

MN ITS Statewide Plan

Agenda

- Overview of Statewide ITS Plan
 - What ITS is trying to accomplish and where it is warranted
 - Investment Scenarios
 - Early Findings
- Missing elements?

Statewide ITS Plan

What is ITS in this Plan?

- Technology systems that improve capacity, safety, efficiency and transportation system information collection/dissemination
- Typical ITS components: Cameras, Dynamic Message Signs, Sensors, Smart Signals, Ramp Meters, 511, Road Weather Systems, Communications, Tolling, Vehicle Systems (CVO, Fleet)
- Fuzzy line defines what is ITS and what is in this plan- example: Traffic Signals

Statewide ITS Plan

Purpose

- MnDOT has not had a statewide ITS Plan
- A plan states what ITS is trying to accomplish
- ITS Investments are generally District driven
- There is an identified need to coordinate ITS investment and priorities with more consistency across the state
- An ITS Plan developed now supports ITS within the upcoming MnSHIP Update
- Effort will be overlap with current MnDOT Transportation Asset Management Plan (TAMP) and District Safety Plans

Statewide ITS Plan

Content

- Plan will:
 - consider both capital and operational investment
 - begin to consider key policy issues on funding, staffing, investment priorities, etc.
 - link to policies of existing state and MPO plans and policies and coordinate with Transportation Asset Management Plan (TAMP)
 - maintain consistency with HIP, STIP and Highway System Operations Plan (HSOP)
- Plan has 10 year horizon so will include discussion on emerging technologies

Statewide ITS Plan

Comparison with TAMP

	TAMP	ITS Plan
Asset inventory, condition, replacement value	*	*
Life-cycle cost considerations	*	*
Asset management performance measures and targets	*	*
Risk management analysis	*	
Performance gap assessment	*	
Financial plan	*	
Investment strategies	*	*
Asset management implementation and future developments	*	*
Vision Scenario		*
Policy Issues		*
Investment Warrants		*
Plan Horizon	10 year	10 year

Statewide ITS Plan

Stakeholder Involvement

- Plan focuses on MnDOT investment
- Most of Stakeholder engagement is internal
- External engagement includes MPOs and State Agencies with key stakes
- General public involvement not currently planned unless requested

Statewide ITS Plan

Investment Scenarios

- Scenarios described as:
 - Preferred Investment (Preservation, Enhancement, Expansion)
 - Modest Increase in Investment (Preservation + Enhancement)
 - Fiscal Constraint (Current investment level)
- Scenarios will consider:
 - Investment tradeoffs/priorities
 - Operating requirements
 - Logical phasing

Statewide ITS Plan

Schedule

- Kick-off in December 2014
- Final Plan expected in June 2015
- Stakeholder outreach will continue after plan completion
- Plan update cycle TBD

District Input on ITS

Initial Feedback

- ITS is a valuable tool- used for safety, mobility, traveler information, monitoring and internal operational efficiency
- Greater MN Districts rely on central funding for ITS
- Design and operations approaches vary by District
- Capital investment decisions are dependent on maintenance support levels
- Systems with annual costs (power/comm/licenses) are often avoided in Greater Mn
- Communication systems drive investment decisions
- ITS Maintenance support is viewed as adequate by some and a gap by others

Statewide ITS Plan

Current and Potential Investments

- \$4M/year from Central funding for planning and implementation
- Metro has \$1M + amount in projects- mostly preservation
- Research investments
- Statewide system investments: varies
- One time funding (Federal or State)
- Operations investments: TBD
- NexTen/Governor's Plan: \$1.4M/year for non-Metro and significant MnPASS expansion

ITS Investments

Possible Greater MN Investments

	2014	2016	2018
DMS	97	115	130
Cameras	238	339	372
Detector Sites	72	84	86
Fiber Optic Cable (Miles)	223	253	279
RICWS	11	43	45
Road Closure Flashers	81	81	83
Your Speed Signs	6	6	6
Over Height Detector	2	2	2
Flood Warning System	1	1	1
Automatic Gates	1	1	1
Dynamic Deer Warning	10	10	10

Most ITS investment expected in DMS, CCTV, RICWS

ITS Investments

Metro Investments

- Most freeway investment shifting to preservation of existing systems but not keeping up with needs
 - Example: over next 10 years there is a gap of 43 DMS that will reach end of life with no replacement funding. Total replacement cost for the 43 DMS is \$5.6 M
- Arterial investments in fiber/cameras on major arterials continue
 - Expect full system build out by 2020
- Adding new freeway systems with construction (Hwy 610)
- MnPASS expanding to I-35E in 2015 and 2016, I-35W North and Lake Street in 2018-2019
- MnPASS switching toll system equipment in 2015

Statewide ITS Plan

Deciding on where to invest in ITS- Metro Strategy

- Freeways:
 - Goal of Instrumenting all freeways within Metro with Cameras, DMS, Fiber, Detection
 - MnPASS expansion based on planning process
- Arterials:
 - Goal of fiber, cameras, interconnected on all Major Arterials
 - Minor Arterials covered in general by Freeway systems (interchanges)
- Expansion is often opportunity driven by tying to construction projects or special funding for new concepts
- *Note: Corresponding ITS Investment Goals not as developed in Greater MN Districts*

Statewide ITS Plan

Organizational Discussion

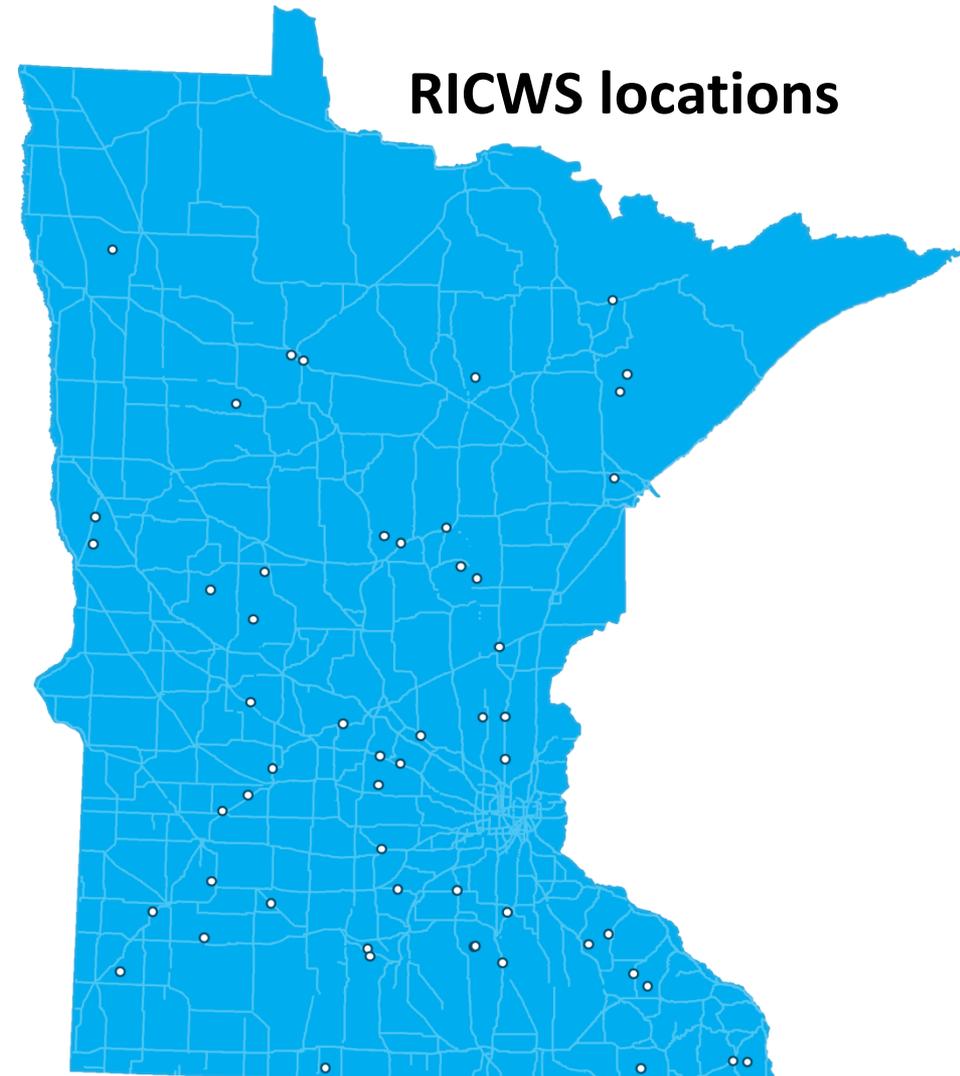
- Organizational Elements and Current Model
 - Funding- Centralized and District
 - Design- Various District Capabilities
 - Maintenance- Centralized and Metro
 - Operations- Regional/MSP

ITS Statewide Systems

ITS without Borders

Systems

- Communications
- 511
- TMC/TOCC
- Fleet
- RWIS
- RICWS
- CVO
- Work Zone ITS
- Winter Closures
- Multi-State Systems



Statewide ITS Communications

Developing Concept to support ITS statewide

Current Situation

- Systems are becoming borderless (Metro, D1, D3, D4)
- TOCC Consolidation and MnIT Role create challenges
- Desire for access to all devices from both Rochester and RTMC dispatch centers

Concept

- Fund one statewide network serving linking all districts, dispatch centers, and ITS devices
- Network would be built in stages
- Organizational and funding are the issues rather than technology

Future Systems

Final Chapter- Input opportunity

- What systems should or should NOT be considered over 10 years?
- Plan Elements Missed?

