



## MEMORANDUM

March 23, 2010

**TO:** METROPLAN ORLANDO committee members

**FROM:** Mighk Wilson, Smart Growth Planner

**SUBJECT:** Pedestrian Safety & Mobility Impact Statement

In the months preceding adoption of the 2030 Long Range Transportation Plan, the METROPLAN ORLANDO Citizens' Advisory Committee (CAC) discussed the importance of understanding and acknowledging pedestrian impacts during the planning process. As part of this evolving discussion, CAC directed staff to develop a draft measurement tool covering pedestrian impacts on a proposed project. If adopted by the METROPLAN ORLANDO Board, this tool would become one of many factors considered during the prioritization process for transportation projects in Central Florida.

Since that time, additional advisory committees, including the Bicycle and Pedestrian Advisory Committee, expressed a desire to participate in development of this tool. Staff reviewed current pedestrian-focused research available, such as the METROPLAN ORLANDO crash database, along with current industry practices. The organization also sought input from peers involved with transportation planning and smart growth initiatives.

A draft Pedestrian Safety Impact Statement is now ready for comment. This statement includes a scoring mechanism through two categories: (1) pedestrian activity and (2) proposed roadway modifications.

Below is a general description of the categories:

- Pedestrian Activity – indicates the likelihood of pedestrian activity and risk exposure in the project corridor by considering the number of pedestrian crashes over a period of time, future land use, transit usage, and nearby schools
  - Scores range from 1 (low) to 5 (high)
- Roadway Modification Factors – evaluates factors that are part of the proposed project, which may positively or negatively impact pedestrian safety, access, or mobility
  - Scores range from -5 (negative five, most detrimental to pedestrians) to 5 (positive five, most helpful to pedestrians)

Each category includes a range of possible scores, which are ultimately applied on a project-by-project basis. The final score for each Pedestrian Safety Impact Statement is derived by multiplying the final score of the pedestrian activity category and the final score of the roadway modification category.

Documents to further describe the Pedestrian Safety Impact Statement accompany this memo. The first document breaks down each category, providing specific details on evaluation factors and related scores. The second document shows provides an application example for the process, using several roadway projects planned in Central Florida.

METROPLAN ORLANDO advisory committees will have the opportunity to comment on the draft Pedestrian Safety Impact Statement during March and April committee meetings. The METROPLAN ORLANDO Board will receive an initial briefing on the draft statement during the April board meeting. Future board activity will be based, in part, on input received during the comment period and committee recommendations.

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# Pedestrian Safety Impact Statement Scoring Criteria

<b>Category 1: Pedestrian Activity</b>						
<b>High Pedestrian Crash Corridor:</b> Based on crash data from METROPLAN ORLANDO studies; measured as crashes per mile, per year.						
Possible Scores	0 to 0.49 = 1	0.50 to 0.99 = 2	1.0 to 1.49 = 3	1.5 to 1.99 = 4	>2.0 = 5	
<b>Future Land Use:</b> Pedestrian travel based tied to higher densities and intensities of residential and commercial, particularly in close proximity.						
Possible Scores	Mix of commercial & med./ high density residential = 5	Predominantly commercial = 4	Med/high density residential = 3	Mix, commercial & low density residential = 2	Low density residential = 1	
<b>Transit Boardings and Exits:</b> Street crossings tied to transit usage. Measured as boardings and exits within ¼ mile of the project, per day.						
Possible Scores	0 - 294 = 1	295 - 834 = 2	835 - 1559 = 3	1560 - 3088 = 4	3089 - 6765 = 5	
<b>Schools:</b> Two considerations: (1) no courtesy busing if living within two miles and (2) students less than one mile from school more likely to walk.						
Possible Scores	Number of public schools, colleges, and universities within 1 mile					
<b>Category 2: Roadway Modifications</b>						
<b>Change in Number of Through Lanes:</b> Increase correlates with higher number of pedestrian crashes. Measured by number of thru lanes.						
Possible Scores	4 to 8 = (-)5	4 to 6 = (-)4	2 to 4 = (-)3	4 to 2 = 3	6 to 4 = 4	8 to 4 = 5

## Category 2: Roadway Modifications, con't

**Medians:** Six-lane roadways without medians average more than six times as many pedestrian crashes per mile, compared to roadways with medians.

Possible Scores	Add to 4/6 lane road = 5	Add to 2-lane road = 3	Remove median = (-)5	No change = 0
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**Pedestrian Level of Service:** Factors include traffic volumes, speed, sidewalk presence and width, and buffer width.

Possible Scores	Each 0.25 change in pedestrian level of service equals one point.
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**Cross Section:** Urban cross sections (curb, gutter) facilitate safer walking and transit access than rural cross sections (shoulder, swale).

Possible Scores	Change rural to urban = 5	Change urban to rural = (-)5	No change = 0
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**Design Speed:** Speed for which the roadway is designed to operate for motorists. Higher speeds generally increase pedestrian crashes and severity.

Possible Scores	Each two-mile-per-hour speed change = 1 point
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**Location of Bus Stops:** Affects ease of access and bus boarding, especially for disabled pedestrians. Measured by location of bus stop.

Possible Scores	Behind ditch = (-)5	Behind swale = (-)4	Front of swale (no curb) = (-)3	Front of swale (curbed) = (-)2	Sidewalk, back of curb = 1	Sidewalk, 3 ft. buffer = 3	Sidewalk, 8 ft. buffer = 4	Sidewalk, 10 ft. buffer = 5
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**Signals per Mile:** More frequent signalized intersections provide safer crossing opportunities for pedestrians and fewer pedestrian crashes per mile.

Possible Scores	Each 0.5 change in signals per mile = 1 point
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**Special Pedestrian Crossings:** Enhanced crosswalks provide safer opportunities for those unwilling/unable to use nearest signalized intersection.

Possible Scores	Each special pedestrian crossing (enhanced crosswalk) per mile = 2 points
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## Category 2: Roadway Modifications, con't

**Lighting:** Roadways without lighting have 1.5 times more pedestrian crashes per mile. "Design Lighting" lights entire roadway evenly.

Possible Scores	Add design lighting = 5	Add courtesy lighting = 3	Remove lighting = (-) 5	No change = 0
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**Barrier Effect:** Features, such as grade separated interchanges, create barriers for pedestrian mobility and access, as well as higher vehicle speeds.

Possible Scores	Add barrier = (-)5	Remove barrier = 5	No change = 0
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# METROPLAN ORLANDO Pedestrian Safety & Mobility Impact Statement Project Scoring Form

Project: Sample

L RTP Segment Number: 0001

	Pedestrian Activity Factors					
	Low		Medium		High	
	1	2	3	4	5	
High Crash Corridor	0	0	0	0	5	5
Future Land Use	0	0	0	4	0	4
Transit Use	0	0	3	0	0	3
Schools within 1 mile	0	2	0	0	0	0
<b>Total</b>						<b>12</b>

	Road Modification Factors													
	High Negative Impact					Neutral			High Positive Impact					
	-5	-4	-3	-2	-1	0	1	2	3	4	5			
Change in Number of Thru Lanes	0	-4	0	0	0	0	0	0	0	0	0	-4		
Median: Add/Remove/No Change	0					0					5	5		
Change in Pedestrian Level of Service	0	0	0	0	0	0	0	2	0	0	0	2		
Urban/Rural Cross Section	0					0					0	0		
Change in Design Speed	0	0	-3	0	0	0	0	0	0	0	0	-3		
Location of Bus Stops	0	0	0	0	0	0	0	0	3	0	0	3		
Change in Signals per Mile	0	0	0	0	0	0	0	0	0	0	0	0		
Planned Special Ped. Xing per Mile	0	0	0	0	0	0	1	0	0	0	0	1		
Lighting: Add/Remove/No Change	0					0				0			5	5
Barrier Effect (grade separation, etc)	0					0						0	0	
<b>Total</b>												<b>9</b>		

<b>Final Score: Pedestrian Activity Score X Road Modification Score</b>	<b>108</b>
Highest Positive Score	1000
Lowest Negative Score	-1000



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## Sample Projects for Pedestrian Safety & Mobility Impact Statement

Project	Limits	Description	Pedestrian Activity Score	Road Modification Score	Combined Score
W SR 50	SR 429 to Good Homes Rd.	Widen to 6 lanes; current design	7.0	8.2	58.6
W SR 50	SR 429 to Good Homes Rd.	Add lighting, two special ped xings per mile, wider buffer	7.0	16.4	125.1
W SR 50	Hiawassee Rd. to Kirkman Rd.	Widen to 6 lanes; current design	12.3	7.3	92.1
W SR 50	Hiawassee Rd. to Kirkman Rd.	Add lighting, two special ped xings per mile, wider buffer, wider sidewalk	12.3	17.3	216.0
Aloma Ave.	SR 436 to Hall/Howell Branch	Widen to 6 lanes (using standard typical)	11.0	-6.0	-65.1
Aloma Ave.	SR 436 to Hall/Howell Branch	Keep as 4-lane, add lighting, two ped xings per mile	11.0	10.7	117.3
Broadway Streetscape	Main St. to Emmett	Narrow from 4 lanes to 2 lanes; streetscape	11.0	12.0	132.0