TIP Criteria Revisions: Safety

June 11, 2020

Matt Genova
Transportation Improvement Program Manager

Boston Region Metropolitan Planning Organization
Today’s Presentation

• Goals for today
• Framing the conversation
• Summary of feedback
• Proposed changes to current criteria
• Next steps
• Discussion
Goals for Today
Goals for Today

1. Provide feedback on general direction of Safety criteria
2. Suggest additional changes or other topics for further exploration within this goal area
3. Set the stage for today’s discussion of Equity criteria
Framing the Conversation
Framing the Conversation: Principles

- Manageable to implement
- Make use of best available data and methods
- Create balance across investment programs
- Both realistic and aspirational
- Clear to project proponents and other stakeholders
Framing the Conversation: Notes

• Point values will be refined at a later date
• Changes are subject to continued feedback
• Criteria will vary by investment program
Current Criteria: Overview

Current TIP Criteria: Point Allocations (134 Possible Points)

- Economic Vitality: 18 points
- Safety: 30 points
- Equity: 12 points
- Clean Air and Sustainable Communities: 16 points
- System Preservation: 29 points
- Capacity Management and Mobility: 29 points
Current Criteria: Overview

Current TIP Criteria: Point Allocations (134 Possible Points)

- Economic Vitality: 18 points
- Safety: 30 points
- Equity: 12 points
- Clean Air and Sustainable Communities: 16 points
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Current Criteria: Objectives

• Three objectives established in Destination 2040:
  1. Reduce the number and severity of crashes and safety incidents for all modes
Current Criteria: Objectives

• Three objectives established in Destination 2040:
  1. Reduce the number and severity of crashes and safety incidents for all modes
  2. Reduce serious injuries and fatalities from transportation
Current Criteria: Objectives

- Three objectives established in *Destination 2040*:
  1. Reduce the number and severity of crashes and safety incidents for all modes
  2. Reduce serious injuries and fatalities from transportation
  3. Make investments and support initiatives that help protect transportation customers, employees, and the public from safety and security threats
## Current Criteria: Scoring

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Scoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crash Severity Value: Equivalent Property Damage Only (EPDO) index</td>
<td>Up to 5 points</td>
</tr>
<tr>
<td>Crash rate (either intersection or corridor)</td>
<td>Up to 5 points</td>
</tr>
<tr>
<td>Improves truck-related safety issue</td>
<td>Up to 5 points</td>
</tr>
<tr>
<td>Improves bicycle safety</td>
<td>Up to 5 points</td>
</tr>
<tr>
<td>Improves pedestrian safety</td>
<td>Up to 5 points</td>
</tr>
<tr>
<td>Improves safety or removes an at-grade railroad crossing</td>
<td>Up to 5 points</td>
</tr>
</tbody>
</table>
Summary of Feedback
Summary of Feedback: MPO

• Survey
  – Quantitative safety criteria are clear, but EPDO is nebulous
  – More definition needed around levels of safety countermeasure effectiveness
Summary of Feedback: MPO

• Survey
  – Quantitative safety criteria are clear, but EPDO is nebulous
  – More definition needed around levels of safety countermeasure effectiveness

• Focus Group
  – Safety is paramount
  – Promoting safety for one mode can enhance safety for others
  – Without safety, mode shift is difficult
Summary of Feedback: Other

• RTAC
  – Pedestrian safety is critical
  – Focus scoring on the degree of improvement
Summary of Feedback: Other

- **RTAC**
  - Pedestrian safety is critical
  - Focus scoring on the degree of improvement

- **LivableStreets Alliance**
  - Reduce focus on property damage only crashes
Summary of Feedback: Other

• RTAC
  – Pedestrian safety is critical
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• LivableStreets Alliance
  – Reduce focus on property damage only crashes

• Conservation Law Foundation
  – Focus on places with most critical needs
Summary of Feedback: Other

• RTAC
  – Pedestrian safety is critical
  – Focus scoring on the degree of improvement

• LivableStreets Alliance
  – Reduce focus on property damage only crashes

• Conservation Law Foundation
  – Focus on places with most critical needs

• Transportation for America
  – Reduce number of criteria overall
Promote more equitable transportation mobility

Improve pedestrian safety

Maintain the existing transit system

Prioritize buses with dedicated bus lanes

Promote economic development by increasing access to jobs and services

Maintain and improve existing sidewalks

Create new connections in the bicycle network

Enhance climate resiliency and the ability to respond to emergencies

Create new connections in the bicycle network

Maintain and improve existing roads and bridges

Reduce emissions and pollution

Limit the environmental impacts of projects

Reduce congestion

Improve mobility and safety for trucks

Improve auto safety

How can the MPO best improve transportation in the region?

First Priority

Second Priority

Third Priority

Public Focus Groups
Public Survey

How can the MPO best improve transportation in the region?

1. Improve pedestrian safety
2. Promote more equitable transportation mobility
3. Reduce emissions and pollution
4. Improve bicycle safety
5. Reduce congestion
6. Create new connections in the bicycle network
7. Prioritize buses with dedicated bus lanes
8. Maintain the existing transit system
9. Maintain and improve existing sidewalks
10. Promote economic development by increasing access to jobs and services
11. Limit the environmental impacts of projects
12. Enhance climate resiliency and the ability to respond to emergencies
13. Maintain and improve existing roads and bridges
14. Promote more equitable transportation mobility
15. Limit the environmental impacts of projects
16. Maintain and improve existing sidewalks
17. Enhance climate resiliency and the ability to respond to emergencies
18. Maintain and improve existing roads and bridges
19. Promote economic development by increasing access to jobs and services
20. Maintain the existing transit system
21. Prioritize buses with dedicated bus lanes
22. Create new connections in the bicycle network
23. Reduce congestion
24. Improve bicycle safety
25. Reduce emissions and pollution
26. Improve auto safety
27. Improve mobility and safety for trucks
28. Public Survey
“Boston’s roads are notoriously difficult to navigate and are setup for accidents of all kinds”
A system that works for pedestrians is a more equitable system. Further, the Boston region has many places where pedestrian activity is hindered or precluded by the transportation network. **Removing these impediments empowers residents.**

“Boston’s roads are notoriously difficult to navigate and are setup for accidents of all kinds”
A system that works for pedestrians is a more equitable system. Further, the Boston region has many places where pedestrian activity is hindered or precluded by the transportation network. Removing these impediments empowers residents.

“Bicycle safety is a top priority and many of the things we can do to make streets safe for bikes can make them safer for drivers and pedestrians too.”

“Boston’s roads are notoriously difficult to navigate and are setup for accidents of all kinds”
Proposed Changes to Current Criteria
## Proposed Changes: Key Takeaways

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Key Takeaway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crash Severity Value: Equivalent Property Damage Only (EPDO) index</td>
<td>Update scoring scale to reflect new EPDO values</td>
</tr>
<tr>
<td>Crash rate (either intersection or corridor)</td>
<td>Focus scoring on injury and fatality crashes</td>
</tr>
<tr>
<td>Improves truck-related safety issue</td>
<td>Reallocate bonus points to focus on multimodal safety improvements</td>
</tr>
<tr>
<td>Improves bicycle safety</td>
<td>Distinguish between roadway and bicycle/pedestrian projects</td>
</tr>
<tr>
<td>Improves pedestrian safety</td>
<td>Distinguish between roadway and bicycle/pedestrian projects</td>
</tr>
<tr>
<td>Improves safety or removes an at-grade railroad crossing</td>
<td>Reimagine scoring to recognize more multimodal safety improvements</td>
</tr>
<tr>
<td>Project addresses documented safety issue</td>
<td>Add criterion to evaluate safety improvements of transit projects</td>
</tr>
</tbody>
</table>
### Existing Criterion: Crash Severity Value: Equivalent Property Damage Only

<table>
<thead>
<tr>
<th>Existing</th>
<th>Proposed – All Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Criterion</strong></td>
<td>Crash Severity Value: Equivalent Property Damage Only (EPDO) index</td>
</tr>
<tr>
<td><strong>Scale</strong></td>
<td>+5 EPDO value of 300 or more</td>
</tr>
<tr>
<td></td>
<td>+4 EPDO value of 200-299</td>
</tr>
<tr>
<td></td>
<td>+3 EPDO value of 100-199</td>
</tr>
<tr>
<td></td>
<td>+2 EPDO value of 50-99</td>
</tr>
<tr>
<td></td>
<td>+1 EPDO value less than 50</td>
</tr>
<tr>
<td></td>
<td>0 No EPDO value</td>
</tr>
</tbody>
</table>

### Discussion

- Update scale: new methodology
- Public feedback
- Performance measures
## Existing Criterion: Crash Rate

<table>
<thead>
<tr>
<th></th>
<th>Existing</th>
<th>Proposed – CS, INT, MI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Criterion</strong></td>
<td>Crash rate (either intersection or corridor)</td>
<td>Fatality and serious injury rate (either intersection or corridor)</td>
</tr>
<tr>
<td><strong>Scale</strong></td>
<td>0-5 point scale, based on:</td>
<td>0-5 point scale, based on:</td>
</tr>
<tr>
<td></td>
<td>• Intersection or corridor</td>
<td>• Intersection or corridor</td>
</tr>
<tr>
<td></td>
<td>• Intersection: Signalized vs. unsignalized</td>
<td>• Intersection: Signalized vs. unsignalized</td>
</tr>
<tr>
<td></td>
<td>• Corridor: Roadway classification</td>
<td>• Corridor: Roadway classification</td>
</tr>
<tr>
<td></td>
<td>(highway, principal arterial, etc.)</td>
<td>(highway, principal arterial, etc.)</td>
</tr>
</tbody>
</table>

**Discussion**

- Remove property-damage only crashes from rate
- Remove from bike/ped scoring
- Public feedback
- Performance measures
## Existing Criterion: Improves Truck-Related Safety Issue

<table>
<thead>
<tr>
<th>Existing</th>
<th>Proposed – CS, INT, MI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Criterion</strong></td>
<td>Improves truck-related safety issue</td>
</tr>
<tr>
<td><strong>Scale</strong></td>
<td></td>
</tr>
<tr>
<td>+3</td>
<td>High total effectiveness of truck safety countermeasures</td>
</tr>
<tr>
<td>+2</td>
<td>Medium total effectiveness of truck safety countermeasures</td>
</tr>
<tr>
<td>+1</td>
<td>Low total effectiveness of truck safety countermeasures</td>
</tr>
<tr>
<td>0</td>
<td>Does not implement truck safety countermeasures</td>
</tr>
<tr>
<td>+2</td>
<td>Improves truck safety at HSIP cluster</td>
</tr>
</tbody>
</table>

### Discussion
- Clarify methodology
- Adjust HSIP bonus structure
- Remove from bike/ped scoring
# Existing Criteria: Improves Bicycle/Pedestrian Safety

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Existing</th>
<th>Proposed – CS, INT, MI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improves bicycle/pedestrian safety</td>
<td></td>
<td>Improves bicycle/pedestrian safety</td>
</tr>
<tr>
<td>Scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+3</td>
<td>High total effectiveness of bike/ped safety countermeasures</td>
<td>+3 High total effectiveness of bike/ped safety countermeasures</td>
</tr>
<tr>
<td>+2</td>
<td>Medium total effectiveness of bike/ped safety countermeasures</td>
<td>+2 Medium total effectiveness of bike/ped safety countermeasures</td>
</tr>
<tr>
<td>+1</td>
<td>Low total effectiveness of bike/ped safety countermeasures</td>
<td>+1 Low total effectiveness of bike/ped safety countermeasures</td>
</tr>
<tr>
<td>0</td>
<td>Does not implement bike/ped safety countermeasures</td>
<td>0 Does not implement bike/ped safety countermeasures</td>
</tr>
<tr>
<td>+1</td>
<td>Improves bike/ped safety at all-mode HSIP cluster</td>
<td>+1 Improves bike/ped safety at all-mode HSIP cluster</td>
</tr>
<tr>
<td>+2</td>
<td>Improves bike/ped safety at bike/ped HSIP cluster</td>
<td>+2 Improves bike/ped safety at bike/ped HSIP cluster OR multiple all-mode HSIP clusters</td>
</tr>
</tbody>
</table>

**Discussion**

- Clarify methodology
- Adjust HSIP bonus structure
# Existing Criteria: Improves Bicycle/Pedestrian Safety

<table>
<thead>
<tr>
<th>Existing</th>
<th>Proposed – Bike/Ped</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Criterion</strong></td>
<td><strong>Improves bicycle/pedestrian safety</strong></td>
</tr>
<tr>
<td><strong>Scale</strong></td>
<td></td>
</tr>
<tr>
<td>+3</td>
<td>High total effectiveness of bike/ped safety countermeasures</td>
</tr>
<tr>
<td>+2</td>
<td>Medium total effectiveness of bike/ped safety countermeasures</td>
</tr>
<tr>
<td>+1</td>
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</tr>
<tr>
<td>0</td>
<td>Does not implement bike/ped safety countermeasures</td>
</tr>
<tr>
<td>+1</td>
<td>Improves bike/ped safety at all-mode HSIP cluster</td>
</tr>
<tr>
<td>+2</td>
<td>Improves bike/ped safety at bike/ped HSIP cluster</td>
</tr>
</tbody>
</table>

**Discussion**

- Adjusted methodology
- Higher point values
## Existing Criterion: Improves Safety or Removes an at-Grade Railroad Crossing

<table>
<thead>
<tr>
<th>Existing</th>
<th>Proposed – CS, INT, MI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Criterion</strong></td>
<td>Improves safety for all users</td>
</tr>
<tr>
<td>Improves safety or removes an at-grade railroad crossing</td>
<td></td>
</tr>
<tr>
<td><strong>Scale</strong></td>
<td>0-5 point scale, based on:</td>
</tr>
<tr>
<td>+5 Removes an at-grade railroad crossing</td>
<td>• Railroad crossing improvements</td>
</tr>
<tr>
<td>+3 Significantly improves safety at an at-grade railroad crossing</td>
<td>• Signal improvements</td>
</tr>
<tr>
<td>+1 Improves safety at an at-grade railroad crossing</td>
<td>• Roadway geometry improvements</td>
</tr>
<tr>
<td>0 Does not include a railroad crossing</td>
<td>• Traffic-calming features</td>
</tr>
<tr>
<td></td>
<td>+1 Improves safety at all-mode HSIP cluster</td>
</tr>
<tr>
<td></td>
<td>+2 Improves safety at multiple all-mode HSIP clusters</td>
</tr>
<tr>
<td></td>
<td>+3 Improves safety at Top-200 crash location</td>
</tr>
</tbody>
</table>

### Discussion
- Public feedback
- Revised HSIP bonus structure
- N/A to bike/ped projects
## New Criterion: Transit Modernization

<table>
<thead>
<tr>
<th></th>
<th>Existing</th>
<th>Proposed – Transit Mod.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Criterion</strong></td>
<td>None</td>
<td>Project addresses documented safety issue</td>
</tr>
<tr>
<td><strong>Scale</strong></td>
<td>None</td>
<td>+8 Project addresses documented safety issues identified through a Federal or State investigation, audit, or finding; or top priority safety issues or hazards as identified by transit agency evaluations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+5 Project addresses other safety issues or hazards as identified by transit agency evaluations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+2 Project does not specifically address identified safety issues but would reduce potential hazards</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 No specific safety benefits identified</td>
</tr>
<tr>
<td><strong>Discussion</strong></td>
<td></td>
<td>• Forthcoming transit agency safety reports</td>
</tr>
</tbody>
</table>
Future Opportunities to Explore

• Expected crash calculations
  – What:
    o Breaks project areas down into segments and intersections and analyzes the potential for safety improvement at each
  – Why not now:
    o Labor intensive

• Crash Modification Factors
  – What:
    o Predicts reductions in crashes due to specific changes in roadway elements
  – Why not now:
    o Too detailed for pre-25%
Next Steps
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Today:
Discuss Safety & Economic Vitality goal areas
Next Steps

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June 25-July 16:
Discuss System Preservation & Capacity Management goal areas
Next Steps

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Discuss Safety & Economic Vitality goal areas

June 25-July 16:
Discuss System Preservation & Capacity Management goal areas

Beginning in late July:
Test scoring & public outreach
Discussion