

Cost-Effectiveness Policy

Contact

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Web site: [Planning and Programming](#) – Benefit/Cost Guidance

Purpose

The Department's policy on cost-effectiveness was first established in the 2003 edition of the Minnesota Statewide Transportation Plan. The intent of the Cost-Effectiveness Policy is to make the best overall investment decisions based upon a balanced consideration of both the quantitative cost-effectiveness goals and qualitative goals outlined below.

For projects that meet FHWA criteria mandating a value engineering (VE) study, performing a cost-effectiveness evaluation as outlined in the memorandum will not qualify as a VE study. VE studies, which are typically performed during the project development/design process once the preferred alternative layout has been selected, are completed using a methodology different from the process outlined in this memorandum for cost-effectiveness evaluations.

Threshold Criteria

All projects meeting the thresholds described below, with letting dates scheduled for SFY 2008 or later, will complete the analysis described here.

Any MnDOT project requiring an Environmental Impact Statement (EIS), an Environmental Assessment (EA), or an Environmental Assessment Worksheet (EAW) is subject to the provisions of this policy. The State EAW thresholds for trunk highway projects are listed below:

1. Construction of additional travel lanes on an existing road for a length of 1.6 or more kilometers (one or more miles).
2. Construction of a road on a new location over 1.6 kilometers (one mile) in length that will function as a collector roadway.
3. Addition of one or more new interchanges to a completed limited access highway.
4. Stand alone access consolidation or closure projects of more than 3.2 kilometers (2 miles) in length.

Note: 1, 2 & 3 above are from Minnesota Rules 4410.4300

<http://www.revisor.leg.state.mn.us/arule/4410/4300.html>, subpart 22, which establishes mandatory State Environmental Assessment Worksheet thresholds for highway projects.

Locally initiated projects with significant MnDOT participation (approximately \$1 million or more), that meet the thresholds outlined above are also subject to these requirements. The responsible governmental unit under the state rules shall be responsible for carrying out the analysis.

As part of quality assurance/quality control, the Office of Transportation System Management will review all cost-effectiveness assessments for EIS and EA projects.

Timing

A cost-effectiveness assessment will be carried out during the alternatives analysis phase of project development. This should be nearly concurrent with the development of the environmental document so that the information is available when the decision needs to be made. A cost-effectiveness analysis during this phase provides a framework for discussing the reasons for advancing a project, and a measure of how well each alternative meets the project mobility, safety and/or other performance objectives. It may also help the project proposer with “right-sizing” the solution to the problem.

The cost effectiveness analysis should be reevaluated if there are changes in the project that require an update or amendment to the environmental document.

Methodology

The cost-effectiveness evaluation is a three-step process as follows:

STEP 1: Benefit/Cost Analysis – Project alternatives should first be evaluated using a traditional benefit/cost analysis following the methodology described in *User and Non-User*

Benefit Analysis for Highways, AASHTO, September 2010. An abbreviated methodology is available at <http://www.dot.state.mn.us/planning/program/benefitcost.html>.

Projects are considered cost-effective if the present value of benefits exceeds the present value of the costs of implementing the project (a benefit/cost ratio greater than 1.0).

If project alternatives are advanced that have a benefit/cost ratio less than 1.0, then the cost effectiveness evaluation proceeds to STEP 2 and concurrently to STEP 3.

STEP 2: Best Value Assessment –

For projects within the scope of this policy (see Threshold Criteria section), this step asks the following questions:

- Are the project alternatives with the highest benefit/cost ratio being carried forward?
- Can the project alternatives be re-scoped to yield a benefit/cost ratio greater than 1.0?
- Is the project being evaluated an essential component of a larger project whose benefit/cost ratio exceeds 1.0?

The approval process is outlined below for cases when alternatives with lower B/C ratios are advanced. While it is desirable to meet the cost-effectiveness standards in STEP 1 or STEP 2, the qualitative measures outlined in STEP 3 are given equal consideration in decision making. Follow the approval process below and provide the quantitative and qualitative information necessary for decision making.

*i. When any **proposed alternative** moved forward in the draft environmental document has a benefit/cost ratio less than 1.0, approval is required by the District Engineer or Office Director and documented in the form of a memorandum sent to the project file.*

*ii. When the **preferred alternative** has been selected:*

- If the benefit/cost ratio is between 0.5 and 1.0, approval of the District Engineer or Office Director is required to proceed with development;*

- *If the benefit/cost ratio is less than 0.5, approval of the Transportation Program Investment Committee (Deputy Commissioner and Division Directors) is required to proceed with development.*

STEP 3: Social, Environmental and Community Goals and Business Impacts – For qualifying trunk highway projects, this step needs to be completed if the benefit/cost results from STEP 1 are less than 1.0.

The impacts of some projects are difficult to monetize. Projects may address, effect, or be affected by critical goals such as minimum accessibility to a transportation system or service, protection of an environmental asset, or specific regional or transportation system goals. In this step, identify any social, environmental, or community goals and business impacts critical to the project and document how the proposed improvement addresses or affects these goals, either positively or adversely. The critical goals should be identified in the Purpose and Need section of the environmental document. The Transportation Program Investment Committee will be responsible for approving projects that do not meet the criteria set forth in STEP 1 or STEP 2, and rely on STEP 3 criteria alone.

Prepared Statement

Results of the cost-effectiveness analysis should be summarized and reported in the Evaluation of Alternatives section of the environmental document, with a statement made clear in the text that the full analysis is available from the district project manager.

Agencies Involved

MnDOT; other agencies that initiate projects with significant MnDOT participation (see Threshold Criteria section.)

Guidelines / Regulations

Creator (Agency/Author)	Subject of guideline/regulation	Date
MnDOT/ Office of Transportation System Management	Benefit Cost Analysis Guidance	July, 2005

Planning & Programming



What is Planning and Programming?

MnDOT's Planning and Programming responsibilities consist of a range of activities. These include writing plans, conducting data analysis, reviewing performance outcomes, and managing the capital program.

Current Activities

MnDOT is updating Minnesota's State Aviation System Plan. The SASP is part of MnDOT's Family of Plans, which stem from the Minnesota GO 50-year Vision. [Review the public outreach plan and view the events calendar.](#)

MnDOT is seeking stakeholder feedback on a draft of the new project selection policy, required by Minnesota Laws 2017, First Special Session, Chapter 3, Section 124. [Learn more about the new project selection policy.](#)

MnDOT is undertaking the Advancing Transportation Equity initiative to better understand how the transportation system, services and decisions-making processes help or hinder the lives of people in underserved and underrepresented communities in Minnesota. Specifically, MnDOT wants to identify key actions that transportation agencies can take to make meaningful change. [Follow the project.](#)

Quick Links

- [MnDOT Performance Measures](#)
- [Family of Plans](#)
- [State Transportation Improvement Program \(STIP\)](#)
- [MnMap](#)
- [Transportation Capital Request Form](#)



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News & Notes

Our work doesn't stop once a plan is updated. The Family of Plans is where MnDOT and our transportation partners communicate what we plan to do. We identify how we will invest, what strategies to implement and specific activities to complete in order to make progress towards the Minnesota GO Vision. To learn more about our key activities visit Minnesotago.org.

Get Connected

Your questions, answered! The information you want to know about [Minnesota transportation and transportation funding](#).

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