

# REACTIVE SAFETY

## Prioritizing Criteria and Measures

**2050 TPP Goal:** Our communities are healthy and safe.

### 2050 TPP Objectives or Policies:

- Work to eliminate fatalities and serious injuries from traffic crashes and incidents on the transportation system by 2050 using the [Safe System Approach](#).
- Emphasize and prioritize the safety of people outside of vehicles in the transportation right-of-way.

**Category Definition:** The Reactive Safety application category seeks to fund projects that reduce fatalities and serious injuries, as well as increase safety and comfort for people outside of vehicles by focusing on locations with a high documented severe crash history.

## Scoring

Criteria and Measures	%
<b>1. Expected Reduction in Fatal and Serious Injury Crashes</b>	<b>35</b>
Measure A – Crashes reduced (Benefit/Cost ratio)	35
<b>2. Connection to Existing Safety Planning Efforts</b>	<b>20</b>
Measure A – Connection to existing safety planning efforts	20
<b>3. Fatal and Serious Injury Crash History</b>	<b>5</b>
Measure A – 10-year crash history of fatal and serious injury crashes	5
<b>4. Improvements for People Outside of Vehicles</b>	<b>25</b>
Measure A – Project-based pedestrian safety enhancements and risk elements	25
<b>5. Community Considerations</b>	<b>15</b>
Measure A – Community data and context	5
Measure B – Community need and future engagement	5
Measure C – Community benefits	5
<b>Total</b>	<b>100</b>

## Examples of Eligible Projects

Please note that this list is not exhaustive and is intended only to provide examples. For questions regarding project eligibility, see the qualifying requirements for this application category and contact the Metropolitan Council.

- New intersection controls (e.g., roundabouts, reduced conflict intersections (RCIs), J-turns, refer to [FHWA's Proven Safety Countermeasures](#) for additional information)
- Intersection modifications (e.g., pavement messages, stop bars, lighting)
- New or modernized grade separations/interchanges that are driven by a safety need
- Separated bicycle or pedestrian facilities
- Pedestrian crossing treatments (e.g., curb extensions (bump-outs), pedestrian countdown timers, pedestrian refuge islands and raised medians, rectangular rapid flashing beacons (RRFBs))
- Roadway reconstruction or reconfiguration that focuses on safety improvements (e.g., adding turn lanes, adding medians, adding bypass lanes or bypass lane conversions, changing intersection control, etc.)
- Road diets, lane modifications or turn lanes (e.g., 3 to 2-lane conversions, lane narrowing, bypass lane conversion, turn lane modifications, etc.)
- Segment safety improvements (e.g., rumble strips, wider striping (6"), embedded wet reflective striping, cable median barrier, delineation for sharp curves (chevrons), new guardrail (not replacement), shoulder widening, safety edge, friction treatments, lighting)
- Sight distance improvements (e.g. lighting, turn lane modification, intersection modification, etc.)
- Access management changes (e.g. frontage roads or access removals)

## Application Criteria and Measures

### 1. Expected Reduction in Fatal and Serious Injury Crashes

This criterion measures the project's expected reduction in fatal and serious injury crashes based on the proposed Crash Modification Factors (CMFs).

#### A. Crashes Reduced

Calculate the reduction in the total number of crashes due to improvements made by the project.

Crash data must be obtained for the project length for calendar years 2021 through 2025. 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 MnCMAT2, crash data from that system can be used as part of the submittal. MnCMAT2 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 MnCMAT2. MnDOT Metro District Traffic Office (Kaare Festvog at [kaare.festvog@state.mn.us](mailto:kaare.festvog@state.mn.us)) will provide a crash listing upon request. Applicants should request crash data from MnDOT at least three weeks before the application deadline. If applicants wish to include crash data not available in MnCMAT2 they should reach out to MnDOT Metro District Traffic Office (Kaare Festvog at [kaare.festvog@state.mn.us](mailto:kaare.festvog@state.mn.us)) to discuss further. The applicant must then attach a listing of the crashes reduced and the MnDOT [HSIP Benefit/Cost \(B/C\) worksheet](#) that identifies the resulting benefit associated with the project.

Applicants should select Crash Modification Factors (CMFs) from the supplied [list](#) of commonly used CMFs. For treatments where a CMF is not chosen from the list, the applicant will provide a reasonable CMF from the [FHWA's CMF Clearinghouse](#) (MUST include a printout of the CMF reference page).

## Reactive Safety

Additionally, the applicant is required to write a brief logical explanation of why they chose a particular CMF. No more than two CMFs per crash and location will be allowed. For example: a crash that occurs where multiple countermeasures are proposed – median construction, lighting, stop sign improvements – an applicant will need to choose which two CMFs that provide the greatest reduction in crashes. For projects with multiple intersections, different CMFs can be used for each intersection depending on the crash types occurring at each intersection but no more than two CMFs can be used for each intersection or location along the project per crash. Refer to the HSIP guidance if using multiple CMFs.

- Crash Modification Factor(s) Used (100 words or less): \_\_\_\_\_
- Rationale for Crash Modification Factor(s) Selected and how the CMF(s) connect to [FHWA's Safe System Approach](#) (300 words or less): \_\_\_\_\_
- MnDOT HSIP Project B/C ratio: \_\_\_\_\_

Upload Crash Modification Factors and B/C Worksheet.

### Scoring Guidance

The applicant with highest Benefit/Cost ratio will receive the full points for the measure. The remaining projects will receive a proportionate share of the full points. The scoring committee may reduce the points awarded if the methodology or data provided by the applicant is not reasonable.

## 2. Connection to Existing Safety Planning Efforts

This criterion measures how the project connects to the Regional Safety Action Plan, existing safety plan, road safety audit, and/or other safety studies focused on reducing fatal and serious injury crashes.

### Connection to Existing Safety Planning Efforts

Please select all of the following that apply:

- Project Location (or part of the location) is listed in the [Regional Safety Action Plan](#) on any of the following lists (note an online map is being developed and a link will be provided in final application):
  - Identified on Regional Top 25 Priority [lists](#) (reactive or proactive)
  - Identified on Regional High Injury Streets [maps](#)
  - Identified on County Top 10 priority lists (reactive or proactive)
  - Crash Risk Index >15 (for pedestrians, use the bicyclists' layers)
- Location is listed in another safety plan that prioritizes reducing fatal and serious injury crashes.
  - Please describe and provide reference or link to the plan: \_\_\_\_\_

### Scoring Guidance

Consider the information and narrative provided by the applicant and rate projects based on the benchmarks provided below.

- **High:** Projects identified in the Regional Safety Action Plan on either the regional top 25 or county top 10 lists will score the highest followed by projects identified on the Crash Risk Index over 15 or on the Regional High Injury Streets maps.
- **Medium-High**
- **Medium:** Projects identified as a priority location for safety investment in a local (e.g. county or city) safety action plan based on a recent injury crash analysis.
- **Medium-Low**

- **Low:** Projects only identified in a targeted study (e.g., NEPA document, corridor study, intersection study, ICE report, etc.) that identifies the specific safety measures needed to improve safety and those safety measures have been incorporated into the proposed project.
- **Non-responsive/Not relevant:** Projects that are not identified in the Regional Safety Action Plan or any local safety plan. This could also include projects that also have not completed a targeted study that defines an existing safety issue (e.g., NEPA document, corridor study, intersection study, ICE report, etc.).

### 3. Fatal and Serious Injury Crash History

This criterion measures the history of fatal and serious injury crashes from 2016 to 2025 that have occurred along the proposed project.

#### A. 10-year Fatal and Serious Injury Crash History

Total correctable fatal and serious injury crashes for 2016-2025 will be tallied with each fatal (type K) crash being worth two times the number of each serious injury (type A) crash. Note possible injury (type B) crashes can be included for pedestrian and bicycle crashes only. Crash data must be obtained for the project length for calendar years 2016 through 2025. Crashes within a 250 ft radius of an intersection or along a corridor should be included. 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 MnCMAT2, crash data from that system can be used as part of the submittal. MnCMAT2 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 MnCMAT2. MnDOT Metro District Traffic Office (Kaare Festvog at kaare.festvog@state.mn.us) will provide a crash listing upon request. Applicants should request crash data from MnDOT at least three weeks before the application deadline. If applicants wish to include crash data not available in MnCMAT2 they should reach out to MnDOT Metro District Traffic Office (Kaare Festvog at kaare.festvog@state.mn.us) to discuss further.

Total crashes = 2\* "Fatal" crashes + "Serious Injury" crashes + "Minor Injury" crashes (pedestrian and bicycle only)

#### Scoring Guidance

Correctable crashes are those that the treatment being proposed is anticipated to mitigate. The applicant with the highest number of correctable fatal (type K), serious injury crashes (type A), and minor injury (type B) (for pedestrians and bicycles only) will receive the full points for the measure. The remaining projects will receive a proportionate share of the points.

### 4. Improvements for People Outside of Vehicles

This criterion measures the project's ability to promote safety for people outside of vehicles, including how the project responds to existing risks and makes use of proven safety countermeasures.

#### A. 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](#).

Answer the following 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.

- 1. Describe how this project will address the safety needs of people crossing the street at signalized intersections, unsignalized intersections, mid-block 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 (600 words or less): \_\_\_\_\_

Consider the following when responding:

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

No

Yes. If yes, describe what measures are being used to recognize the increased distance between designated 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, converting intersection control from signalized to roundabout to slow motorist speed, curb extensions, medians, lighting, etc.)

- 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 and how many feet will the crossing distance be changing by (increasing or decreasing)? Describe what measures are being used to reduce exposure and delay for pedestrians (e.g., median crossing islands, curb bulb-outs, etc.). 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)

- 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 controlled or enhanced crossing opportunity).

- 2. Describe how separation will be provided for modes (vehicles and people outside of vehicles), including if there will be separation between bicyclists and pedestrians** (400 words or less): \_\_\_\_\_

- 3. Describe how motorist speed will be managed in the project design, in both through-traffic and turning movements.** Describe any project-related factors that may affect speed directly or

## Reactive Safety

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 and bicyclists if motorist speed will increase (e.g., buffers or other separation from moving vehicles, crossing treatments appropriate for higher speed roadways, etc.). If known, what are the existing and proposed speed limits? Is this an increase or decrease from existing conditions? (400 words or less): \_\_\_\_\_

### Scoring Guidance

Consider the information and narrative provided by the applicant and rate projects based on the benchmarks provided below. Projects may be rated at any point along the scale based on their performance against the stated criteria.

- **High:** The highest rated projects in this criterion will serve the needs of pedestrians and bicyclists with the greatest safety and least pedestrian and bicyclist delay, detour, or discomfort. Score projects higher if selected countermeasures are designed to be comfortably used by people of all ages and abilities. The highest scoring projects will provide convenient or direct at-grade crossing opportunities to prioritize directness and convenience with safety. Score projects higher if design elements are included to help motorists drive slower or mitigate multiple crash types or threats. The response will include quantitative or qualitative metrics showing a high level of improvement using an established methodology.
- **Medium-High**
- **Medium:** Mid-range projects in this measure may make a strong case as to how the project improves the travel experience, safety, and security for people outside of vehicles but without quantitative data or using a less established methodology. These projects may require lengthy detours or elevation changes or have less convenient or direct at-grade crossings that do not align well with destinations. Similarly, mid-range projects may have quantitative or qualitative data and an established methodology but only offer a small improvement to the multimodal experience.
- **Medium-Low**
- **Low:** Projects that make minimal improvement to the travel experience, safety and security for people outside of vehicles should receive low points in this measure. These projects may include motor vehicle design elements that raise concerns for pedestrian and bicyclist safety, such as increased vehicle speeds or increased crossing distances that would not be fully mitigated by any safety countermeasures for pedestrians and bicyclists.
- **Non-responsive/Not relevant:** Projects that do not improve the travel experience and safety for people outside of vehicles should receive zero points for this measure.

## 5. Community Considerations

See separate Community Considerations criteria document.