Minnesota's Transportation Asset Management Plan (TAMP)

SASHTO 2014

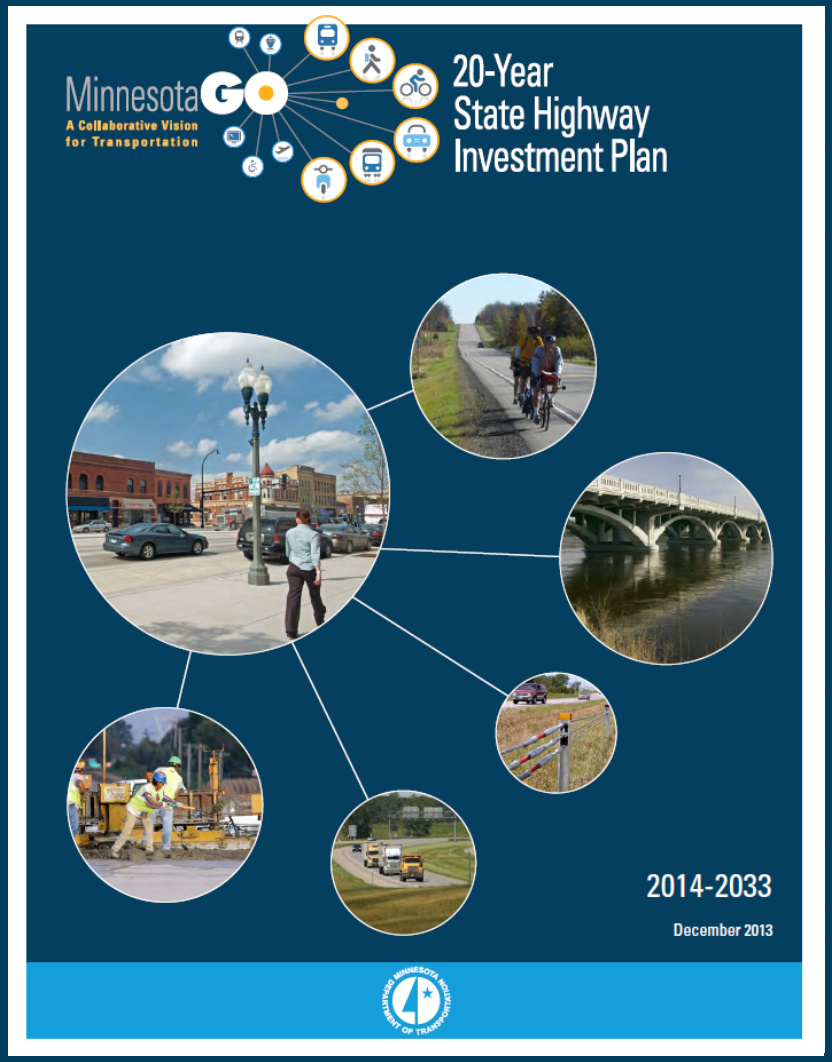
Tuesday, August 26, 2014

We all have a stake in A to B

A Logical Next Step for MnDOT …

MnDOT Data Business Plan

Statewide Multimodal Transportation Plan (SMTP)

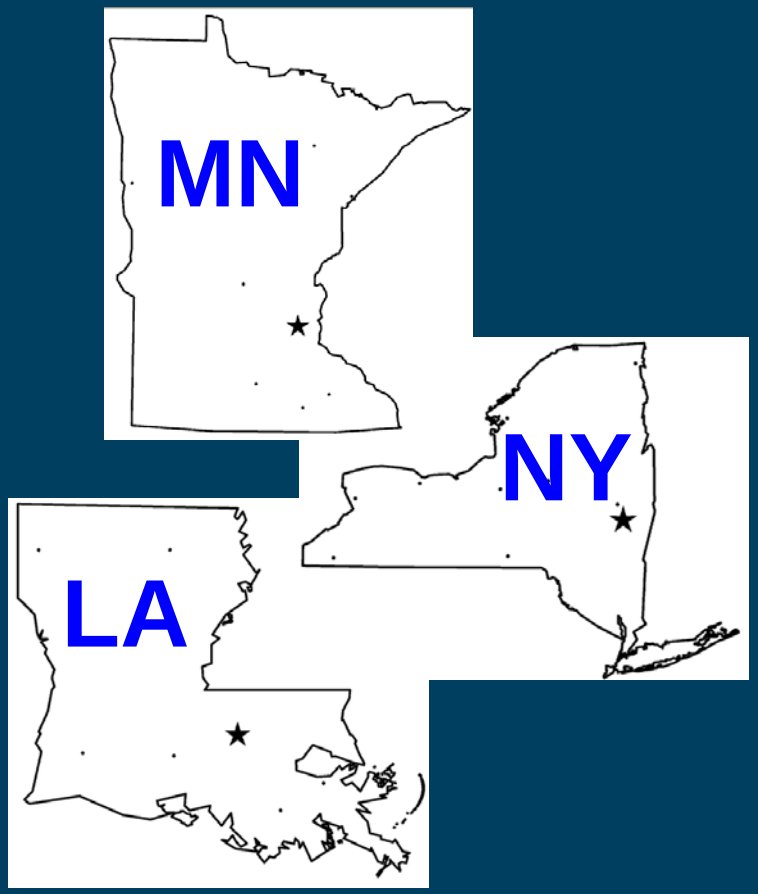


Highway System Operations Plan (HSOP)

State Highway Investment Plan (MnSHIP)

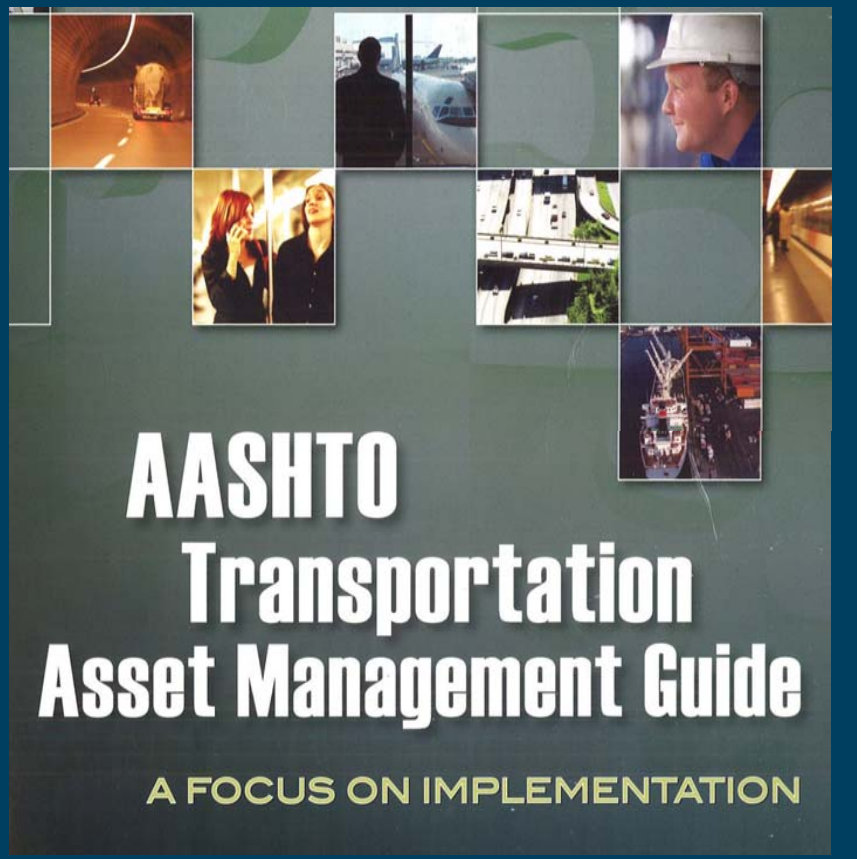
FHWA Transportation Asset Management Pilot Project

- Support three state DOTs developing their first TAMP
  - Develop TAMP Work Plan
- Working with FHWA & MnDOT consultants



Key MAP-21 Components

- Asset Inventory/Conditions
- Objectives/Measures
- Performance Gap Assessment
- Lifecycle Cost
- Risk Analysis
- Financial Plan
- Investment Strategies
- Enhancements



Asset Management Plan Scope

Highway Assets

- **Pavement**
- **Bridge**
- **Drainage Structures**
  - Highway Culverts
  - Deep Stormwater Tunnels
- Guardrails
- Traffic Signals
- Signs
- **Overhead Sign Structures**
- Pavement Markings
- ITS
- Pedestrian Ramps
- Lighting
- **High-Mast Light Tower Structures**
- Land
- Rest Areas
- Sidewalks
- Retaining Walls
- Tunnels
- Noise Barrier
- Fencing
- Weigh Stations
- ADA Infrastructure
- Modal Infrastructure
- Transit Vehicles

Asset Inventory & Conditions

- Summary of asset inventory and conditions
  - “Folios” for each asset category, including:
    - System size and replacement value
    - Data collection, management, and reporting methods
    - Condition ratings, targets, and investment levels
- Explanation of factors influencing condition and performance
- Discussion of asset valuation

Changes from Original Outline

Sample Outline in FHWA Draft Work Plan	*MnDOT Final TAMP Outline*
Chapter 1: Asset Inventory and Conditions	Chapter 1: Introduction
Chapter 2: Asset Management Objectives and Measures	Chapter 2: Asset Management Objectives
Chapter 3: Performance Gap Assessment	Chapter 3: Asset Inventory and Conditions
Chapter 4: Life-Cycle Cost Considerations	Chapter 4: Risk Management Analysis
Chapter 5: Risk Management Analysis	Chapter 5: Life-Cycle Cost Considerations
Chapter 6: Financial Plan	Chapter 6: Performance Gaps
Chapter 7: Investment Strategies	Chapter 7: Financial Plan and Investment Strategies
Chapter 8: Asset Management Process Enhancements	Chapter 8: Implementation and Future Developments

Asset Inventory & Conditions

- Summary of asset inventory and conditions
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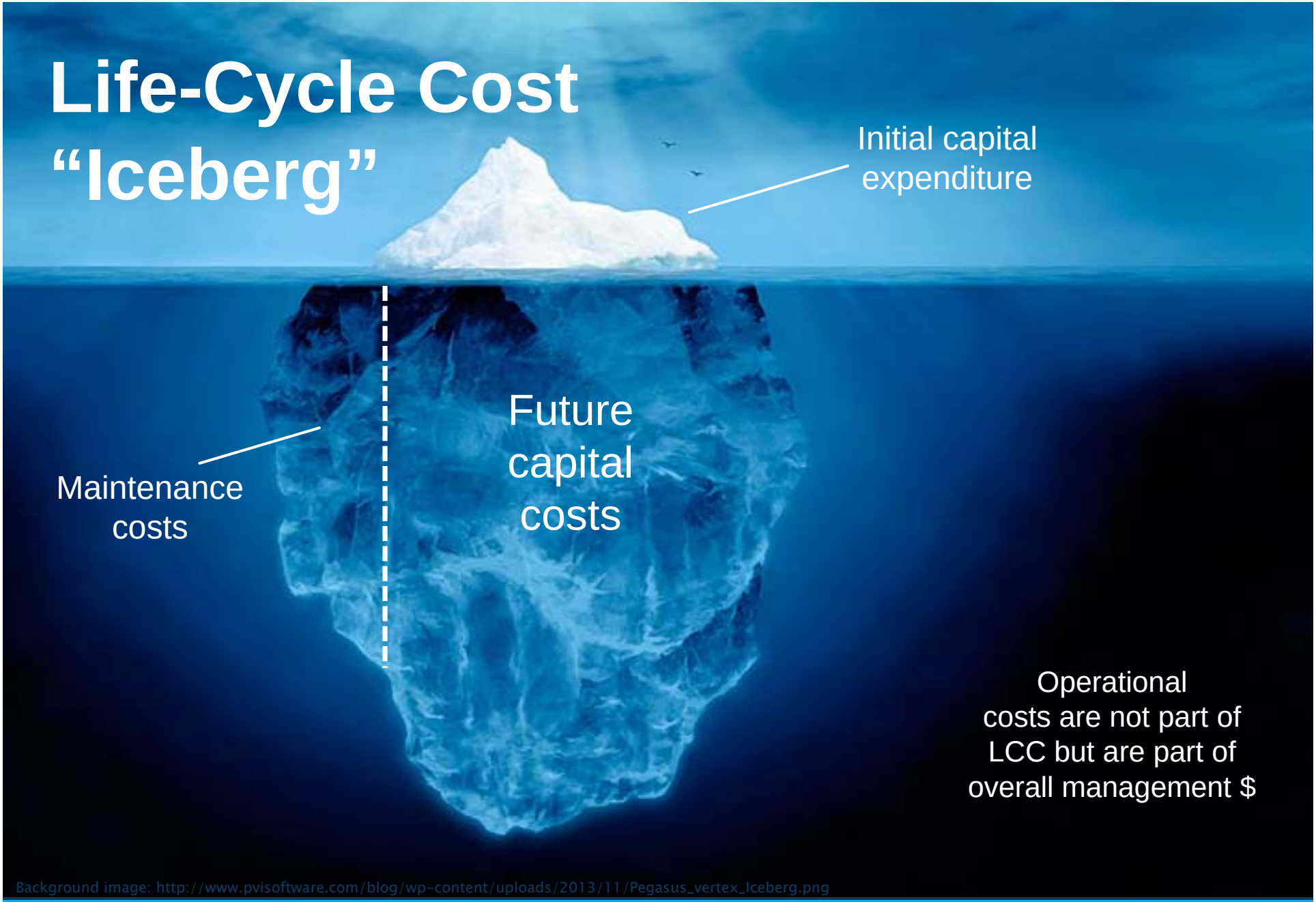
Risk Management Analysis

- Risk as it affects transportation
- Risk management at MnDOT
  - Enterprise Risk Management
  - MnSHIP
  - HSOP
  - Bridge Management (BRIM)
  - Pavement Management (HPMA)
  - Research
- MnDOT's TAMP risk assessment process
  - "Undermanaged Risks"
  - Prioritization of mitigation strategies

Life-Cycle Cost "Iceberg"



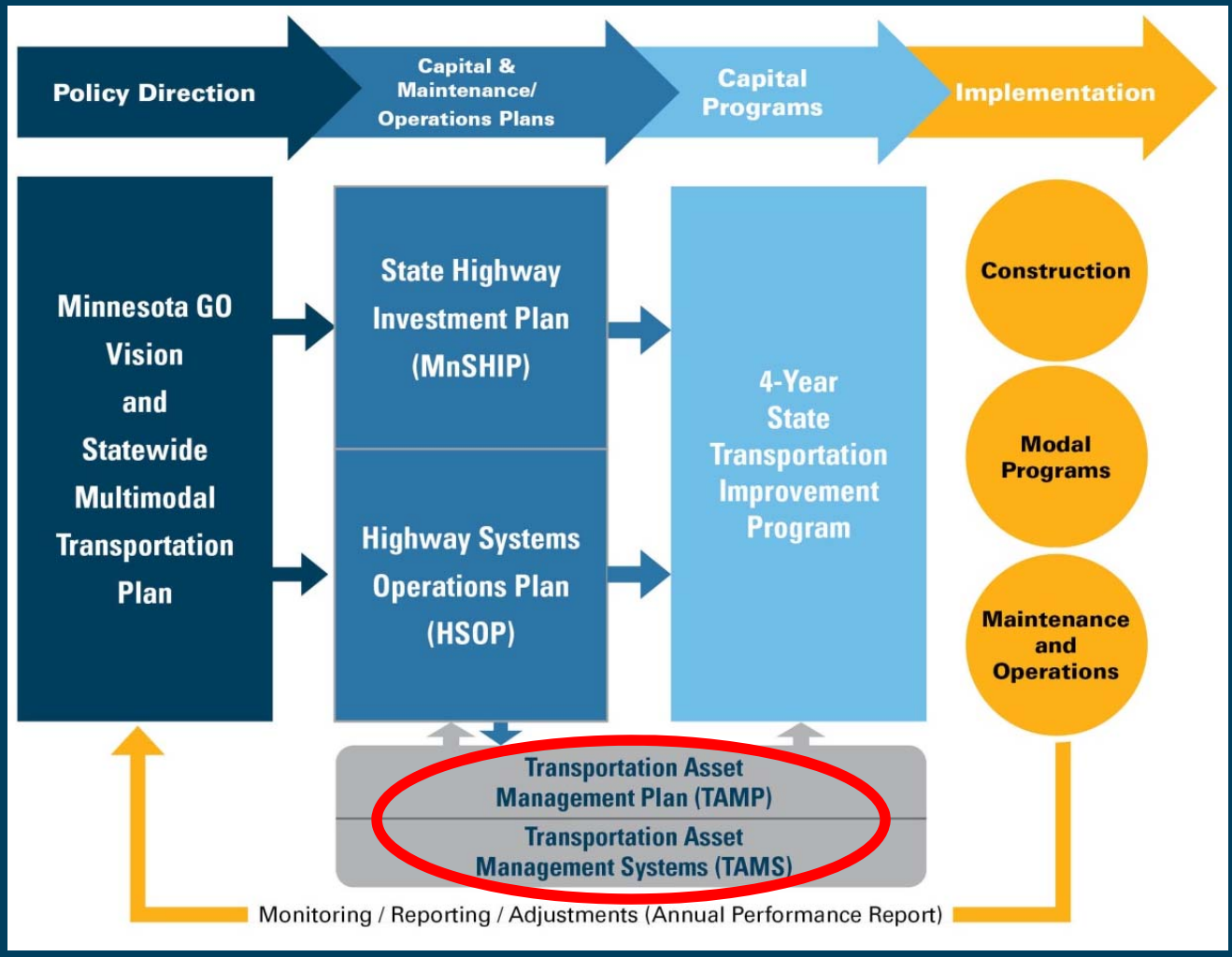
Current Condition and Targets

Asset	Current Condition	Target Recommendation
Pavement		
Interstate	2.4% Poor	≤ 2% Poor
Non-Interstate NHS	4.3% Poor	≤ 4% Poor
Non-NHS	7.5% Poor	≤ 6% Poor
Bridge		
NHS	4.7% Poor	≤ 2% Poor
Non-NHS	2.1% Poor	≤ 8% Poor
Hydraulic Infrastructure		
Highway Culverts	10% Poor	≤ 8% Poor
	6% Very Poor	≤ 3% Very Poor
Deep Stormwater Tunnels	49% Poor	≤ 8% Poor
	24% Very Poor	≤ 3% Very Poor
Other Traffic Structures		
Overhead Sign Structures	6% Poor	≤ 4% Poor
	8% Very Poor	≤ 2% Very Poor
High-Mast Light Tower Structures	6% Poor	TBD
	15% Very Poor	

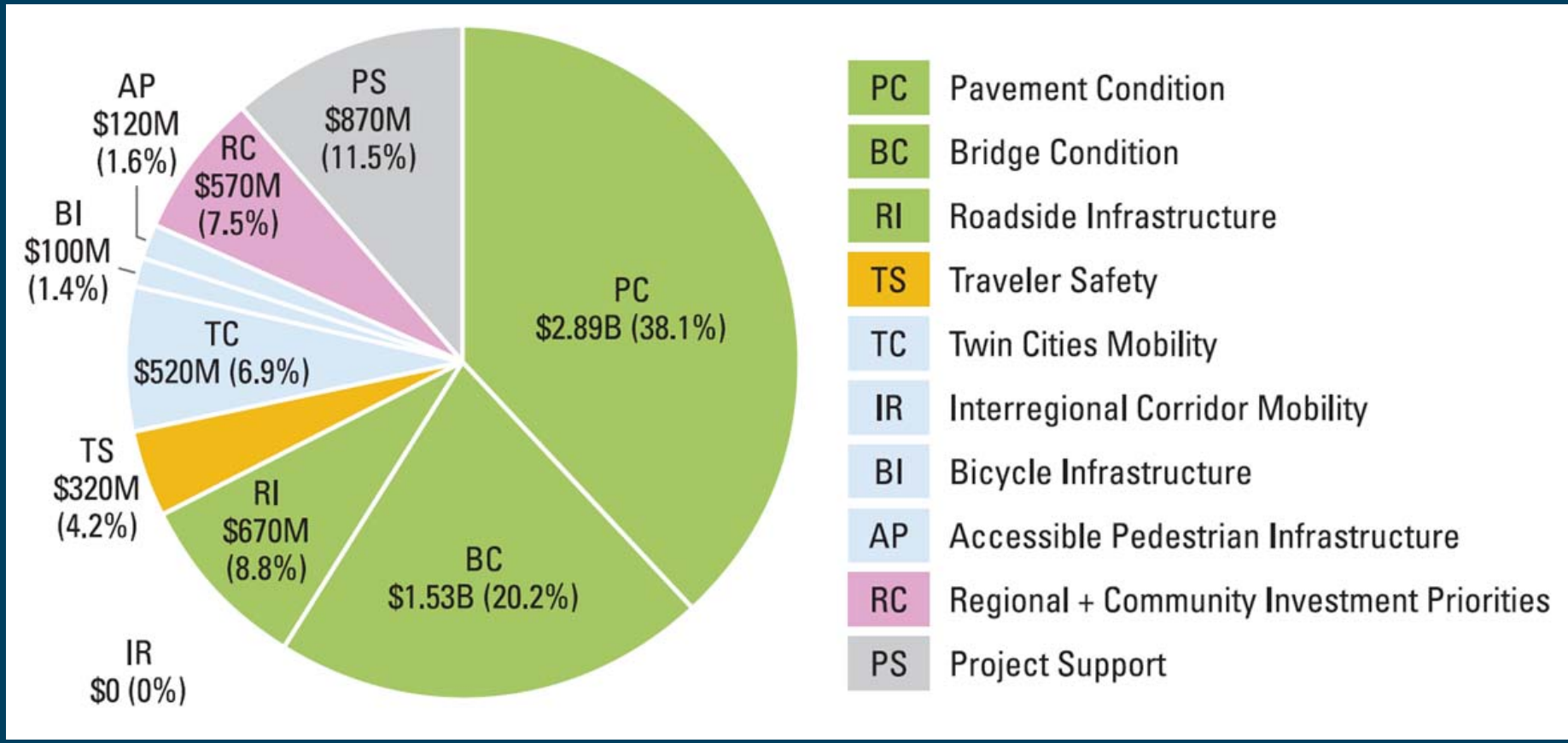
Implementation & Future Developments

- MnDOT's focus: fully incorporating asset management into existing plans and policies
- Governance (TAMP Implementation Task Force)
- Implementation priorities
  - Mitigating undermanaged risks
  - Overarching business process enhancements
  - Research priorities
- Lessons learned

MnDOT Planning Process



Moving Forward



2014–2023 Capital Investments (MnSHIP)

Challenges

Time and effort intensive sections of the process:

- Asset inventory and condition (surprisingly)
  - Much back-and-forth on exact #s

- Risk
  - Integrating w/previous risk efforts at MnDOT
  - Avoid repeating efforts; *add value* through TAMP risk process

Challenges (cont'd)

- Life-cycle costing
  - LCCA relatively simple for individual assets; difficult to scale up to statewide system
- Financial
  - Condition targets
- Creation of TAMP document
  - Document should complement and enhance MnDOT's "Family of Plans"
  - Relationship with consultant
    - Division of labor (based on expertise)
    - Communication

Key Messages, Findings, Recommendations

- Life-cycle costing
- Incorporating TAMP into existing practices
- Data gaps
- What is the purpose? Reporting of Decisionmaking Process vs. Vehicle for improvement

Moving Forward

TAMP

Enhancements

- Enhance existing business processes
- Build on existing information, plan, and processes

Future Capital Plan (MnSHIP)

- Starting to incorporate life-cycle analysis
- Adding detailed information about “other roadside infrastructure”

Future Operations Plan (HSOP)

- Requirements for maintenance by asset type
- More strategic
- More data-driven

Thank You

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