Discussion of Updated Transportation Performance Measures

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Discussion of Updated Transportation Performance Measures

Changes made to measures within:

1. Pedestrian Access and Mobility
2. Bicycle Access and Mobility
4. Vehicular Access and Mobility

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Pedestrian Access and Mobility

1a. Functionality of Streetside for Pedestrian Activity
1b. Separation from Vehicular Traffic
1c. Pedestrian-Oriented Facilities or Improvements
1d. Walkable Network/Neighborhood Connections
1e. **Pedestrian Crossings**
1f. **Vehicle/Pedestrian Conflicts at Driveways**
1g. Universal Design
1h. Walkable Destinations
1i. Ease of Choice

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Pedestrian Access and Mobility

1e. Pedestrian Crossings	
Description	• Ease of crossing Broadway
Measurement	• Frequency, length, and quality of pedestrian crossings • Time needed to cross street • Signal timing for pedestrian phase (VISSIM analysis)
Factors	• Width and number of lanes (through and turn) • Width and number of medians • Level of pedestrian comfort in medians • Frequency of crossings • Signal timing design • **Wait time for crossing signal (including time in median if two or more light cycles are required to cross)**
Ability to Effect	• High
Ability to Evaluate	• Moderate at this phase – several factors are directly related to cross section design, several are not

Pedestrian Access and Mobility

1f. Vehicle/Pedestrian Conflicts at Driveways	
Description	• Conflicts between pedestrians and vehicles exist at driveways for site access; strongly related to #2b
Measurement	• Provision of level pedestrian crossings • Travel speed to vehicles • Frequency of driveways
Factors	• Width of roadside to accommodate level pedestrian crossings • Target speed and roadway design's support of speed management • Frequency and width of driveways • **Visibility (landscaping, site lines, signage)**
Ability to Effect	• High
Ability to Evaluate	• Moderate – some factors are directly related to cross section design, several are not

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Pedestrian Access and Mobility

1h. Ease of Transition to Walking ™	
Description	• The ability of users to become pedestrians
Measurement	
Factors	• Proximity and number of parking lots • Proximity and number of bicycle parking/lockers • Number of bus stops/transit stations • Number and type of comfort and safety features (lighting, seats, shade) • Number of attractions/commercial uses
Ability to Effect	• High
Ability to Evaluate	• Not at this level of design

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Bicycle Access and Mobility

2a. **Separation of Bikes and Arterial Traffic**

2b. **Bike Conflicts with Crossing Vehicles**

2c. ~~Vehicle/Bike Conflicts at Side Streets~~ (combined into 2b)

2d. **Pavement Condition**

2e. **Bike Facility Improvements**

2f. Bike Network Connections

2g. Corridor Travel Time

2h. Bike Crossings

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Bicycle Access and Mobility

2a. Separation of Bikes and Arterial Traffic	
Description	• Greater separation is a factor related to bicyclist safety and comfort, and therefore likely bicycle use of Broadway
Measurement	• Relationship of proposed separation compared to ITE Walkable Thoroughfares Manual recommendation of 6 feet
Factors	• **Bike lane is a legal bike lane (as opposed to a "striped shoulder")** • Combination of bike lane and buffer (painted line or other) width • Buffer other than painted line • Location of transit stops (street side or median)
Ability to Effect	• High
Ability to Evaluate	• High for cross section and location of transit stops • Low for intersections (crossings of bike lane for right turns)

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Bicycle Access and Mobility

2b. Bike Conflicts with Crossing Vehicles (note this includes the 2c perf. measure)	
Description	• Vehicles cross bike lanes for a variety of reasons, the design and frequency of these crossings can effect bicyclist safety and comfort
Measurement	• Frequency and type of traffic crossing bike lanes • Length of uninterrupted bike lane • Design details of crossing area
Factors	• Reducing number and length of crossing points • Design details of crossing area
Ability to Effect	• High
Ability to Evaluate	• Moderate at current level of design (location of transit stops and use of local access lanes) • Design does not include current details of site access or intersections

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Bicycle Access and Mobility

2d. Pavement Condition	
Description	• Smooth pavement is a priority for bicyclist comfort
Measurement	• Input from TDOT and Bicycle Advisory Committee • Best practice guidance, possibly including **elements of** NACTO Bike Guide
Factors	• Concrete with proper joint design versus asphalt • **Gutter design** • **Landscaping palette**
Ability to Effect	• High
Ability to Evaluate	• Low to none • Pavement type not dependent on cross section design, except for potential for lower cost cross section concepts to allow for more budget to be spent on bike lane pavement

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Bicycle Access and Mobility

2e. Bike Facility Improvements	
Description	• Extent of bike racks, shade, drinking fountains, green pavement (bike boxes, etc.) and other features to serve bicyclists needs
Measurement	• % shade, number/frequency of design features • Qualitative evaluation
Factors	• Increase in number of features • **Continuity of bike treatments through project area**
Ability to Effect	• Minimal at the cross section and alignment level, beyond provision of enough area in streetside to allow for facilities. Evaluation of space is generally covered by measures 1a and 1b.
Ability to Evaluate	• Moderate at this level of design • Design does not currently include this level of design, but lower cost cross section concepts may allow more budget to be spent on bike facilities

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Vehicular Access and Mobility

4a. Movement of Through Traffic

4b. Intersection Delay – Overall Intersection Performance

4c. Intersection Delay – Worst Movement

4d. Accident Potential

4e. Lane Continuity

4f. Persons per Vehicle or Person Trips

4g. Access Management to Adjacent Uses

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Vehicular Access and Mobility

4f. ~~Persons per Vehicle or~~ Person Trips for multiple measures	
Description	• Multi-modal measures allowing evaluations on a per person basis

Measurement	• Convert vehicle, transit, and bicycle trips to person trips for the corridor
	• Use traffic model and VISSIM to assess different modal performance for:
	  • Corridor travel time
	  • Average delay
	  • Travel time reliability
	  • Other measures as appropriate

Factors	• Number of traffic lanes • Signal design/timing • Intersection design • Access management • Transit service design • #2b Bike Conflicts with Crossing Vehicles • Dedicated transit lanes, transit priority treatments at intersections, level boarding, off-vehicle ticketing, and other measures
Ability to Effect	• High
Ability to Evaluate	• Not viable at current level of design • Requires alignment and intersection design