Addressing Transportation Equity in the Safety Goal Area

June 11, 2020

Betsy Harvey
Outline

• Overview of transportation equity scoring proposal

• Proposed safety criteria for evaluating impacts on equity populations

• Application to safety criteria
Proposed Equity Evaluation Framework

Goal: Evaluate project’s impacts on equity populations

**Evaluate Equity Criteria**

1. **Safety Criteria**
   - Evaluate equity criteria in each goal area
   - Improves pedestrian safety

2. **Base Score**

**Identify Equity Populations in Project Area**

- Determine the share of the equity population and compare to the regional average

**Equity Multiplier**

\[ \text{Final Score} = \text{Base Score} \times \text{Equity Multiplier} \]
Proposed Safety Criteria

- Crash severity value (equivalent property damage only [EPDO] value)
- Improves bicycle safety
- Improves pedestrian safety
- Fatality/serious injury crash rate
- Improves safety of all users

“Improving pedestrian safety is the most important to me… A system that works for pedestrians is a more equitable system.”
Step 1

Create Equity Index
Minority Population

Share of Minority Population
- ≤8.5%
- ≤18.3%
- ≤35.8%
- ≤100.0%
Low-income Population

Share of Low-income Population
- Yellow: ≤10.2%
- Orange: ≤17.6%
- Red: ≤31.0%

Map showing the distribution of low-income population across a region.
Elderly Population

Share of Elderly Population
- ≤3.1%
- ≤5.6%
- ≤8.1%
- ≤100.0%
Youth Population

Share of Youth Population

- Yellow: ≤11.6%
- Orange: ≤20.0%
- Dark Orange: ≤24.5%
- Red: ≤60.8%
People with Disabilities

Share of People with Disabilities
- yellow: ≤6.7%
- orange: ≤9.0%
- red: ≤11.9%
- dark red: ≤100.0%
Step 1: Create Equity Index

- Mean = 28.2%
- Number of Transportation Analysis Zones: 240
- Percent of Minority Population: 0% to 100%
- 1: -0.5 to -1.5
- 2: -0.5 to 0.5
- 3: 0.5 to 1.5
- 4: Greater than 1.5

Mean = 28.2%
## Step 1: Create Equity Index

For Each Project

<table>
<thead>
<tr>
<th>Demographic Group</th>
<th>Base Index Points</th>
<th>Population Weight</th>
<th>Maximum Index Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minority population</td>
<td>1 through 4</td>
<td>x2</td>
<td>8</td>
</tr>
<tr>
<td>Low-income population</td>
<td>1 through 4</td>
<td>x1</td>
<td>4</td>
</tr>
<tr>
<td>People with LEP</td>
<td>x0.5</td>
<td>x1</td>
<td>4</td>
</tr>
<tr>
<td>People with disabilities</td>
<td>x0.5</td>
<td>x0.5</td>
<td>2</td>
</tr>
<tr>
<td>Elderly population</td>
<td>x0.5</td>
<td>x0.5</td>
<td>2</td>
</tr>
<tr>
<td>Youth population</td>
<td>x0.5</td>
<td>x0.5</td>
<td>2</td>
</tr>
</tbody>
</table>

**HIGHEST POSSIBLE EQUITY INDEX** 22
Step 2

Score Project
Step 2: Score Project

Identify Project’s Equity Multiplier

<table>
<thead>
<tr>
<th>Project’s Equity Index</th>
<th>Project’s Equity Multiplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 5</td>
<td>1.25</td>
</tr>
<tr>
<td>6 to 10</td>
<td>1.50</td>
</tr>
<tr>
<td>11 to 15</td>
<td>1.75</td>
</tr>
<tr>
<td>16 or greater</td>
<td>2.00</td>
</tr>
</tbody>
</table>
Step 2: Score Project

Distribution of Equity Multipliers
(Projects programmed in federal fiscal years 2017–21)

<table>
<thead>
<tr>
<th>Equity Multiplier</th>
<th>Number of Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.25</td>
<td>2</td>
</tr>
<tr>
<td>1.50</td>
<td>26</td>
</tr>
<tr>
<td>1.75</td>
<td>7</td>
</tr>
<tr>
<td>2.00</td>
<td>1</td>
</tr>
</tbody>
</table>
## Step 2: Score Project

### Hypothetical Project Scores for Safety Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Base Score</th>
<th>Multiplier</th>
<th>Final Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crash severity value (EPDO)</td>
<td>2</td>
<td>1.5</td>
<td>3</td>
</tr>
<tr>
<td>Fatality/serious injury crash rate</td>
<td>1</td>
<td>None</td>
<td>1</td>
</tr>
<tr>
<td>Improves safety for all road users</td>
<td>1</td>
<td>None</td>
<td>1</td>
</tr>
<tr>
<td>Improves pedestrian safety</td>
<td>3</td>
<td>1.5</td>
<td>4.5</td>
</tr>
<tr>
<td>Improves bicyclist safety</td>
<td>2</td>
<td>1.5</td>
<td>3</td>
</tr>
</tbody>
</table>

Total: 9, 12.5
Questions or Feedback?