



BROADWAY BOULEVARD CITIZEN PLANNING TASK FORCE

MEMORANDUM

TO: Broadway Boulevard Citizens Task Force (CTF)

FROM: Broadway Boulevard Project Team

DATE: December 3, 2013

RE: **Item 8. Progress Update on Current Study and Analysis of Selected Alternatives**

The project team is currently working on key tasks to move the project work forward and bring back information for the Task Force to discuss and consider at a charrette in early 2014 (dates to be determined at December 5, 2013 CTF meeting). This memorandum summarizes these tasks, which the project team and Task Force discussed at the October 2013 charrette meetings, and provides the following supplemental attachments:

- Attachment 1: Revised Detailed Recommended Schedule and Agendas for 2014
- Attachment 2: Refined cross sections developed for use with all the tasks
- Attachment 3: Table of Performance Categories and Performance Measures
- Attachment 4: Table of Recommended Performance Assessment for Initial Design Concepts

This item is intended to bring back to the Task Force the tasks the project team is working on, issues they are addressing to progress the initial draft concepts for an early 2014 charrette, and other questions the Task Force might have. The discussion during Item 8 will also relate to Item 6. *Initial Overview of the Economic Development White Paper for the Broadway Project Area*, and Item 7. *Parking and Access Management Issues, and the Relation to Roadway Design, Impacts to Properties, and Acquisition*.

The CTF is asked to approve meeting dates for, at a minimum, the next CTF meeting.

Summary List of Immediate Project Team Tasks

- 1) Develop initial design concepts for the “bookends” of the Broadway cross section alternatives being considered: 4-lanes, and 6-lanes plus 2 dedicated transit lanes. As was discussed at the October 24, 2013 CTF meeting, it is anticipated that the minimums and maximums of various parameters and performance categories will be created by focusing on these concepts first. The initial design concepts will begin to piece together the cross sections with different intersection design options, to create the first project area-long corridor design concepts. Rough concepts will also be developed for the 4-lanes plus 2

dedicated transit lanes, and the 6-lanes. This will allow initial performance comparisons of different performance measures.

The initial designs will include mixed flow lanes, transit lanes (as appropriate), bicycle facilities, sidewalks, landscape/shade type, medians, and intersection designs. Based on discussions and public input, the team created base cross sections following these two principles:

- Use efficient widths to minimize impact while providing for safety, cost, and achieving desired multimodal and other goals,
- Explore the balance of function and width for bicycle facilities, sidewalks, and landscape/shade.

The cross sections the project team has refined include (and attached in Attachment 2):

- 4-lanes = 96' Right-of-Way (previously 98' and 114')
- 4+2T Lanes = 118' Right-of-Way (previously 124' and 152'); transit in either center or outside lanes
- 6-lanes = 118' Right-of-Way (previously 120' and 152'); curb-to-curb dimensions same as 4+2T option
- 6+2T-lanes = 150' Right-of-Way (previously 146' and 154'); center-running BRT/light rail or side-running BRT/streetcar

2) **Conduct initial multi-modal travel time and traffic capacity/performance assessment for both the initial design concepts (4-lanes, and 6-lanes plus 2 dedicated transit lanes), and rough concepts for the 4-lanes plus 2 dedicated transit lanes, and 6-lanes.** This analysis will use two traffic demand scenarios - the PAG 2040 traffic demand model projections and the reduced PAG 2040 traffic demand model projections (70% of projected growth). Examples of what will be reviewed include:

- Transportation Analysis - Using the VISSIM traffic simulation modeling tool to study traffic movement, transit corridor travel time and riders per vehicle, bicycle travel time.
- Traffic Operations - Using the VISSIM traffic simulation modeling tool, to study travel time (auto, transit, bicycle, pedestrian), vehicle delay [Level of Service], queue length, and speed.
- Traffic Safety - Using the Highway Safety Manual that relates different types of configurations and designs with crash statistics

3) **Assessment of selected performance measures of these initial design concepts.** At this stage in the project planning and design, the initial design concepts allow some additional aspects of performance to be measured. Attachments 3 and 4 identify the 57 performance measures that have been developed to date, as well as which are going to be used for the current analysis the project team is working on.

Brief Background: The use of performance measures in the Broadway project work relates to two policy parameters set in 2012 for the project. The Regional Transportation Authority Board emphasized the need to uphold their pledge to a policy the Board adopted in 2005, which promised "not to diminish the functionality" of any project in the RTA Plan, as it was

originally envisioned by the Technical Management Committee and the Citizens Advisory Committee. The Tucson Mayor and Council provided direction on September 19, 2012 that the Broadway Citizens Task Force should conduct their work under a definition of functionality that allowed for consideration of performance measures detailed in the US EPA's *Guide to Sustainable Transportation Performance Measures*.

On October 18, 2012, the project team provided a copy of the EPA's *Guide* to the Task Force, and shared a memo describing how the *Guide* relates to and could apply to the detailed project-level design being undertaken for Broadway. The memo can be found online at: http://cms3.tucsonaz.gov/files/projects/broadway/2012_10-18_CTF_PerfMeasuresMemo_Final.pdf The materials provided at the October 18, 2012 CTF meeting can be found by scrolling to the meeting date at: <http://cms3.tucsonaz.gov/broadway/broadway-citizens-task-force>.

Working from the draft Vision and Goal Statements, and public input obtained from project meetings and Public Input Report, the Task Force and project team have developed 57 possible performance measures that fall under 10 performance categories:

<u>Transportation Specific</u>	<u>Non-Transportation Specific</u>
Pedestrian Access & Mobility	Sense of Place
Bicycle Access & Mobility	Environment/Public Health
Transit Access & Mobility	Economic Vitality
Vehicular Access & Mobility	Project Cost
Person Access & Mobility	Certainty

For the September 26, 2013 public meeting, 11 performance measures were presented to the public and used to assess the performance of the different cross section alternatives. Attachment 3 shows in table format how the 10 transportation and non-transportation performance categories, the 57 performance measures developed to date, and the 11 performance measures presented to the public relate to each other.

Attachment 4 is another table that highlights the 30 performance measures that the project team recommends for the current round of initial design and analysis. (NOTE: The remaining measures not highlighted in orange will not be deleted. They may be more appropriate for measuring details at the next level of analysis on refined concepts, performance measures, and performance measure assessment methodologies.)

- 4) **Address key issue areas and policy studies for Broadway design options.** These key issues influence the underlying assumptions that will guide the initial design concepts and performance assessments.
 - **Property Impacts and Economic Vitality**
 - South / North Impact Risks: *Risks related to partial acquisitions becoming full acquisitions; potential risks for acquisition on both sides of street*
 - Parking: On-Street and Off-Street: *Redesign of parking in the area; district parking; use of private walkways for public sidewalks; easements; flexibility with existing policies (number of spaces; alley access); risk of increasing acquisition costs*

Item 8. Progress Update on Current Study and Analysis of Selected Alternatives

- Potential for Reuse: *Existing zoning capacity; potential flexibility for zoning, code, ordinances, and development standards; estimates of use and capacity; estimates of value and economic potential*
- Definition of Economic Framework: range of potential economic futures for the properties along Broadway including a likely mix of maintain existing development, refurbishing and reusing existing buildings, infill of existing properties, and partial and full redevelopment of properties that can be supported by property owners and the real estate market.
- Street Design and Transportation
 - Intersection Type: *standard intersection designs will be used at this point with potential to explore use of Indirect left turns in future design concepts.*
 - Transit Options: *existing local and limited service; rapid bus; Bus Rapid Transit (fully dedicated or hybrid); Streetcar; and/or Light Rail*
 - Efficiency of Streetscape Improvements: *shade, pedestrian buffer, visual quality, landscape versus shade structures and/or railings, construction and maintenance costs; trees overhanging bicycle facilities*
 - Universal Design Treatments to be developed in future design concepts
 - Potential for Traffic to Redistribute



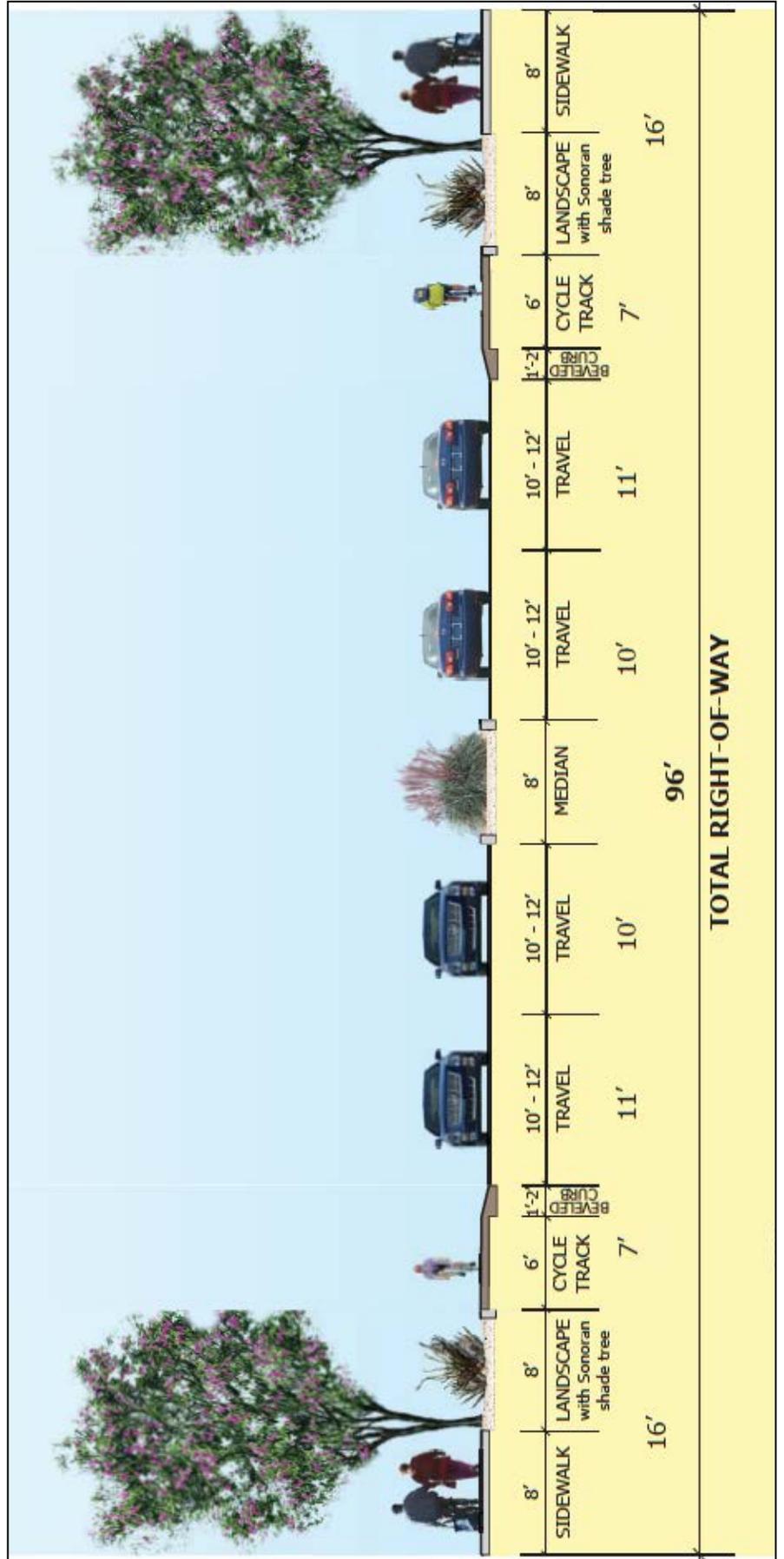
Broadway Boulevard, Euclid to Country Club
DRAFT Detailed Recommended Meeting Schedule and Agendas
Revised November 26, 2013

Schedule following CTF Charrette #2 (October 21 & 24, 2013)

Meeting Descriptions	Potential Revised Schedule
CTF Meeting – EPS Study presentation; progress update on analysis and prep for Charrette #3; other	Thurs, Jan. 23 #22
CTF Charrette #3 (Two CTF Action Meetings) – Street Design Alternatives and performance assessment review, and direction on refinements; include a presentation on Universal Design [NOTE: this had been a single CTF meeting and has now been expanded to two meetings during one week]	Feb. 4 th & 6 th #23 and #24
<i>No CTF meetings anticipated. Technical work completed by project team to prepare and assess initial Street Design Concepts</i>	<i>Feb. and Early-March 2014</i>
CTF Meeting (Action Mtg.) – Street Design Alternatives, direction on refinements; discuss potential public meeting #4 format	Mid-March, 2014 #25
<i>Design refinements and analysis; prepare for Stakeholder Review; begin preparing for public meeting #4</i>	<i>March and April 2014</i>
Stakeholder Agency Review	Late-April 2014 #3
CTF Meeting (Action Mtg.) – Finalize design refinements and analysis for public presentation	Early May, 2014 #26
Public Meeting #4 – Cross section, alignment, and corridor development concepts; performance evaluation; and preferred design approach.	Mid-May 2014
CTF Meeting (Action Mtg.) – Public Input and Street Design and Corridor Development Concept	June 5, 2014 #27
CTF Charrette #4 – CTF Draft Recommended Street Design and Corridor Development Concept	Mid-June, 2014 #28 and #29
<i>No CTF meetings. Technical work to detail and evaluate draft recommended concept</i>	<i>July and August 2014</i>
CTF Meeting (Action Mtg.) – CTF Draft Recommended Street Design and Corridor Development Concept Evaluation;	Late August, 2014 #30
Stakeholder Agency Review	September 2014 #4
CTF Meeting (Action Mtg.) – Finalize CTF Draft Recommended Street Design and Corridor Development Concept Evaluation for public presentation	Early Oct., 2014 #31
Public Meeting #5 – Draft Recommended Street Design and Corridor Development Concept Evaluation	Late Oct. 2014
CTF Charrette #5 – Determine CTF Recommended Design Concept	Nov. 2014 #32 and #33
CTF Meeting (Action Mtg.) – Finalize CTF Recommended Broadway Design Concept	Early Dec. 2014
Mayor and Council Hearing – Action on CTF Recommended Broadway Design Concept	Late Dec. 2014 Early Jan. 2015

4-lane Option

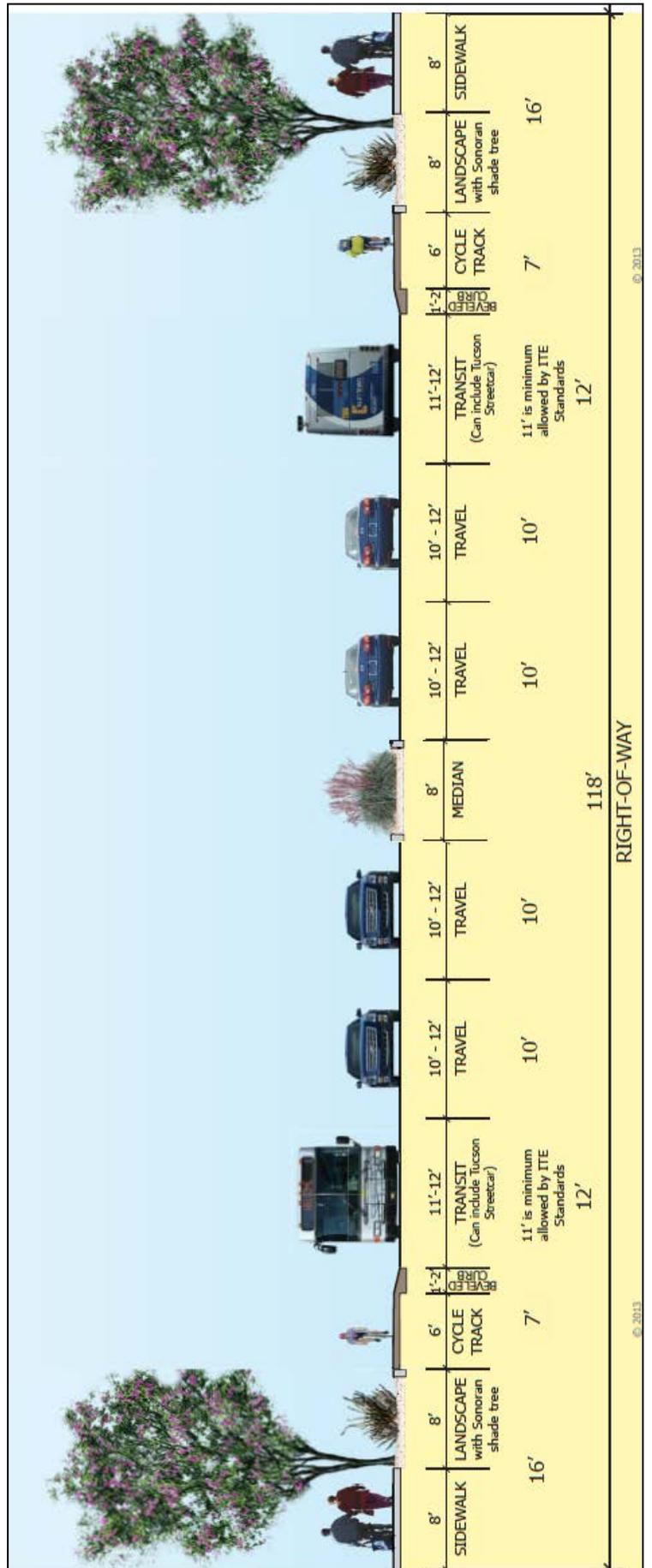
96' Right-of-Way (previously 98' and 114')



4-lane plus 2 Dedicate Transit Lanes Option

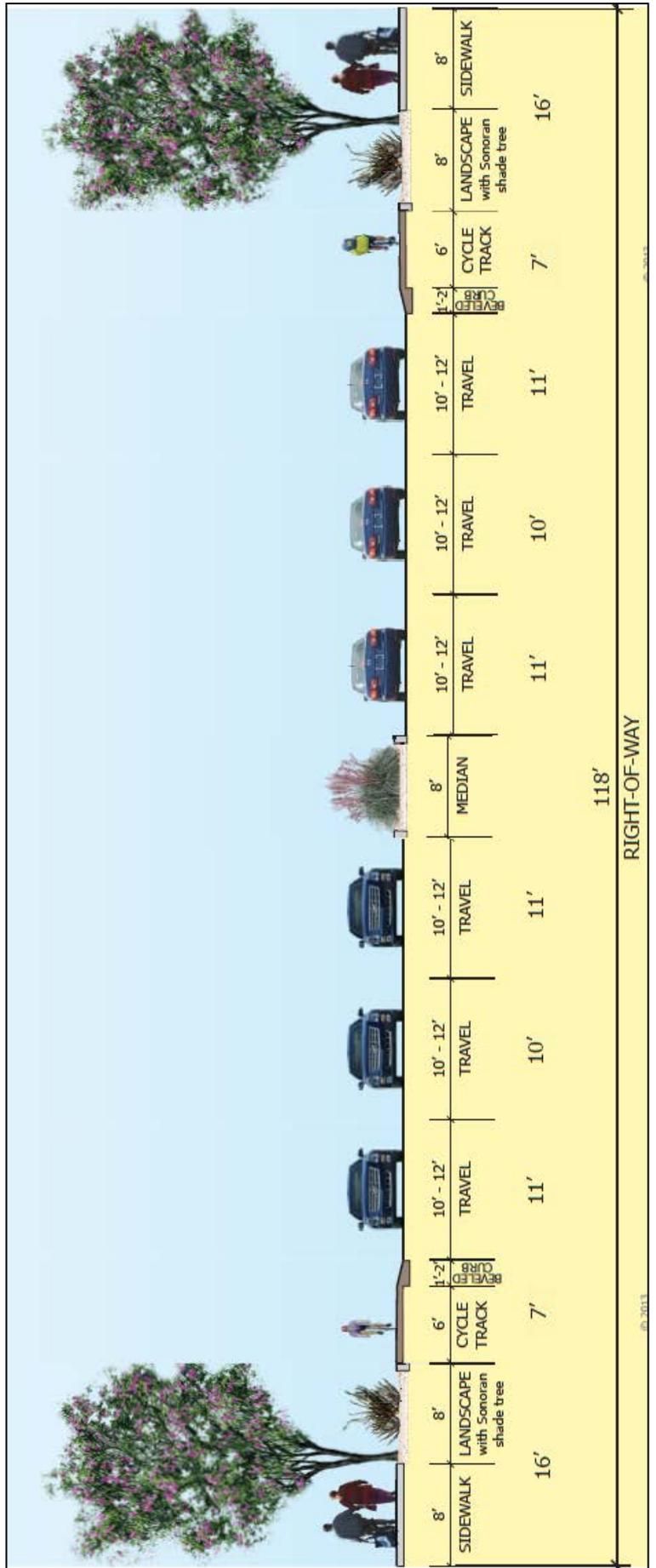
118' Right-of-Way (previously 124' and 152')

Transit either in center or outside lanes



6-lanes Option

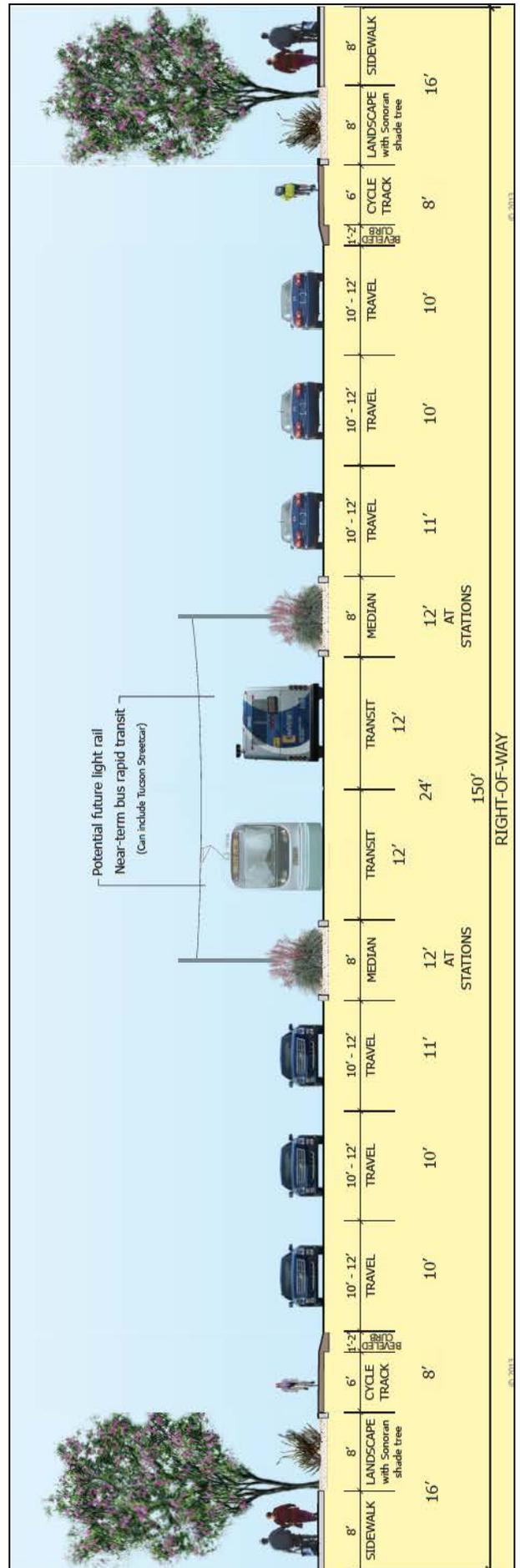
118' Right-of-Way (previously 120' and 152')
 Curb-to-curb dimensions same as 4+2T Option



6-lanes plus 2 Dedicated Transit Lanes Option

150' Right-of-Way (previously 146' and 154')

Center running BRT/light rail or side running BRT/streetcar



Performance Categories	57 Detailed Performance Measures	11 Compiled Performance Measures for Public Workshop
Pedestrian Access & 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 Transition to Walking	<ul style="list-style-type: none"> • Pedestrian Environment (1a, 1b, 1c, 1e, 1f, & 1g)
Bicycle Access & Mobility	2a. Separation of Bikes and Arterial Traffic 2b. Bike Conflicts with Crossing Vehicles 2c. Pavement Condition 2d. Bike Facility Improvements 2e. Bicycle Network Connections 2f. Bicycle Corridor Travel Time 2g. Bike Crossings	<ul style="list-style-type: none"> • Bicycling Environment (2a, 2b, 2d, & 2g)
Transit Access & Mobility	3a. Distance to Transit Stops 3b. Transit Stop Facilities 3c. Transit Corridor Travel Time 3d. Schedule Adherence 3e. Frequency and Hours of Service 3f. Accommodation of Future High Capacity Transit 3g. Riders per Vehicle	<ul style="list-style-type: none"> • Transit Travel Time (3c) • Accommodation of Future High Capacity Transit (3f)
Vehicular Access & Mobility	4a. Movement of Through Traffic During Peak Traffic Periods 4b. Intersection Delay – Overall Intersection Performance 4c. Intersection Delay – Worst Movement 4d. Accident Potential 4e. Lane Continuity 4f. Access Management for Adjacent Properties	<ul style="list-style-type: none"> • Traffic Movement (4a)
Person Access & Mobility	5a. Person Trips for Multiple Measures	
Sense of Place	6a. Historic Resources 6b. Significant Resources 6c. Visual Quality 6d. Broadway as a Destination 6e. Gateway to Downtown 6f. Conductiveness to Business 6g. Walkable Community	<ul style="list-style-type: none"> • Historic & Significant Buildings (6a & 6b) • Visual Quality (6c)
Environment and Public Health	7a. Greenhouse Gases 7b. Other Tailpipe Emissions 7c. Heat Island 7d. Water Harvesting 7e. Health Benefits of Changes in Walking and Biking 7f. Land Use Mix 7g. Affordability	<ul style="list-style-type: none"> • Health Benefits of Walking & Biking (7c)
Economic Vitality	8a. Change in Economic Potential 8b. Change in Business Revenue 8c. Change in Sales Tax Revenue 8d. Change in Property Tax Revenue 8e. Business Impacts 8f. Job Impacts	<ul style="list-style-type: none"> • Economic Potential (8a)
Project Cost	9a. Construction Cost 9b. Acquisition Cost 9c. Operations and Maintenance Cost 9d. Income for Reuse of Excess City-owned Property	<ul style="list-style-type: none"> • Construction and Acquisition Cost (9a & 9b)
Certainty	10a. Ability to Provide for Changing Transportation Needs 10b. Risk of Relying on Future Development for Economic Vitality 10c. Ability of City to Operate and Maintain Improvements	<ul style="list-style-type: none"> • Ability of City to Operate & Maintain Improvements (10c)

Workshop Performance Measures	Detailed Performance Measures for Initial Design Phase
Historic and Significant Buildings	6a. Historic Resources 6b. Significant Resources
Economic Potential	8a. Change in Economic Potential
Visual Quality	6c. Visual Quality
Bicycling Environment	2a. Separation of Bikes and Arterial Traffic 2d. Bike Facility Improvements 2f. Bicycle Corridor Travel Time 2b. Bike Conflicts with Crossing Vehicles 2e. Bicycle Network Connections 2g. Bike Crossings 2c. Pavement Condition
Pedestrian Environment	1a. Functionality of Streetside for Pedestrian Activity 1f. Vehicle/Pedestrian Conflicts at 1b. Separation from Vehicular Traffic Driveways 1c. Pedestrian-Oriented Facilities or Improvements 1g. Universal Design 1d. Walkable Network/Neighborhood Connections 1h. Walkable Destinations 1e. Pedestrian Crossings 1i. Ease of Transition to Walking
Health Benefits of Walking and Biking	7e. Health Benefits of Changes in Walking and Biking
Traffic Movement	4a. Movement of Through Traffic During Peak Traffic Periods 4d. Accident Potential 4b. Intersection Delay – Overall Intersection Performance 4e. Lane Continuity 4f. Access Management Management for Adjacent Properties 4c. Intersection Delay – Worst Movement
Accommodation of High Capacity Transit	3f. Accommodation of Future High Capacity Transit
Ability of City to Maintain	10c. Ability of City to Operate and Maintain Improvements
Construction and Acquisition Cost	9a. Construction Cost 9b. Acquisition Cost
Transit Travel Time	3a. Distance to Transit Stops 3c. Transit Corridor Travel Time 3e. Frequency and Hours of Service 3b. Transit Stop Facilities 3d. Schedule Adherence 3g. Riders per Vehicle
5a. Person Trips for Multiple Measures	
6d. Broadway as a Destination	6f. Conduciveness to Business
6e. Gateway to Downtown	6g. Walkable Community
7a. Greenhouse Gases	7c. Heat Island 7f. Land Use Mix
7b. Other Tailpipe Emissions	7d. Water Harvesting 7g. Affordability
8b. Change in Business Revenue	8e. Business Impacts
8c. Change in Sales Tax Revenue	8f. Job Impacts
8d. Change in Property Tax Revenue	8g. Change in Property Tax Revenue
9c. Operations and Maintenance Cost	9d. Income for Reuse of Excess City-owned Property
10a. Ability to Provide for Changing Transportation Needs	10b. Risk of Relying on Future Development for Economic Vitality

**Recommended
Performance
Assessments for Initial
Design Concepts**