



Corridors of Commerce DRAFT - Scoring and Prioritization Process

Patrick Weidemann

Director of Capital Planning and Programming

November 16, 2017

Project Purpose

To develop and implement a scoring and project prioritization process for the Corridors of Commerce program that complies with the revised law passed by the 2017 Legislature and signed into law.

Topics

- 2017 Legislative
- Proposed Draft Scoring Process
- Criteria Scoring Details
- Your Input
- Schedule

2017 Legislation

Available Funding

- The 2017 legislation provided a total of \$300 M in bonding for Corridors of Commerce.
- In addition, the legislation provided \$25 M in cash to the Corridors of Commerce program for each year of the FY 2018-2019 biennium.
- That legislation was a change in MnDOT's base budget, which means the \$25 M / year to Corridors of Commerce will continue unless changed by a future legislative session.

Available Funding

- MnDOT made the decision to program \$400 M for the next round of Corridors of Commerce project selections.
 - \$300 M in bonds
 - \$50 M in cash from the FY 2018-2019 biennium
 - \$50 M in cash from the FY 2020-2021 biennium
- If the 2020-2021 biennium cash is legislatively changed and is no longer available, MnDOT will cut \$50 M in projects from the selected program.

Project Eligibility Changes

- “Project construction work will commence within three years, or a longer length of time as determined by the Commissioner” [161.088 Subd #4 (4)]
- MnDOT is proposing that project construction work must be able to commence within four years of award of funding.

Project Eligibility Changes

- “For each project, the commissioner must consider all of the eligibility requirements under paragraph (a). The commissioner is prohibited from considering any eligibility requirements not specifies under paragraph (a).” [161.088 Subd #4 (5) d]

Project Selection Criteria Changes

- “The Commissioner must establish a process to identify, evaluate, and select projects under the program. The process must be consistent with the requirements of the subdivision and must not include any additional evaluation criteria.” [161.088 Subd 5 (a)]
- “Regional balance throughout the state” [161.088 Subd 5 (c) (d)] was added as an additional criteria to the original criteria that were already identified in law.

The Legislation Mandated Criteria

- Return on Investment
- Economic Impact
- Freight Efficiency
- Safety
- Regional Connections
- Policy Objectives
- Community Consensus
- Regional Balance



Proposed Draft Scoring Process

November 2017

Background

- This proposed scoring process is a **draft** and MnDOT is wanting your input to help refine and improve it.
- The legislation is very clear that MnDOT must use the eight criteria in law and may only use those criteria to evaluate and score corridors of commerce projects for funding.

Project Recommendations

- Project recommendations will be taken from the public, stakeholders, and other interest groups via an on-line submission process, once the Project Scoring and Prioritization Process has been adopted.
- MnDOT itself will not be submitting project recommendations for scoring consideration.
- All submitted projects which meet the eligibility criteria of the law must and will be scored.

Criteria Point Scoring

- MnDOT is proposing to award points for seven of the eight legislative criteria.
- The eighth criteria, Regional Balance, has been developed as a funding division criteria that will be applied to the projects after they have been scored and ranked.

Criteria Point Scoring

- The scoring system utilizes the adjacent point system.
- Other than Return on Investment and Economic Impact, all the other scoring criteria have equal points.
- The two variations are explained under Economic Impact details.

Criteria	Total Points Available
Return on Investment	140
Economic Impact	50
Freight Efficiency	100
Safety Improvements	100
Regional Connections	100
Policy Objectives	100
Community Consensus	100
Maximum Total Points	690

The Use of the Decile Approach

- For the scoring in the Return on Investment, Economic Impact, Freight Efficiency, and Safety Criteria, MnDOT is proposing a decile approach be applied.
- In a decile approach, the scoring component outputs from projects in a criteria will all be compared to each other.
- The projects are divided into ten equal groupings (deciles) based upon how they compare to each other.
- Projects then receive the number of points assigned to the decile they fall in with their output.

The Use of the Decile Approach

(Sample Decile Division)

Top Decile = 50 Points

2nd Decile = 45 Points

3rd Decile = 40 Points

4th Decile = 35 Points

5th Decile = 30 Points

6th Decile = 25 points

7th Decile = 20 points

8th Decile = 15 points

9th Decile = 10 points

10th Decile = 5 points.

The Use of the Decile Approach

- Several of the scoring criteria have more than one output components and the decile approach is applied separately to each of the output components.
- In a decile system it is very possible to have multiple projects falling into the same decile and thus will get the same score for a particular output component.

The Use of Rubrics

- For the criteria of Regional Connections, Policy Objectives, & Community Consensus, MnDOT will be using scoring rubrics.
- Each rubric has its points already developed and projects that meet the specific condition/s of the rubric will receive the points assigned.

Final Scoring & Project Selection

- All submitted eligible projects will be scored together and will have their scores summarized and ranked on a single list.
- Each scored project will be geographically classified as either a Metro Area project or Greater Minnesota project.
 - Metro Area geographic projects are considered those projects which are within the geographic boundaries of MnDOT's Metro District and are thus subject to the metro eligibility requirements.
 - Greater Minnesota projects are all those that are not Metro Area projects.

Final Scoring & Project Selection

- Projects scoring the highest on the list will then be awarded funding until either geographic area (Metro or Greater Minnesota) has been awarded its defined percentage of the available program funding that is established in Criteria #8 – Regional Balance.

Final Scoring & Project Selection

- Once an area's percentage has been reached, no additional projects from that geographic region will be selected regardless of whether they score higher than the other region's projects.
- Projects will then be selected from the list for the remaining geographic area until they reach their threshold and all funding has been awarded.

Tied Final Scores

- Should projects in the same geographic region have a tied score, the following approach will be used to break the tie;
 1. All the projects from that geographic region will be re-scored for the decile scoring criteria without the other region's projects.
 2. Because there are fewer projects, almost all ties should be broken through this process.
 3. If a tie continues to exist, MnDOT will review other options for breaking the tie.

Award Announcement

- After MnDOT has completed the scoring, ranking, and selection of the projects, we will publically announce the funding awards.
- As a part of that announcement, MnDOT will also release the final scores for all the projects



Criteria Scoring Detail

November 2017



Criteria #1

Return on Investment Scoring

Definition & Approach

Legal Definition:

A return on investment measure that provides for comparison across eligible projects.

Draft Approach:

Utilize the Project Effectiveness analysis from Highway Capacity Manual which incorporates;

- Travel time savings
- 5-year crash reduction savings

Return on Investment Scoring

Travel Time Savings Output



- Utilize the National Performance Management Research Data Set (NPMRDS) from FHWA to calculate actual travel times.
- Future condition travel time savings calculated using
 - Increases in capacity
 - Increases in free flow speed.

Return on Investment Crash Reduction Output

- Utilize MnDOT's most recent 5-year crash data to determine type and severity of crashes.
- Apply FHWA's Crash Modification Factors to the type of geometric improvement being scored in order to determine the expected reduction on crashes from the improvement.
- Using the FHWA Highway Safety Manual, convert the expected savings benefits from the project into annualized dollar savings.

Return on Investment Scoring Summary

Output Area	Inputs	Outputs	Points
Travel Time Savings	<ul style="list-style-type: none"> • NPMRDS data set • Posted speed limits • Project Cost 	Time Savings / Dollar Invested	70 – points divided by decile system.
5-year Crash Reduction Savings	<ul style="list-style-type: none"> • 5-year crash data • FHWA Crash Modification Factors • Highway Safety Manual crash cost tables • Project Cost 	Crash Savings / Dollar Invested	70 – points divided by decile system.

Good Scoring Projects

Projects will have good Travel Time output scores if they;

- Have significant travel time delay that can be improved with low to medium cost improvements.
- Have some travel time delay that can be improved for very low cost improvements.

Projects will have good Crash Reduction Savings output scores if they;

- Have very high crash factors that can be directly reduced by an improvement.
- The higher the crash factor and the lower the improvement cost, the better the output score.



Criteria #2 Economic Impact

Definition & Approach

Legal Definition:

Measurable impacts on commerce and economic competitiveness

Approach:

Purchased the Regional Input-Output Modeling System (RIMS II) data set for each MnDOT district. The model provides a jobs/million invested factor for each district and is a national model.

RIMS II Multipliers

District	Multiplier (Jobs/\$1 M)
District 1	9.9502
District 2	8.6916
District 3	10.2447
District 4	8.4549
District 6	9.6264
District 7	9.6277
District 8	9.5527
Metro	11.4459

Scoring Summary

Output Area	Inputs	Output	Scoring
RIMS II Jobs Creation	<ul style="list-style-type: none">RIMS II MnDOT District MultipliersTotal Project Cost	Jobs Created	50-Points total, assigned based upon decile distribution.

Criteria Difficulties

- Good data and models on the impact of transportation projects on the economy do not exist.
 - How much does finishing a 4-lane expansion or adding additional lanes to a corridor impact the immediate economy?
 - How do you consistently measure that impact between different projects?

Criteria Difficulties

- The approach chosen by MnDOT, while consistent, does not place any different economic value on the type jobs created or the relative impact of those jobs to the surrounding area from the project.
- The Return on Investment criteria does consider the economic return benefits of a project within its calculation on statewide basis. Therefore, economic impacts are somewhat built into that criteria as well.

Impact of Criteria Difficulties on Scoring

- The total points available specifically from this Economic Impact criteria has been set at 50, which is half of the other categories.
- This is a direct reflection of the simplistic nature of the model used and the lack of good available alternative options.
- Likewise, the total points available from Return on Investment criteria has been set higher at 140-points as a way to capture some of the implied statewide economic benefits coming from that criteria.

Good Scoring Projects

- As this is a simple multiplier process, the higher the cost of the project the higher the output score.
- Please remember that although the highest costing projects will score the best in this category, that high cost will likely have significant impacts on the project's Return on Investment score.



Criteria #3 Freight Efficiency

Definition & Approach

Legal Definition:

Measures of annual average daily traffic and commercial vehicle miles traveled, which may include data near the project location on the trunk highway or on connecting trunk or local highways; and measures of congestion or travel time reliability, which may be within or near the projects limits, or both.

Approach:

- Utilize the National Performance Management Research Data Set (NPMRDS) to calculate reliability.
- Utilize Heavy Commercial Annual Average Daily Traffic (HCAADT) data to determine impacted heavy commercial within project area.

Freight Scoring

Output Areas	Inputs	Outputs	Scoring
Reliability	NPMRDS	Planning Time Index	50 Points total, points assigned based on decile distribution
HCAADT	MnDOT Data point within 5 miles of project and relevant to project	HCAADT	50 Points total, points assigned based on decile distribution

Good Scoring Projects

Projects will have good Reliability score if;

- The reliability of travel time has higher variation compared to other projects being scored.

Projects will have a good HCAADT scores if;

- They have higher Heavy Commercial Average Annual Daily Traffic counts compared to the other projects being scored.



Criteria #4 Improvements to Traffic Safety

Definition & Approach

Legal Definition:

Improvements to traffic safety.

Approach:

Utilize 5-year crash statistics for the following;

- Average number of K + A crashes
- Average number of all crashes

Safety Scoring

TAT Selected Criteria	Inputs	Outputs	Scoring
K+A Crashes	5-year K+A crash average	Average Number of K+A crashes.	50 Points total, assigned based upon decile distribution.
All Crashes	5 year crash average	Average Number of all crashes.	50 Points total, assigned based upon decile distribution.

Impacts on Safety Scoring

Projects will have a higher scoring K+A crash output if;

- They have a higher average number of K and A crashes combined over the last five years, compared to other projects being scored.

Projects will have a higher scoring All Crashes output if;

- They have a higher average of total crashes over the last five years, compared to other projects being scored.



Criteria #5 Regional Connections

Definition & Approach

Legal Definition:

Connection to regional trade centers, local highway systems, and other transportation modes.

Approach:

Developed a scoring rubric based upon a hierarchy system.

Corridor Connections Scoring Rubric

Project Type	Greater Minnesota			Metro District	
	Interstate System/ Connection to Level 1 Trade Center	IRC System	Supplemental IRC System	Principal Arterials	All other THs
Closing a Gap in a Larger Corridor (ex. Lane Gaps)	100	90	50	100	50
Add Lanes to Existing Facility (expands capacity) Does not include filling a gap	90	80	50	90	50
Eliminate Existing Isolated Intersection with an Interchange or Grade Separation; Reconstruct Intersection/Interchange with More Capacity	80	70	20	80	20
Completing a Corridor Conversion (Multiple Interchanges and Access Patterns)	N/A	N/A	N/A	70	20
Creating/Improving Connection to a Multimodal Facility	60	50	30	60	30
Add Passing Lanes to a Facility	N/A	40	10	10	10
Missing interchange ramps/movements	20	10	10	20	10
Project minimally impacts connectivity between trade centers for users	0	0	0	0	0

Greater Minnesota Roadway Hierarchy

Greater Minnesota

- Interstate corridors and those corridors which connect a Level 1 – Regional Trade Centers to the Metro area have the highest potential scores.
- The remaining original IRC system corridors then has the next highest potential scores.
- Finally the Supplemental IRC system corridors added in 2013 have the lowest potential scores.

Metro Roadway Hierarchy

Metro

- Principal arterials within the metro have the potential to score the highest points.
- All other trunk highways have a lower potential to score points.

Project Type Hierarchy

Developed hierarchy for scoring based upon improvements;

- Highest scoring improvement is closing a system lane gap
- Second is expanding new capacity
- Third is eliminating isolated traffic signals
- Fourth is conversion of a corridor to freeway (in metro)
- Fifth is multimodal facility connections
- Sixth is adding passing lanes
- Seventh is missing interchange ramp improvements



Criteria #6 Policy Objective

Definition & Approach

Legal Definition:

The extent to which the project addresses multiple transportation system policy objectives and principles.

Approach:

Developing a points-added matrix for projects which support the policy and objectives outlined in the Statewide Multimodal Policy Plan.

Policy Objective Scoring Rubric

Policy Area	Criteria	Scoring
Open Decision Making	There has been a corridor study, safety plan, safety audit, or environmental document that covers the proposed project.	50 - Points
System Stewardship & Healthy Communities	<ul style="list-style-type: none"> • Pavement and/r bridges within the project area are due for a major rehabilitation or replacement within the next eight years. • Project incorporates and ITS technology or a traveler information system component. • The project addresses a significant flooding risk, snow trap/drifted issue, or other environmental impact to the reliability of the TH. • Project reduces VMT or hours of congestion. • Project removes an at-grade rail crossing. • Project includes improvements for pedestrians and/or bicyclist. • Project replaces existing overhead lighting with new L.E.D. lighting. • Adds or supports transit service (like park and ride facilities, transit only shoulders, and park-n-pool locations). • Project will improve access to health care or recreational areas of the State. 	10 – Points for Each Maximum of 50
Total Points Available		100

Impacts on Policy Objectives

Projects will receive higher scores in the Policy Objective area if;

- They already have a completed a plan, study, or environmental document.
- They include elements which help support the stewardship of the transportation system.
- They incorporate multiple benefits to help maximize healthy communities across the state.



Criteria #7 Community Consensus

Definition & Approach

Legal Definition:

Support and consensus for the project among members of the surrounding community

Approach:

Utilize resolutions of support from impacted jurisdictions, regional planning agencies, and chambers to secure points.

Community Consensus Scoring

TAT Selected Criteria	Inputs	Outputs	Scoring
Letters and Resolutions	Impacted Jurisdiction(s) Resolutions of Support	Resolutions	45 pts.
	MPO/RPO/RPC Letter of Support	Letters	45 pts.
	Chamber of Commerce Letter of Support	Letters	10 pts.

Impacts on Consensus Scoring

- It is anticipated that most good overall scoring projects should be able to score all the available 100-points in this category.
- All jurisdictions impacted by the project means any municipality and/or County that is touched by the project must send a resolution of support.
- The resolution and letters of support are not needed at the time the project is recommended, but will be needed prior to the scoring/award announcement for the program.



Criteria #8 – Regional Balance

Definition & Approach

Legal Definition:

There isn't one.

Approach:

Break the award of funding along a split between Greater Minnesota and the Metro area, after the complete scoring of all the projects together.

Regional Balance Rational

- Because of limited funding and the nature of projects competing for Corridors of Commerce, breaking the funding into smaller sub-regional buckets did not make practical sense.
- Consideration of regional balance on a smaller geographic scale than Metro to Greater Minnesota is something that MnDOT will explore over time with Corridors of Commerce.

Regional Balance Rational

- For the 2013 & 2015 Corridors of Commerce cycles, funding was split along a soft 50-50 split between Metro and Greater Minnesota.
- MnDOT is seeking input on what should be the split into the future.
 - Do you have any initial thoughts or suggestions regarding what the split could be?
 - As a group, would you be willing to send us recommendations?



Your Input

November 2017

We Want Your Input

- What are your initial comments and reactions to the proposed draft scoring system for Corridors of Commerce?
- What improvements or scoring adjustments would you like to see?
- Other Thoughts?



Current Corridors of Commerce Schedule

November 2017

Schedule

Activity	Date
Public input on Draft Process	October 31 to December 20
Review and Approve Final Process	December 21 to December 31
Public Recommendation Period Opens	January 15th
Public Recommendation Period Closes	February 2nd
Project Evaluation & Scoring	February – March
Project Award Announcement	End of March

Thank You

Patrick Weidemann

Director of Capital Planning and Programming

MnDOT Office of Transportation System Management

pat.weidemann@state.mn.us

(651) 366-3758 or (320) 214-6365