

Mn/DOT Scoping Process Narrative

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Scoping Process

Purpose: The purpose of the Mn/DOT Scoping Process is to establish a standard for quality in scoping projects. Scoping, done well, is completed early, looks at all aspects of the project comprehensively, aligns projects with Mn/DOT performance-based investment priorities and the FHWA/AASHTO advocated principles of Context Sensitive Solutions (CSS), is well documented and includes a process for making changes. The principal benefits of a good scoping process include improved stakeholder coordination and trust, better cost estimates, less rework, and a certainty that limited funds are focused on needed investments. Documents associated with the process will be managed using the Electronic Document Management System (EDMS) beginning January 1, 2007. Districts have been asked to incorporate the process into their project planning-scoping-programming cycle for 2012 projects.

Process: The Mn/DOT Scoping Process begins with a Project Planning Phase in which transportation system needs are identified and prioritized. The most critical needs are carried forward into the Project Scoping Phase, which can include work in the Environmental Documentation and Construction Limits Core Activities, as well as the Scoping Core Activity itself¹. During this period a full range of functional and stakeholder groups are queried to identify potential work to be done with the project. Decisions are made as to what will and what will not be part of the project scope. These decisions are documented so that they can be conveyed to those who will work on the project. A Total Project Cost Estimate is developed based on the scope. The scoped projects are then reviewed during the Project Programming Phase and either included in the STIP or 10-Year Plan [HIP] or held for reconsideration the following year.

Tools: The Mn/DOT Scoping Process utilizes a variety of forms to guide the process and document the decisions. These tools are listed with each step. The Scoping Process is meant to address issues in the Project Planning Phase and the Project Scoping Phase, and not replace other established project development processes. It simply provides a framework to be used for planning and scoping projects that supports and aligns with subsequent project development tasks. Cost estimating also ties closely with the Scoping Process. Cost estimates developed at various points are prepared based on the principles and processes outlined in the Cost Estimating/Cost Management Technical Reference Manual (CE/CM TRM).

Notes: While the expectation is that all districts will use the basic steps and principles of the scoping process, the details of how the steps are accomplished and the information in the documents need to be tailored to each district's organization. In addition, the personnel involved in the steps within the process will vary between districts. In particular, decision and approval authority will need to be determined at a district level.

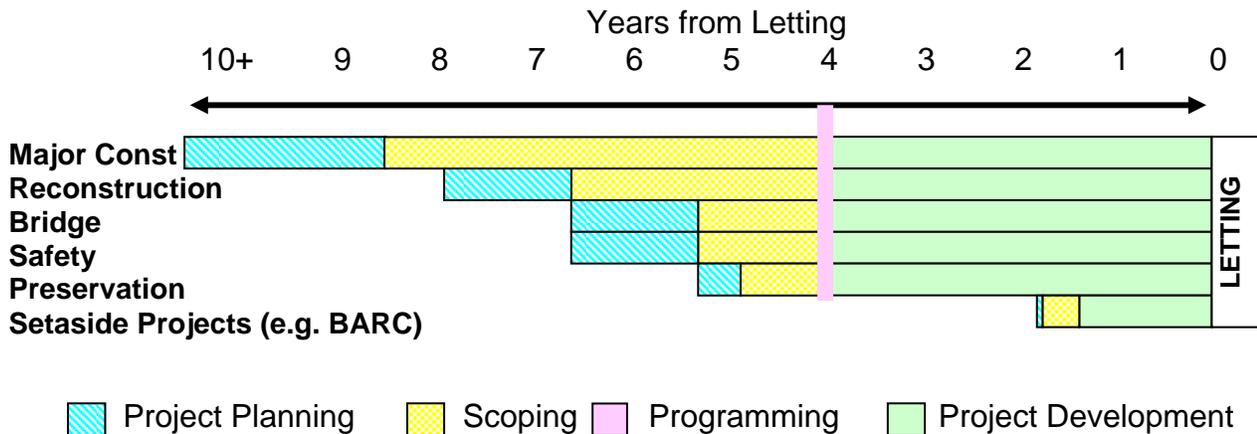
The Scoping Process is intended to be applicable to all projects, no matter the size or complexity. The difference in the application of the process on varying projects is in the timelines of when planning and scoping take place. Larger, more complicated projects will take longer to plan and scope than smaller, less complicated projects. For example, preservation type projects may only take one year to plan and scope, and could be accomplished in the year

¹ Note that draft recommendations of Productivity and Cost Management Task Forces would incorporate the Environmental Documentation Core Activity into the Scoping Core Activity and move some Construction Limits Activity Codes into the Scoping Core Activity--eliminating or at least minimizing the amount of scoping work in other Core Activities.

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before STIP submittal. However, an expansion project that requires an EIS will need to be started much earlier to allow time for alternative selection. For all projects, the goal is to have detailed scoping completed by the time the project is selected for funding and included in the STIP. One notable exception to this goal relates to projects that fall into set-aside categories. Set-aside projects are generally small projects that are not specifically identified in the STIP and require very little time to plan and deliver. Historically, these projects (and other projects like them) have not caused problems due to insufficient scoping, and therefore will not be specifically addressed with this scoping process. While documentation is important for all projects, districts should decide how they want to incorporate the various scoping documents into their current set-aside process.

Below is a sample timeline of when planning and scoping could be completed for different classifications of projects.



Districts should evaluate the timeframes for each type of project, and determine when project planning, scoping, and design should be started and how long the various phases will take to ensure that the overall goal of having scoping completed by programming is achieved.

1 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. When developing the purpose for each project, the principles of Context Sensitive Solutions (CSS) should be utilized to ensure that a full range of stakeholders have been included.

Process: The process consists of first gathering all the needs of the transportation system. These 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. These needs are prioritized by applying fiscal constraints through a series of steps intended to shorten the list of needs to those that will become projects and be considered for inclusion in the STIP or HIP. Needs that are not selected during the

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prioritization process are added to the list of needs for reconsideration for next year. The outcome of the Project Planning Phase may vary from projects that can be selected in the year just prior to STIP submittal and proceed directly in the Project Scoping Phase, to projects that are identified up to 10 years or more before letting and placed into the HIP, which can require significant work to select a preferred alternative prior to detailed scoping and inclusion in the STIP.

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 guidance to the project manager during the scoping phase of the project. A project must have an approved Project Planning Report for it to be considered for inclusion in the HIP or to move on to the Project Scoping Phase. 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 (Statewide, District, Modal, Operations, Safety), etc...

Notes: Throughout the Project Planning Phase, the over-arching guidance provided by the district long-range plans regarding performance-based needs is considered when defining and prioritizing potential projects.

1.1 Identify Needs

Purpose: First, to gather the information necessary to determine where problems lie. Then, for each deficiency in system performance, define the specific performance problem (i.e., reason that the deficiency has been identified.) This should be facilitated by the district planner, coordinating with each functional group for needs that fall within their specified area.

Process: Will vary by the district and the database used, but generally, the various areas (pavement, bridge, safety, etc.) are analyzed to determine deficiencies. Then, the gathered system performance data is analyzed by the district planner (working with the responsible functional group(s)) against state plan policies and/or performance measures and targets. For example, for a pavement project the need might be based on the current RQI value; for a bridge project the sufficiency rating; for an intersection, its identification as a high crash-cost intersections, etc... This step also includes annual district-plan check-in meetings as well.

Personnel: Planning Director, Functional PEs

Tools: Databases (TIS, HPMA, Hydinfra, Pontis), functional group input, Plans (Statewide, District, Modal, Operations, Safety), etc...

Notes: The performance need is different from the need statement that is included with environmental documentation—it is the quantifiable deficiency in performance that was used to identify the need.

1.2 Compile List of Needs = Needs List

Purpose: To compile in one list all the deficiencies gathered by all groups during the analysis of the system performance.

Process: The categorized needs from the planners and other functional groups are combined into one spreadsheet/database.

Personnel: Planning Director

Tools: Needs Spreadsheet

Notes: By combining into one list, all needs that have been identified by planning and the functional groups can be prioritized on a district-wide basis.

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1.3 Define Project Concept

Purpose: In the context of state and district plan performance-based needs, to begin to sort the needs and formulate potential projects that could address those needs.

Process: The needs that have been compiled from all the functional groups are sorted. Individual needs that could be addressed under the same project are grouped together. At this time, assumptions are made as to a preliminary fix and cost for each of the needs.

Personnel: Planning Director, Functional PEs

Tools: Needs List

Notes: By assuming a preliminary fix and a cost, the Needs List can be pared down to a more manageable list that will be further analyzed.

1.4 Apply Fiscal/Other Constraints

Purpose: To apply constraints to the Needs List to narrow down to those needs that will be further analyzed as potential projects. Constraints might include fiscal constraints, personnel constraints, political constraints, etc.

Process: Varies by district, but will generally consist of the designated district decision makers meeting to select those potential projects that best meet the goals and priorities of the district and state, within the estimated resource limits. The criteria used will be developed by each district.

Personnel: Planning Director, other district personnel

Tools: Needs Spreadsheet

Notes: Needs that are not selected will be added to the list for consideration in the following year. A draft Project Planning Report can be created for projects that do not make it to the Long List if the district wants to maintain some record of the general concept discussed for a potential project, for use in a future year. See Step 1.10 for more information.

1.5 Compile List of Projects = Long List

Purpose: To compile the projects that were selected in the previous step into the "Long List" of those that will be further analyzed.

Process: The Planning Director (or other) compiles the list of projects that were selected in the previous step.

Personnel: Planning Director (or other)

Tools: Needs Spreadsheet

Notes: None

1.6 Define Purpose

Purpose: To define a specific goal to achieve to correct the identified performance need.

Process: For each need on the Long List, the purpose the potential project would achieve is defined. This purpose should be based on a number of criteria, including future plans for the corridor, fiscal constraints, district long range plans, and political environments.

Personnel: Varies by district

Tools: None

Notes: A well defined purpose (in conjunction with a well defined need) will aid in the development of alternatives.

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1.7 Identify Alternatives

Purpose: Determine the fixes that could meet the need and purpose of the proposed project within the context of resources anticipated to be available.

Process: The functional group that identified the deficiency will take the lead to determine those alternatives that could potentially correct the deficiency. More than one alternative may meet the need and purpose of the proposed project. At this point, a draft version of the Project Planning Report could be started, to provide documentation on what the cost estimate range developed in the next step is based. Any major items that would significantly impact the project cost should be identified.

Personnel: Varies by district

Tools: None

Notes: When project scoping commences, the preferred alternative will be selected.

1.8 Develop Cost Estimate Range

Purpose: Create the planning cost estimate range for each project.

Process: See Cost Estimating/Cost Management Technical Reference Manual

Personnel: District Cost Estimator

Tools: CE/CM TRM

Notes: This cost estimate range is based only on the need that placed the project onto the list, plus other significant items identified in the previous step. At this time, it should not include "add-ons" for other work that could be done with the project. This estimate range should provide an idea of the cost scale of the project, but is not intended to be all-inclusive of other costs associated with the project.

1.9 Apply Fiscal/Other Constraints

Purpose: To narrow down the projects from the Long List to those that will be carried forward into project scoping or entered into the HIP.

Process: Varies by district, but will generally consist of designated district personnel meeting to select those projects that best meet the priorities and goals set by the district.

Personnel: District Planning Director, other district personnel

Tools: Needs Spreadsheet

Notes: This list will include slightly more projects than can be potentially funded. This helps to ensure that there are enough projects from which to select when programming occurs. Projects that are not selected will be put on the list for consideration the following year.

1.10 Draft Project Planning Report (if needed)

Purpose: For projects not selected for inclusion in the Short List, a draft Project Planning Report (PPR) can be created. By creating a draft PPR, the district can capture any initial concepts or ideas that might have been discussed for a potential project, and document the basis for the rough cost estimate range that was developed after the Needs List.

Process: The Planning Director decides which projects should have a draft PPR created and completes the document.

Personnel: Planning Director

Tools: Project Planning Report

Notes: A draft Project Planning Report does not need to be completed for all projects that don't make it to the Short List, but only for those that the district wants to maintain

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some record of the general concept discussed for a potential project, for use in a future year.

1.11 Compile List of Projects = Short List

Purpose: To compile the list of potential projects that were selected in the previous steps into the "Short List" of those that will be continue on and receive S.P.'s and be added to PPMS.

Process: The Planning Director (or other) compiles the list of projects that were selected in the previous step.

Personnel: Planning Director (or other)

Tools: Needs Spreadsheet

Notes: None

1.12 Create project in PPMS, Obtain S.P.

Purpose: To create the project in PPMS so that an S.P. can be obtained and time can begin to be charged to the specific project.

Process: Planning (or other) provides the project information for the projects on the Short List to the district PPMS coordinator. Planning will code each project to its primary state plan policy and identify known secondary project policy objectives (e.g., preservation, safety, congestion relief). The coordinator then creates the project in PPMS and obtains S.P.(s) for each project.

Personnel: District PPMS Coordinator, ADE (or other)

Tools: None

Notes: The project schedule is based on a default schedule; the schedule, cost estimate, and details of the project in PPMS will be refined at the end of project scoping.

1.13 Develop Project Planning Report

Purpose: To document decisions made regarding the project during the Project Planning Phase. Completion of the Project Planning Report allows the project to proceed through the gate into either the HIP or the Project Scoping Phase.

Process: A Project Planning Report (PPR) is completed for each project that is included in the Short List. This form is completed by the district personnel responsible for the Project Planning Phase, usually the planning section. The report is recommended by planning (or other) and approved by the ADE (or other).

Personnel: Varies by district

Tools: Project Planning Report

Notes: The Project Planning Report will be given to the Project Manager and will be used as a framework for project scoping. It will also help in determining when project scoping should be started for a specific project, based upon the type of work that is proposed. The PPR should include some discussion of the risk involved in the project. See the Cost Estimating/Cost Management Technical Reference Manual for a discussion on risk and contingency.

1.14 Letting Planned and More Than 5 Years Out?

Purpose: Evaluate whether projects are ready to proceed directly into alternative development or are destined for inclusion in the HIP. This will allow districts to select near-term and long-term projects during their yearly project selection cycle.

Process: The Planning Director evaluates whether the project is planned for letting more than five years from the current year. If it is, then the project is included in the next

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iteration of the HIP. If is currently within five years of proposed letting, the project should proceed directly into alternative selection and then on to detailed scoping.

Personnel: Planning Director

Tools: None

Notes: An approved Project Planning Report must be completed for a project before it can be included in the HIP.

1.15 Highway Improvement Plan (HIP)

Purpose: List those projects that are identified, but planned beyond the STIP timeframe.

Process: As described by other planning processes.

Personnel: Planning Director

Tools: None

Notes: An approved Project Planning Report must be completed for a project before it can be included in the HIP.

2 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 in that a full range of functional and stakeholder groups has the opportunity to provide input – including the results of work performed as part of the Environmental Documentation and Construction Limits Core Activities² - early in the project development process.

Process: The process begins with the assignment of a Project Manager to every project on the Short List as identified at the end of the Project Planning Phase. The Project Manager then leads the project through the development of alternatives and selection of the preferred alternative. Detailed scoping begins after the selection of the preferred alternative, when the Project Manager distributes the scoping worksheets to functional groups and communicates with other stakeholders. 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 both the issues that will be included in the scope and the issues that will not be included in the scope along with the reason they were rejected. A Baseline Cost Estimate is prepared for the project and the schedule is updated in PPMS. Finally, the Project Scoping Report is approved and the project passes through the gate to be considered for programming and funding.

A number of documents are created and used in the Project Scoping Phase. Templates for documents are located in EDMS. These documents can be created, stored, and distributed from EDMS, maximizing the effectiveness of managing these documents.

Personnel: Project Manager – Leads Project Scoping Phase, other district and C.O. personnel involved as needed

Tools: Scoping Worksheets, Project Scoping Report, HPDP, CE/CM TRM

² Note that draft recommendations of Productivity and Cost Management Task Forces would incorporate the Environmental Documentation Core Activity into the Scoping Core Activity and move some Construction Limits Activity Codes into the Scoping Core Activity--eliminating or at least minimizing the amount of scoping work in other Core Activities.

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Notes: The timing of scoping and the detail needed will vary by type of project and by district. Larger, more complex projects will require more time and effort to develop alternatives, select a preferred alternative, and scope then less complex projects, and may require more of the Environmental Documentation and Construction Limits work to be completed before the Project Scoping Report can be done. However, the overall steps in the Project Scoping Phase are the same for all projects. In addition, from this point on in the scoping process, individual projects have been identified. Therefore, time used to scope projects needs to be charged to the appropriate project number and Scoping, Environmental Documentation or Construction Limits activities.

At a minimum, the scope of a project is considered final when the person in the district with scope approval authority signs the final Project Scoping Report. However, there are a number of other items that would be advantageous to be completed before the project goes into the STIP because they reduce the risk of future potential scope changes. Some of these other items that would ideally be completed prior to STIP submittal include the final geometric layout, design exception approval, preliminary construction limits, municipal consent, foundations, pavement type determination, materials design recommendation (MDR), and Traffic Management Plan. Again, these items are not required for a scope to be considered final, but are beneficial at reducing the unknowns for the project.

Steps:

2.1 Assign a Project Manager

Purpose: To assign a Project Manager that will lead the project through the remaining project development activities.

Process: Projects on the Short List are assigned a project manager by the ADE (or other) based on district philosophies, workloads, etc...

Personnel: ADE (or other)

Tools: None

Notes: None

2.2 Develop Alternatives

Purpose: To perform all steps necessary to analyze potential alternatives.

Process: Depends on the type of project. The Project Manager follows the HPDP to develop and analyze alternatives. For example, may include cost-effectiveness analyses, public involvement, traffic studies, plus work outside the Scoping Core Activity itself, such as environmental studies and soils/pavement analysis.

Personnel: Project Manager, District Functional Groups, CO Offices

Tools: HPDP, CSS

Notes: The amount of work required in this step will vary depending on the type of project. Enough work must be done so that a preferred alternative can be selected in the next step. The performance-based need and purpose that was defined in the Project Planning Phase guides the alternative development. For scoping, a more detailed project purpose should be developed using CSS principles by including a full range of stakeholders.

2.3 Develop Preferred Alternative

Purpose: To perform all steps necessary to select a preferred alternative that will be carried forward into detailed project scoping.

Process: Depends on the type of project. The Project Manager follows the HPDP to select the preferred alternative from the alternatives that were developed.

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Personnel: Project Manager, District Functional Groups, CO Offices

Tools: HPDP, CSS

Notes: The amount of work required in this step will vary depending on the type of project. The purpose that is defined for the project guides the selection of the preferred alternative. If Value Engineering (VE) has not yet been considered, a determination needs to be made as to whether VE is needed. If the total project cost--including design, construction and right-of-way costs--exceeds \$25 million, a formal value engineering study must be completed. More information is available in the HPDP or by contacting the Mn/DOT Value Engineering Coordinator.

2.4 Scoping Worksheets

Purpose: To complete detailed scoping for projects by supplying functional groups and other stakeholders with guidance and a tool to record issues for a given project.

Process: Project Manager distributes Scoping Worksheets to appropriate functional groups. Prior to distributing, the Project Manager fills out the "SP (TH) #", "Prj Mgr:", and "Prj Limits" in the header and the date that the form should be returned in the footer. The Project Manager should include the Project Planning Report, or some other general project information, in the distribution to the functional groups. The Project Manager should communicate with a full range of stakeholders using the appropriate means to contact them and solicit input. The functional groups review the proposed project and include any problems or issues on the form. Alternative solutions to address the issues should be developed and each should include a cost estimate which will be used when meeting to determine the scope. There should also be an assessment of the risk involved in various elements, in order to ascertain whether further investigation or contingency needs to be applied. Each functional group completes their scoping worksheet and returns it to the Project Manager by the date specified.

Personnel: Project Manager, District Functional Groups, CO offices, CE/CM TRM

Tools: Scoping Worksheets, databases, field observations

Notes: Project Manager should also set date and time for the scoping meeting. The Scoping Worksheets should be used as a guide to investigate issues; districts should feel free to make modifications as needed.

2.5 Compile Issues and Costs in Draft Project Scoping Report

Purpose: Compile issues received from all functional groups into one document in order to discuss and resolve the project scope.

Process: The Project manager completes a draft Project Scoping Report. It should be completed with all information known about the project at the time. Under "Proposed Project Elements", the Project Manager should compile all issues and cost estimates from the functional group worksheets.

Personnel: Project Manager

Tools: Scoping Worksheets, Project Scoping Report

Notes: The issues should be grouped by category (e.g., driving lanes, shoulder, roadside) and not by the functional group that submitted them. This will allow overlapping issues to be discussed at the same time during the scoping meeting. The Project Manager should take time at this point to ensure that responses are complete, and begin action on any items that need additional work prior to the scoping meeting.

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2.6 Issue Resolution and Agreement on Scope

Purpose: To decide on those items that will/will not be included in the scope of the project.

Process: The Project Manager calls a meeting with the appropriate personnel to discuss all items that were compiled into the draft Project Scoping Report. Issues that will be included in the scope are discussed and agreed upon. These decisions are based on fiscal constraints, district and state policies and priorities. The decisions should also be made with the primary performance-based purpose of the project in mind. If there is disagreement between functional groups as to those items to include in the scope, the ADE (or other) has decision authority. The Project Manager facilitates the meeting and makes sure that all decisions are recorded. These should include both items that are in the scope of the project and those that are not.

Personnel:

- Project Manager organizes and facilitates meeting
- Functional Groups, ADE participate in meeting
- ADE has final decision authority if there is a conflict between functional groups

Tools: Project Scoping Report

Notes: Depending on the complexity of the project, more than one scoping meeting may be necessary. If appropriate, FHWA concurrence on the scope should be obtained.

2.7 Prepare Baseline Cost Estimate

Purpose: Prepare the Baseline Cost Estimate that will be used when the project is submitted for the STIP.

Process: See Cost Estimate/Cost Management Technical Reference Manual

Personnel: District Cost Estimator, Project Manager

Tools: CE/CM TRM

Notes: If Value Engineering (VE) has not yet been considered, a determination needs to be made as to whether VE is needed. If the total project cost--including design, construction and right-of-way costs--exceeds \$25 million, a formal value engineering study must be completed. If multiple projects are tied together for letting, then the total combined project cost must be compared against the \$25 million threshold. Additional information is available in the HPDP or by contacting the Mn/DOT Value Engineering Coordinator.

2.8 Refine Project Schedule

Purpose: Update the project schedule and activities to reflect the information known about the project after scoping is complete.

Process: The Project Manager works with the district PPMS coordinator and responsible functional groups to update activities, durations and due dates in the project schedule

Personnel: Project Manager, PPMS Coordinator

Tools: None

Notes: This step ensures that the schedule accurately reflects the estimated time needed to complete the remaining project development activities. It also is a check to make sure that the project can be delivered by the proposed letting date.

2.9 Finalize Project Scoping Report

Purpose: To document the decisions made regarding the scope of the project and to make sure that the Project Scoping Report is complete prior to approval.

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Process: Based on the outcome of the scoping meeting(s), the Project Manager revises the Project Scoping Report. Items that will be included in the scope of the project should be listed under “Proposed Project Elements” and issues that will not be included in the scope should be listed under “Work Items Considered but Rejected” along with the reason for excluding it from the scope. The Project Manager reviews the Project Scoping Report for completeness. This includes the Baseline Cost Estimate, typical sections, issues relating to project delivery, commitments made, the completed geometric design table, and any other supporting documentation necessary.

Personnel: Project Manager

Tools: Project Scoping Report

Notes: None

2.10 Approve Project Scoping Report

Purpose: To have the scope of the project formally approved so that costs and scope are centrally controlled on a district-wide basis. Completion of a Project Scoping Report allows the project to proceed through the gate to be eligible for inclusion in the STIP.

Process: The Project Manager signs the final Project Scoping Report and submits to the ADE (or other) for approval and signature. If the scope is not approved, the issue resolution, cost estimates and schedule refinement steps will continue to cycle until the scope is approved. The signed scoping report is then returned to the Project Manager and is stored in EDMS.

Personnel: ADE, Project Manager

Tools: Project Scoping Report

Notes: This step indicates the final step in the scoping process. Any changes that occur to the scope of the project after this point must be approved through the Project Change Process.

3 Programming Phase

Purpose: The purpose of the Programming Phase is to decide which of the scoped projects will be submitted to the ATP for possible funding and inclusion in the STIP.

Process: The scoped projects (collectively) are prioritized a final time based on comparison of the predicted performance to the performance measures, generally as part of the District Plan check-in process. 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.

3.1 Compile List of Approved Scoped Projects

Purpose: To gather data on all scoped projects so that final prioritization can occur.

Process: Planning (or other) gathers information on all approved scoped projects, including updated cost estimates.

Personnel: Planning Director

Tools: None

Notes: None

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3.2 Analysis of Effect on Performance Trends

Purpose: The predicted performance of the scoped projects is analyzed and compared to the performance goals set in the district long range plans. This will give an indication to the district of the overall effect of their decisions and how they relate to the district's long term goals.

Process: Varies according to the type of project; pavement projects are analyzed in HPMA to predict future condition of road system based on selected projects; other project types are compared to the performance measures laid out in the district long range plans.

Personnel: Planning Director, others

Tools: HPMA, district long range plans, Highway Systems Operations Plan, Strategic Highway Safety Plan, etc...

Notes: This step provides the district with another tool in helping to guide the decision making process as to those projects that will be submitted for funding. It serves as a recheck to make sure that the program will be aligned with performance goals.

3.3 Fiscally constrained list aligned with performance goals/ATP Process

Purpose: Since more projects may have been scoped than can be funded in the current year, the district may need to choose the projects that will be submitted for consideration in the ATP process.

Process: The district prioritizes the scoped projects and selects those that will be submitted to the ATP process. Prioritization should be based both on fiscal constraints and the performance trend analysis in order to align decisions with the district's performance goals. The ATP process is carried out by the district and Central Office.

Personnel: Planning Director, OIM, others

Tools: None

Notes: Projects that are not selected through the ATP process are put back on the list for consideration the following year.

3.4 STIP

Purpose: Project selected through ATP process are listed in the STIP.

Process: As described elsewhere.

Personnel: Planning Director, OIM, others

Tools: None

Notes: From this point forward, any changes to the projects included in the STIP will need to be evaluated using the Project Change Process.

4 Project Change Process

Purpose: No matter how well scoping is done, there will be instances where conditions change or something that was not known during scoping will be discovered after the Project Scoping Report has been signed. There is a fundamental difference between those project changes that cause a change to the purpose and need of a project and those project changes that don't affect the purpose and need. If a change to the project results in a change to the purpose and need of the project, it is, in essence, a new project. Districts should re-scope the project based on the new purpose and need and establish a new Baseline Cost Estimate. This new project should then re-compete for funding based on the new purpose and need and project scope. If a proposed change to the project still falls within the original purpose and need, these changes can be considered project changes alone. These instances will require a Project Change Request Form be completed and

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approved. In addition, project changes may also cause changes to the program. The Program Evaluation Form allows the impacts of these proposed changes to be evaluated, documented and approved. The following steps apply to project changes that fall within the original project need and purpose. Using the Project Change Process ensures that changes are communicated to everyone in the district that might be affected by the change.

Process: Each district must determine how they want to handle changes to a project. A number of tools are provided for districts to use, whether the proposed change is a change to the project only, a change to the program, or both. The forms provided are tools that can be used by districts to evaluate the possible impacts from a project and/or program change, and to communicate those changes with the rest of the district. In general, the process involves the Project Manager determining the appropriateness of the change, and then evaluating the impacts of the proposed change in terms of cost, schedule, letting, and re-work by other sections. The impacts are documented in a Project Change Request Form and/or Program Evaluation Form which must be approved by the ADE (or other).

Different forms may be used in different situations; for example, if a proposed project change does not cause a change to the program (i.e., no change in letting date or no significant cost increase), then the Project Change Request Form alone could be used. If a proposed project change also causes a change to the program, then the change is not approved until the program changes are also approved, so both the Project Change Request Form and Program Evaluation Form should be used.

Tools: Project Change Request Form, Program Evaluation Form, CE/CM TRM

Notes: Below are a few minimum criteria to be used to evaluate whether a change in the project will require the completion of a Project Change Request form:

- Any element that causes the Baseline Estimate to deviate by \$_ (or _%) from what is shown in the approved Project Scoping Report (*these values should be determined by the district*)
- Causes a change in letting date or FY
- A change in major project elements (e.g., typical section, length)
- A change in project termini

Districts need to review and determine what other instances may require approval through the Project Change Process. In addition, districts must determine who within the district has review and approval authority for both project changes and program changes.

Steps:

4.1 Determine if there is a Scope, Cost, or Time Change

Purpose: To evaluate the proposed project change in regards to whether it affects the scope, cost or schedule of the project.

Process: The Project Manager evaluates the newly discovered issue to determine whether it exceeds the minimum criteria set by the district to require a formal Project Change Request.

Personnel: Project Manager

Tools: CE/CM TRM

Notes: If the proposed change does not exceed the criteria for a project change request, the Project Manager should still evaluate the impacts of the proposed change; however, a formal Project Change Request is not needed.

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4.2 Determine if there is a Purpose and Need Change

Purpose: To evaluate the proposed project change in regards to whether it is a change to the purpose and need of the project.

Process: The Project Manager evaluates the newly discovered issue to determine whether it results in a change to the purpose and need of the project. If the proposed change in the project falls within the existing purpose and need, then the Project Change Process can be used. If it is a purpose and need change, the project should be considered a new project and have a new Project Scoping Report and Baseline Cost Estimate prepared.

Personnel: Project Manager

Tools: None

Notes: None

4.3 Complete Project Change Request Form

Purpose: To begin the analysis of the impacts of the project change.

Process: The Project Manager completes a draft Project Change Request Form. The form includes potential impact areas that need to be evaluated.

Personnel: Project Manager, functional groups

Tools: Project Change Request Form

Notes: The following steps describe the areas in the Project Change Request Form in more detail. Also, depending on the complexity of the issue, this step may require involvement of the original scoping committee to evaluate.

4.3.1 Circulate Proposed Project Change for Review

Purpose: To ask functional reviewers about implications of proposed project change.

Process: The Project Manager circulates a brief description of proposed change to key scoping worksheet reviewers.

Personnel: Project Manager, functional groups

Tools: Project Change Request Form

Notes: This is an essential step to ensure the implications of the project change are understood.

4.3.2 Review Effects on Schedule

Purpose: To check whether the proposed project change will impact the schedule and letting date of the project. This includes a check on whether re-work is needed by previous project development stages.

Process: The Project Manager works with the functional units to determine whether they can still complete their work according to the current project schedule. If not, the Project Manager must check with the Planning Director (or other) whether a new letting date can be accommodated.

Personnel: Project Manager, Planning Director, functional groups

Tools: Project Change Request Form

Notes: None

4.3.3 Review Effects on Environmental Documentation

Purpose: To determine whether the proposed project change will impact the environmental documentation for the project.

Process: The Project Manager works with the environmental documentation group to determine whether the change will affect the environmental documentation (amendment, higher level document, or no change).

Personnel: Project Manager, environmental documentation personnel

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Tools: Project Change Request Form

Notes: The impact to the schedule should be evaluated as well.

4.3.4 Review Effects on Public Commitments

Purpose: To evaluate whether the proposed project change will change perceptions or expectations of the public regarding the project.

Process: The Project Manager must evaluate the proposed project change against previous public involvement and whether expectations of the project might be impacted.

Personnel: Project Manager, functional groups

Tools: Project Change Request Form

Notes: This is an important step because it can directly impact the credibility of Mn/DOT in the eyes of the public or other local partners. A plan to deal with this issue should be developed so that negative impacts can be minimized.

4.3.5 Review Effects on Construction Limits and Subsequent R/W Delivery

Purpose: To determine whether the proposed project change will change construction limits and affect the deliverability of R/W.

Process: If construction limits have been established for the project, the Project Manager must determine whether the proposed scope change will affect the construction limits. If they do, and R/W has started work on the project, the Project Manager must work with R/W to determine what this change does to their schedule and the overall impact to the project schedule.

Personnel: Project Manager, R/W Engineer

Tools: Project Change Request Form

Notes: Even a minor change in construction limits can set the R/W process back significantly. This should be kept in mind when proposing a project change that changes construction limits after the R/W process has started.

4.4 Complete Program Evaluation Form

Purpose: To determine impacts to the program due to the project change and to obtain approval for those changes.

Process: The Project Manager and Planning Director complete the form to document and obtain approval for proposed program changes

Personnel: Project Manager, Planning Director, ADE (or other)

Tools: None

Notes: If the proposed project change does NOT cause a change to the district program, this document does not need to be completed. If the project change would cause a change to the program, then the project change is not approved until the Program Evaluation Form is approved as well. For projects with a Baseline Cost Estimate greater than \$2 million, if the new Total Project Cost Estimate exceeds the Baseline Cost Estimate, the project must be reviewed by the Transportation Program Committee (TPC). The following steps describe some areas of the form in more detail.

4.4.1 Recommend Strategies to Accommodate Proposed Change in Program

Purpose: If the project change results in a higher cost estimate, the impact of the change to the construction program must be evaluated to determine whether funds are available to accommodate the increase.

Process: The Project Manager meets with the District Planning Director (or other) and informs them of the proposed increase in the cost estimate. The planning director evaluates this increase and determines whether funds are available.

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Personnel: Project Manager, Planning Director

Tools: Program Evaluation Form

Notes: If funds are not available, the importance of the project change needs to be weighed against importance of other commitments in the construction program. Making the choice to do one thing means that the district must choose to not do something else.

4.4.2 Evaluate Potential Changes to STIP

Purpose: To determine whether a revision or amendment needs to be made to the STIP.

Process: The District Planning Director (or other) evaluates the proposed project change as to whether a formal STIP amendment or modification is needed.

Personnel: Planning Director

Tools: Program Evaluation Form

Notes: None

4.5 Obtain Approval for Project Change

Purpose: Formally obtaining approval for the project change provides a measure of control to the district and a way to track project changes on a district wide basis.

Process: The Project Manager signs the Project Change Request Form and/or the Program Evaluation Form and submits to the ADE (or other) for review and approval. For projects with a Baseline Cost Estimate greater than \$2 million, if the new Total Project Cost Estimate exceeds the Baseline Cost Estimate, the project must be reviewed by the Transportation Program Committee (TPC).

If the project change is approved, it should be added to the "Scope Changes" box on the first page of the Project Scoping Report and the Project Change Request Form added as an appendix to the end of the report. The schedule should be updated in PPMS and the form distributed to the appropriate functional groups so that the change is incorporated into the project.

If the project change is not approved, then the project scope stays as was originally approved. The Project Scoping Report should be amended, under "Work Items Considered but Rejected", to include the rejected project change. If the project can be constructed with the original scope, then project development activities continue. If the project is no longer viable in its original form, it should be sent back to the beginning of the planning phase to be re-scoped and considered for funding in a later year.

Personnel: Project Manager, ADE (or other)

Tools: Project Change Request Form and/or Program Evaluation Form

Notes: If there is more than one Project Change Request Form for a project they should be sequentially numbered.

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Appendix

The Appendix contains tools that can be used by the districts to support the Scoping Process. These tools are not required, but are offered to help the districts in implementing specific areas of the scoping process.

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Communication Summary Tool

*this table can be filled out by each district to aid them in making sure the correct people are receiving project documents related to the scoping process

Document	Distribution List	Distribution Method	Storage
Project Planning Report	All PEs ADE – Proj. Development	Project Manager e-mails EDMS reference to final signed document	Scan signed form into EDMS (as pdf); Original signed copy should be stored in project file
Project Scoping Worksheets	As listed on first page of worksheets	Project Manager e-mails EDMS reference of working document to personnel completing worksheets	
Project Scoping Report	All PE's All ADE's All SE/GE2/GET All ES/SES	Project Manager e-mails EDMS reference of final signed report to distribution list	Scan signed form into EDMS (as pdf); Original signed copy should be stored in project file
Project Change Request Form and Program Evaluation Form	All PE's ADE – Proj Development ADE – Maintenance	Project Manager e-mails EDMS reference of final signed report to distribution list	Scan signed form into EDMS (as pdf); Original signed copy should be stored in project file

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Personnel Involvement Summary

*these tables can be completed by each district to summarize who has responsibility for each step, who has decision making authority for each step and who has approval authority for designated steps. The personnel listed in each step are suggestions only and can be changed to better reflect the structure of the district.

Project Planning Phase				
Step		Who has Responsibility?	Who has Decision Making Authority?	Who has Approval Authority?
1.1	Identify Needs	Bridge PE - <i>Bridge needs</i> AME - <i>Maint. needs not covered by others (i.e., frost heaves, slope failures, snow trap areas, etc.)</i> Management - <i>Community needs/inputs</i> Traffic PE - <i>Safety needs</i> Materials PE - <i>Pavement Needs</i> Hydraulics Engr - <i>Storm sewer / Mjr Culvert/ Pond Maint.</i> Planning Director - <i>Access issues, Planning studies</i>		
1.2	Compiled List of Needs = Needs List	Planning Director		
1.3	Define Project Concept	Planning Director with input from personnel in Step 1.1		
1.4	Apply Fiscal/Other Constraints	Planning Director	Functional PEs/Mgmt	
1.5	Compile List of Projects = Long List	Planning Director		
1.6	Define Purpose	Person who proposed the project (in 1.1)		
1.7	Identify Alternatives	Same as 1.6		
1.8	Develop Cost Estimate Range	Cost Estimator		
1.9	Apply Fiscal/Other Constraints	Planning Director	Functional PEs/Mgmt	
1.10	Draft Project Planning Report (if needed)	Planning Director		
1.11	Compile List of Projects = Short List	Planning Director		
1.12	Create Project in PPMS, Obtain S.P.	PPMS Coordinator		
1.13	Develop Project Planning Report	Planning Director	Planning Director - Rec's for approval	ADE – Project Development
1.14	Letting Planned and More Than 5 Years Out?	Planning Director		
1.15	Highway Improvement Plan (HIP)	Planning Director		
Notes:	District Planning Director leads the entire Project Planning Phase			

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Project Scoping Phase				
Step		Who has Responsibility?	Who has Decision Making Authority?	Who has Approval Authority?
2.1	Assign Project Manager	ADE – Project Development		
2.2	Develop Alternatives	Led by Project Manager		
2.3	Develop Preferred Alternative	Led by Project Manager		
2.4	Scoping Worksheets	Project Manager	Functional Groups	
2.5	Compile Issues into Draft Project Scoping Report	Project Manager		
2.6	Issue Resolution and Agreement on Scope	Project Manager	Functional Groups -- <i>Provide Rec's</i>	ADE – Project Development
2.7	Prepare Baseline Cost Estimate	Cost Estimator with Project Manager		
2.8	Refine Project Schedule	PPMS Coordinator with Project Manager		
2.9	Finalize Project Scoping Report	Project Manager		
2.10	Approve Project Scoping Report	ADE – Project Development	ADE – Project Development	ADE – Project Development

Notes: Project Scoping is overseen by the Project Manager
 Project Development ADE has ultimate authority for scope approval

Programming Phase				
Step		Who has Responsibility?	Who has Decision Making Authority?	Who has Approval Authority?
3.1	Compile List of Approved Scoped Projects	Planning Director		
3.2	Analysis of Effect on Performance Trends	Materials PE -- Pavement Performance Measures Planning Director -- other Performance Measures		
3.3	Fiscally constrained list aligned with performance goals/ATP Process	Planning Director, District Members and Staff of ATP Board	ADE – Project Development - <i>Screens & Forwards Rec's</i>	District Engineer
3.4	STIP	Planning Director, OIM	OIM	OIM

Notes: Programming is led by District Planning Director

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Project Change Process			
Step	Who has Responsibility?	Who has Decision Making Authority?	Who has Approval Authority?
4.1	Determine if there is a Scope, Cost or Time Change	Project Manager with input from Functional Area PEs evaluate if it is a change in the project	
4.2	Determine if there is a Purpose and Need Change	Project Manager with input from Functional Area PEs evaluate if it is a change in the purpose & need	
4.3	Complete Project Change Request Form	Project Manager with input from Functional Area PEs, Planning Dir., and Dist. Cost Estimator	
4.3.1	Circulate Proposed Project Change for Review	Project Manager	
4.3.2	Project Schedule/Rework Review	Project Manager with input from Programming & Project Development PE and Func PEs	
4.3.3	Environmental Document Review	Project Manager with input from Environmental Coordinator	
4.3.4	Public Commitment Review	Project Manager with input from Management	
4.3.5	Const. Limit & R/W Review	Project Manager with input from Design & R/W	
4.4	Complete Program Evaluation Form	Project Manager and Planning Director	Planning Director - <i>Rec's for Fund availability</i>
4.4.1	Recommend Strategies to Accommodate Proposed Change in Program	Planning Director	
4.4.2	Evaluate Potential Changes to STIP	Planning Director	
4.5	Obtain Approval for Project Change	ADE – Project Development	ADE – Project Development – <i>Rec's for approval</i> District Engineer

Notes: Project Change process is led by the Project Manager
 Project changes are not approved until the Program Evaluation Form is approved (if needed)