

## MEMORANDUM

June 15, 2021

To: Heidi Schallberg, AICP  
Organization: Metropolitan Council  
From: Jessica Schoner, PhD  
Project: Pedestrian Safety Action Plan

**Re: Proposed Updated Pedestrian Safety Measure for Regional Solicitation Roadway Expansion, Modernization, and Spot Mobility Project Categories**

The attached document contains our recommended revisions to the pedestrian safety measure included in regional solicitation applications for roadway expansion, roadway modernization, and spot mobility project categories.

The proposed measure contains five sub-measures, collectively described as a “Pedestrian Safety Worksheet”. The first sub-measure identifies projects that are largely not intended to benefit pedestrians, and assigns a score of zero without applicants having to complete the remainder of the Pedestrian Safety Worksheet. The next two sub-measures examine existing safety risk factors, based on trends and patterns we observed in both the Task 4 descriptive crash analysis and the Task 5 systemic crash analysis. Finally, the last two sub-measures are centered on how the project’s design will impact pedestrian safety, including specific pedestrian safety countermeasures and any additional risk impacts present.

The scoring guidance written for each sub-measure assumes that overall pedestrian safety measure weighting (i.e., 30 points for expansion/modernization and 50 points for spot mobility) will remain unchanged from the 2020 application cycle. However, the sub-measures and scoring guidance are written flexibly enough that this could easily be revised in the future.

The sub-measures could also be adopted in part. For example, sub-measure 4 is most similar to the entirety of the previous pedestrian safety measure, so if the location-based sub-measures are a poor fit for stakeholders’ needs and goals right now, then adopting the content of sub-measure 4 as the entirety of the pedestrian measure, rather than adopting the whole worksheet, would still likely be valuable.

In addition, the sub-measure could be adapted for use in other Regional Solicitation categories (e.g. bridges, pedestrian, or SRTS projects).

Sincerely,

**Jessica Schoner, PhD** | Data Science Practice Lead

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# Proposed Pedestrian Safety Measure

Roadway Expansion, Roadway Modernization, and Spot Mobility & Safety Categories

## Measure: Pedestrian Safety Worksheet

### *SUB-MEASURE 1: Project-Based Pedestrian Safety Enhancements*

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. The following is a current list of state-of-practice resources for pedestrian safety:

- *FHWA Safe Transportation for Every Pedestrian (STEP) Tools for Selecting and Implementing Countermeasures for Improving Pedestrian Crossing Safety*
- *FHWA STEP Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations*
- *NCHRP Report 926: Guidance to Improve Pedestrian and Bicyclist Safety at Intersections*
- National Association of City Transportation Officials Guides:
  - *City Limits: Setting Safe Speed Limits*
  - *Urban Street Design Guide*
  - *Urban Bikeway Design Guide*
  - *Designing for All Ages & Abilities*
  - *Don't Give Up at the Intersection*
  - *Transit Street Design Guide*
- *Manual on Uniform Traffic Control Devices (MUTCD)*
- *PEDSAFE*
- *BIKESAFE*
- *FHWA Proven Safety Countermeasures*
- CMF Clearinghouse

Please answer the following four 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, note that it is unknown and anticipated possible values or engineering choices, to the greatest extent available.

- Describe how this project will address the safety needs of people walking/rolling along the street.
- Describe how this project will address the safety needs of people crossing the street at signalized and unsignalized intersections.
  - Crossing design at intersections should be consistent with *NCHRP Report 926: Guidance to Improve Pedestrian and Bicyclist Safety at Intersections*.
- Describe how this project will address the safety needs of people crossing the street at mid-block locations.
  - Crossing design at mid-block locations should be consistent with the *FHWA STEP Guide to Improving Pedestrian Safety at Uncontrolled Crossing Locations*.

- Note how far apart signalized or otherwise enhanced/protected crossing opportunities will be located along the corridor, consistent with guidance in the *FHWA STEP Studio* resource.
- Describe how motorist speed will be managed in the project design.
  - Note the existing and proposed design and posted speeds.
  - Note whether this represents an increase or decrease from existing conditions and the expected pedestrian safety impacts of this design decision.
  - Note any engineering strategies or treatments in the proposed design that are intended to encourage motor vehicle operation at or below the design speed.

### SCORING GUIDANCE (X Points)

The project that will provide the most improvement to pedestrian safety across all four questions will receive full points. Remaining projects will receive a share of the full points, based on scorer's discretion, considering the following guidance. Weight the responses to all four of these questions approximately equally.

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.

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.

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 (e.g., street trees, speed humps, chicanes, etc.), and elements to help motorists turn slowly, such as tight turning/corner radius, curb extensions, medians/crossing islands, and hardened centerlines.

### ***SUB-MEASURE 2: Project-Based Pedestrian Safety Risk Impacts (Minus up to HALF of maximum possible points for Pedestrian Safety Worksheet)***

Does the project meet any of the following criteria?

- Net increase in crossing distance or time at any intersection or mid-block location in the project (e.g., adding turn or through lanes, widening lanes, multi-phase crossing, pedestrian bridge or tunnel)
  - If yes: Number of intersection legs or mid-block locations affected: \_\_\_\_\_
- Prohibited crossings on one or more legs of any intersection

- If yes: Number of intersection legs affected: \_\_\_\_\_
- Increased curb radii or increased motor vehicle turning speeds
- Project increases motor vehicle design speed or posted speed limit
- Project includes sidewalk or sidepath only on one side, not both

**SCORING GUIDANCE** (Minus up to 50% of maximum possible points for Pedestrian Safety Worksheet)

Subtract 5% of maximum pedestrian safety worksheet score per intersection leg or per mid-block location affected by the first two factors.

Subtract 10% of maximum pedestrian safety worksheet score each, for each of the three remaining factors indicated.

*If score from this sub-measure would subtract more points than collectively earned across other sub-measures, then the worksheet score is zero. Worksheet score should never be negative.*

**SUB-MEASURE 3. Projects that do not serve pedestrians**

Does the project meet any of the following criteria?

- Project is primarily on a restricted access highway (e.g., adding capacity to a restricted access highway or rebuilding restricted access highway interchange) **and** does not provide safe and comfortable pedestrian facilities and crossings
- Existing location lacks any pedestrian facilities (e.g., sidewalks, marked crossings) **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)
- Maximum or average distance between protected or enhanced pedestrian crossing opportunities increases (e.g., signal is removed, and no enhanced or protected crossing facilities are added)

**SCORING GUIDANCE** (0 Points)

If any of the items above are checked, then **score for entire pedestrian safety worksheet is zero**. Do not score remaining sub-measures.

**SUB-MEASURE 4: Existing Location-Based Pedestrian Safety Risk Factors**

Check off how many of the following factors are present:

- Existing road configuration is **either**:
  - One-way, 3+ through lanes
  - Two-way, 4+ through lanes
- Existing road has a design speed or posted speed limit of **either**:
  - 30 MPH or more in Urban Center
  - 35 MPH or more elsewhere
- Existing road has AADT of greater than 7,000 vehicles per day

**SCORING GUIDANCE** (X Points)

Applications where all three factors are present score maximum points. Score remaining applications proportionally based on number of factors indicated (e.g., 2 risk factors = 2/3 of maximum points).

**SUB-MEASURE 5: Existing Location-Based Pedestrian Safety Exposure Factors**

Check off how many existing location exposure factors are present:

- Existing road has transit running on it with 1+ transit stops in the project area
- Existing road has High Frequency transit running on it and 1+ High Frequency stops in the project area
- Project area is in an Urban Center Thrive community
- Existing road is within 500' of 1+ shopping, dining, or entertainment destinations (e.g., grocery store, restaurant)

If yes, please describe:

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- 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:

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**SCORING GUIDANCE** (X Points)

Applications where all five factors are present score maximum points. Score remaining applications proportionally based on number of factors indicated (e.g., 4 exposure factors = 4/5 of maximum points).

**Proposed Scoring / Weighting**

The current pedestrian safety measure is weighted as 30 points for roadway expansion and roadway reconstruction projects, and 50 points for spot mobility & safety projects. If this measure replaces the existing measure and keeps the same number of points, consider weighting each sub-measure in the worksheet as follows:

<i>Sub-Measure</i>	<i>Points Distribution – Roadway Expansion and Roadway Modernization</i>	<i>Points Distribution – Spot Mobility &amp; Safety</i>
<i>SUB-MEASURE 1: Project-Based Pedestrian Safety Enhancements</i>	10	20

<i>SUB-MEASURE 2: Project-Based Pedestrian Safety Risk Impacts</i>	Minus up to 15 (total score never less than 0)	Minus up to 25 (total score never less than 0)
<i>SUB-MEASURE 3: Projects that do not serve pedestrians</i>	If yes – overall worksheet score is zero If no – score sub-measures 1, 2, 4, and 5	If yes – overall worksheet score is zero If no – score sub-measures 1, 2, 4, and 5
<i>SUB-MEASURE 4: Existing Location-Based Pedestrian Safety Risk Factors</i>	10	15
<i>SUB-MEASURE 5: Existing Location-Based Pedestrian Safety Exposure Factors</i>	10	15
<b>TOTAL POINTS</b>	<b>30</b>	<b>50</b>

## Appendix: Background Understanding of Existing Pedestrian Safety Measure from 2020 Application Cycle

The project team reviewed application forms, submitted applications, and responses from a staff survey about the 2020 Regional Solicitation application cycle.

### Pedestrian Safety Criterion Structure and Application Context

Our team reviewed the most recent application forms for each of 10 funding categories in the Regional Solicitation (excluding Travel Demand Management categories). We identified whether, how, and how much pedestrian safety factored into the final score.

The primary pedestrian safety criterion added for roadway projects to the 2020 Regional Solicitation application was a free-response item immediately following an existing all-mode crash reduction criterion. The following prompt (with associated scoring guidance for application reviewers) reads as follows:

*“Discuss how the project will improve safety for pedestrians. Safety countermeasures for pedestrians can include those identified by the FHWA as part of its Safe Transportation for Every Pedestrian program or others in its Proven Safety Countermeasures (e.g., pedestrian refuge islands, raised crosswalks, pedestrian hybrid beacons, leading pedestrian intervals). More information about pedestrian safety best practices is also available in MnDOT’s Best Practices for Pedestrian/Bicycle Safety.*

#### SCORING GUIDANCE (30 Points)

*The project that will provide the most improvement to pedestrian safety will receive full points. Remaining projects will receive a share of the full points at the scorer’s discretion.”*

The results of the Regional Solicitation pedestrian safety measure scan are summarized in Table 1. The above prompt was included in Roadway Expansion, Roadway Reconstruction, and Spot Mobility categories in the 2020 application cycle. Pedestrian safety was already accounted for in different ways (e.g., crash history, narrative about conflict points) in the Multiuse Trails & Bicycle Facilities and Pedestrian Facilities project categories. Pedestrian safety did not have its own specific metric in other categories (Traffic Management Technologies, Transit Expansion, Transit Modernization), though safety was included in other question prompts.

Percentages listed in the table refer only to the percent of the total score that comes from pedestrian-specific measures. Combined measures, such as including pedestrian safety among all road user safety in a broader safety measure, or including pedestrian safety among other connectivity or access benefits in a “Multimodal Elements” criterion, aren’t reflected in these percentages. Some rows show 0% but still note ways in which pedestrian safety is reflected in the application.

**TABLE 1: SUMMARY OF HOW PEDESTRIAN SAFETY IS FACTORED INTO EACH REGIONAL SOLICITATION PROJECT CATEGORY APPLICATION**

Category	Current Pedestrian Safety Inclusion (scoring weight shown in parenthesis)	Draft Recommendation for next Regional Solicitation Cycle	Draft Additional and Longer-term Recommendations
<b>Strategic Capacity (Roadway Expansion)</b>	<b>6B (2.7%):</b> “Discuss how the project will improve safety for pedestrians...”	<b>Replace with two-part location (quantitative) and design (narrative) question;</b> increase weight relative to other criteria; modify scoring to allow point subtraction for proposed projects with high risk elements	Consider substantially reducing funding for this category and reallocating to other project types with greater potential to improve pedestrian safety
<b>Roadway Reconstruction/ Modernization</b>	<b>6B (2.7%):</b> “Discuss how the project will improve safety for pedestrians...”	<b>Replace with two-part location (quantitative) and design (narrative) question;</b> increase weight relative to other criteria	Monitor responses, feedback, and performance; update criterion, scoring rubric, and weighting as needed to prioritize pedestrian safety
Roadway Traffic Management Technologies	<b>(0%): Pedestrian safety not explicitly scored.</b> May be mentioned under equity/housing (3A/3B), safety (6A/6B), or multimodal (7A) criteria at proposer’s discretion.	Monitor how often pedestrian safety is mentioned in criteria 3, 6, and 7	Develop and add pedestrian safety metric (6C) tailored to this project type. Likely would require different countermeasure scoring considerations from other roadway pedestrian safety metrics.
<b>Spot Mobility and Safety</b>	<b>4B (4.5%):</b> “Discuss how the project will improve safety for pedestrians...”	<b>Replace with two-part location (quantitative) and design (narrative) question;</b> increase weight relative to other criteria	Monitor responses, feedback, and performance; update criterion, scoring rubric, and weighting as needed to prioritize pedestrian safety
Bridges	<b>(0%): Pedestrian safety (nor any other road user safety) not explicitly scored.</b> May be mentioned under equity/housing (3A/3B) or	Monitor how often pedestrian safety is mentioned in criteria 3 and 5. Consider adding two-part location	Monitor responses, feedback, and performance; update criterion, scoring rubric, and weighting as needed



	multimodal (5A) criteria at proposer's discretion.	(quantitative) and design (narrative) question.	to prioritize pedestrian safety
Multiuse Trails	<b>4B (13.6%):</b> Pedestrian and bicyclist safety evaluated together. Responses that provide historical crash data are scored higher than responses without crash data.	Monitor whether respondents indicate awareness of safety countermeasures and how pedestrians (vs bicyclists) are factored into responses and scoring	Consider asking for specific pedestrian countermeasures at any trail crossings, especially crossings with higher volume, higher speed, and higher AADT roadways. Consider using systemic criterion to prioritize location rather than crash history alone.
Pedestrian	<b>4B (16.4%):</b> Pedestrian safety explicitly considered. Responses that provide historical crash data are scored higher than responses without crash data.	Monitor whether respondents indicate awareness of safety countermeasures.	Consider revising example list of projects to show awareness of both linear (sidewalk) and crossing needs, especially crossings with higher volume, higher speed, and higher AADT roadways. Consider adding systemic measure to prioritize location rather than crash history alone.
Safe Routes to School	N/A – study team did not evaluate	N/A – study team did not evaluate	N/A – study team did not evaluate
Transit Expansion	<b>(0%):</b> Pedestrian safety not explicitly considered. May be included in equity/housing (3A/3B) or multimodal (5) responses at proposer's discretion.	Monitor whether respondents mention pedestrian safety.	Consider developing and adding a criterion that targets specific needs of pedestrians around transit – for example, crossing facilities provided for every stop, including unsignalized and mid-block locations.
Transit Modernization	<b>(0%):</b> Pedestrian safety not explicitly considered. May be included in equity/housing (3A/3B) or multimodal (6) responses at proposer's discretion. Safe walking facilities not provided as an example	Consider adding pedestrian safety element as an example for 5A question and monitor whether respondents mention pedestrian safety.	Consider developing and adding a criterion that targets specific needs of pedestrians/walk-up transit users around transit – for example, crossing facilities provided for every stop,

of transit service and customer improvements (5A).

including unsignalized and mid-block locations.

Travel Demand Management

N/A – study team did not evaluate

N/A – study team did not evaluate

N/A – study team did not evaluate

### Application Responses to Pedestrian Safety Criterion

The project team reviewed the contents of a selection of applications that scored highly on pedestrian safety, including a read-through of the project description and the response to the pedestrian safety criterion. Our team noted that multiple of the roadway expansion projects mentioned sidewalks and sidepaths on both sides of the street as safety elements. Creating space for people walking and rolling (i.e., pedestrians) on both sides of the street reduces the need for redundant crossings (i.e., crossing the street to access the sidewalk, then crossing back to access a destination). Sidewalks and sidepaths are also highly effective at preventing certain types of mid-block crashes.

However, the applications included fewer details about safety treatments to facilitate safe, convenient, and comfortable crossings. Of the three expansion applications we reviewed, the one that was ultimately selected for funding included a pedestrian tunnel under an interchange. The other two applications were lighter on details about crossing facilities. This speaks to a need for both the pedestrian safety criterion and the broader Pedestrian Safety Action Plan to help agencies think about and design for all the different movement needs that pedestrians have – traveling along, as well as crossing at signalized, unsignalized, and mid-block locations.

### Applicant and Scorer Feedback on Pedestrian Safety Criterion

Metropolitan Council staff administered a survey about the 2020 Regional Solicitation application and scoring. The project team reviewed survey responses that related to the pedestrian safety measure and scoring and observed the following:

- Some respondents interpreted the reference to FHWA Proven Safety Countermeasures or strategies recommended in the FHWA Safe Transportation for Every Pedestrian (STEP) Guide as an indication that points would be awarded based solely on the countermeasures incorporated into the project, and not the project's overall safety impacts.
- These respondents noted that scorers considered elements like a project's potential to improve pedestrian connectivity or provide pedestrian access to destinations when evaluating responses; scorers did not narrowly evaluate responses in terms of specific countermeasures.
- While pedestrian connectivity can be an important facet of pedestrian safety, the respondents seemed concerned that broader themes such as promoting walking were undermining the named goal of the criterion – safety. They felt that a narrower focus on countermeasures and/or a quantitative scoring would bring objectivity to the process and keep the scoring better aligned with a safety objective.
- These respondents expressed a desire for more consistency and less subjectivity when applying scoring methods across funding categories.
- One respondent noted a need to ensure projects that implement safety countermeasures designed to address multiple recent fatalities are prioritized.
- Other respondents noted that to help achieve goals for safety in the state's Strategic Highway Safety Plan, safety should be valued more overall. They noted that the maximum funding amount for pedestrian projects is low and discourages any significant pedestrian improvements unless coupled with a roadway project, reinforcing the automobile as the top choice for transportation investment, despite many surveys showing desires for other mode choices.

- A respondent noted that multimodal elements are, in their opinion, undervalued, as they are typically evaluated on an existence basis and not a needs assessment, quality basis, or based on the roadway's potential impact to multimodal travel. This stakeholder noted that in many ostensibly multimodal roadway projects, the portion of the roadway intended for motor vehicle travel is designed in a way that presents a significant barrier to multimodal travel (e.g. high speeds, many lanes, difficult crossings), despite the inclusion of multimodal elements.
- Another respondent noted their perspective that equity, safety, and other goals-based criteria should be elevated, while criteria of forecasted volume should be de-emphasized.