

# Session 2: TSMO Business Planning

Sue Porter, MnDOT TSMO Manager

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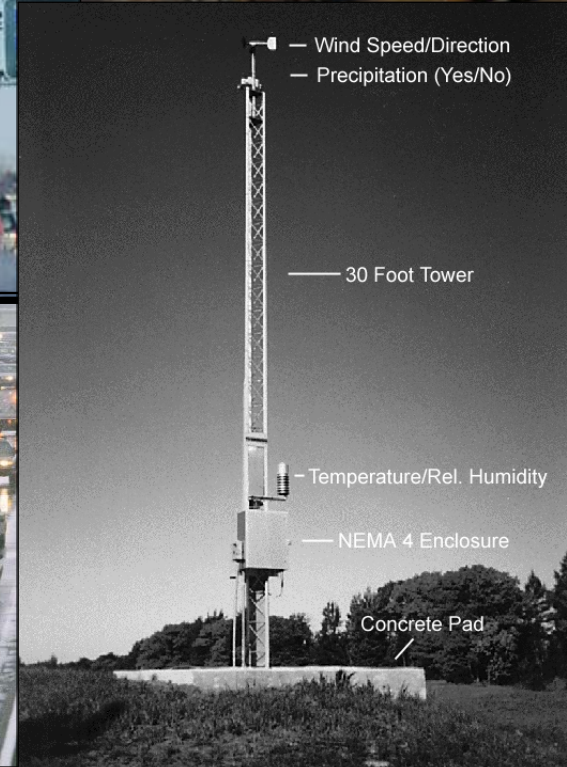
[susan.porter@state.mn.us](mailto:susan.porter@state.mn.us)

# Session 2: TSMO Business Planning Organization/Practices/Challenges

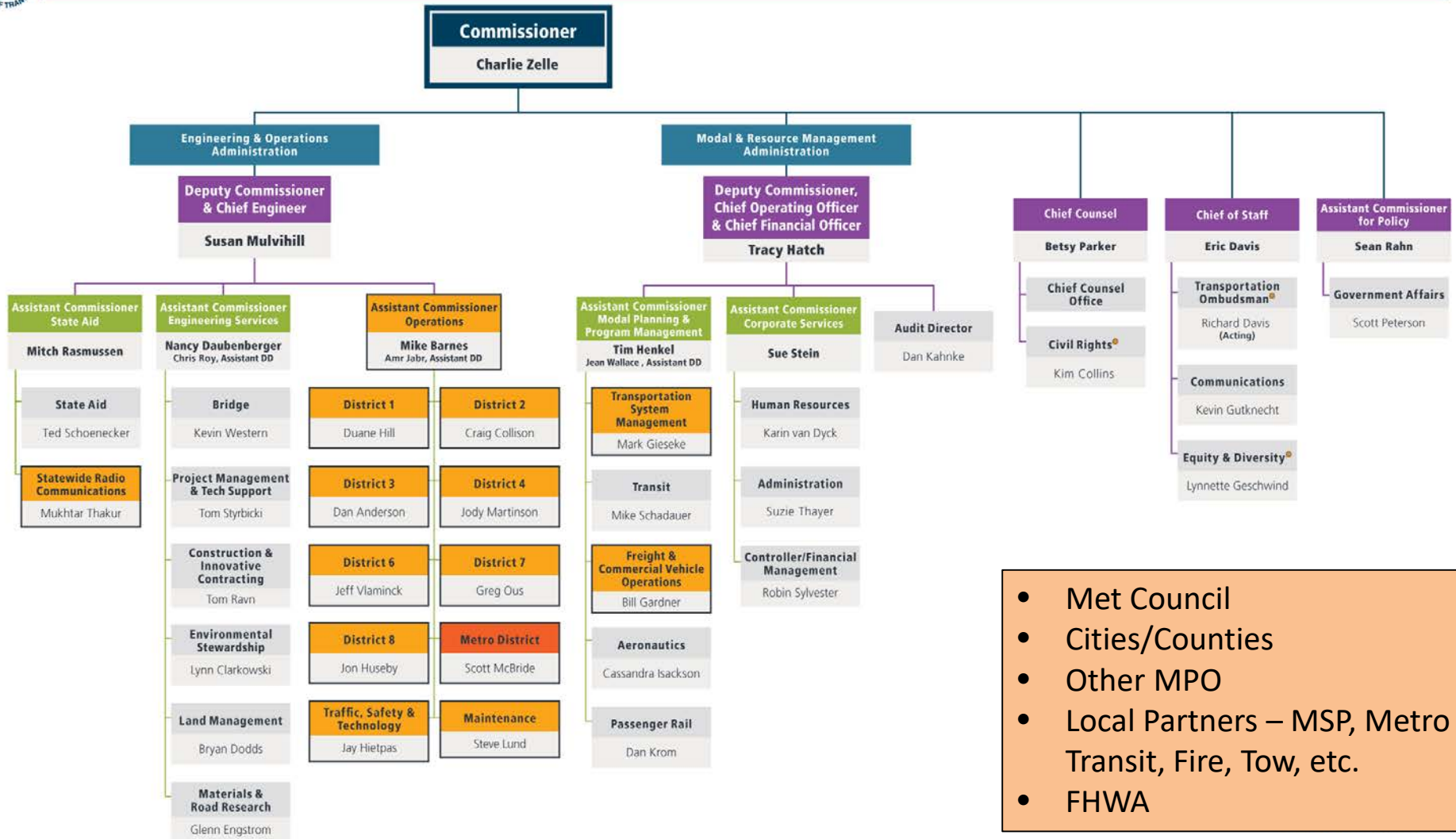
- Does your agency currently have a published TSMO vision and mission statement? If so, what are they? **No, individual programs have their own vision and mission**
- Does your agency use a Capability Maturity Model (CMM) framework for TSMO programming and institutional support? **The framework is being used to evaluate the “current TSMO state” of each MnDOT TSMO program. About half done.**
- Does your agency currently have a published TSMO Business Plan? Is it publically accessible? **No, we are planning on developing a TSMO program plan in next year.**
- Which of the following TSMO business elements have formal support in your agency (either through a Business Plan, or on an ad-hoc basis):
  - Strategic Planning
  - Workforce Developments
  - Customer Feedback Tools
  - Performance Measurement & Management
  - Organizational Planning & Process Improvement

**We are very decentralized  
so each  
Office/Section/Program  
works somewhat  
independently on these.**

# MnDOT Traffic Operations Strat



# Current Operations Organization



- Met Council
- Cities/Counties
- Other MPO
- Local Partners – MSP, Metro Transit, Fire, Tow, etc.
- FHWA

# Assessment of MnDOT Capabilities

## Transportation System Management and Operations

Category	Current Assessment Level
<b>Business Processes</b> (Planning, programming, budgeting, implementation)	<b>Level 2 Plus</b>
<b>Systems &amp; Technology</b> (Systems engineering, standards and technology interoperability)	<b>Level 3</b>
<b>Performance Measurement</b> (Measures, data & analytics and utilization)	<b>Level 2</b>
<b>Culture</b> (Technical understanding, leadership, outreach, and program authority)	<b>Level 2 Plus</b>
<b>Organization/Workforce</b> (Organizational structure and workforce capability development)	<b>Level 2 Plus</b>
<b>Collaboration</b> (Partnerships among levels of government and with public safety agencies and private sector)	<b>Level 4 Minus</b>

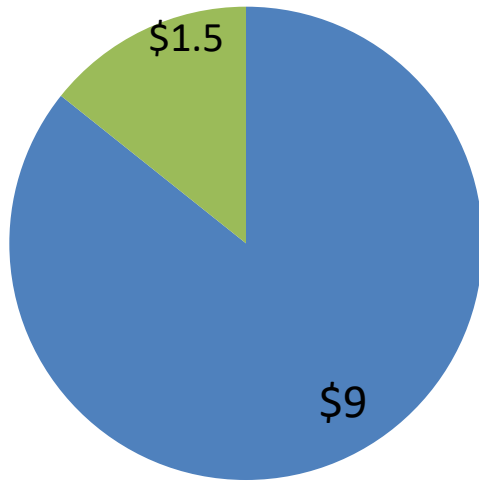
# MnDOT Progress since TSMO Workshops (June, 2014 & May, 2015)

- Developed a Statewide ITS Plan
- Established a “TSMO Manager” position reporting to Assistant Division Director of Operations
- Established a TSMO Leadership Team
- Begun assessing each TSMO program using CMM

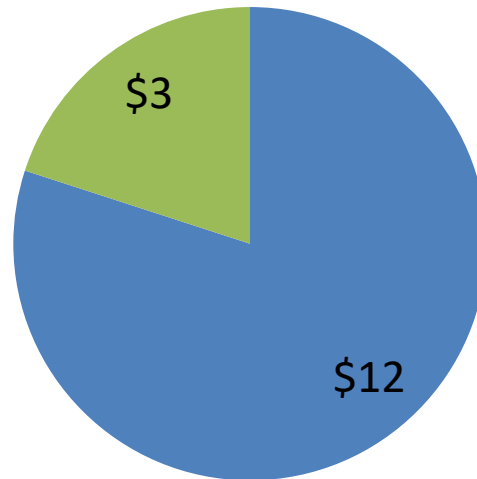
# Statewide ITS Plan

## 10 YR Investment Needs Above Base

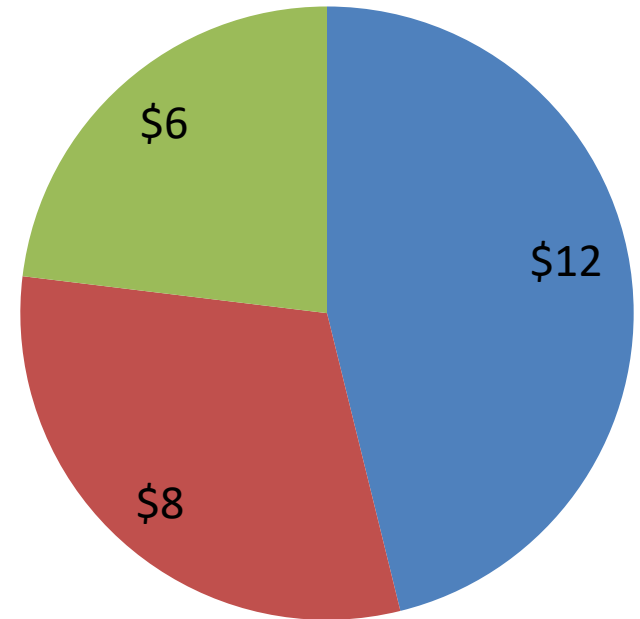
Scenario A: \$10.5 M



Scenario B: \$15M



Scenario C: \$26M



■ Asset Management

■ Expansion

■ Operations

# Statewide ITS Plan

## Outcomes of Optimization Scenario

### Expansion/Asset Mgmt.

- All expansion of other scenarios
- Build out of ITS on Hwy 52 and I-35 in D6, Hwy 169 in D7, I-94 in D3/4
- ITS assets replaced at life cycle targets
- 511 road weather is automated

### Decommissioned ITS

- Only those devices no longer needed

### ITS Communications

- Statewide virtual ITS network (with Mn.IT) for management of devices at RTMC
- All ITS devices are connected

### Operations

- All ITS operations managed through RTMC 24 x 7
- Improved Emergency Management ability
- Automated 511 road/weather data input

### Staffing

- 4 FTE for RTMC Operations
- 1 FTE for Metro Traffic
- 1 FTE for statewide Maintenance and Integration
- 2 FTE for ITS Design

### Transportation System Management & Operations

- Core strategy for Agency
- TSM&O Plan developed and implemented
- Seek to achieve highest level of TSM&O in most areas



# TSM&O Assignment\*

- Be the point of contact for MnDOT TSM&O related issues and national committees
- Establish a high level agency leadership team to oversee TSM&O
- Determine “current state” of all TSM&O strategies using the Capability Maturity Matrix
- Determine if a formal TSM&O plan should be developed
- Prepare MnDOT Organization for Connected and Autonomous Vehicle growth

\* working with MnDOT experts in each program

# TSM&O Leadership Team

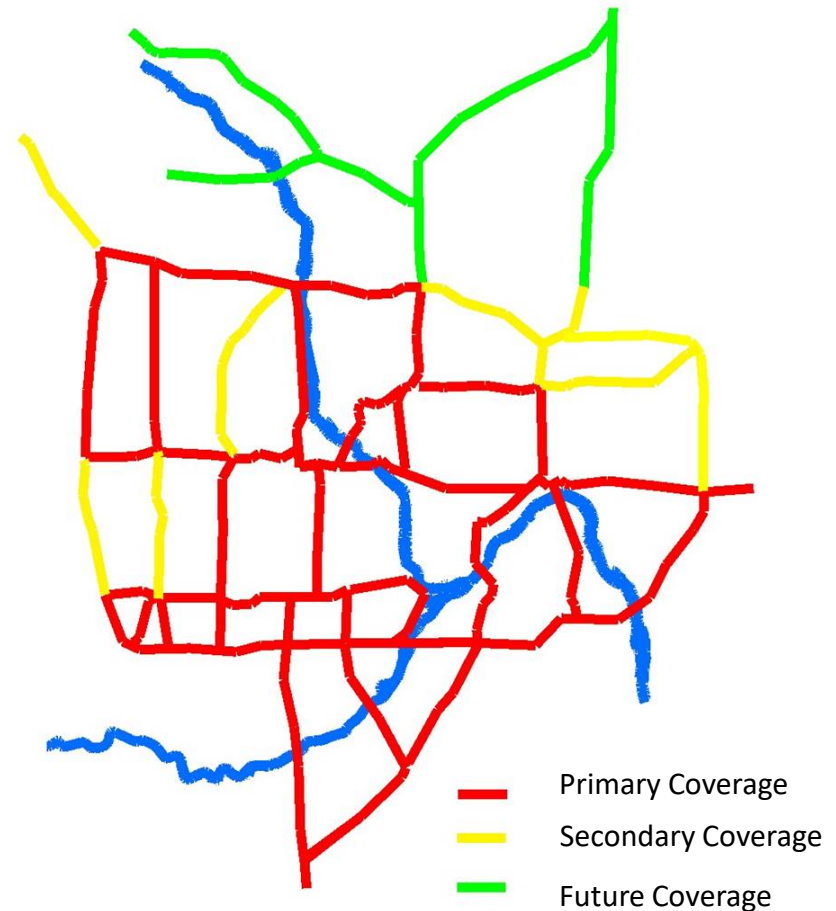
(Management Group similar to PCMG, CMG, OMG, AMG)

- Sue Mulvihill Deputy Commissioner & Chief Engineer
- Mike Barnes Division Director
- Amr Jabr Asst. Division Director
- Jeff Vlaminck Rochester District Engineer
- Duane Hill Duluth District Engineer
- Steve Lund State Maintenance Engineer
- Jay Hietpas State Traffic Engineer
- Steve Misgen Acting Metro Maint and Traffic Office Director
- Brian Kary Acting RTMC Manager
- Mike Gerbensky Acting Metro Traffic Engineer
- Ray Starr ITS R&D
- Mark Nelson MnDOT Planning Director
- Sue Porter TSMO Lead
- James McCarthy FHWA
- Others TBD

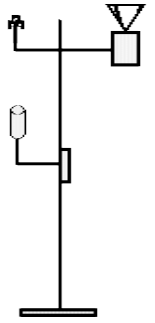
# Next steps to improve the FIRST Program



- Expand coverage to north metro
  - Secondary routes become primary allow for more coverage in core metro.
- Expand hours of operations
  - Weekend coverage is currently only one-driver
- Increase coverage during major construction
  - Additional FIRST drivers
  - Contracted Tow Trucks
- Types of Vehicles
  - Pickup Trucks
  - Incident Response Trucks

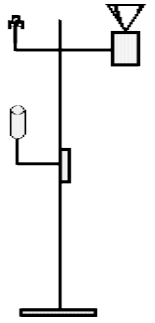


# Next steps to improve the Road Weather Technology Program



- Expand road weather data backbone (RWIS)
- Need for additional regional coordinator on a permanent basis
- Improve IT support, develop framework and create expertise
- Finish the Management Reports project
- Equip new trucks with AVL as purchased
- Finish testing and expand the use of Plowcams

# RWIS expansion project



- Add 60 sites throughout state
  - Would like to spread over three year period
  - Cost of approximately \$60k per site
  - \$1.2m per year
- Need to locate funds
- Tails
  - Districts have been informed of additional operating and maintenance costs



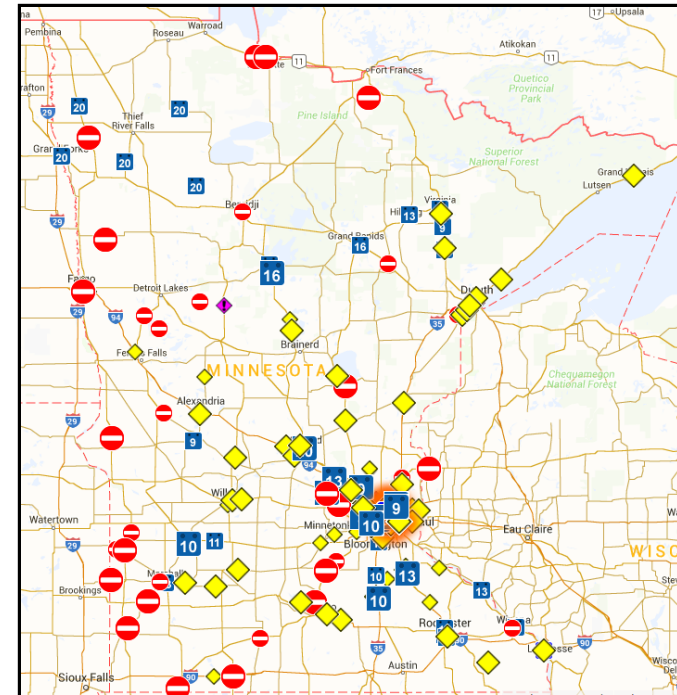
# Next steps to improve the Traveler Information Program

- Consolidate the district's CARS users to central location (RTMC – if the Ops Center goes to 24/7)
  - More consistent entries
  - Easier quality control
  - Help with deployment of DMS signs statewide
  - Help with other 511 responsibilities especially during weekends, holidays and during vacations
- Marketing
  - Promotions, news releases and media outreach will equal more 511 end users

# 511 Enhancements



- Geofenced Messages (pushed alerts)
  - Flooding – road closures
  - Tornado Warning
  - Pushed messages to your 511 app based on your location
- MnPASS Pricing displayed on 511
- Multimodal enhancements
- Rest Area Amenities and Truck parking
- Connected Vehicles
  - 511 can help bridge the gap of vehicles not having onboard systems that receive traveler information
  - Tell Me App –
  - Hear Me App



# Signal Operations Capability Matrix (Metro)

	Level 1	Level 2	Level 3	Level 4
BUSINESS PROCESSES (planning, programming, implementation)	Processes related to TSMO activities, ad hoc, and unintegrated	Multiyear districtwide TSMO plan and program in place with deficiencies, evaluation & strategies	Programming, budgeting & project development process for TSMO standardized and documented	Processes streamlined & subject to continuous improvement
SYSTEM & TECHNOLOGY (systems engineering & technology interoperability)	Ad hoc approaches outside of systems engineering	Systems engineering employed and consistently used for concept of operations, architecture & systems development	Systems & technology standardized, documented & trained districtwide & new technology incorporated	Systems & technology routinely upgraded & utilized to improve efficiency & performance
PERFORMANCE MEASUREMENT (measures, data, & analytics & utilization)	No regular performance measurement related to TSMO	TSMO strategies measurement largely via outputs, with limited after action analysis	Outcome measures identified and consistently used for TSMO strategies improvement	Mission-related outputs and outcomes data routinely utilized for management, reported internally and externally and archived
CULTURE (technical understanding, leadership, outreach & program authority)	Value of TSMO not widely understood beyond champions	Agency wide appreciation of the value & role of TSMO	TSMO accepted as formal core program	Explicit agency commitment to TSMO as key strategy to achieve full range of mobility, safety, livability & sustainability objectives
ORGANIZATION & WORKFORCE (organizational structure & workforce capability development)	Fragmented roles based on legacy organization & available skills	Relationship among roles & units rationalized and core staff capacities identified	Top-level management position & core staff for TSMO established in central office & districts	Professionalization & certification of operations core capacity position including performance incentive
COLLABORATION (partnerships among levels of government & with public safety agencies & private sector)	Relationships on informal, infrequent & personal basis	Regular collaboration at regional level	Collaborative interagency adjustment of roles & responsibilities by formal interagency agreements	High level of operations coordination institutionalized among key players, public & private



# Signal Operations Matrix (D3 & D6)

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# Next Steps Signal Operations (Metro)

- Get through the construction season
- Transition to new central system (Sept)
- Transition to TAMS (Sept)
- Transition to using Signal Performance Measures (Fall-Winter)
  - Retiming driven by actual need
- Talent Management
  - Staffing levels - vacancies
  - Skill levels

# Next TSM&O Steps

- Continue current review of MnDOT TSM&O Strategies using CMM
  - Work Zone Management Systems (Oct)
  - Freeway Operations and Active Traffic Mgmt (Nov)
  - Others
- Education and outreach to DOT Leadership and partners/stakeholders
- Develop a TSMO Program Plan
- SPaT challenge or ATCMDG

# Discussion & QUESTIONS

TSM&O Strategies	MnDOT Experts
Traffic Incident Management	Brian Kary – RTMC, Mike Schweyen D6
Safety Service Patrols	Brian Kary/John McClellan
Freeway Operations and Active Traffic Mgmt	Steve Misgen/Brian Kary
Traveler Information/Dynamic Message Signs	Brian Kary/ Kelly Braunig
Road Weather Information Systems	Curt Pape/Jon Bjorkquist
Work Zone Management Systems	Ken Johnson/Tiffany Dagon/GM
Ramp Metering Systems	Brian Kary
Traffic Signal Optimization/Retiming	Steve Misgen
Traffic Adaptive Signal Control	Steve Misgen
Special Event Management	All Districts (RNC, Grandma’s, Others)
Commercial Vehicle Information Systems	John Thompkins
Bus Rapid Transit	Metro Transit/Metro District
Transit Signal Priority	Metro Transit/Metro District
Parking Management Systems	John Thompkins – others?
High Occupancy Toll Facilities	Brian Larson/Brian Kary