Mn/DOT Scoping Process Executive Summary

Introduction

As directed by Bob Winter, Mn/DOT District Operations Division Director, the Pre-Construction Managers Group (PCMG) organized a working group to develop a model for scoping projects that would be used statewide. This document summarizes the results of that effort.

Poorly scoped projects tend to grow in scope as project delivery progresses. This results in rework for the functional groups, higher than programmed costs, and letting delays. These effects ripple through the entire program and have a deleterious effect on public trust.

The benefits of a good scoping process are well recognized and include:

- Alignment with performance goals & Context Sensitive Solutions
- Better cost estimates
- Less rework
- Predictable delivery schedule
- Greater public trust
- Improved coordination with partners
- Everybody on the team working toward the same goal

The objective of the PCMG scoping initiative was to incorporate the best practices currently used by Mn/DOT Districts to develop a process that is characterized by the following principles:

- Early
- Comprehensive
- Documented
- Has a Change Process

Main Features

The main features of the Scoping Process are a set of expectations for Mn/DOT Districts statewide, a process, and a set of tools.

Expectations

- Comprehensive scoping will be conducted before the project is programmed in the State Transportation Improvement Program (STIP).
- Consistent with the principles of Context Sensitive Solutions (CSS) … “A full range of stakeholders should be involved with transportation officials in the scoping phase. The purposes of the project should be clearly defined and consensus on the scope should be forged before proceeding.”
- Investigations will be sufficiently in-depth and decisions will be made so that the defined scope is complete and uncertainties are reduced.
- Districts will define a timeline for the planning-scoping-programming cycle to ensure that functional groups get enough time to adequately scope a project before the scope is finalized.
- The scope of the project will be well documented.
- Changes in the scope will be documented.

- The Scoping Report and Amendments will be approved by district management.
- Districts will modify the statewide process and tools to best fit their needs – provided the principles of early, comprehensive, documented, and having a change process are included.
- Scoping will be charged to the appropriate activity codes and project SP.

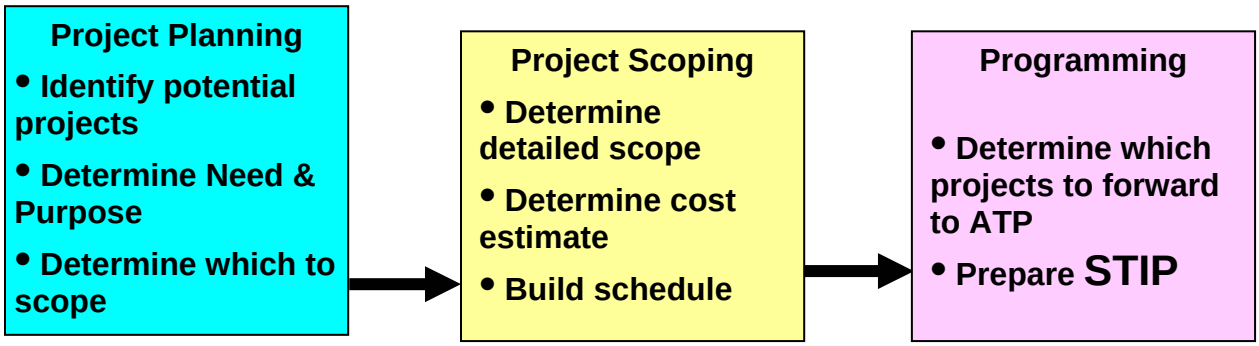
Implementation
The process is proposed for use statewide beginning January 1, 2007 for projects scheduled for fiscal year 2012. Districts that have not already scoped earlier projects may, of course, incorporate the process. Districts that are already in a planning/scoping cycle will need to determine how to phase in the process.

Process
The process describes the advancement of an identified transportation system performance-based need through planning to scoping and then to programming. The process is described in more detail below.

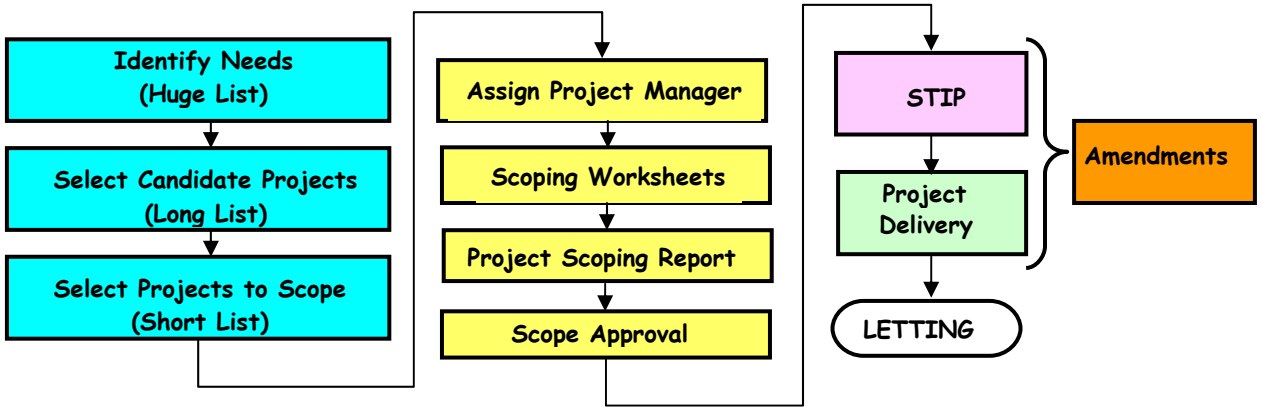
Tools
The statewide process uses various tools to document the process and scope. These include:
- Planning Needs List – to track potential projects during planning.
- Project Planning Report – to provide the project manager with some background regarding what was determined during planning.
- Early Notification Memo – to provide information and solicit early input on complex projects.
- Scoping Worksheets – to provide functional groups an outline of things to investigate during scoping and record their recommendations.
- Scoping Report – to use in its draft form as an outline for scoping meetings and in its final to document the scope.
- Scope Amendment – to ensure that proper consideration was given for the effects of a scope change and to document the change.
- Electronic Document Management System (EDMS) to aid in the process, and in document tracking and retention.

The Process
The Mn/DOT Project Planning – Scoping – Programming cycle begins with a Project Planning Phase in which transportation system performance needs are identified and prioritized. The most critical needs are carried forward into the Scoping Phase. During this period the full range of functional and stakeholder groups are queried to identify potential work to be done during the project. Decisions are made as to what will be done and what will not be part of the scope. These decisions are documented so that they can be conveyed to those who will work on the project. A cost estimate is also developed based on the scope. The scoped projects are then reviewed during the Programming Phase and either included in the STIP or HIP (10 Year Plan) or held for reconsideration the following year.

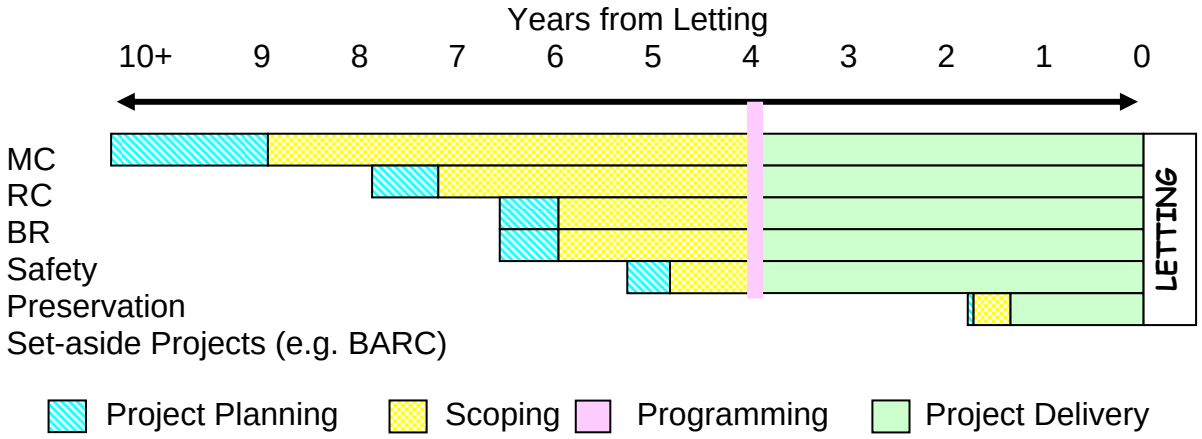
The goals of each phase are:



This simplified drawing depicts the major activities in each phase. A more detailed flowchart is available to show the full process.



The timeline for conducting project planning and scoping depends on the magnitude of the project. A generalized concept of the timeframes is presented in the following graphic. Districts should set their own specific timelines.



Project Planning Phase

Purpose: During the Project Planning Phase, performance-based measures and targets from the Statewide Transportation Plan or District plans are used to identify deficiencies in the transportation system. The deficiencies are prioritized so that the most important needs are addressed with the constrained funds available. The

performance-based need and purpose of the project are defined to guide scope development.

Process: The process consists of first gathering all the needs of the transportation system. Needs are identified based upon the Statewide Transportation Plan, district long range plans, Highway Systems Operations Plan, Strategic Highway Safety Plan and the performance measures and other operational objectives that are identified for the transportation system. The identified needs are prioritized within the given fiscal constraints through a series of steps to determine a list of needs that will become potential projects to be scoped for possible funding and inclusion in the STIP. Needs that are not selected for scoping during the prioritization process will be added to the list of needs for re-consideration the following year.

There are two paths that a project can take in the Project Planning Phase; one path is for Complex projects and the other for non-Complex projects. Complex projects are those that require additional work to be completed before an alternative is selected and scoping can begin. These may include projects that are controversial, require significant public involvement, layout development, or more extensive environmental review (EA, EIS). Non-Complex projects are all other projects that can proceed directly into scoping (only a small range of alternatives is appropriate to meet the need and purpose).

Every project selected during the Project Planning Phase has a Project Planning Report completed for it. This report documents the decisions that were made during the planning phase and provides a framework for the project manager during the scoping phase of the project. Each selected project is entered into PPMS and has an S.P.(s) obtained for it.

Tools: databases, judgment, Needs Spreadsheet, Project Planning Report, Plans

Notes: During this phase, time is charged to the appropriate system planning activity codes.

Project Scoping Phase

Purpose: The purpose of the Project Scoping Phase is to extensively investigate all potential issues that could affect the cost and schedule of a project. This is to be completed prior to programming so that by the time the project is in the STIP, cost increases and re-work due to changes are minimized. The scoping process is comprehensive; all functional groups and a full range of stakeholders will have the opportunity to provide input early in the project development process.

Process: For complex projects, alternatives are developed and analyzed, and a preferred alternative selected as per the guidance in the Mn/DOT Highway Project Development Process (HPDP). Following the selection of a preferred alternative for complex projects, and as the first step for non-complex projects, the Project Manager distributes scoping worksheets to functional and stakeholder groups. Issues are returned to the Project Manager who compiles them into a draft Project Scoping Report. A meeting is held to discuss the scope of the project, after which a final scoping report is prepared which summarizes the issues that will be included in the scope, as well as the issues that will not be included in the project along with the reason they were rejected. A cost estimate is prepared for the project and the

schedule is updated in PPMS. Finally, the scoping report is approved and signed, and is ready to be considered for programming and funding.

Tools: Early Notification Memo, Scoping Worksheets, Project Scoping Report

Notes: The timing of scoping and the detail needed will vary by type of project and by district. Larger, more complex projects may require considerably more time and effort to scope then less complex projects. During scoping, time is charged to the appropriate activity (environmental documents, layouts, scoping) and the project charge identifier.

Programming Phase

Purpose: The purpose of the Programming Phase is to decide which of the scoped projects will be submitted by the District to the Area Transportation Partnership (ATP) for possible funding and inclusion in the STIP.

Process: The scoped projects are prioritized a final time based on comparison of the predicted performance to the performance measures. Fiscal constraints are applied again to determine those projects that will continue forward. Selected projects will be submitted for consideration in the ATP process. Those that are not selected to be part of the ATP process, or those that are not selected for inclusion in the STIP will be put on the list for consideration for the following year.

Tools: District ATP process documentation, long range plans

Notes: The steps of the Programming Phase will vary by district. The steps below are a guide for the major milestones that should occur during this phase.

Scope Changes During Project Development

Purpose: Even if scoping is done well, there will be instances where conditions change or something that was not known during scoping will be discovered during the project development process, and the scope of the project will need to be modified. The scope amendment process allows the impacts of these proposed changes to be evaluated, documented and approved.

Process: The Project Manager determines the appropriateness of the change, evaluates the impacts of the proposed change in terms of cost, schedule, letting, and re-work by other sections. The impacts are documented in a Scope Amendment form which must be approved by District management (typically the ADE).

Tools: Scope Amendment Form

Notes: There may be situations where items need to be removed from the originally approved scope. These changes should also be evaluated for impacts to the cost and schedule.

The Committee

The following people participated on the scoping working group:

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