

## Broadway Boulevard, Euclid to Country Club

### REVISED DRAFT PERFORMANCE MEASURE DEFINITIONS AND ASSESSMENT

August 14, 2013

Several revisions and updates have been made to the performance measures and assessment methodology, the street design elements, the lane configuration alternatives, and the street cross section alternatives following the July 25<sup>th</sup> CTF meeting. These changes have been made in response to comments from the CTF during and following the meeting and ongoing discussions with TDOT staff regarding potential bicycle facilities improvements.

There are five tables attached to this memorandum, and they are listed here in the order they should be reviewed:

- Performance Measure Definitions and Assessment Methodology Table
- Block-by-Block Widths of Existing Street, Right of Way, and Building Separation
- Assessment of Street Cross Section Elements (a set of sheets with these street element cards is also included)
- Assessment of Lane Configuration Alternatives (a set of sheets with these diagrams is also included)
- Assessment of Street Cross Section Alternatives

The design team is continuing to work on methods to distill this information so that its key elements can be communicated to the public in the upcoming public meeting. The distilled information and the small group exercise that is being planned for the public meeting will allow the public to understand the project's goals, performance assessments, design alternatives, and trade-offs between various goals for the project and will provide the CTF with meaningful input regarding community preferences related to street cross section design, modal emphasis, and other aspects of the Broadway project.

### Performance Measure Definitions and Assessment Methodology Table

Several of the definitions of performance measures have been refined and assessment methodologies have been revised and clarified. The **blue text** in the definition and methodology section of the table is used to highlight significant text that is new since the June 20<sup>th</sup> CTF meeting. Significant changes and additions to performance measures include:

- **2a. Separation of Bikes and Arterial Traffic:** An additional pair of options have been added to the street elements. Both are types of "cycle tracks," bicycle lanes that are physically separated from traffic lanes. The first type is separated by a sloped or beveled curb; the second by a vertical curb. Both are one-way bike facilities. These cycle track elements and their assessments are included in the Performance Measure table.



Example of beveled curb cycle track  
(Source: Maus, Bike Portland)



Example raised curb cycle track  
(The Hague Source: CD+A)

- **2b. Crossing Conflicts Between Bicycles and Vehicles (was Bike Conflicts with Crossing Vehicles):** This performance measure has been revised and renamed to include the assessment of potential conflicts and level of comfort for bicyclists making a left turn onto or from Broadway at intersections as a response to comments from the CTF. This element of the performance measure cannot be assessed at this point as intersections have not been designed.
- **3c. Transit Corridor Travel Time:** CTF members requested that the design team discuss this performance measure with TDOT and PAG transit staff to see what refinements could be made to the definition and assessment of the 4 lane plus dedicated transit lanes (4+T) and the 6 lane plus dedicated transit lanes (6+T). The design team's discussion with TDOT and PAG staff clarified that the reason for the difference in the assessment of the 4+T and 6+T is based on the ability of the mixed flow lanes to carry projected future traffic (based on the two projections, PAG and PAG Low (reduced 30%)) which therefor has an influence on signal timing and overall traffic flow along the corridor whether in a mixed flow or dedicated lane. Also, staff requested that one of the 4+T alternatives be revised to move the center dedicated transit lanes to be outside transit lanes. That way, the pair of 4+T alternatives is comparable to the pair of 6+T alternatives; each represents both the side and center transit lane configurations.
- **3f. Accommodation of Future High Capacity Transit:** CTF members also asked the design team to review this performance measure. As a result of discussions with TDOT and PAG staff, the assessments have been refined to reflect the revised street section alternatives, and to distinguish the difference between the ability of 4-lane and 6-lane mixed-flow alternatives to accommodate dedicated transit lanes in the future. An assessment of the alternatives' ability to accommodate potential future streetcar service has also been added.
- **6e. Gateway to Downtown:** At the request of CTF members, the design team has updated the definition and assessment methods for this performance measure to reflect the relationship of the historic and significant buildings in the study area to the heritage and character of the area as an early extension of downtown commercial activity to the east.

- **8a. Change in Economic Potential:** In response to discussions with the CTF, the design team has added an additional methodology description of the difference between short-term and long-term economic potential. Also, some additional justification of the 65-foot remnant parcel depth being the minimum depth for future development is provided. For information purposes the long term assessment has been updated to assess both for a minimum 65-foot depth and a 75-foot depth; this provides indication of the sensitivity of this performance measure to a deeper minimum remnant parcel lot depth.
- **9c. Operations and Maintenance Cost:** In response to public comment from the Broadway Coalition, this performance measure has been added and assessed.

## Block-by-Block Widths of Existing Street, Right of Way, and Building Separation

This table has been updated to reflect the changes to the Street Cross Section Alternatives in terms of right of way width, pedestrian landscape area, and bicycle facility improvements.

## Street Elements and Street Cross Section Alternatives

Some additions and revisions to the street element cards and the street cross sections have been made. Several of the street cross section alternatives now incorporate the new cycle track elements discussed earlier; the transit lane alternatives have been changed to make the 4+T and 6+T alternatives more comparable; and the widest of the alternatives that has been assessed to date has been narrowed. See details below:

- **Previous Alternative 4A:** This alternative has been eliminated per direction of the CTF, because in many cases it is narrower than the existing right of way.
- **New Alternative 4A:** This is the previous Alternative 4B with the bike lane width changed to 6 feet.
- **New Alternative 4B:** This is the previous Alternative 4C; the previous 7 foot bike lane is replaced with a 7 foot wide cycle track.
- **Alternative 4+T A:** In this alternative, the dedicated transit lanes were reconfigured to side running so that the 4+T alternatives include one side-running and one center-running, the same as the 6+T alternatives. The previous 6-foot-wide bike lanes have been replaced with 9-foot-wide buffered bike lanes and the total right of way width has widened from 118 feet to 124 feet.
- **Alternative 4+T B:** The previous 7-foot-wide bike lanes have been replaced with 9-foot-wide cycle tracks, and to maintain the previous 152-foot right of way width the 10-foot landscaped medians have been replaced with 8-foot landscaped medians.
- **Alternative 6A:** The previous 6-foot-wide bike lanes have been replaced with 7-foot-wide buffered bike lanes and the previous 114 foot right of way width has therefore increased to 120 feet.
- **Alternative 6B:** The previous 7-foot-wide bike lanes have been replaced with 9-foot-wide cycle tracks, and to maintain the previous 152 foot right of way width the 24-foot landscaped median has been replaced with a 20-foot landscaped median. Note that

Alternatives 6B and 4+T B still have the same right of way width and either could be converted into the other through the reconstruction of the median and center lanes.

- **Alternative 6+T A:** The previous 7-foot-wide bike lanes have been replaced with 9-foot-wide buffered bike lanes; to maintain the 146 foot total right of way width the median has been reduced from 20 feet to 16 feet.
- **Alternative 6+T B:** This alternative has been reduced from 174 feet in right of way width to 154 feet, in response to discussions with the CTF and the resulting desire to maintain a maximum width for the alternatives that is as close to 150 as viable. This has been done by narrowing the center medians from 10 feet to 8 feet in width and narrowing the buffer landscape area next to the sidewalks from 16 feet to 8 feet. In addition, the previous 7 foot wide bike lanes have been replaced with 7 foot wide cycle tracks.
- **Southern Arizona Transit Advocates Concept:** This alternative remains unchanged.

## Assessment Tables

All of the assessment tables have been updated to reflect the various changes and updates to performance measures, street cross section elements, and street cross section alternatives. Assessments that have been revised substantively are marked in blue highlighting. Additional revisions to point out are:

- **All Assessment Tables.** To address CTF concerns regarding those performance measures that have been grayed out as they cannot be assessed at the current level of design, the tables have been updated to include text from the methodology table that describes why the performance measure cannot be assessed at this time.
- **Street Cross Section Elements.** The cycle track options have been added and assessed. This has led to the refinement of assessments for some other elements in relation to the resulting difference in width of right of way and bicycle access.
- **Lane Configuration Alternatives.** These have been simplified so that there is not a distinction between center and side running dedicated transit lanes nor the two median configurations for center-running transit. This is being done in preparation for revising materials for use in the next public meeting. The illustrations have also been removed as we believe they overcomplicate communication of the lane configuration alternatives.
- **Street Cross Section Alternatives.** This has been updated to reflect all the other changes and refinements mentioned in this memorandum.

## Conclusion

These revisions reflect some significant revisions and refinements to the Broadway street section alternatives and the assessments. We look forward to finalizing these and the draft materials for the small group sessions at the next public workshop with the CTF at the August 22<sup>nd</sup> meeting.