Project Scoping and Project Management at MnDOT

Capacity Building Workshop
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Overview

• MnDOT’s Scoping Process
  – Lessons Learned and Moving Forward

• Project Management
  – National DOT trends and perspectives
  – Peer Review Process and Results
  – Construction Industry Perspective
  – Next Steps
MnDOT’s Scoping Process

- Initiated prior to the CE/CM effort
- Began in 2006 by the Preconstruction Managers Group (PCMG - Assistant District Engineers in the MnDOT’s districts)
  - Developed a process
  - Developed a manual
  - Provided training ahead of implementation
- Implemented in early 2008
MnDOT’s Scoping Process

• Objective of the scoping process:
  – Early
  – Comprehensive
  – Documented
  – Formalized Change Process
Benefits of Good Scoping

• Early identification of what a project is and isn’t
• Early identification of risks and potential conflict points
• Presents a critical path for project managers
• Alignment with our performance goals
• Improved cost estimates and schedules
• Improved coordination with partners
• Greater public trust
Scoping Process – Goal of Each Phase

**Project Planning**
- Analyze performance gaps
- Determine potential projects’ performance-based Need & Purpose
- Determine which to scope

**Project Scoping**
- Determine detailed scope
- Determine cost estimate
- Build schedule

**Programming**
- Determine which projects to forward to ATP
- Prepare STIP
Scoping Process Implementation

- Implemented in FY 2012 projects in the 2009-2012 STIP
  - 96% of projects in 2012 had an approved scoping document
- All projects in the 2010 – 2013 STIP required to use the new scoping process
  - 94% of all projects of projects had approved scoping documents
- For 2011-2014, 90+% of projects have scopes
Scoping Process Implementation – Remaining Challenges

- Continued communication about the value to project managers of early scoping
- Continue to focus on earlier coordination both internally and externally
- Integration of Risk Management
- Integration of many new initiatives and changes to policies and laws
- Identifying the appropriate level of effort
- More clearly identify roles & responsibilities
Scoping Process – Next Steps

- Reconvened the Project Scoping Committee
- Mission Statement:
  - Define the “right” projects to be delivered on-time, on-budget and that meet customer expectations. The committee continues to ensure a comprehensive scoping process is early, scalable, documented, and includes a flexibility-driven change management process.
Scoping Process – Next Steps

– Review:
  • Evaluate the scoping process

– Refine:
  • Clear guidance on Level of Effort
  • Clearly defined roles and responsibilities
  • Address Complexity and Flexibility

– Reach:
  • Guidance on Scope Management
  • Incorporate Risk and develop a process to integrate new initiatives, laws and policies
Why a Peer Review? Why Project Management?

- Improve project delivery performance – on time, on budget (an issue we share with peers)
- Benchmark MnDOT’s project management practices
- Initial step in a change management process
- Check for best industry practices
- Build from our success
- Aligns with our Strategic Vision and Directions
Project Management Aligns with MnDOT’s Strategic Vision

• Key element to successfully implementing the Strategic Directions of Safety, Mobility, Innovation, Leadership and Transparency

• MnDOT’s Goal: Create, implement, support and sustain a “Project Management Environment”
Project Management

Risk

Scope

Cost

Schedule

Resources

Quality

Triple Constraint
Recent National Work in Transportation Project Management

- NCHRP 20-68A, AASHTO Domestic Scan 07-01, “Best Practices in Project Delivery Management”

MnDOT Steering Committee and Project Team Leadership
Project Oversight and Champions for Change

- **Steering Committee**
  - Commissioner
  - Deputy Commissioner
  - 3 Division Directors
  - 1 Asst. Div. Director
  - 2 District Engineers
  - FHWA

- **Project Team**
  - Advisory to Steering Committee
  - Developed the Peer Review agenda
  - Communicated with Stakeholders
  - Cross-Sectional representation of MnDOT and external partners
An Opportunity to Partner…

• Center for Transportation Studies, U of MN
  – Jim Grothaus, CTS Project Manager
  – Laurie McGinnis, Stephanie Malinoff, and Joe Barbeau

• CH2M HILL, Inc.
  – Doug Abere and Tim Thoreen
  – John Conrad, Tim Neuman and Mike Paddock
Peer Review Process

• Background Documents Provided Context
  – White paper (current practices, national studies)
  – Survey of MnDOT Staff (180+ responses)

• Peer Review Panel (visited week of Oct. 5-8, 2009)
  - Pasco Bakotich, Washington State DOT
  - Sidonia Detmer, Virginia DOT
  - Tucker Ferguson, Pennsylvania DOT
  - Larry Langer, Arizona DOT
  - Jim McMinimee, Utah DOT
  - George Jones, FHWA
  - Laurie McGinnis, U of MN, CTS
  - John Conrad, CH2M HILL
  - Tim Neuman, CH2M HILL
  - Mike Paddock, CH2M HILL
Panel Members Learned How MnDOT “Does Business”

**Conducted Interviews**
- 20 Group Interviews
- Interviewed 100+ MnDOT Staff

**Interviews Focused on Four Categories**
- Project Phases
- Functional/Program Areas
- Initiatives and Support
- Specific Projects
Best Practices Exist in MnDOT

• Widespread implementation of scoping process and support for CE/CM, including:
  – Routine project reviews
  – Scope amendment process

• There is a strong project delivery focus and culture
  – Informal networks for resource sharing
  – Empowered to use consultants

• Training programs are valued and encouraged
Best Practices Exist in MnDOT (cont.)

- Innovation is promoted, for example:
  - Contracting (contractor incentives, Design-Build process)
  - Utility group process improvements; REALMS (R/W)
  - IT Program Office PM organization and use of PMBOK processes

- Hear Every Voice and CSS are valuable tools

- Annual reporting of schedule delays and reasons given helps overall program review
What are Good PM Skills?

• Good communication skills
• “Big Picture” point of view; ambiguity about project details will not hinder progress
• Understanding of MnDOT processes to ground decision-making
• Able to manage project change
Project Management Opportunities and Challenges

- The panel identified several opportunities for change
- Two major themes help organize the findings:
  - Development of a project management organization and culture
  - Enhancing project management tools, technology, training, and methods
Panel Observations (1 of 3)

• The term “project manager” has many definitions within MnDOT, resulting in:
  – Unclear transitions in the PM role
  – No performance measures to work from
  – Inconsistency in roles and responsibilities

• Build understanding of baseline schedules and cost estimates

• Early involvement of construction and maintenance staff
Panel Observations (2 of 3)

- Include tools for risk and conflict management in the development of projects
- Develop resource/knowledge management systems and networks
- Gaps exist in training for experienced project managers
- Explore project manager core competencies and career tracks
- Utilize team charters and project charters
Panel Observations (3 of 3)

• Project Management Plans should be used regularly (and should be appropriately scaled)
• MnDOT’s project tracking software/system does not provide the capabilities needed for advanced project management
• Other potential areas for improvement:
  – Track and keep project commitments
  – Integrate project lessons learned; enhance closeout
Construction Industry Perspective
Mortenson Construction – Kendall Griffith

• Most everything Mortenson does is project management
• We share common priorities and focal points – a focus on delivery of projects
• Careful balance between structured project management processes (technical aspects) and the importance of softer skills and forward-looking strategies
Emphasis: Clarify the authority and responsibilities of Project Managers

• The PM is the leader of the project team

• “CEO of the Project”, with full responsibility for the success of the project:
  – Preconstruction and design-phase management
  – Safety, quality, productivity management
  – Scheduling and budget management
  – Procurement, insurance, billings, etc.

  – And… **Customer relationships**
Emphasis: Clarify the authority and responsibilities of Project Managers

- PMs are responsible to deploy the “project management control systems” (Primavera)
- PCMS tool supports PMs; they do not define what PMs do (3rd most important tool)
- Second most important PM tool is verbal communication
- Most important PM tool is in-person, face-to-face communication!
**Emphasis:** Utilize project-level risk management plans

- Effective “Issues” management is the primary determinant of Mortenson’s PM success
- Establishing plans for cost, schedule and quality management early in the project “clears the deck” to allow primary PM to focus on Issue Management
- Mortenson’s project management focus is Issue Management
Construction Industry perspective on Project Management success:

• Understand the Customer’s goals and priorities
• Start with a well-planned schedule and budget framework that support Customer goals and priorities
• Build a relationship that ensures clear communication of status of all project issues
• Actively management the issues on project to ensure the Customer’s goals are achieved
Peer Review Recommendations

Action Items

• Clarify the authority and responsibilities of PMs
• More broadly establish the use of PM Plans
• Implement team charters
• Complete project-level risk management plans
• Update training for PMs
• Explore PM core competencies
• Explore project management and other career tracks with Human Resources
• Develop and Implementation Plan for long-term sustained change
Peer Review Final Report

- Final Report issued in January
- Website for the Peer Review:
  http://www.dot.state.mn.us/cost-estimating/peer-review/index.html
Current Activities

• Facilitating the development of project management plans on four of the Ch. 152 Bridge projects
  – Included project-level risk management plans
• Exploring resource-loaded schedules and an earned value pilot project
• PM and portfolio management training for three key internal project managers
Current Activities (cont.)

• Funding basic project management training courses based on the PMBOK

• Developing a RFP for implementation
  – Focus on developing project management plan guidance and templates
  – Integrating stakeholder involvement and risk

• Identifying showcase projects to implement PM processes

• Encourage PMP certification
Thank You!

Questions?

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