PFS, 2006)
    - Addresses concepts, methods, processes, tasks, techniques and other issues related to work analysis, scheduling and staff planning
      - Methods for job, workload and demand analysis
      - General scheduling practices for scheduling
      - Identifies issues associated with shiftwork
      - Guidance to create a staffing plan and planning for emergencies

# Research Findings

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- Operations, staffing and performance (continued)
  - [TMC Business Planning and Plan Handbook](#) (TMC PFS, 2005)
    - Develops value proposition and establishes the basis for performance measurement and monitoring to chart the progress (graphic)
  - [ITS Benefits, Costs, Deployment and Lessons Learned Desk Reference](#) (FHWA, 2011)
    - Chapter 8 highlights benefits, costs, deployment and lessons learned for TMCs
  - [Integration of Emergency and Weather Elements into TMCs](#) (FHWA, 2006)
    - Identifies practices for integration as well as pros/cons and benefits/challenges for various concepts

# Research Findings

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- Other information
  - [Impacts of Technology Advancements on Transportation Management Center Operations](#)  
(TMC PFS, 2013)
    - Explores how to better position TMCs operationally in anticipation of future technology changes and advancements
      - Eight top trends of TMC operations are identified
      - Individual strategies – 80 in total – are presented to address trends

# Research Findings

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- There are a number of resources available to support development, operations, staff and performance aspects of TMCs
- Most resources are fairly neutral in the processes described BUT the examples referenced are primarily urban
- TMC PFS is a good resource
  - Admittedly focused on urban centers
  - “A Guidebook for Virtual TMC Development” expected to have some rural application
    - *Dan Lukasik will be discussing this during today’s session*

- North/West Passage states with TMC/TOC facilities were asked to identify needs for those states without centers
- Building on challenges of not having a TMC/TOC, the states without centers were asked to define their needs for rural TMC/TOC operations
  - Needs within the state
  - Needs in relation to cross-jurisdictional coordination



1. A single point of contact during events (e.g. weather, special events, incidents)
2. A point of contact to be available 24/7
3. A point of contact for TMC/TOC operations position vs. specific individual
4. The ability to discuss impacts with point of contact
5. The ability to have two-way communication during events
6. A high-level knowledge of what resources may be available to share

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7. Other states to not send traffic toward places where it can't pass through or be held
  8. A centralized coordination and resource management point for state emergency operations
  9. Centralized operational activities such as district coordination, traveler information, and device management during events (e.g. weather, special events, incidents)
  10. Consistency across systems and operations
  11. Timely and accurate data about construction, incidents and road weather conditions
  12. Dissemination of timely and accurate information about construction, incident and road weather conditions
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# Operational Concepts

*Peer exchange with other  
North/West Passage states*



Service	State		
	WY	MN	ID
Conduct incident management	X	X	X
Operate ITS field equipment (e.g. CCTV, DMS, HAR, RWIS)	X	X	X
Dispatch maintenance forces	X	X	X
Dispatch freeway service patrol			X
Dispatch state police		X	X
Dispatch emergency services			X
Collect/integrate/disseminate road conditions or forecasts	X	X	X
Disseminate traveler information	X	X	X
Manage warning and active safety systems (e.g. snow gates)		X	X
Coordinate with neighboring states	X		X
Support commercial vehicle movement and inspections	X		X
Coordinate hazardous material incident response			X
Coordinate strategic national stockpile	X		
Operate variable speed limit system	X		
Manage Wyoming Authorized Travel program	X		
Manage citizen reporting program	X		X

# Operational Concepts

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- Five overall concepts identified
  - Consolidated statewide center
    - Wyoming, Utah
  - Regional centers
    - Washington, Minnesota
  - Contracted inter-agency center
    - Idaho
  - Virtual center
    - Florida
  - Multistate center
    - Trio states, Oregon-Washington



- MT, ND and SD plan to pursue further development of rural TMC/TOC operations
- Peer exchange was most valuable aspect of project
  - Additional peer exchange planned for management within MT, ND and SD
- Although existing guidance for TMC/TOC development and operations uses urban examples, processes can be applied to rural centers



**Questions?**



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