

Roadway Reconstruction/Modernization

Prioritizing Criteria and Measures

May 8, 2023

Purpose: To fund roadway preservation projects that improve infrastructure condition, reduce crashes, and enhance multimodal travel options.

Definition: A roadway project that does not add thru-lane capacity, but reconstructs, reclaims, and/or modernizes a corridor with improved safety, multimodal, or mobility elements (e.g., new turn lanes, traffic signal, or roundabout). Routine maintenance including mill and overlay projects are not eligible. Projects must be located on a non-freeway principal arterial or A-minor arterial functionally classified roadway, consistent with the latest TAB approved functional classification map.

Examples of Roadway Reconstruction/Modernization Projects:

- Interchange reconstructions that do not involve new ramp movements or added thru lanes
- Two-lane to three-lane conversions (with a continuous center turn lane)
- Four-lane to three-lane conversions
- Shoulder improvements
- Strengthening a non-10-ton roadway
- Raised medians, frontage roads, access modifications, or other access management
- Roadway improvements with the addition of multimodal elements
- Roadway improvements that add safety elements
- New alignments that replace an existing alignment and do not expand the number of lanes

Scoring:

Criteria and Measures	Points	% of Total Points
1. Role in the Regional Transportation System and Economy	105	9%
Measure A - Connection to Total Jobs and Manufacturing/ Distribution Jobs	65	
Measure B - Regional Truck Corridor Study Tiers	40	
2. Usage	175	15%
Measure A - Current daily person throughput	110	
Measure B - Forecast 2040 average daily traffic volume	65	
3. Equity and Affordable Housing	100	8%
Measure A - Engagement	30	
Measure B - Equity population benefits and impacts	40	
Measure C - Affordable housing access	30	
4. Infrastructure Age/Condition	175	15%
Measure A - Date of construction	50	
Measure B - Geometric, structural, or infrastructure deficiencies	125	
5. Congestion Reduction/Air Quality	80	7%
Measure A - Vehicle delay reduced	50	

Criteria and Measures	Points	% of Total Points
Measure B - Kg of emissions reduced	30	
6. Safety	280	23%
Measure A - Crashes reduced	233	
Measure B – Pedestrian Crash Reduction (Proactive)	47	
7. Multimodal Elements and Existing Connections	110	9%
Measure A - Transit, bicycle, or pedestrian project elements and connections	110	
8. Risk Assessment	75	6%
Measure A – Risk Assessment Form	75	
9. Cost Effectiveness	100	8%
Measure A – Cost effectiveness (total points awarded/total project cost)	100	
Total	1,200	

Role in the Regional Transportation System and Economy (170 Points)

Tying regional policy (Thrive MSP2040) to the Regional Solicitation, this criterion measures the project's ability to serve a transportation purpose within the regional transportation system and economy based on how it connects to employment, manufacturing/distribution-related employment, and post-secondary students; and how it aligns with the Regional Truck Corridor Study.

- A. **MEASURE:** Reference the “Regional Economy” map generated at the beginning of the application process. Report the existing employment and manufacturing/distribution-related employment, and post-secondary students enrolled within one mile, as depicted on the “Regional Economy” map.

RESPONSE (Data from the “Regional Economy” map):

- Existing Employment within 1 Mile: _____ (Maximum of 65 points)
- Existing Manufacturing/Distribution-Related Employment within 1 Mile: _____ (Maximum of 65 points)
- Existing Post-Secondary Students within 1 Mile: _____ (Maximum of 40 points)

Upload the “Regional Economy” map used for this measure.

SCORING GUIDANCE (65 Points)

All Census block groups that are included within or intersect the buffer area around the project will be included.

The applicant with the highest existing total employment will receive the full points. Remaining projects will receive a proportionate share of the full points. For example, if the application being scored had 1,000 workers within one mile and the top project had 1,500 workers, this applicant would receive $(1,000/1,500) \times 65$ points or 43 points.

The applicant with the highest existing manufacturing/distribution-related employment will receive the full points. Remaining projects will receive a proportionate share of the full points equal to the existing

manufacturing/distribution-related employment within one mile of the project being scored divided by the project with the highest manufacturing/distribution-related employment within one mile multiplied by the maximum points available for the measure (30). For example, if the application being scored had 1,000 manufacturing/distribution-related workers within one mile and the top project had 1,500 manufacturing/distribution-related workers, this applicant would receive $(1,000/1,500) \times 65$ points or 43 points.

The applicant with the highest number of post-secondary students will receive 40 points. Remaining projects will receive a proportionate share of the 40 points. For example, if the application being scored had 1,000 students within one mile and the top project had 1,500 students, this applicant would receive $(1,000/1,500) \times 40$ points or 27 points.

The scorer will assess if the applicant would score highest with the total employment part of the measure, the manufacturing/distribution employment part of the measure, or the education part of the measure and give the applicant the highest of the three scores out of a maximum of 65 points.

Note: Due to the use of multiple sub-measures, two applicants can receive the full 65 points.

- B. **MEASURE:** This measure relies on the results on the Regional Truck Corridor Study, which prioritized all principal and minor arterials based on truck volume, truck percentage of total traffic, proximity to freight industry clusters, and proximity to regional freight terminals. The truck corridors were grouped into tiers 1, 2, and 3, in order of priority. Use the 2021 Updated Regional Truck Corridors tiers to respond to this measure: [2021 Updated Regional Truck Corridors](#). (40 points)

RESPONSE: (Select one for your project, based on the updated 2021 Regional Truck Corridors):

- Along Tier 1: ☐ Miles (to the nearest 0.1 miles) : _____
- Along Tier 2: ☐ Miles (to the nearest 0.1 miles) : _____
- Along Tier 3: ☐ Miles (to the nearest 0.1 miles) : _____
- The project provides a direct and immediate connection (i.e., intersects) with either a Tier 1, Tier 2, or Tier 3 corridor: ☐
- None of the tiers: ☐

SCORING GUIDANCE (40 Points)

Applicants will be awarded points as assigned in the above tiers:

- Projects along Tier 1: 40 points
- Projects along Tier 2: 30 points
- Projects along Tier 3: 20 points
- Projects that provide a direct and immediate connection to a corridor: 10 points.
- None of the tiers: 0 points

If no applicant is along Tier 1, the top-scoring application(s) will be adjusted to 40 points, with the others adjusted proportionately.

Note: Due to the use of tiered scoring, multiple applications can receive the full points.

2. Usage (175 Points)

This criterion quantifies the project's potential impact by measuring the current daily person throughput and future vehicular traffic that will be served by the project. These roadway users directly benefit from the project improvements on the A-minor arterial or non-freeway principal arterial. For interchange reconstruction projects, the cross-street traffic volumes should be used instead of the mainline volumes.

- A. **MEASURE:** The applicant must identify the location along the project length and provide the current AADT volume from the *MnDOT Traffic Mapping Application* and existing transit routes that travel on the road (reference "Transit Connections" map). Due to the potential timing issues with when a traffic count was taken relative to the COVID-19 pandemic (and resulting drop in traffic volumes), applicants may also use a historic AADT volume from the MnDOT Traffic Mapping Application (instructions under the Help Document). Ridership data will be provided by the Metropolitan Council staff, if public transit is currently provided on the project length. Metropolitan Council staff will calculate the current daily person throughput at one location along the A-minor arterial or non-freeway principal arterial project length using the current average annual daily traffic (AADT) volume and average annual ridership.

- Current Daily Person Throughput = (current average annual daily traffic volume x 1.30 vehicle occupancy) + average annual daily transit ridership (2022)

RESPONSE:

- Location: _____
- Current AADT volume: _____
- Existing Transit Routes on the Project: _____

Upload "Transit Connections" map.

SCORING GUIDANCE (110 Points)

The applicant with highest current daily person throughput will receive the full points for the measure. Remaining projects will receive a proportionate share of the full points. For example, if the application being scored had a daily person throughput of 1,000 people and the top project had a daily person throughput of 1,500 people, this applicant would receive $(1,000/1,500) \times 110$ points or 73 points.

- B. **MEASURE:** Provide the forecast (2040) average daily traffic volume at the same location along the A-minor arterial or non-freeway principal arterial project length, as identified in the previous measure. The applicant may choose to use a county or city travel demand model based on the Metropolitan Council model to identify the forecast (2040) average daily traffic volume or have Metropolitan Council staff determine the forecast volume using the Metropolitan Council model and project location. Respond as appropriate to the use of one type of forecast model.

RESPONSE:

- Use Metropolitan Council model to determine forecast (2040) ADT volume ☐
- If checked, METC Staff will provide Forecast (2040) ADT volume ☐

OR

RESPONSE:

- Identify the approved county or city travel demand model to determine forecast (2040) ADT volume: _____
- Forecast (2040) ADT volume : _____

SCORING GUIDANCE (65 Points)

The applicant with the highest forecast (2040) ADT volume will receive the full points for the measure. Remaining projects will receive a proportionate share of the full points. For example, if the application being scored had a daily forecast of 28,000 vehicles and the top project had a daily forecast of 32,000 vehicles, this applicant would receive $(28,000/32,000) \times 65$ points or 57 points.

3. Equity and Affordable Housing (100 Points)

This criterion addresses the [Council's role in advancing equity](#) by examining how a project directly benefits or impacts (positively and negatively) Black, Indigenous, and People of Color (BIPOC) populations, low-income populations, people with disabilities, youth, older adults, and residents of affordable housing. The criterion evaluates whether the applicant engaged these populations to identify transportation needs and potential solutions and how the project will address these identified needs. The criterion also evaluates a community's overall efforts to implement affordable housing and how the project improves multimodal access to affordable housing.

A. **MEASURE:** Engagement (0 to 30 points). This measure is a qualitative scoring measure.

A successful project is the result of active engagement of Black, Indigenous, and People of Color populations, low-income populations, persons with disabilities, youth, older adults, and residents in affordable housing. Engagement should occur prior to and during project development, with the intent to provide direct benefits or solve an expressed transportation issue, while also limiting and mitigating any negative impacts.

- Describe any Black, Indigenous, and People of Color populations, low-income populations, disabled populations, youth, or older adults within a ½ mile of the proposed project. Describe how these populations relate to regional context. Location of affordable housing will be addressed in Measure C.
- Describe how Black, Indigenous, and People of Color populations, low-income populations, persons with disabilities, youth, older adults, and residents in affordable housing were engaged, whether through community planning efforts, project needs identification, or during the project development process.
- Describe the progression of engagement activities in this project. A full response should answer these questions:

1. What engagement methods and tools were used?
2. How did you engage specific communities and populations likely to be directly impacted by the project?
3. What techniques did you use to reach populations traditionally not involved in community engagement related to transportation projects?
4. How were the project's purpose and need identified?
5. How was the community engaged as the project was developed and designed?
6. How did you provide multiple opportunities for of Black, Indigenous, and People of Color populations, low-income populations, persons with disabilities, youth, older adults, and residents in affordable housing to engage at different points of project development?
7. How did engagement influence the project plans or recommendations? How did you share back findings with community and re-engage to assess responsiveness of these changes?
8. If applicable, how will NEPA or Title VI regulations will guide engagement activities?

(Limit 2,800 characters; approximately 400 words):

SCORING GUIDANCE (0 to 30 Points)

Each application will be qualitatively scored based on the available points and will receive the number of points awarded.

- B. **MEASURE:** Equity Population Benefits and Impacts (0 to 40 points). This measure is a qualitative scoring measure.

Successful projects are designed to provide direct benefits to Black, Indigenous, and People of Color populations, low-income populations, persons with disabilities, youth, older adults. All projects must mitigate potential negative benefits as required under federal law. Projects that are designed to provide benefits go beyond the mitigation requirement to proactively provide transportation benefits and solve transportation issues experienced by Equity populations. Benefits to residents of affordable housing are addressed in Measure C.

Describe the project's benefits to Black, Indigenous, and People of Color populations, low-income populations, children, people with disabilities, youth, and older adults. Benefits could relate to:

- pedestrian and bicycle safety improvements;
- public health benefits;
- direct access improvements for residents or improved access to destinations such as jobs, school, health care, or other;
- travel time improvements;
- gap closures;
- new transportation services or modal options;
- leveraging of other beneficial projects and investments;
- and/or community connection and cohesion improvements.

This is not an exhaustive list. A full response will support the benefits claimed, identify benefits specific to Equity populations residing or engaged in activities near the project area, identify benefits addressing a transportation issue affecting Equity populations specifically identified through engagement, and substantiate benefits with data.

Acknowledge and describe any negative project impacts to Black, Indigenous, and People of Color populations, low-income populations, children, people with disabilities, youth, and older adults. Describe measures to mitigate these impacts. Unidentified or unmitigated negative impacts may result in a reduction in points.

Below is a list of potential negative impacts. This is not an exhaustive list.

- Decreased pedestrian access through sidewalk removal / narrowing, placement of barriers along the walking path, increase in auto-oriented curb cuts, etc.
- Increased speed and/or “cut-through” traffic.
- Removed or diminished safe bicycle access.
- Inclusion of some other barrier to access to jobs and other destinations.

(Limit 2,800 characters; approximately 400 words):

SCORING GUIDANCE (0 to 40 Points)

Each application will be qualitatively scored based on the available points and will receive the number of points awarded.

- C. **MEASURE:** Affordable Housing Access (0 to 30 points). This measure is a qualitative scoring measure.

Describe any affordable housing developments—existing, under construction, or planned—within ½ mile of the proposed project. The applicant should note the number of existing subsidized units, which will be provided on the Socio-Economic Conditions map. Applicants can also describe other types of affordable housing (e.g., naturally-occurring affordable housing, manufactured housing) and under construction or planned affordable housing that is within a half mile of the project. If applicable, the applicant can provide self-generated PDF maps to support these additions. Applicants are encouraged to provide a self-generated PDF map describing how a project connects affordable housing residents to destinations (e.g., childcare, grocery stores, schools, places of worship).

Describe the project’s benefits to current and future affordable housing residents within ½ mile of the project. Benefits must relate to affordable housing residents. Examples may include:

- specific direct access improvements for residents
- improved access to destinations such as jobs, school, health care or other;
- new transportation services or modal options;
- and/or community connection and cohesion improvements.

This is not an exhaustive list. Since residents of affordable housing are more likely not to own a private vehicle, higher points will be provided to roadway projects that include other multimodal access improvements. A full response will support the benefits claimed, identify benefits specific to residents of affordable housing, identify benefits addressing a transportation issue affecting residents of affordable housing specifically identified through engagement, and substantiate benefits with data.

(Limit 2,800 characters; approximately 400 words):

SCORING GUIDANCE (0 to 30 points)

The project that best provides meaningful improvements to access to affordable housing units will receive the full 30 points. Multiple projects may receive the highest possible score of 30 points based on this assessment. Remaining projects will receive a share of the full points at the scorer's discretion.

- D. **BONUS POINTS (0 TO 25 POINTS ABOVE THE TOTAL CRITERION POINTS):** Those projects that score at least 80% of the maximum total points available through Measures A, B, and C will be awarded bonus points based on the geographic location of the project. These points will be assigned as follows, based on the highest-scoring geography the project contacts:
- 25 points to projects within an Area of Concentrated Poverty
 - 15 points to projects within census tracts with the percent of population in poverty or population of color above the regional average percent
 - 10 points for all other areas

Upload the "Socio-Economic Conditions" map used for this measure.

RESPONSE (Select one, based on the "Socio-Economic Conditions" map):

- Project is located in an Area of Concentrated Poverty: ☐
- Project's census tracts are above the regional average for population in poverty or population of color (Regional Environmental Justice Area): ☐
- Project located in a census tract that is below the regional average for population in poverty or populations of color (Regional Environmental Justice Area): ☐

SCORING GUIDANCE (0 to 25 Points)

If the applicant receives at least 80% of the available points in Measures A, B, and C (e.g., 80 points for the Roadway applications) the project will receive Bonus points as described. If an applicant qualifies for Bonus points it may result in an Equity and Affordable Housing score of more than the total points available.

4. Infrastructure Age/Condition (175 Points)

This criterion will assess the age of the roadway facility being improved. Roadway improvement investments should focus on the higher needs of an aging facility, whereas improvements to a recently reconstructed roadway does not display an efficient use of funds.

- A. **MEASURE:** Identify the year of the roadway's original construction or most recent reconstruction. If the reconstruction date is used for the roadway, a full reconstruction must have been completed during the indicated year. Routine maintenance, such as an overlay or sealcoating project does not constitute a reconstruction and should not be used to determine the infrastructure age.

If construction was completed over several years, enter the segment lengths for each year. The average age will be calculated.

RESPONSE:

- Year of original roadway construction or most recent reconstruction: _____
- Location(s) used: _____

SCORING GUIDANCE (50 Points)

The applicant with the oldest roadway will receive full points. Remaining projects will receive a proportionate share of the full points. For example, if the application being scored was constructed 41 years ago and the oldest project was constructed 48 years ago, this applicant would receive $(41/48) \times 50$ points or 43 points.

Note: Because of the reporting of year of construction, it is possible for multiple projects to receive the full allotment of 50 points.

- B. **MEASURE:** Select the geometric, structural, or infrastructure deficiencies listed below that will be improved as part of this project, as reflected in the project cost estimate. (125 Points)

RESPONSE (Select all that apply. Please identify the proposed improvement):

- Improved roadway to better accommodate freight movements: ☐ 0-15 pts
 - *RESPONSE (Limit 700 characters; approximately 100 words):*
- Improved clear zones or sight lines: ☐ 0-10 pts
 - *RESPONSE (Limit 700 characters; approximately 100 words)*
- Improved roadway geometrics: ☐ 0-15 pts
 - *RESPONSE (Limit 700 characters; approximately 100 words)*
- Access management enhancements: ☐ 0-20 pts
 - *RESPONSE (Limit 700 characters; approximately 100 words)*
- Vertical/horizontal alignment improvements: ☐ 0-10 pts
 - *RESPONSE (Limit 700 characters; approximately 100 words)*
- Improved stormwater mitigation: ☐ 0-10 pts
 - *RESPONSE (Limit 700 characters; approximately 100 words)*
- Signals/lighting upgrades: ☐ 0-10 pts
 - *RESPONSE (Limit 700 characters; approximately 100 words)*
- Other Improvements: ☐ 0-10 pts
 - *RESPONSE (Limit 700 characters; approximately 100 words)*

SCORING GUIDANCE (125 Points)

Within each improvement sub-measure, the answer most responsive to the need will receive full points

(e.g., the top project that improves clear zones or sight lines will receive 10 points), with each remaining project receiving a share of the full points at the scorer's discretion. It is possible for more than one project to receive maximum points for a sub-measure.

The highest-scoring application for this measure will be adjusted to receive the full 125 points. Remaining projects will receive a proportionate share of the full points equal to the points for the project being scored divided by the points assigned to the highest-scoring project multiplied by the maximum points available for the measure (100). For example, if the application being scored had 25 points and the top project had 50 points, this applicant would receive $(25/50) \times 125$ points or 63 points.

5. Congestion Reduction/Air Quality (80 Points)

This criterion measures the project's ability to reduce congestion. In addition, it will address its ability to improve congested intersections operating at unacceptable levels of service during peak hour conditions. The project will also be measured based on its ability to reduce emissions.

- A. **MEASURE:** Conduct a capacity analysis at one or more of the intersections (or rail crossings) being improved by the roadway project using existing turning movement counts (collected within the last three years) in the weekday a.m. or p.m. peak hour and the Synchro or HCM software. The applicant must show the current total peak hour delay at one or more intersections (or rail crossings) and the reduction in total peak hour intersection delay at these intersections (or rail crossings) in seconds due to the project. If more than one intersection (or rail crossing) is examined, then the delay reduced by each intersection can be added together to determine the total delay reduced by the project.
- For roadway projects that include a railroad crossing, the applicant should conduct fieldwork during either the weekday a.m. or p.m. peak hour to determine the total peak hour delay reduced by the project. Applicants can also add together intersection delay reduced and railroad delay reduced, if they both will be improved by the project.
 - The applicant should include the appropriate Synchro or HCM full reports (including the Timing Page Report) that support the improvement in total peak hour delay and should conduct the analysis using the following:
 - Under the network settings, all defaults should be used for lanes, saturation flow rates, volumes, and simulation
 - Use Synchro's automatic optimization to determine cycle, offset and splits (for traffic signals). Use the setting when assessing delay both with and without the project. This methodology will ensure that all applicants start with their signal systems optimized when determining existing delay.
 - Project improvements assumed in the build condition should be reflected in the total project cost, such as additional through or turn lanes and protective left-turn phasing
 - Roadway lengths for intersection approaches must be the same length for before and after scenarios
 - An average weekday should be used for the existing conditions instead of a weekend, peak holiday, or special event time period that is not representative of the corridor for most of the year

Total Peak Hour Delay Reduced (Seconds) = Total Peak Hour Delay/Vehicle x Vehicles Per Hour

RESPONSE:

- Total Peak Hour Delay/Vehicle without the Project (Seconds/Vehicle): _____

- Total Peak Hour Delay/Vehicle with the Project (Seconds/Vehicle): _____
- Total Peak Hour Delay/Vehicle Reduced by the Project (Seconds/Vehicle): _____ (automatically calculated)
- Volume (Vehicles Per Hour): _____
- Total Peak Hour Delay Reduced by the Project (Seconds): _____ (automatically calculated)

EXPLANATION of methodology used to calculate railroad crossing delay, if applicable (Limit 1,400 characters; approximately 200 words):

SCORING GUIDANCE (50 Points)

The applicant with the most peak hour vehicle delay reduced by the project improvement will receive the full points for the measure. Remaining projects will receive a proportionate share of the points. For example, if the application being scored reduced delay by 5,000 seconds and the top project reduced delay by 25,000 seconds, this applicant would receive $(5,000/25,000) \times 50$ points, or 10 points.

- B. **MEASURE:** Using the Synchro or HCM analysis completed in the previous measure, identify the total peak hour emissions reduction in kilograms (CO, NOX, VOC) due to the project. The applicant should include the appropriate Synchro or full HCM reports (including the Timing Page Report) that support the improvement in total peak hour emissions. If more than one intersection is examined, then the emissions reduced by each intersection can be added together to determine the total emissions reduced by the project.

Roadway projects that do not include railroad grade-separation elements:

- Total Peak Hour Emissions Reduced (Kilograms) = Total Peak Hour Emissions without the project – Total Peak Hour Emissions with the Project

RESPONSE:

- Total (CO, NOX, and VOC) Peak Hour Emissions without the Project (Kilograms): _____
- Total (CO, NOX, and VOC) Peak Hour Emissions with the Project (Kilograms): _____
- Total (CO, NOX, and VOC) Peak Hour Emissions Reduced by the Project (Kilograms): _____ (calculated online)

If more than one intersection is examined, the response should include a total of all emissions reduced.

Roadway projects that include railroad grade-separation elements:

- For roadway projects that include a railroad crossing, the applicant needs to input four variables before and after the project to determine the change in emissions. Those variables include: speed, vehicle mile traveled, delay, and total vehicle stops. The applicant needs to conduct fieldwork during either the a.m. or p.m. peak hour to determine the existing conditions and then detail any assumptions used for conditions after the project is built. The variables will be used in the exact same equation used within the software program (i.e., Synchro) required of the other project types. Therefore, the approach to calculate the kilograms emissions reduced for railroad grade-separation projects will be comparable to intersection improvement projects.

RESPONSE:

- Cruise speed in miles per hour without the project: _____ (Applicant inputs number)
- Vehicle miles traveled without the project: _____ (Applicant inputs number)
- Total delay in hours without the project: _____ (Applicant inputs number)
- Total stops in vehicles per hour without the project: _____ (Applicant inputs number)
- Cruise speed in miles per hour with the project: _____ (Applicant inputs number)
- Vehicle miles traveled with the project: _____ (Applicant inputs number)
- Total delay in hours with the project: _____ (Applicant inputs number)
- Total stops in vehicles per hour with the project: _____ (Applicant inputs number)
- Fuel consumption in gallons (F1)
- Fuel consumption in gallons (F2)
- Fuel consumption in gallons (F3)

Speed = cruise speed in miles per hour

Total Travel = vehicle miles traveled

Total Delay = total delay in hours

Stops = total stops in vehicles per hour

$K1 = 0.075283 - 0.0015892 * \text{Speed} + 0.000015066 * \text{Speed}^2$

$K2 = 0.7329$

$K3 = 0.0000061411 * \text{Speed}^2$

F1 (or F2 – without the project) = Fuel consumption in gallons

$F1 = \text{Total Travel} * k1 + \text{Total Delay} * k2 + \text{Stops} * k3$

$F2 = \text{Total Travel} * k1 + \text{Total Delay} * k2 + \text{Stops} * k3$

$F3 = F1 - F2$

$CO = F3 * 0.0699 \text{ kg/gallon}$

$NOX = F3 * 0.0136 \text{ kg/gallon}$

$VOC = F3 * 0.0162 \text{ kg/gallon}$

Equation Automatically Provides Emissions Reduced:

- Total (CO, NOX, and VOC) Peak Hour Emissions Reduced by the Project (Kilograms):
_____ (Online Calculation)

EXPLANATION of methodology and assumptions used (Limit 1,400 characters; approximately 200 words):

SCORING GUIDANCE (30 Points)

The applicant with the most kilograms reduced by the project improvement will receive the full points for the measure. Remaining projects will receive a proportionate share of the full. For example, if the application being scored reduced emissions by 3 kilograms and the top project reduced emissions by 5 kilograms, this applicant would receive $(3/5) * 30$ points or 18 points.

6. Safety (280 Points)

This criterion addresses the project's ability to correct deficiencies and improve the overall safety of a roadway facility. It will assess the project's monetized safety benefits.

A. **MEASURE:** Respond as appropriate to one of the two project types below. (233 Points)

Roadway projects that do not include railroad grade-separation elements:

Calculate the reduction in the total number of crashes due to improvements on the A-minor arterial or non-freeway principal arterial made by the project. The applicant must base the estimate of crash reduction on the methodology consistent with the latest Highway Safety Improvement Program (HSIP) application (www.dot.state.mn.us/stateaid/trafficsafety.html). Applicants should focus on the crash analysis for reactive projects.

Crash data must be obtained for the project length for calendar years 2020 through 2022. Crash data should include all crash types and severities, including pedestrian and bicycle crashes.

Only crashes contained within the Minnesota Department of Public Safety's database can be used. If the agency submitting the application has access to MnCMAT, crash data from that system can be used as part of the submittal. MnCMAT data will be reviewed by MnDOT to ensure accuracy. Crash data can also be obtained from MnDOT if an agency does not have access to MnCMAT. MnDOT Metro District Traffic Office will provide a crash listing, upon request. Applicants should request crash data from MnDOT as early as possible. The applicant must then attach a listing of the crashes reduced and the HSIP Benefit/Cost (B/C) worksheet (www.dot.state.mn.us/stateaid/trafficsafety.html) that identifies the resulting benefit associated with the project. As part of the response, please detail and attach the crash modification factor(s) used from FHWA's Crash Modification Factors Clearinghouse: <http://www.cmfclearinghouse.org/>. As part of the Regional Solicitation Before & After Study, Phase 2 (2021), a list of commonly used crash modification factors was created. Applicants have the option to use these crash modification factors (posted on the Metropolitan Council's Regional Solicitation website, under Application Resources) or find a more appropriate one on FHWA's Clearinghouse.

This measure requests the monetized safety benefit of the project. The cost of the project is scored in the Cost Effectiveness criterion.

RESPONSE:

- Crash Modification Factors Used (Limit 700 characters; approximately 100 words): _____
- Rationale for Crash Modifications Selected (Limit 1,400 characters; approximately 200 words): _____
- Project Benefit (\$) from B/C ratio: _____
- Total Fatal (K) Crashes: _____
- Total Serious Injury (A) Crashes: _____
- Total Non-Motorized Fatal and Serious Injury Crashes: _____
- Total Crashes: _____
- Total Fatal (K) Crashes Reduced by Project: _____
- Total Serious Injury (A) Crashes Reduced by Project: _____
- Total Non-Motorized Fatal and Serious Injury Crashes Reduced by Project: _____
- Total Crashes Reduced by Project: _____

Upload Crash Modification Factors and B/C Worksheet.

Roadway projects that include railroad grade-separation elements:

Since the number of observed crashes at an existing at-grade railroad crossing is minor compared to an intersection, this measure will assess crash risk exposure that exists in order to compare projects. As a proactive safety measure, railroad grade-separation projects eliminate the crash risk exposure.

Crash Risk Exposure Eliminated = current average annual daily traffic volume x average number of daily trains at the at-grade crossing

RESPONSE:

- Current AADT volume: _____
- Average daily trains: _____
- Crash Risk Exposure eliminated: _____

SCORING GUIDANCE (233 Points)

This measure will be considered separately for projects that do and do not include a railroad grade-separation project. As a result, two projects (one without a railroad grade-separation project and one with a railroad grade-separation) may receive the full points.

For projects that do not include a grade-separation project, the applicant with the highest dollar value of benefits will receive the full points for the measure. Remaining projects will receive a proportionate share of the full points. For example, if the application being scored had safety benefits of \$11,000,000 and the top project had safety benefits of \$16,000,000, this applicant would receive $(11,000,000/16,000,000) \times 233$ points or 160 points.

For railroad grade-separation projects, the applicant with the highest crash risk exposure eliminated due to the project will receive the full points for the measure. Remaining projects will receive a proportionate share of the full points. For example, if the application being scored reduced 11,000 exposures and the top project reduced 16,000, this applicant would receive $(11,000 / 16,000) \times 233$ points or 160 points.

B. **MEASURE:** Pedestrian Safety Measure in Roadway Applications

Determine if these measures do not apply to your project.

Does the project match either of the following descriptions?

- ☐ Project is primarily a freeway (or transitioning to a freeway) **and** does not provide safe and comfortable pedestrian facilities and crossings.
- ☐ Existing location lacks any pedestrian facilities (e.g., sidewalks, marked crossings, wide shoulders in rural contexts) **and** project does not add pedestrian elements (e.g., reconstruction of a roadway without sidewalks, that doesn't also add pedestrian crossings and sidewalk or sidepath on one or both sides).

If either of the items above are checked, then **score for entire pedestrian safety measure is zero**. Applicant does not need to respond to the sub-measures and can proceed to the next section.

SUB-MEASURE 1: Project-Based Pedestrian Safety Enhancements and Risk Elements

To receive maximum points in this category, pedestrian safety countermeasures selected for implementation in projects should be, to the greatest extent feasible, consistent with the countermeasure recommendations in the Regional Pedestrian Safety Action Plan and state and national best practices. Links to resources are provided on the Regional Solicitation Resources web page.

Please answer the following two questions with as much detail as possible based on the known attributes of the proposed design. If any aspect referenced in this section is not yet determined, describe the range of options being considered, to the greatest extent available. If there are project elements that may increase pedestrian risk, describe how these risks are being mitigated.

- **Describe how this project will address the safety needs of people crossing the street at signalized intersections, unsignalized intersections, midblock locations, and roundabouts.**

Treatments and countermeasures should be well-matched to the roadway's context (e.g., appropriate for the speed, volume, crossing distance, and other location attributes). Refer to the Regional Solicitation Resources web page for guidance links. (Limit 2,800 characters; approximately 400 words)

Considerations

Is the distance in between signalized intersections increasing (e.g., removing a signal)?

- No
- Yes. If yes, describe what measures are being used to fill the gap between protected crossing opportunities for pedestrians (e.g., adding High-Intensity Activated Crosswalk beacons to help motorists yield and help pedestrians find a suitable gap for crossing, turning signal into a roundabout to slow motorist speed, etc.). (Limit 1,400 characters; approximately 200 words)

- Will your design increase the crossing distance or crossing time across any leg of an intersection? (e.g., by adding turn or through lanes, widening lanes, using a multi-phase crossing, prohibiting crossing on any leg of an intersection, pedestrian bridge requiring length detour, etc.). This does not include any increases to crossing distances solely due to the addition of bike lanes (i.e., no other through or turn lanes being added or widened).

- No
- Yes. If yes:
 - How many intersections will likely be affected? _____
 - Describe what measures are being used to reduce exposure and delay for pedestrians (e.g., median crossing islands, curb bulb-outs, etc.) (Limit 1,400 characters; approximately 200 words)

- If grade separated pedestrian crossings are being added and increasing crossing time, describe any features that are included that will reduce the

detour required of pedestrians and make the separated crossing a more appealing option (e.g., shallow tunnel that doesn't require much elevation change instead of pedestrian bridge with numerous switchbacks). (Limit 1,400 characters; approximately 200 words):

- If mid-block crossings are restricted or blocked, explain why this is necessary and how pedestrian crossing needs and safety are supported in other ways (e.g., nearest protected or enhanced crossing opportunity). (Limit 1,400 characters; approximately 200 words)
-
-

- **Describe how motorist speed will be managed in the project design, both for through traffic and turning movements.** Describe any project-related factors that may affect speed directly or indirectly, even if speed is not the intended outcome (e.g., wider lanes and turning radii to facilitate freight movements, adding turn lanes to alleviate peak hour congestion, etc.). Note any strategies or treatments being considered that are intended to help motorists drive slower (e.g., visual narrowing, narrow lanes, truck aprons to mitigate wide turning radii, etc.) or protect pedestrians if increasing motorist speed (e.g., buffers or other separation from moving vehicles, crossing treatments appropriate for higher speed roadways, etc.). (Limit 2,800 characters; approximately 400 words)
-
-
-
-

- If known, what are the existing and proposed design, operation, and posted speeds? Is this an increase or decrease from existing conditions? (Limit 1,400 characters; approximately 200 words)
-

SCORING GUIDANCE (16 Points)

Projects that will provide the most improvement to pedestrian safety across the two questions will receive full points. Other projects will receive a share of the full points, based on scorer's discretion, considering the following scoring guidance. Weight the responses to each of these questions equally and consider them cumulatively when scoring. If mid-block crossings are not applicable for the project, and the applicant's explanation adequately shows that pedestrian needs are still being safely met, do not penalize the applicant.

See the *FHWA STEP Studio* resource, *FHWA STEP Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations*, *NCHRP Report 926: Guidance to Improving Pedestrian and Bicyclist Safety at Intersections*, and related resources referenced in the application prompt for state-of-practice guidance on pedestrian-oriented safety design and treatments.

Assume that pedestrians may need to travel along and across the entire extent of the project, and evaluate how well the pedestrian safety countermeasures described serve those needs. Projects that serve those needs with the greatest safety and least pedestrian delay, detour, or discomfort should score highest. For example, projects that provide safe at-grade crossings or comfortable tunnels with

minimal detour and elevation change should score higher than projects that include pedestrian bridges requiring lengthy detours and elevation change. Projects that provide frequent crossing opportunities or crossing opportunities well-aligned with transit or other likely places with pedestrian crossing needs should score higher than projects that have infrequent or non-existent protected crossings.

Consider how safely, easily, and comfortably children, older adults, and people with disabilities will be able to navigate crossing the street. Score projects more highly if the safety countermeasures selected are designed to be comfortably used by people of all ages and abilities.

Consider pedestrian-oriented safety treatments in context with motor vehicle design elements. If there are motor vehicle design elements that raise concerns about pedestrian safety (e.g., increased speed, increased crossing distance) that are not fully mitigated by the pedestrian safety countermeasures described, consider a lower score. For roadway expansion projects, where all projects *by definition* will be increasing crossing distance, consider how much additional distance is added as well as the types of countermeasures being considered. If the only element causing an increase in crossing distance is the addition of bike lanes or other bike facilities, especially if the project has reduced other elements to help mitigate this impact (e.g., reducing through lane widths), do not penalize the score for the crossing distance attributable to bike lanes.

Regardless of the speed limit, score projects more highly if they include design elements to help motorists drive slowly. For example, narrow lanes, visual narrowing, and elements to help motorists turn slowly, such as tight turning/corner radius or truck aprons, curb extensions, medians/crossing islands, and hardened centerlines.

SUB-MEASURE 2: Existing Location-Based Pedestrian Safety Risk Factors

These factors are based on trends and patterns observed in pedestrian crash analysis done for the Regional Pedestrian Safety Action Plan. Check off how many of the following factors are present. Applicants receive more points if more risk factors are present.

- ☐ Existing road configuration is **either**:
 - One-way, 3+ through lanes
 - Two-way, 4+ through lanes
- ☐ Existing road has a design speed, posted speed limit, or speed study/data showing 85th percentile travel speeds in excess of:
 - 30 MPH or more
- ☐ Existing road has AADT of greater than 15,000 vehicles per day (List the AADT _____)

SCORING GUIDANCE (16 Points)

Multiply the score from Sub-Measure 1 by the proportion of risk factors indicated to calculate the number of points earned for Sub-Measure 2. Applications where all three factors are present score additional points equal to 100% of their Sub-Measure 1 score. Applications where two of the three factors are present score additional points equal to 2/3 (or 67%) of their Sub-Measure 1 score. And so on. To earn the maximum possible score on Sub-Measure 2, a project would need to earn maximum points on Sub-Measure 1 and also have all 3 risk factors present.

SUB-MEASURE 3: Existing Location-Based Pedestrian Safety Exposure Factors

These factors are based on trends and patterns observed in pedestrian crash analysis done for the Regional Pedestrian Safety Action Plan. Check off how many of the following existing location exposure factors are present. Applicants receive more points if more risk factors are present.

- ☐ Existing road has transit running on or across it with 1+ transit stops in the project area (If flag-stop route with no fixed stops, then 1+ locations in the project area where roadside stops are allowed. Do not count portions of transit routes with no stops, such as non-stop freeway sections of express or limited-stop routes.)
- ☐ Existing road has high-frequency transit running on or across it and 1+ high-frequency stops in the project area (high-frequency defined as service at least every 15 minutes from 6am to 7pm weekdays and 9am to 6pm Saturdays.)
- ☐ Existing road is within 500' of 1+ shopping, dining, or entertainment destinations (e.g., grocery store, restaurant)

If yes, please describe (Limit 1,400 characters; approximately 200 words):

- ☐ Existing road is within 500' of other known pedestrian generators (e.g., school, civic/community center, senior housing, multifamily housing, regulatorily-designated affordable housing)

If yes, please describe (Limit 1,400 characters; approximately 200 words):

SCORING GUIDANCE (15 Points)

Multiply the score from Sub-Measure 1 by the proportion of exposure factors indicated to calculate the number of points earned for Sub-Measure 3. Applications where all four factors are present score additional points equal to 100% of their Sub-Measure 1 score. Applications where two of the four factors are present score additional points equal to 2/4 (or 50%) of their Sub-Measure 1 score. And so on. To earn the maximum possible score on Sub-Measure 3 a project would need to earn maximum points on Sub-Measure 1 and also have all 4 exposure factors present.

7. Multimodal Elements and Existing Connections (110 Points)

This criterion measures how the project improves the travel experience, safety, and security for other modes of transportation and addresses the safe integration of these modes. The Transportation Policy Plan requires that explicit consideration of all users of the transportation system be considered in the planning and scoping phase of roadway projects.

A. **MEASURE:** Describe how the project positively affects the multimodal system.

- Discuss any bicycle, pedestrian, or transit elements that are included as part of the project and how they improve the travel experience, safety, and security for users of these modes. Applicants should make sure that new multimodal elements described in the response are accounted for as part of the cost estimate form earlier in the application. Applicants should note if there is no transit service in the project area and identify supporting studies or plans that address why a mode may not be incorporated in the project (e.g., a bicycle system plan that locates bikeway facilities on a lower-volume parallel route).
- Describe how the proposed multimodal improvements positively affect identified alignments in the Regional Bicycle Transportation Network (RBTN) or along a regional trail, if applicable.
- Describe how the proposed multimodal improvements either provide a new, or improve an existing Major River Bicycle Barrier Crossing (MRBBC) as defined in the 2040 Transportation Policy Plan (TPP) or how they provide a new or improved crossing of a Regional Bicycle Barrier with respect to the tiered Regional Bicycle Barrier Crossing Improvement Areas as defined in the TPP and Technical Addendum to the Regional Bicycle Barriers Study (May 2019), if applicable.
- Discuss the existing bicycle, pedestrian, and transit connections and how the project enhances these connections.
- Discuss whether the project implements specific locations identified as being deficient in a completed ADA Transition Plan.

RESPONSE (Limit 2,800 characters; approximately 400 words):

SCORING GUIDANCE (110 Points)

The project that most positively affects the multimodal elements system will receive the full points. Remaining projects will receive a share of the full points at the scorer's discretion. The project score will be based on the quality of the improvements, as opposed to being based solely on the number of modes addressed. Points can be earned for incorporating multimodal project elements, positively affecting identified alignments in the Regional Bicycle Transportation Network (RBTN), regional trail, Major River Bicycle Barrier Crossing, or Regional Bicycle Barrier, or for making connections with existing multimodal systems or helping to implement an ADA Transition Plan. Projects do not need all of these elements to be awarded all of the points. Multimodal elements for rural roadway projects may include wider shoulders that will be used by bicyclists and pedestrians.

8. Risk Assessment (75 Points)

This criterion measures the number of risks associated with successfully building the project. High-risk applications increase the likelihood that projects will withdraw at a later date. If this happens, the region is forced to reallocate the federal funds in a short amount of time or return them to the US Department of Transportation. These risks are outlined in the checklist in the required Risk Assessment.

- A. **MEASURE:** Applications involving construction must complete the Risk Assessment. This checklist includes activities completed to-date, as well as an assessment of risks (e.g., right-of-way acquisition, proximity to historic properties, etc.).

RESPONSE (Complete Risk Assessment):

Please check those that apply and fill in anticipated completion dates for all projects. New/expanded transit service projects will receive full credit for items 2-5 but must fill out item 1. Transit vehicle purchases will receive full credit.

1. Public Involvement (20 Percent of Points)

Projects that have been through a public process with residents and other interested public entities are more likely than others to be successful. The project applicant must indicate that events and/or targeted outreach (e.g., surveys and other web-based input) were held to help identify the transportation problem, how the potential solution was selected instead of other options, and the public involvement completed to date on the project. The focus of this section is on the *opportunity for public input* as opposed to the quality of input. NOTE: A written response is required and failure to respond will result in zero points.

100% ☐ Multiple types of targeted outreach efforts (such as meetings or online/mail outreach) specific to this project with the general public and partner agencies have been used to help identify the project need.

50% ☐ At least one meeting specific to this project with the general public has been used to help identify the project need.

50% ☐ At least online/mail outreach effort specific to this project with the general public has been used to help identify the project need.

25% ☐ No meeting or outreach specific to the project was conducted, but the project was identified through meetings and/or outreach related to a larger planning effort.

0% ☐ No outreach has led to the selection of this project.

RESPONSE (Limit 2,800 characters; approximately 400 words). Describe the type(s) of outreach selected for this project (i.e., online or in-person meetings, surveys, demonstration projects), the method(s) used to announce outreach opportunities, and how many people participated. Include any public website links to outreach opportunities.

2. Layout (25 Percent of Points)

Layout includes proposed geometrics and existing and proposed right-of-way boundaries. A basic layout should include a base map (north arrow; scale; legend;* city and/or county limits; existing ROW, labeled; existing signals;* and bridge numbers*) and design data (proposed alignments; bike and/or roadway lane widths; shoulder width;* proposed signals;*

and proposed ROW). An aerial photograph with a line showing the project's termini does not suffice and will be awarded zero points.

*If applicable

100% ☐ Layout approved by the applicant and all impacted jurisdictions (i.e., cities/counties/MnDOT. If a MnDOT trunk highway is impacted, approval by MnDOT must have occurred to receive full points. **A PDF of the layout must be attached along with letters from each jurisdiction to receive points.**

100% ☐ A layout does not apply (signal replacement/signal timing, stand-alone streetscaping, minor intersection improvements). Applicants that are not certain whether a layout is required should contact Colleen Brown at MnDOT Metro State Aid – colleen.brown@state.mn.us.

75% ☐ For projects where MnDOT trunk highways are impacted and a MnDOT Staff Approved layout is required. Layout approved by the applicant and all impacted local jurisdictions (i.e., cities/counties), and layout review and approval by MnDOT is pending. **A PDF of the layout must be attached along with letters from each jurisdiction to receive points.**

50% ☐ Layout completed but not approved by all jurisdictions. **A PDF of the layout must be attached to receive points.**

25% ☐ Layout has been started but is not complete. **A PDF of the layout must be attached to receive points.**

0% ☐ Layout has not been started

3. Review of Section 106 Historic Resources (15 Percent of Points)

100% ☐ No known historic properties eligible for or listed in the National Register of Historic Places are located in the project area, and project is not located on an identified historic bridge

100% ☐ There are historical/archeological properties present but determination of “no historic properties affected” is anticipated.

80% ☐ Historic/archeological property impacted; determination of “no adverse effect” anticipated

40% ☐ Historic/archeological property impacted; determination of “adverse effect” anticipated

0% ☐ Unsure if there are any historic/archaeological properties in the project area.

Project is located on an identified historic bridge: ☐

4. Right-of-Way (25 Percent of Points)

100% ☐ Right-of-way, permanent or temporary easements, and MnDOT agreement/limited-use permit either not required or all have been acquired

50% ☐ Right-of-way, permanent or temporary easements, and/or MnDOT agreement/limited-use permit required - plat, legal descriptions, or official map complete

25% ☐ Right-of-way, permanent or temporary easements, and/or MnDOT agreement/limited-use permit required - parcels identified

0% ☐ Right-of-way, permanent or temporary easements, and/or MnDOT agreement/limited-use permit required - parcels not all identified

5. Railroad Involvement (15 Percent of Points)

100% ☐ No railroad involvement on project or railroad Right-of-Way agreement is executed (include signature page, if applicable)

50% ☐ Railroad Right-of-Way Agreement required; negotiations have begun

0% ☐ Railroad Right-of-Way Agreement required; negotiations have not begun.

Anticipated date or date of executed Agreement _____

SCORING GUIDANCE (75 Points)

The applicant with the most points on the Risk Assessment (more points equate to less project risk) will receive the full points for the measure. Remaining projects will receive a proportionate share of the full points. For example, if the application being scored had 40 points and the top project had 70 points, this applicant would receive $(40/70) \times 75$ points or 43 points.

9. Cost Effectiveness (100 Points)

This criterion will assess the project's cost effectiveness based on the total TAB-eligible project cost (not including noise walls) and total points awarded in the previous criteria.

- A. **MEASURE:** This measure will calculate the cost effectiveness of the project. Metropolitan Council staff will divide the number of points awarded in the previous criteria by the TAB-eligible project cost (not including noise walls). If a project has been awarded other outside, competitive funding (e.g., state bonding, Transportation Economic Development Program, Minnesota Highway Freight Program), project sponsors may reduce the total project cost for the purposes of this scoring measure by the amount of the outside funding award.

- Cost- effectiveness = total number of points awarded in previous criteria/total TAB-eligible project cost

RESPONSE (This measure will be calculated after the scores for the other measures are tabulated by the Scoring Committee):

- Total Project Cost (entered in Project Cost Form): _____ (automatically calculated)

- Enter amount of Noise Walls: _____
- Enter amount of any outside, competitive funding (attach documentation of award): _____
- Points Awarded in Previous Criteria: _____ (entered by Metropolitan Council staff)

SCORING GUIDANCE (100 Points)

The applicant with the most points (i.e., the benefits) per dollar will receive the full points for the measure. Remaining projects will receive a proportionate share of the full points. For example, if the top project received .0005 points per dollar and the application being scored received .00025 points per dollar, this applicant would receive $(.0005/.00025) * 100$ points for 50 points.

The scorer for this measure will also complete a reasonableness check of the total project cost that is used for this measure. The scorer may follow up with the applicant to clarify any questions. Up to 50 percent of points awarded for this measure can be deducted if the scorer does not believe that the cost estimate is reasonable.

TOTAL: 1,200 POINTS