

Call to the Audience Guidelines

- 2 Call to the Audience opportunities
- Must fill out participant card
- Participants called in the order cards are received
- 3 minutes allowed per participant
- CTF Facilitator will call on speakers and manage time
- CTF members cannot discuss matters raised
- CTF cannot take action on matters raised
- CTF members can ask project team to review an item




BROADWAY BOULEVARD

EUCLID to COUNTRY CLUB

July 25, 2013
Broadway Citizens Task Force Meeting

Meeting Agenda

1. Call to Order/Agenda Review/Announcements	
2. 1 st Call to the Audience	15 min
3. Approval of CTF Meeting Summaries for the May 21, May 23, May 30, June 2013 Meetings	10 min
4. Public Input Report, and Reports on Project Presentations & Outreach	5 min
5. Opportunity to Ask Questions Regarding Informational Update Memo for Ronstadt Transit Site Redevelopment and the Downtown Links Project	50 min
6. Comprehensive Review and Discussion of Draft Performance Measures, Assessment Methodology, and draft Assessment of Lane Configuration Alternatives, of Cross Section Elements, and of Street Cross Section Alternatives	100 min
7. 2 nd Call to the Audience	10 min
8. Next Steps/CTF Roundtable	15 min
9. Adjourn	



Call to the Audience

15 Minutes

Please limit comments to 3 minutes

- Called forward in order received
- CTF members cannot discuss matters raised
- CTF cannot take action on matters raised
- CTF members can ask project team to review an item



Approval of Meeting Summaries: May 21, May 23, May 30, & June 20, 2013 Meetings

Jenn Toothaker, Project Manager
City of Tucson Department of Transportation



Review Public Input Report

Jenn Toothaker

Public Input Report consists of a spreadsheet and attachments:

- **Spreadsheet** = Input received from 6/10/2013 - 7/15/2013
- **Attachments** = Documentation of only new input received




Opportunity for CTF to Ask Questions Regarding Informational Update Memo for the Ronstadt Transit Center Site Redevelopment and Downtown Links Projects

Jenn Toothaker and Tom Fisher, Project Managers
City of Tucson Department of Transportation

Jim Schoen, Principal
Kittelson & Associates, Inc.




Ronstadt Transit Center Site Redevelopment

- Corky Poster of Poster Frost Mirto hired
- Community planning process undertaken in April 2013
- Report issued in May 2013
- Public hearings to be held in Sept. 2013




Ronstadt Transit Center Site Redevelopment

Community planning process informed a set of redevelopment goals, included in May, 2013 report:

http://cms3.tucsonaz.gov/files/citymgr/Final_RTC_Community_Planning_Process_5.24.2013.pdf

RTA Board Resolution No. 2013-010
The Board of the Regional Transportation Authority (RTA) is pleased to announce the completion of the Ronstadt Transit Center Site Redevelopment Community Planning Process. The process was a collaborative effort between the RTA, the City of Tucson, and the community. The process resulted in a set of redevelopment goals that will guide the future development of the site. The goals are as follows:

Ronstadt Transit Center Site Redevelopment

Next Steps:

- Issue RFQ for qualified development teams
- Create a shortlist/begin community input process (end of 2013)
- *Conduct Comprehensive Operational Analysis*
- Issue RFP for specific design proposals




Downtown Links Project Update

July 2013



DOWNTOWN LINKS CORRIDOR PROJECT I-10 TO BROADWAY BLVD MAY 2013



Approved Alignment

(Mayor & Council approved in 2008)



DOWNTOWN LINKS CORRIDOR PROJECT I-10 TO BROADWAY BLVD MAY 2013



Comprehensive Review & Discussion of Draft Performance Measures, Assessment Methodology, and Draft Assessments of Lane Configuration Alternatives, Street Cross-Section Elements, & Street Cross-Section Alternatives

Phil Erickson
Community Design + Architecture

Agenda for this item

- Introduction
- Overview of new and updated materials
- Overview of concept for “distilling” information for public meeting
- Discuss specific design elements and alternatives, performance measures, and assessments
- CTF Decision Point for this and August meeting, can be decided incrementally:
 - Is the Task Force comfortable with this foundation of design elements and alternatives, performance measures, and assessment for it to be basis for materials for the Public Meeting and to go to Stakeholder Agencies?

Overview of New & Update Materials

- Have all of these materials in Power Point and can discuss in more detail as needed:
 - New way of describing alternatives
 - Lane Configurations
 - Street Cross Section Elements
 - Street Cross Section Alternatives
 - Performance Measures – revisions and new measures
 - Definitions
 - Assessment methodology
 - If can be assessed at current level of design
 - Update of links between Performance Measures and goals
 - Revisions and updates to assessments

New Way of Describing Alternatives

Street Cross Section Elements	Lane Configuration Alternatives	Street Cross Section Alternatives
6' Sidewalk with shade tree (16' landscape)	4 lane without landscaping (32' - 42')	Option 6A (32' v.a.w.)
6' Sidewalk with shade tree (8' landscape)	4 lane with landscaping (34' - 138')	Option 6B (330' v.a.w.)
6' Sidewalk with shade tree (0' landscape)	4 lane + transit without landscaping (34' - 114')	Option 6C (112' v.a.w.)
6' Sidewalk with shade structure (0' landscape)	4 lane + transit with landsc. and cr. median (200' - 182')	Option 6-T A (112' v.a.w.)
6' Sidewalk with 5' landscape	4 lane + center running transit with landscaping and bus center median (112' - 182')	Option 6-T B (112' v.a.w.)
6' Sidewalk with 3' buffer	4 lane without landscaping (32' - 114')	Option 6A (114' v.a.w.)
6' Sidewalk	4 lane with landscaping (138' - 182')	Option 6B (114' v.a.w.)
20' Center-Running Transit	4 lane + transit with landsc. and cr. median (200' - 182')	Option 6-T A (146' v.a.w.)
11'-12' Side- or Center-Running Transit	4 lane + transit with landscaping and 2 center medians (138' - 182')	Option 6-TB (114' v.a.w.)
5'-7' Bike Lane	4 lane + transit with landscaping and 2 center medians (138' - 182')	Option 6-TA (146' v.a.w.)
7'-9' Buffered Bike Lane		Option 6-TA (146' v.a.w.)

Street Cross Section Elements

PEDESTRIAN	PEDESTRIAN	SEEDS TREES	PEDESTRIAN	PEDESTRIAN	ROADWAY	ROADWAY	BIKE	BIKE
SIDEWALK WITH SHADE TREE	SIDEWALK WITH TREE	SIDEWALK WITH SHADE STRUCTURE	SIDEWALK WITH LANDSCAPING	SIDEWALK	CENTER-RUNNING TRANSIT LANES	SIDE-OR CENTER-RUNNING TRANSIT LANE	BIKE LANE	BIKE LANE
20'	30'	17'-22'	17'	5'-6'	20'	10'-12'	7'-9'	7'-9'

New Element

Updated Street Section Elements

- 2a. Separation of Bikes and Arterial Traffic
 - Added buffered bike lane to the possible street section elements, and assessed for performance measure

Mountain Avenue, Tucson

Arterial Street, Austin, TX
Source: NACTO

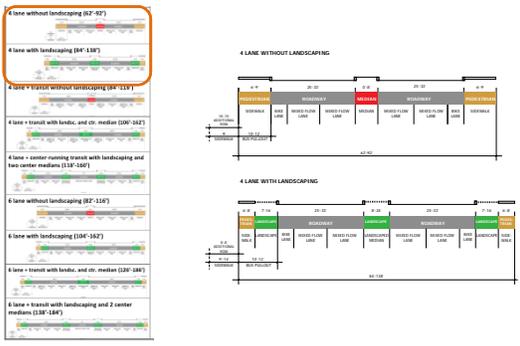
Lane Configuration Alternatives

- Four configuration types
 - 4 mixed-flow travel lanes (2 alternatives)
 - 4 mixed-flow travel lanes + transit (3 alternatives)
 - 6 mixed-flow travel lanes (2 alternatives)
 - 6 mixed-flow travel lanes + transit (2 alternatives)




BROADWAY BOULEVARD

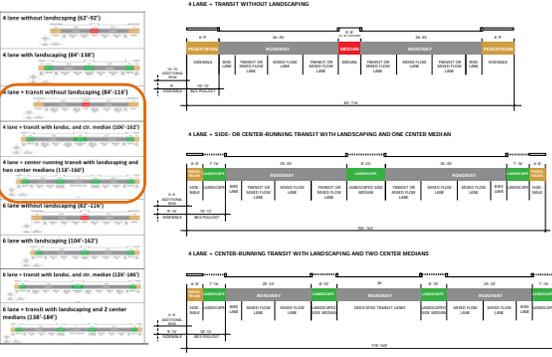
Lane Configuration Alternative Example Illustrations





BROADWAY BOULEVARD

Lane Configuration Alternative Example Illustrations





BROADWAY BOULEVARD

Updated Performance Measures

- 2a. Separation of Bikes and Arterial Traffic
 - Added buffered bike lane to the possible street section elements, and assessed for performance measure




BROADWAY BOULEVARD

Updated Performance Measures

- New or Relocated Performance Measures
 - 5a. Person Trips for Multiple Measures
 - 9c. Operations and Maintenance Cost
 - 10. 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




BROADWAY BOULEVARD

Updated Performance Measures

- Changed to not able to assess at current level of design
 - 6e. Gateway to Downtown
 - Previously primarily transportation based definition
 - Redefined to include placemaking and visual quality
 - Future land use and relationship between development and street are not determined at current level of design
 - 6g. Walkable Community
 - Previously not as focused on future adjacent use
 - Future land use and relationship between development and street are not determined at current level of design



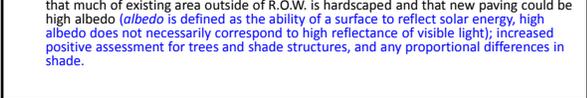

BROADWAY BOULEVARD

Updated Performance Measures

- Definition and assessment methodology clarified
 - 7c. Heat Island

Use of shade and other design features of the improvements to Broadway that can reduce the heat created by the sun shining on Broadways road pavement and sidewalks.

- The solar heat gains to pavement can increase the temperature of the street and surrounding area which can have detrimental environmental and public health effects.
- Factors include:
 - Change in amount of pavement
 - Amount of shaded pavement and other areas that can hold heat
 - Proportion of shaded pavement
 - For this assessment it is assumed that there will be an effort to select construction materials for street and sidewalk pavement, as well as gravel/crushed stone for landscaped areas that are "cooler" and would reduce the heat island effect compared to existing materials used along Broadway
- For initial assessment the following approach has been taken: Assume existing condition is the base "neutral" condition. Slight penalty for more R.O.W. paving with assumption that much of existing area outside of R.O.W. is hardscaped and that new paving could be high albedo (*albedo* is defined as the ability of a surface to reflect solar energy, high albedo does not necessarily correspond to high reflectance of visible light); increased positive assessment for trees and shade structures, and any proportional differences in shade.



Updated Performance Measures

- Definition and assessment methodology clarified
 - 7d. Water Harvesting and Green Street Stormwater Management

The degree to which the roadway is graded to drain stormwater into landscaped areas where its flow rate can be reduced, its water quality improved, and it can provide irrigation for the plants in the landscaped areas.

- TDOT has recently adopted an Active Practice Guidelines for Green Streets which sets guidance for the design of water harvesting and green stormwater management of streets in Tucson.
- For initial assessment the following approach has been taken: Ratio of landscaped to pavement width.



Updated Performance Measures

- Definition and assessment methodology clarified
 - 7e. Health Benefits of Changes in Walking and Biking (renamed and defined Walkability/Bikeability)

For initial assessment the following approach has been taken: Combined consideration of 1. Pedestrian and 2. Bicycle Access and Mobility performance measures given that this infrastructure is necessary to support the choice of walking and biking regardless of future land use conditions. In future assessments of more developed designs, this performance measure will give consideration to the 6g. Walkable Community performance assessment.



Updated Performance Measures

- Definition and assessment methodology clarified
 - 8a. Change in Economic Potential

Suitability of parcels along Broadway to provide for current commercial or residential use, repurposed, or adaptive reuse, or to provide future mix of commercial and residential uses, and open space.

- Impacts of Broadway improvements to parking, access, and buildings all affect viability of existing businesses and potential for future development.
- While cross section width is an indicator of negative impact on existing businesses, in some cases reuse of remnant parcels may have more economic potential than existing development.
- Not able to fully assess potential for future development and revitalization of existing buildings at current level of design and planning (need alignments and intersection designs to understand full right of way impacts).
- Real estate and business market potential also needs to be assessed.

Updated Performance Measures

- Definition and assessment methodology clarified
 - 8a. Change in Economic Potential

Assessment Methodology at current level of design for *Short Term / Immediate Economic Potential (up to 5 years after construction of Broadway improvements)*: Based on the following assumptions an estimate of % of street fronting property that would have a building directly impacted (i.e.; economic vitality would rely on reuse of the property) can be roughly estimated:

- Reduce potential for acquisition by avoiding land acquisition and/or impact to parking on one side of the street

- 80' R.O.W. – West of Campbell likely no buildings impacted and east about 5% would likely be impacted (O)
- 90-100' R.O.W. – West of Campbell likely 25% of buildings impacted and east about 10% would likely be impacted (O)
- 105-120' R.O.W. – West of Campbell likely 50% of buildings impacted and east about 20% would likely be impacted (-)
- 125-135' R.O.W. – West of Campbell likely 50% of buildings impacted and east about 35% would likely be impacted (- -)
- 140-165' R.O.W. – West of Campbell likely 50% of buildings impacted and east about 45% would likely be impacted (- - -)

Updated Performance Measures

- Definition and assessment methodology clarified
 - 8a. Change in Economic Potential

Assessment Methodology at current level of design for *Long Term Economic Vitality Potential (6 or more years after construction of Broadway improvements)*: Based on the following assumptions an estimate of % of street fronting property that would not be developable (i.e.; would be open space or district parking) can be roughly estimated:

- Reduce potential for acquisition by avoiding land acquisition and/or impact to parking on one side of street.
- A parcel with 65 foot depth can be reused for development.

- 130' R.O.W. – West and east of Campbell Avenue less than 5% of street frontage would be district parking or open space (- - - to ++)
- 150' R.O.W. – West of Campbell about 10% and to the east about 8% of street frontage would be district parking or open space (- - - to ++)
- 160' R.O.W. – West of Campbell about 25% and to the east about 8% of street frontage would be district parking or open space (- - - to ++)
- 170' R.O.W. – West of Campbell about 30% and to the east about 15% of street frontage would be district parking or open space (- - - to ++)

Preparation for Public Meeting

- Concept for “distilling” Performance Measures and assessment
- Public Meeting purpose and desired public input
- Concept for small group exercise



	57 Detailed Performance Measures	16 Compiled Performance Measures
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 Driveway 1g. Universal Design 2a. Walkable Destinations 2b. Ease of Transition to Walking	<ul style="list-style-type: none"> • Quality of Pedestrian Environment along Broadway (1a, 1b, 1c, 1f, & 1g) • Quality of Pedestrian Crossings (1e)
Bicycle Access & Mobility	2a. Separation of Bikes and Vehicular Traffic 2b. Bike Corridor(s) with Crossing Facilities 2c. Payment Condition 2d. Bike Facility Improvements 2e. Bicycle Network Connections 2f. Bicycle Corridor Travel Time 2g. Bike Coverage	<ul style="list-style-type: none"> • Quality of Bicycling Environment along Broadway (2a, 2b, & 2d) • Quality of Bicycling Crossings (2g)
Transit Access & Mobility	3a. Distance to Transit Stops 3b. Transit Stop Facilities 3c. Transit Corridor Travel Time 3d. Schedule Adherence	<ul style="list-style-type: none"> • Quality of Transit Stops (3b) • Transit Travel Time (3c) • Accommodation of Future High Capacity Transit (3f) • Accommodation of Future High Capacity Transit (3g) • Riders per Vehicle
Vehicular Access & Mobility	4a. Movement of Through Traffic During Peak Traffic Periods 4b. Intersection Delay – General Intersection Performance 4c. Intersection Delay – Warrant Movement 4d. Accident Potential 4e. Lane Continuity 4f. Access/Management Management for Adjacent Properties	<ul style="list-style-type: none"> • Through Traffic Movement in Peak Traffic Periods (4a)
Person Access & Mobility	5a. Person Trips for Multiple Measures	
Sense of Place	6a. Historic Resources 6b. Significant Resources 6c. Visual Quality 6d. Sense of Place 6e. Sense of Place 6f. Sense of Place 6g. Sense of Place 6h. Sense of Place 6i. Sense of Place 6j. Sense of Place 6k. Sense of Place 6l. Sense of Place 6m. Sense of Place 6n. Sense of Place 6o. Sense of Place 6p. Sense of Place 6q. Sense of Place 6r. Sense of Place 6s. Sense of Place 6t. Sense of Place 6u. Sense of Place 6v. Sense of Place 6w. Sense of Place 6x. Sense of Place 6y. Sense of Place 6z. Sense of Place	<ul style="list-style-type: none"> • Potential Impacts to Historic & Significant Buildings (6a & 6b) • Visual Quality (6c)
Environment and Public Health	7a. Greenhouse Gases 7b. Other Airborne 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	<ul style="list-style-type: none"> • Change in Economic Potential (8a)
Project Cost	9a. Construction Cost 9b. Acquisition Cost 9c. Operations and Maintenance Cost	<ul style="list-style-type: none"> • Construction Cost (9a) • Acquisition Cost (9b)
Certainty	10a. Ability to Provide for Changing Transportation Needs 10b. Risk of Delay or Future Development for Economic Vitality 10c. Ability of City to Operate and Maintain Improvements	<ul style="list-style-type: none"> • Ability to Provide for Changing Transportation Needs (10a) • Ability of City to Operate & Maintain Improvements (10c)

Simplify Design Alternatives

Street Cross Section Elements

8' Sidewalk with shade tree (8' landscape)	
8' Sidewalk with shade tree (8' landscape)	
6'-8' Sidewalk with shade structure (7' landscape)	
8' Sidewalk with 5' landscape	
8' Sidewalk with 2' buffer	
8' Sidewalk	
20' Center-Running Transit	
11'-13' Side-on Center-Running Transit	
5'-9' Bike Lane	
7'-9' Buffered Bike Lane	

- Remove Dedicated Transit Lanes as assessment independent of a full street cross section, because assessment of lanes as elements is somewhat confusing

Simplify Design Alternatives

Lane Configuration Alternatives (5 rather than 9)

4 lane with landscaping (84' - 107')	
4 lane with landscaping (84' - 107')	
4 lane + transit without landscaping (84' - 116')	
4 lane + transit with hardscape and/or median (106' - 107')	
4 lane + transit with hardscape and/or median (106' - 107')	
4 lane + transit with hardscape and/or median (106' - 107')	
4 lane + transit with hardscape and/or median (106' - 107')	
4 lane + transit with hardscape and/or median (106' - 107')	
4 lane + transit with hardscape and/or median (106' - 107')	
4 lane + transit with hardscape and/or median (106' - 107')	

Street Cross Section Alternatives (9 rather than 10)

Option 6B (100' x 100')	
Option 6C (112' x 100')	
Option 6T A (114' x 100')	
Option 6T B (112' x 100')	
Option 6A (114' x 100')	
Option 6B (112' x 100')	
Option 6T A (114' x 100')	
Option 6T B (112' x 100')	
Option 6T A (114' x 100')	
Option 6T B (112' x 100')	
Option 6T A (114' x 100')	
Option 6T B (112' x 100')	
Option 6T A (114' x 100')	
Option 6T B (112' x 100')	

Lane Configuration and Cross Section Alternative Groups

4 lane + transit without landscaping	
Option 6B (100' x 100')	
Option 6C (112' x 100')	
Option 6T A (114' x 100')	
Option 6T B (112' x 100')	
Option 6A (114' x 100')	
Option 6B (112' x 100')	
Option 6T A (114' x 100')	
Option 6T B (112' x 100')	
Option 6T A (114' x 100')	
Option 6T B (112' x 100')	
Option 6T A (114' x 100')	
Option 6T B (112' x 100')	

Preparation for Public Meeting

- Public Meeting purpose and desired public input
 - Provide information about process to date
 - Goals and Performance Measures
 - Design alternatives and assessments
 - Next steps for project
 - Desired public input
 - Performance Measure priorities
 - Recommendations for Street Section Alternatives to study further
 - Major discussion points amongst participants – potential “points of tension”



Preparation for Public Meeting

- Small Group Exercise Concept
 - Review and discuss goals and Performance Measures
 - Initial identification of key Performance Measures
 - Review and discuss Street Section Elements
 - Pedestrian, bicycle, and transit assessments
 - Review and discussion of Lane Configuration Types and Street Section Alternatives and assessments
 - Identify 3 alternatives to study further
 - Review and validate key Performance Measures
 - Identify key discussion points



Updated Linkages between Goals and Performance Measures

Goal Topics	Potential Goal Statements	Related Performance Measures
Buildings and Site Development		
Responsible use of historic buildings and sites	<ul style="list-style-type: none"> Protect historic resources and existing buildings, signage, and sites. Protect best examples of architecture from and existing buildings, signage, and sites. 	<ul style="list-style-type: none"> Historic Resources
Responsible use of significant buildings and sites	<ul style="list-style-type: none"> Protect historic buildings and sites. Protect best examples of architecture and existing buildings, signage, and sites. 	<ul style="list-style-type: none"> Significant Resources
Support development and use of new, particularly historic, buildings and sites	<ul style="list-style-type: none"> Encourage preservation, reuse, and new development that includes historic buildings, signage, and sites. Encourage new development of a scale that complements historic buildings, signage, and sites. 	<ul style="list-style-type: none"> Historic Resources Significant Resources
Consider impacts of parking supply and demand	<ul style="list-style-type: none"> Encourage alternative parking modes and supply to provide enough, but not too much, parking. Encourage development of active working and other activities to help reduce reliance on parking and support other transit modes. 	<ul style="list-style-type: none"> Transit Transportation

Updated Linkages between Goals and Performance Measures

Goal Topics	Potential Goal Statements	Related Performance Measures
Multimodal Street Design		
Walkability/Throughability	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Walkability/Throughability
Transit	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Transit
Land Management/Traffic Calming	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Land Management/Traffic Calming
Landscaping/Street Design	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Landscaping/Street Design
Public Art	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Public Art
Urban Form/Impacts	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Urban Form/Impacts
Health of Watershed	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Health of Watershed
Sustainability	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Sustainability

Updated Linkages between Goals and Performance Measures

Goal Topics	Potential Goal Statements	Related Performance Measures
Multimodal Street Design		
Walkability/Throughability	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Walkability/Throughability
Transit	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Transit
Land Management/Traffic Calming	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Land Management/Traffic Calming
Landscaping/Street Design	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Landscaping/Street Design
Public Art	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Public Art
Urban Form/Impacts	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Urban Form/Impacts
Health of Watershed	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Health of Watershed
Sustainability	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Sustainability

Updated Linkages between Goals and Performance Measures

Goal Topics	Potential Goal Statements	Related Performance Measures
Multimodal Street Design - continued		
Walkability/Throughability	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Walkability/Throughability
Transit	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Transit
Land Management/Traffic Calming	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Land Management/Traffic Calming
Landscaping/Street Design	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Landscaping/Street Design
Public Art	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Public Art
Urban Form/Impacts	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Urban Form/Impacts
Health of Watershed	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Health of Watershed
Sustainability	<ul style="list-style-type: none"> Provide for multimodal street design that includes pedestrian, bicycle, and transit facilities. 	<ul style="list-style-type: none"> Sustainability

Updated Linkages between Goals and Performance Measures

Goal Topics	Potential Goal Statements	Related Performance Measures
Sustainability/Environment		
Water Resource Management	<ul style="list-style-type: none"> Protect water resources and existing water infrastructure. 	<ul style="list-style-type: none"> Water Resource Management
Energy	<ul style="list-style-type: none"> Encourage energy efficiency and renewable energy use. 	<ul style="list-style-type: none"> Energy
Planning/Land Design/Process	<ul style="list-style-type: none"> Encourage planning and design processes that support sustainable development. 	<ul style="list-style-type: none"> Planning/Land Design/Process
Public Art	<ul style="list-style-type: none"> Encourage public art that enhances the community. 	<ul style="list-style-type: none"> Public Art
Urban Form/Impacts	<ul style="list-style-type: none"> Encourage urban form and impacts that support sustainable development. 	<ul style="list-style-type: none"> Urban Form/Impacts
Health of Watershed	<ul style="list-style-type: none"> Encourage watershed health and protection. 	<ul style="list-style-type: none"> Health of Watershed
Sustainability	<ul style="list-style-type: none"> Encourage sustainability in all aspects of development. 	<ul style="list-style-type: none"> Sustainability

Lane Configuration Alternatives

- Four configuration types
 - 4 mixed-flow travel lanes (2 alternatives)
 - 4 mixed-flow travel lanes + transit (3 alternatives)
 - 6 mixed-flow travel lanes (2 alternatives)
 - 6 mixed-flow travel lanes + transit (3 alternatives)

Lane Configuration Alternatives

- Four configuration types
 - 4 mixed-flow travel lanes (2 alternatives)

Lane Configuration Alternatives

- Four configuration types
 - 4 mixed-flow travel lanes + transit (3 alternatives)

Lane Configuration Alternatives

- Four configuration types
 - 6 mixed-flow travel lanes (2 alternatives)

Lane Configuration Alternatives

- Four configuration types
 - 6 mixed-flow travel lanes + transit (3 alternatives)

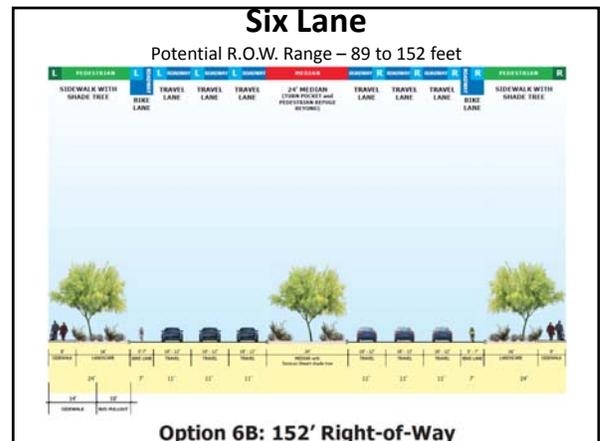
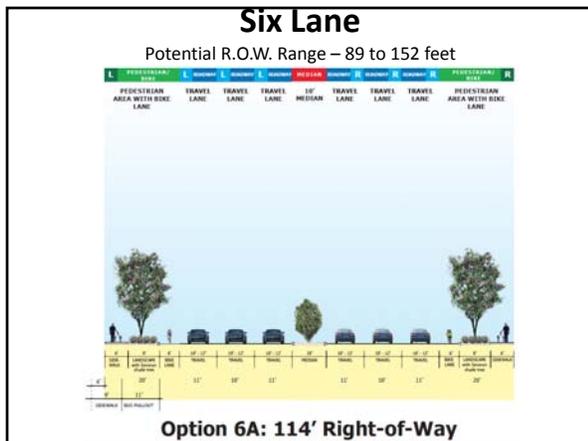
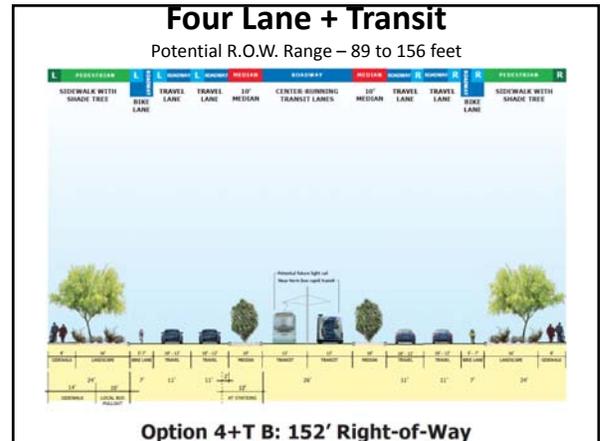
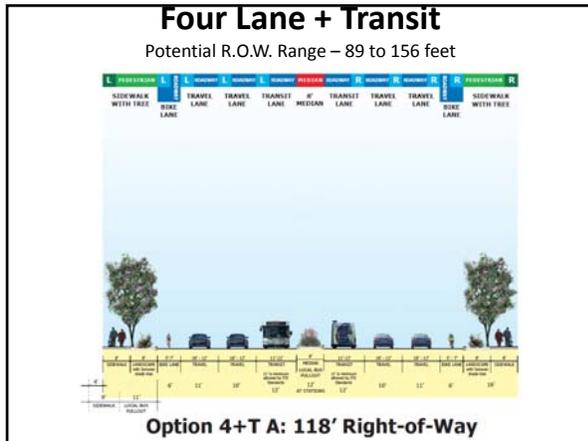
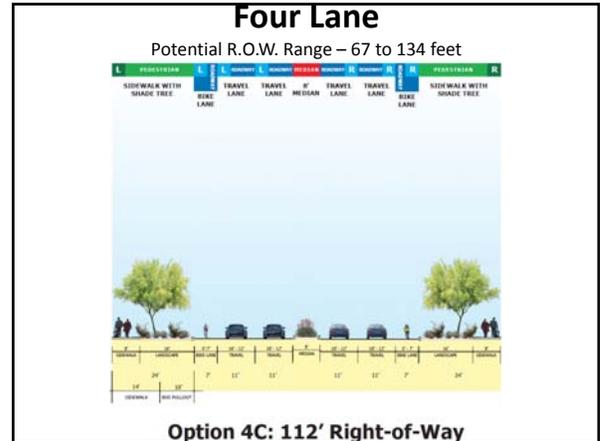
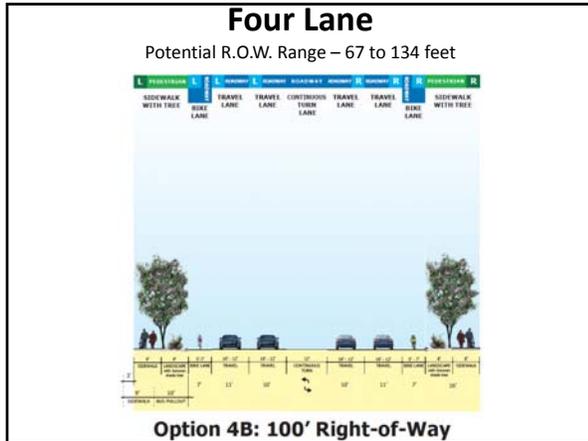
Draft Street Cross Section Alternatives

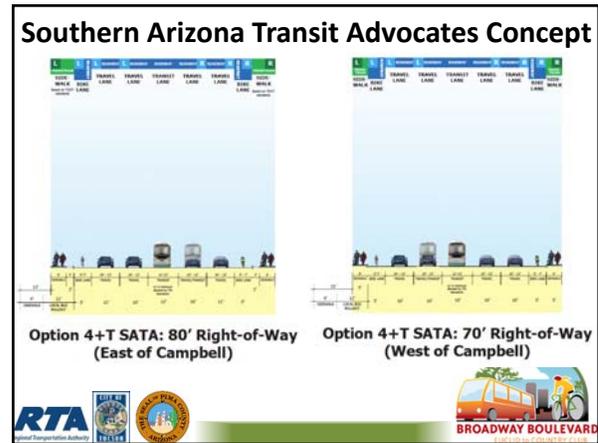
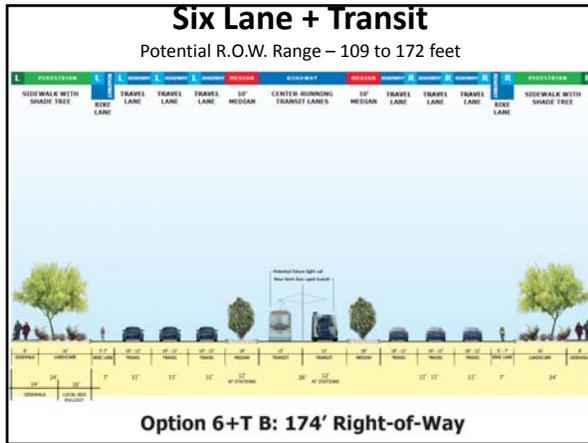
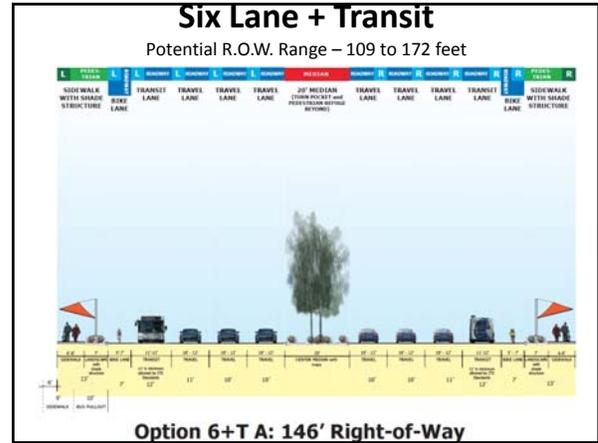
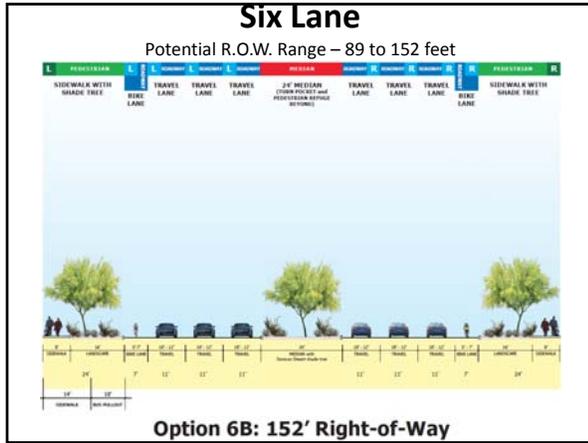
- Example cross sections of the Lane Configuration Alternatives
 - Include different facilities for pedestrians, bicycles, transit, and vehicles
 - In response to input from the public, stakeholder agencies, and the CTF
 - Evolving Goals and definition of "functionality"
 - Evolving set of design parameters and criteria (i.e.; min. lane widths, target speed, landscape maintenance requirements, etc.)

Four Lane

Potential R.O.W. Range – 67 to 134 feet

Option 4A: 67' Right-of-Way

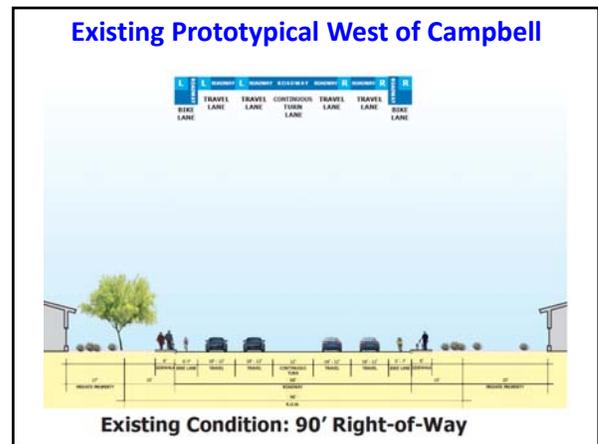




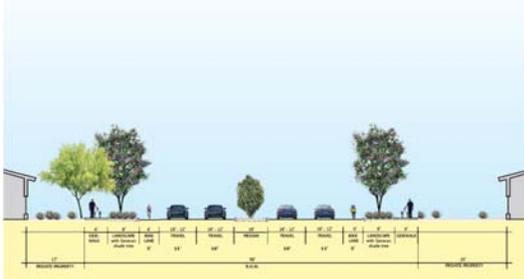
Exploration of "Fitting" Cross Section Concepts in Existing Conditions

- Illustrate prototypical conditions along Broadway
- How Cross Section Concepts can be integrated to
 - Avoid potential impacts to parking and buildings
 - Reduce potential for property acquisition
 - Maximize positive impacts to character of the street and its context
 - Maximize support for walking, biking, and transit
- Begins to illustrate positive and negative impacts that will be more fully assessed during the alignment design process
- Range of design parameters related to context and particular street elements
 - Commercial building frontages
 - Visibility
 - Parking and access
 - Walkways and sidewalks
 - Residential building frontages
 - Privacy
 - Landscaped yard setback
 - Flexibility in width for various street design elements – "section cards"
 - Potential to enhance some elements of Cross Section Concepts if space allows (i.e., additional landscape, sidewalk, or other space within the cross section)

BROADWAY BOULEVARD



Four Lane Prototypical West of Campbell



Option 4A: Modified 90' Right-of-Way (matching existing R.O.W)

Four Lane + Transit Prototypical West of Campbell



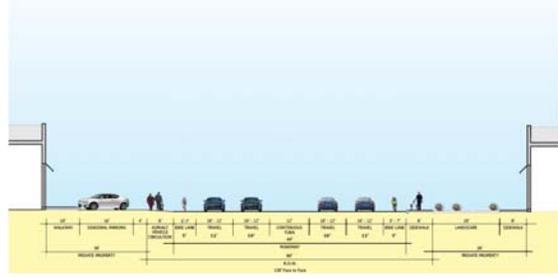
Option 4+T A: Modified 112' Right-of-Way

Six Lane + Transit Prototypical West of Campbell



Option 6+T A: 146' Right-of-Way

Existing Prototypical East of Campbell



Existing Condition: 80' Right-of-Way

Four Lane Prototypical East of Campbell

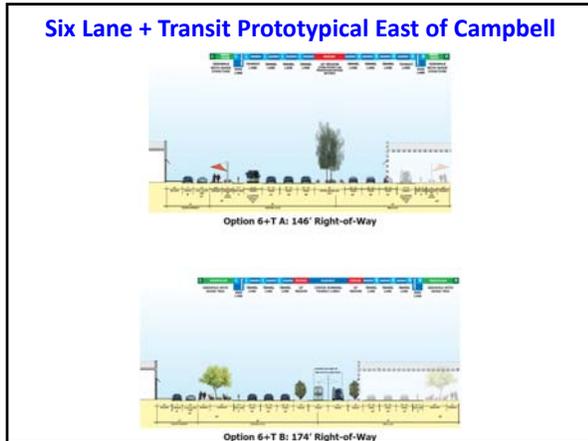


Option 4A: Modified 138' Right-of-Way
(58' roadway width maintaining existing parking and buildings)

Six Lane Prototypical East of Campbell



Option 6A: Modified 138' Right-of-Way
including parking and public sidewalks at building fronts



Overview Performance Measures

- Reflective of
 - Public input and discussions with CTF to date
 - Guidance from US EPA's *Guide to Sustainable Transportation Performance Measures*
 - Other best practices research including:
 - ITE, *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach*
 - NACTO, *Urban Bikeway Design Guide*
 - US Access Board *Public Right-of-Way Accessibility Guidelines*
 - AASHTO *Green Book*
- Starting point for selecting and further developing "Transportation" and "Non-transportation" measures for Broadway

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 Transition to Walking

1a. Functionality of Streetside for Pedestrian Activity

Degree to which there is enough width to support desired pedestrian activity, landscaping, street furnishings and other improvements.

- Sidewalk width and the width of the buffer area between the sidewalk and the roadway are key factors for the comfort and functionality of a street for pedestrians.
- The ITE Walkable Urban Thoroughfares Manual provides guidance for design of major urban streets like Broadway. The transportation characteristics of Broadway (i.e.; speed and number of lanes) make it a Boulevard Street type as defined by the manual (25-35 mph with 4-6 lanes, for various context types, see document for definitions). The current and potential character of the context along Broadway are defined as C-4 General Urban areas and C-3 Suburban areas in the manual. The combination of street type and context type lead to the guidance for sidewalk width:
 - C-4 with predominantly commercial ground floor – 1.5 ft. edge, 7 ft. furnishings (including landscape), 8 ft. throughway, 2.5 ft. frontage
 - C-4 with predominantly residential ground floor – 1.5 ft. edge, 8 ft. furnishings (including landscape), 8 ft. throughway, 0 to 1.5 ft. frontage
 - C-3 with predominantly commercial ground floor – 1.5 ft. edge, 7 ft. furnishings (including landscape), 6 ft. throughway, 2.5 ft. frontage
 - C-3 with predominantly residential ground floor – 1.5 ft. edge, 8 ft. furnishings (including landscape), 6 ft. throughway, 0 to 1.5 ft. frontage
- Result of guidance in relation to Broadway is for a 9.5 ft.-wide landscape area and 8 ft. sidewalk. Assume that additional sidewalk width if needed would be part of private development; [the assessment compares the range of possible pedestrian improvements to this guidance.](#)

STREET ELEMENTS OR DETAILS		STREET CROSS-SECTION ALTERNATIVES	
	Compliance with Design Guidelines		Compliance with Design Guidelines
Existing Conditions	NS	Existing Conditions	NS
8' Sidewalk with shade tree (10' landscape)	NS	Option 6A (87' r.o.w.)	NS
8' Sidewalk with shade tree (8' landscape)	NS	Option 6B (100' r.o.w.)	NS
6' Sidewalk with shade structure (7' landscape)	NS	Option 6C (112' r.o.w.)	NS
6' Sidewalk with 5' landscape	NS	Option 6+T A (146' r.o.w.)	NS
6' Sidewalk with 3' buffer	NS	Option 6+T B (174' r.o.w.)	NS
6' Sidewalk	NS		
20' Center-Running Transit	NS		
11'-12' Side- or Center-Running Transit	NS		
5'-7' Bike Lane	NS		
7'-8' Buffered Bike Lane	NS		

1a. Functionality of Streetside for Pedestrian Activity

Table 4.1 Context Zone Characteristics

Context Zone	Distinguishing Characteristics	General Character	Building Placement	Frontage Types	Typical Building Height	Type of Public Open Space	Transit (Where Provided)
C-1 Rural	Natural landscape	Rural features	Not applicable	Not applicable	Not applicable	Natural open space	None
C-2 Rural	Agricultural with scattered development	Agricultural activity and natural features	Large setbacks	Not applicable	Not applicable	Agricultural and natural	Rural
C-3 Suburban	Primarily single-family residential with walkable development patterns and pedestrian facilities; dominant landscape character includes scattered commercial uses that support the residential uses, and converted as walkable features.	Detached building with landscaped yards, normally adjacent to C-4 zone.	Varied front and side yard setbacks	Residential uses include lawns, porches, fences and landscaping; tree planting. Commercial uses front onto thoroughfares.	1 to 2 story with some 3 story	Parks, green belts	Local, express bus.
C-4 General Urban	Mix of housing types including attached units, with a range of commercial and office activity at the neighborhood and community scale.	Predominantly detached buildings, balance between landscape and building scale and building presence of pedestrians.	Shadows to medium front and side yard setback	Porches, fences, low taller workplace buildings	2 to 3 story with some variations and low taller workplace buildings	Parks, green belts	Local, limited stop bus, rapid transit, express bus, bus rapid transit, light rail, streetcar, trolley.
C-5 Urban Center	Attached housing types such as townhouses and apartments mixed with retail, work, place and civic activities at the community or sub-regional scale.	Predominantly attached building within the public right-of-way; substantial pedestrian activity.	Small or no setbacks, buildings oriented to street with placement and character defining a street wall.	Stoops, stoops, porches, awnings and shaded walkways	3 to 5 story with some variation	Parks, plazas and squares, boulevard, medium landscape	Local bus, limited stop rapid transit, express bus, bus rapid transit, light rail, streetcar, trolley.

Source: ITE; Designing Walkable Urban Thoroughfares: A Context Sensitive Approach, RP-036A; 2010.

1b. Separation from Vehicular Traffic

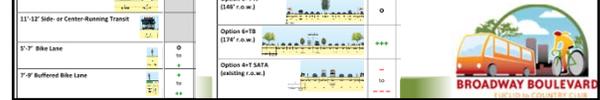
Width and design character of area between outside edge of vehicle lane and sidewalk.

- Guidance/factors include ITE Manual guidance for buffer width; Multi-modal level of service considerations for presence and frequency of street trees and other landscaping within buffer which varies depending on design of street elements; and speed and volume of traffic (assumed to be relatively constant).

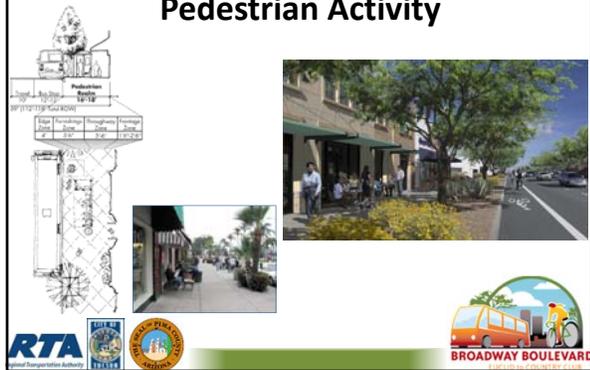


STREET ELEMENTS OR DETAILS		STREET CROSS SECTION ALTERNATIVES	
	Feasibility		Feasibility
Existing Conditions	---	Existing Conditions	---
8' Sidewalk with shade tree (18' landscape)	+++	Option 6A (87' r.o.w.)	---
8' Sidewalk with shade tree (8' landscape)	++	Option 6B (100' r.o.w.)	++
8' Sidewalk with shade structure (7' landscape)	0	Option 6C (112' r.o.w.)	+++
8' Sidewalk with 5' landscape	---	Option 6-T A (118' r.o.w.)	++
8' Sidewalk with 3' buffer	---	Option 6-T B (112' r.o.w.)	+++
8' Sidewalk	---	Option 6A (114' r.o.w.)	++
20' Center-Running Transit	---	Option 6B (112' r.o.w.)	+++
11'-12' Side- or Center-Running Transit	---	Option 6-T A (146' r.o.w.)	0
5'-7' Bike Lane	0 to +	Option 6-TB (114' r.o.w.)	+++
7'-9' Buffered Bike Lane	+	Option 6-T SARA (existing r.o.w.)	---
	++		---

1b. Separation from Vehicular Traffic



Functionality of Streetside for Pedestrian Activity



1c. Pedestrian-oriented Facilities or Improvements

Extent of shade, lighting, seating, drinking fountains and other features to serve pedestrian needs and provide for visual interest.

- Factors include percentage of shade, lighting levels and consistency, number and frequency of other pedestrian supportive design features (i.e.; seating, drinking fountains).



STREET ELEMENTS OR DETAILS		STREET CROSS SECTION ALTERNATIVES	
	Feasibility		Feasibility
Existing Conditions	---	Existing Conditions	---
8' Sidewalk with shade tree (18' landscape)	+++	Option 6A (87' r.o.w.)	---
8' Sidewalk with shade tree (8' landscape)	++	Option 6B (100' r.o.w.)	0
8' Sidewalk with shade structure (7' landscape)	0	Option 6C (112' r.o.w.)	+++
8' Sidewalk with 5' landscape	---	Option 6-T A (118' r.o.w.)	0
8' Sidewalk with 3' buffer	---	Option 6-T B (112' r.o.w.)	+++
8' Sidewalk	---	Option 6A (114' r.o.w.)	0
20' Center-Running Transit	---	Option 6B (112' r.o.w.)	+++
11'-12' Side- or Center-Running Transit	---	Option 6-T A (146' r.o.w.)	---
5'-7' Bike Lane	0 to +	Option 6-TB (114' r.o.w.)	+++
7'-9' Buffered Bike Lane	+	Option 6-T SARA (existing r.o.w.)	---
	++		---

1c. Pedestrian-oriented Facilities or Improvements

1d. Walkable Network/Neighborhood Connections

Ability for pedestrians to access neighborhoods and pedestrian network.

- Factors include number, length between, and quality of connections from Broadway to surrounding pedestrian network
- This measure cannot currently be assessed, because connections from Broadway and the pedestrian network are not included in the current level of design
- Not measurable at current level of design



1e. Pedestrian Crossings

Ease of crossing Broadway and side streets intersecting with Broadway with foot.

- Assume that the number of crossings is equal (except that existing conditions would have fewer than any future option). Therefore the current assessment is about the quality and distance of the crossing.
- As design is developed further and intersection designs are developed the ease of crossing side streets can be assessed.



LAND CONFIGURATION ALTERNATIVES	AS APPLIED	STREET CROSS SECTION ALTERNATIVES	AS APPLIED
Existing Conditions	to	Existing Conditions	to
4 lane without landscaping (82' - 102')	to	Option 6A (87' r.o.w.)	to
4 lane with landscaping (84' - 104')	to	Option 6B (100' r.o.w.)	to
4 lane + transit without landscaping (84' - 118')	to	Option 6C (112' r.o.w.)	to
4 lane + transit with lands. and cr. median (100' - 102')	to	Option 6-T A (118' r.o.w.)	to
4 lane + center-running transit with landscaping and two center medians (110' - 102')	to	Option 6-T B (112' r.o.w.)	to
4 lane without landscaping (92' - 118')	to	Option 6A (114' r.o.w.)	to
4 lane with landscaping (104' - 102')	to	Option 6B (112' r.o.w.)	to
4 lane + transit with lands. and cr. median (130' - 102')	to	Option 6-T A (140' r.o.w.)	to
4 lane + transit with landscaping and 2 center medians (130' - 102')	to	Option 6-T B (134' r.o.w.)	to
		Option 6-T S&TA (existing r.o.w.)	to

1e. Pedestrian Crossings



1f. Vehicle / Pedestrian Conflicts at Driveways

Degree to which conflicts between pedestrians and vehicles exist at driveways for site access; strongly related to Performance Measure 2b.

- Factors include level pedestrian crossing of driveway; vehicle speed; frequency of driveways; and visibility of the pedestrian on the sidewalk (measured by distance from right travel lane to sidewalk).



STREET ELEMENTS OR DETAILS	AS APPLIED	STREET CROSS SECTION ALTERNATIVES	AS APPLIED
Existing Conditions	to	Existing Conditions	to
8' Sidewalk with shade tree (16' landscaped)	to	Option 6A (87' r.o.w.)	to
8' Sidewalk with shade tree (8' landscaped)	to	Option 6B (100' r.o.w.)	to
8' Sidewalk with shade structure (7' landscaped)	to	Option 6C (112' r.o.w.)	to
8' Sidewalk with 5' landscaped	to	Option 6-T A (118' r.o.w.)	to
8' Sidewalk with 5' buffer	to	Option 6-T B (112' r.o.w.)	to
8' Sidewalk	to	Option 6A (114' r.o.w.)	to
20' Center-Running Transit	to	Option 6B (112' r.o.w.)	to
11'-12' Side- or Center-Running Transit	to	Option 6-T A (140' r.o.w.)	to
5'-7' Bike Lane	to	Option 6-T B (134' r.o.w.)	to
7'-9' Buffered Bike Lane	to	Option 6-T S&TA (existing r.o.w.)	to

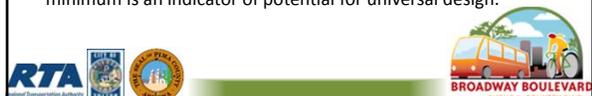
1f. Vehicle / Pedestrian Conflicts at Driveways



1g. Universal Design

Provision of access and mobility for people of all ages and abilities using design elements that go beyond base requirements of disabled access per the Americans with Disabilities Act (ADA) federal design requirements.

- Many factors that are not defined at current level of design will come into play in this assessment, such as:
 - Intersection and signal design
 - Type and design of pedestrian facilities
 - Design of transit facilities
 - Wayfinding signs
- At current level of design, sidewalk width more than ADA minimum is an indicator of potential for universal design.



STREET ELEMENTS OR DETAILS	AS APPLIED	STREET CROSS SECTION ALTERNATIVES	AS APPLIED
Existing Conditions	to	Existing Conditions	to
8' Sidewalk with shade tree (16' landscaped)	to	Option 6A (87' r.o.w.)	to
8' Sidewalk with shade tree (8' landscaped)	to	Option 6B (100' r.o.w.)	to
8' Sidewalk with shade structure (7' landscaped)	to	Option 6C (112' r.o.w.)	to
8' Sidewalk with 5' landscaped	to	Option 6-T A (118' r.o.w.)	to
8' Sidewalk with 5' buffer	to	Option 6-T B (112' r.o.w.)	to
8' Sidewalk	to	Option 6A (114' r.o.w.)	to
20' Center-Running Transit	to	Option 6B (112' r.o.w.)	to
11'-12' Side- or Center-Running Transit	to	Option 6-T A (140' r.o.w.)	to
5'-7' Bike Lane	to	Option 6-T B (134' r.o.w.)	to
7'-9' Buffered Bike Lane	to	Option 6-T S&TA (existing r.o.w.)	to

1g. Universal Design



Universal Design

BROADWAY BOULEVARD

1h. Walkable Destinations

Presence and access to jobs, homes, shopping, etc.; and presence of sufficient density of other uses and access from other uses to support market for employment, shopping, etc.

- Many factors that are not defined at current level of design will come into play in this assessment, such as:
 - 1d. Walkable Network/Neighborhood Connections: This measures the performance of alternative designs' ability to create the necessary infrastructure to encourage walking to destinations. This infrastructure will then support the market potential for businesses that people would want to walk to on Broadway.
 - Economic Vitality performance measures related to potential for jobs, commercial uses, and homes along Broadway.
- Measured by determining density of households and jobs within walkable distance of uses along Broadway.
- **Not measurable at current level of design**

BROADWAY BOULEVARD

1i. Ease of Transition to Walking

Measure of the ability of users of other transportation modes to become pedestrians along Broadway.

- Many factors that are not defined at current level of design are needed to assess this measure, including:
 - 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
- Measure by determining the number and distance related to above factors.
- **Not measurable at current level of design**

BROADWAY BOULEVARD

Bicycle Access and 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

BROADWAY BOULEVARD

2a. Separation of Bikes and Arterial Traffic

Degree to which the street design elements allow separation of cyclists from vehicular traffic.

- Greater separation is a factor related to bicyclist safety and comfort, and therefore likely bicycle use of Broadway.
- **The main factor in this performance measure is the width of the bicycle lane.**
- **The following guidance is based on traffic speeds of 35 mph or less:**
 - 5 ft. width negative (-)
 - 6 ft. width neutral (ITE Manual recommendation)
 - 7 ft. width positive (+)
 - 7 to 9 ft. width buffered bike lane positive (+ + ++)

BROADWAY BOULEVARD

2a. Separation of Bikes and Arterial Traffic

STREET ELEMENTS OR DETAILS	Number of Street Elements	STREET CROSS SECTION ALTERNATIVES	Number of Street Elements
Existing Conditions	-	Existing Conditions	-
8' Sidewalk with shade tree (3x)	+	Option 4A (35' r.o.w.)	+
8' Sidewalk with shade tree (2x)	+	Option 4B (200' r.o.w.)	+
8' Sidewalk with shade tree (1x)	+	Option 4C (153' r.o.w.)	+
8' Sidewalk with shade structure (1x)	+	Option 4D A (134' r.o.w.)	+
8' Sidewalk with 5' landscaper	+	Option 4D B (157' r.o.w.)	+
8' Sidewalk with 7' buffer	+	Option 6A (134' r.o.w.)	+
8' Sidewalk	+	Option 6B (153' r.o.w.)	+
10' Center-Running Transit	+	Option 6D A (149' r.o.w.)	+
11' 12' Side- or Center-Running Transit	+	Option 6D B (174' r.o.w.)	+
7' 7' Bike Lane	+	Option 6E (134' r.o.w.)	+
7' 7' Buffered Bike Lane	++	Option 6E SATEA (149' r.o.w.)	++

BROADWAY BOULEVARD

2f. Bicycle Corridor Travel Time

The time it takes for average and advanced bicyclists to travel the length of Broadway.

- Need further design details, including – **signal and** intersection design, alignment, **access management design, transit stop locations**, etc. in order to assess using VISSIM transportation simulation model. Quality of movement along Broadway to connections is assessed in 2a. Separation of Bikes and Arterial Traffic, 2b. Bike Conflicts with Crossing Traffic,
- **Not measurable at current level of design**



2g. Bike Crossing

Convenience and quality of bicycle crossings of Broadway and side streets intersecting with Broadway.

- Assume some basic improvements at crossings and more crossings for all concept options, so this gives:
 - Four lane options 1 plus;
 - Six lane options 1 plus (regardless of median width as street crossings will likely be at least 18 ft. wide given turn lane and 7 ft. refuge island width); and
 - Eight lane options a neutral, except for 6+T B given its large width.
- **As design is developed further and intersection designs are developed the ease of crossing side streets can be assessed.**



LANE CONFIGURATION ALTERNATIVES	STREET CROSS SECTION ALTERNATIVES
Existing Conditions	Existing Conditions
4 lane without landscaping (82' - 92')	Option 4A (67' r.o.w.)
4 lane with landscaping (84' - 100')	Option 4B (100' r.o.w.)
4 lane + transit without landscaping (84' - 110')	Option 4C (112' r.o.w.)
4 lane + transit with lands, and ch. median (100' - 102')	Option 4T A (118' r.o.w.)
4 lane + center-mounting transit with landscaping and two center medians (118' - 100')	Option 4T B (112' r.o.w.)
4 lane without landscaping (82' - 118')	Option 6A (114' r.o.w.)
4 lane with landscaping (110' - 102')	Option 6B (112' r.o.w.)
4 lane + transit with lands, and ch. median (110' - 102')	Option 6T A (114' r.o.w.)
4 lane + transit with landscaping and 2 center medians (118' - 100')	Option 6T B (112' r.o.w.)
	Option 4+T SATA (existing r.o.w.)

2g. Bike Crossings



Transit Access and 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



3a. Distance to Transit

Number and location of transit stops and the number of households, jobs, and services within walking distance has an relationship to transit ridership

- Factors include: Number of households, jobs, and square feet of commercial use within walking distance of transit stops; and 1d. Walkable Network/Neighborhood Connections, 1h. Walkable Destinations, and several non-transportation performance measures.
- Cannot be assessed at current level of design as transportation factors require alignment and crossing design, and non-transportation factors are related to future land use.
- **Not measurable at current level of design**



3b. Transit Stop Facilities

Design qualities of transit stops **for comfort and safety of riders and to support improved aesthetics and community character.**

- Factors include: Percentage of shade; lighting levels and consistency; and number and frequency of other design features (e.g.; **drinking fountains, off-bus ticket machines, next bus information signs, wayfinding information, etc.**).
- Four lanes get ○ when have pull outs (except those with wider pedestrian areas get +) because of lower construction cost may be more budget to improve transit stops; SATA also gets a + because of transit platforms for streetcar.
- Six lanes get neutral with pull outs as this is now the regional standard.
- BRT in middle of roadway gets ++ because it is assumed that this investment in roadway infrastructure for BRT would mean commitment to high-level of improvements on the platforms.

STREET ELEMENTS OR DETAILS	LANE CONFIGURATION ALTERNATIVES	STREET CROSS SECTION ALTERNATIVES
Existing Conditions	Existing Conditions	Existing Conditions
8' Sidewalk with shade tree (16' landscape)	8 lane without landscaping (82' - 82')	Option 4A (82' r.o.w.)
8' Sidewalk with shade tree (8' landscape)	8 lane with landscaping (84' - 138')	Option 4B (100' r.o.w.)
6'-4" Sidewalk with shade structure (7' landscape)	8 lane + transit without landscaping (84' - 138')	Option 4C (112' r.o.w.)
8' Sidewalk with 5' landscape	8 lane + transit with lands, and ch. median (100' - 82')	Option 4-T A (118' r.o.w.)
8' Sidewalk with 3' buffer	8 lane + center-running transit with landscaping and two center medians (118' - 188')	Option 4-T B (124' r.o.w.)
8' Sidewalk	8 lane without landscaping (82' - 118')	Option 4A (114' r.o.w.)
20' Center-Running Transit	8 lane with landscaping (104' - 182')	Option 4B (122' r.o.w.)
11'-12' Side- or Center-Running Transit	8 lane + transit with lands, and ch. median (130' - 188')	Option 4-T A (140' r.o.w.)
3' - 5' Bike Lane	8 lane + transit with landscaping and 2 center medians (138' - 188')	Option 4-T B (146' r.o.w.)
7'-8' Buffered Bike Lane	8 lane + transit with landscaping and 2 center medians (138' - 188')	Option 4-T SATA (existing r.o.w.)

3c. Transit Corridor Travel Time

The time it takes to travel the length of the Broadway project by transit.

- Existing corridor travel time is lower than existing vehicular traffic travel time, so two negatives rather than the one negative for 4a. Movement of Through Traffic.
- Four and six lanes with pull outs, signal prioritization, etc. are assumed to be slower than vehicular movement, because all buses must pull into bus pull outs and this slows the bus travel time.
- Dedicated transit lanes with accompanying signal prioritization, etc. are assumed to have roughly the same corridor travel time as vehicles, except for where the dedicated lane is outside lane (Option 6+TA), because it would have issues with right turning vehicles and the BRT may need to use the bus pullouts. Also, SATA is one minus sign less than the vehicular through movement performance measure because at least a portion of the service is in a dedicated lane.
- VISSIM results accounting for signal timing, transit priority treatments, traffic delay, merges, and boarding time at transit stops
- Initial assessment based on traffic assessment of current PAG projections and 30% reduced traffic growth option, with qualitative comparisons based on professional experience and judgment of relationship between transit and vehicular travel time
- Transit priority treatment at intersections, level boarding, off-vehicle ticketing, etc. are considered to be more likely with dedicated transit lanes

LANE CONFIGURATION ALTERNATIVES	TRANSIT ACCESS	STREET CROSS SECTION ALTERNATIVES	TRANSIT ACCESS
Existing Conditions	Existing Conditions	Existing Conditions	Existing Conditions
8 lane without landscaping (82' - 82')	Option 4A (82' r.o.w.)	Option 4A (82' r.o.w.)	Option 4A (82' r.o.w.)
8 lane with landscaping (84' - 138')	Option 4B (100' r.o.w.)	Option 4B (100' r.o.w.)	Option 4B (100' r.o.w.)
8 lane + transit without landscaping (84' - 138')	Option 4C (112' r.o.w.)	Option 4C (112' r.o.w.)	Option 4C (112' r.o.w.)
8 lane + transit with lands, and ch. median (100' - 82')	Option 4-T A (118' r.o.w.)	Option 4-T A (118' r.o.w.)	Option 4-T A (118' r.o.w.)
8 lane + center-running transit with landscaping and two center medians (118' - 188')	Option 4-T B (124' r.o.w.)	Option 4-T B (124' r.o.w.)	Option 4-T B (124' r.o.w.)
8 lane without landscaping (82' - 118')	Option 4A (114' r.o.w.)	Option 4A (114' r.o.w.)	Option 4A (114' r.o.w.)
8 lane with landscaping (104' - 182')	Option 4B (122' r.o.w.)	Option 4B (122' r.o.w.)	Option 4B (122' r.o.w.)
8 lane + transit with lands, and ch. median (130' - 188')	Option 4-T A (140' r.o.w.)	Option 4-T A (140' r.o.w.)	Option 4-T A (140' r.o.w.)
8 lane + transit with landscaping and 2 center medians (138' - 188')	Option 4-T B (146' r.o.w.)	Option 4-T B (146' r.o.w.)	Option 4-T B (146' r.o.w.)
8 lane + transit with landscaping and 2 center medians (138' - 188')	Option 4-T SATA (existing r.o.w.)	Option 4-T SATA (existing r.o.w.)	Option 4-T SATA (existing r.o.w.)

3c. Corridor Travel Time

3d. Schedule Adherence

The extent that transit is able to stay on schedule.

- Dependability of travel time along the corridor can be measured to a degree with VISSIM.
- This measure is a rough combining of 3b and 3c with a slightly more weight to 3c.
- Dependent on factors that are not controllable as part of this project, including Sun Trans scheduling and transit driver behavior.

LANE CONFIGURATION ALTERNATIVES	MINIBUS	STREET CROSS SECTION ALTERNATIVES	MINIBUS
Existing Conditions	Existing Conditions	Existing Conditions	Existing Conditions
8 lane without landscaping (82' - 82')	Option 4A (82' r.o.w.)	Option 4A (82' r.o.w.)	Option 4A (82' r.o.w.)
8 lane with landscaping (84' - 138')	Option 4B (100' r.o.w.)	Option 4B (100' r.o.w.)	Option 4B (100' r.o.w.)
8 lane + transit without landscaping (84' - 138')	Option 4C (112' r.o.w.)	Option 4C (112' r.o.w.)	Option 4C (112' r.o.w.)
8 lane + transit with lands, and ch. median (100' - 82')	Option 4-T A (118' r.o.w.)	Option 4-T A (118' r.o.w.)	Option 4-T A (118' r.o.w.)
8 lane + center-running transit with landscaping and two center medians (118' - 188')	Option 4-T B (124' r.o.w.)	Option 4-T B (124' r.o.w.)	Option 4-T B (124' r.o.w.)
8 lane without landscaping (82' - 118')	Option 4A (114' r.o.w.)	Option 4A (114' r.o.w.)	Option 4A (114' r.o.w.)
8 lane with landscaping (104' - 182')	Option 4B (122' r.o.w.)	Option 4B (122' r.o.w.)	Option 4B (122' r.o.w.)
8 lane + transit with lands, and ch. median (130' - 188')	Option 4-T A (140' r.o.w.)	Option 4-T A (140' r.o.w.)	Option 4-T A (140' r.o.w.)
8 lane + transit with landscaping and 2 center medians (138' - 188')	Option 4-T B (146' r.o.w.)	Option 4-T B (146' r.o.w.)	Option 4-T B (146' r.o.w.)
8 lane + transit with landscaping and 2 center medians (138' - 188')	Option 4-T SATA (existing r.o.w.)	Option 4-T SATA (existing r.o.w.)	Option 4-T SATA (existing r.o.w.)

3d. Schedule Adherence

3e. Frequency and Hours of Service

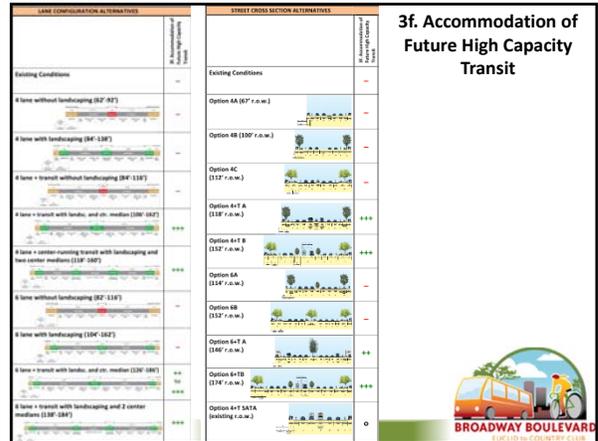
The frequency at which transit service stops along Broadway and for what period of week and weekend days.

- Potential that service efficiencies related to other transit performance measures could allow for increase of service for minimal additional cost.
- This is mainly an independent decision that Sun Trans would make that cannot be influenced to much a degree by this project.
- Not measurable at current level of design.

3f. Accommodation of Future High Capacity Transit

The ability of the roadway and roadside design to accommodate future high capacity transit. **This can ultimately improve performance of design concepts in relation to other transit performance measures.**

- Existing and 4 lanes get - because they would end up having one lane in each direction for vehicular traffic if dedicated transit lanes were provided.
- Six lane options get - because even though these could be converted to 4+T with dedication of lanes, there would likely be resistance to reducing traffic lanes once they are in place and construction would need to occur to make the conversation.
- 6+T A has right turning vehicle issues so ++
- 4+T and 6+T B gets +++, because they provide for high-quality high capacity transit with implementation of the concept
- SATA is rated neutral because only one direction is in a dedicated lane while the service levels are reduced by the other direction running in a shared lane.



3f. Accommodation of Future High Capacity Transit



3g. Riders per Vehicle

Average number of daily riders per transit vehicle or per peak hour transit vehicle.

- VISSIM modeling and transit service assumptions
- Other transit performance measures effect transit ridership and efficiency of service
- Affected by Sun Trans service planning which is not controlled by this project
- Not measurable at current level of design**



Vehicular Access and Mobility

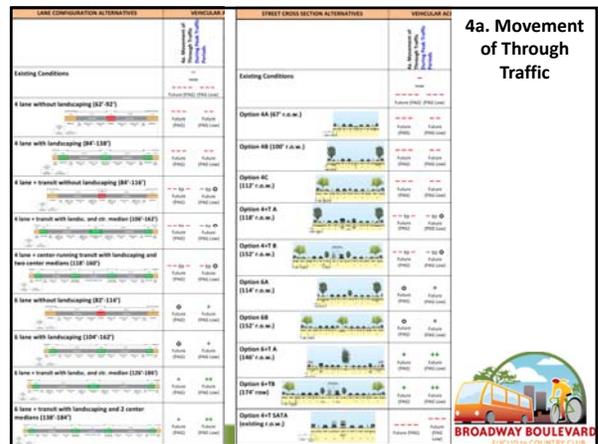
- 4a. Movement of Through Traffic During Peak Traffic Periods
- 4b. Intersection Delay – Overall Intersection Performance
- 4c. Intersection Delay – Worst Movement
- 4d. Accident Potential
- 4e. Lane Continuity
- 4f. Access Management Management for Adjacent Properties



4a. Movement of Through Traffic During Peak Traffic Periods

Effectiveness of moving through vehicular traffic, which affects a variety of other transportation, environment, and economic factors.

- Existing section with current volumes - impacts of buses stopping in through lanes and high number of ped HAWK signals (that are not synchronized with other signals), through traffic flow is less than desirable; increased traffic demand for either growth scenario without adding intersection capacity will result in long travel times and excessive delay.
- 4 lane options w/o exclusive transit lanes - do not provide sufficient through capacity at the signalized intersections for either growth scenario. These options assume that additional turning lanes are provided at the key intersections (Euclid, Campbell, Country Club) and bus pullouts and coordinated pedestrian HAWK signals are provided.
- 4-lane options with exclusive transit lanes - through traffic operations will be improved assuming that a sufficient modal shift from car to transit (BRT) occurs to reduce vehicular demand.
- 6 lane options w/o exclusive transit lanes - fair to good through traffic operations depending upon growth scenario; assumed bus pull outs and coordinated pedestrian HAWK signals.
- 6 lane options with exclusive transit lanes - good to very good through traffic operations depending upon growth scenario and assuming that a sufficient modal shift from car to transit (BRT) occurs to reduce vehicular demand.
- The SATA concept is rated lower than the 4 lane mixed flow options because the streetcar shared lanes are estimated to reduce performance for those lanes.
- Design details that will be developed later in the project (i.e.; intersection and signal design, access management, etc.) will allow assessment using VISSIM which will allow for quantitative measurement of:
 - Average corridor travel time
 - Average speed
 - Average 95 percentile queue length
 - Average delay Average corridor travel time
 - Volume to Capacity Ratio (V/C)
 - Travel time reliability
- Initial assessment based on assessment of current PAG projections and 30% reduced traffic growth option, with qualitative comparisons based on professional experience and judgment



4a. Movement of Through Traffic



4b. Intersection Delay – Overall Intersection Performance

Overall delay for vehicular traffic on Broadway and cross streets at intersections.

- Design details that will be developed later in the project will allow assessment using VISSIM:
- Number of through and turn lanes
- Length of turn lanes
- Signal design, including crossing time considerations for pedestrians and bicycles
- Transit priority treatments
- Other intersection design features
- **Not measurable at current level of design**

4c. Intersection Delay – Worst Movement

Worst delay for a single vehicular movement on Broadway or cross streets at intersections.

- Design details that will be developed later in the project will allow assessment using VISSIM, see 4b.
- **Not measurable at current level of design**

4d. Accident Potential

Degree to which street design could affect the potential for accidents.

- Certain factors can contribute to higher accident rates and severity of accidents. These can include the following factors, which are not determined at current level of design:
- Number of access points to adjacent properties
- Number of side street access points
- Lane continuity (4e)
- Amount of bike lane cross over length.
- **Not measurable at current level of design**

4e. Lane Continuity

The degree to which the number of lanes in the roadway is consistent. **The number of lanes can be increased and decreased along the length of a street to reflect different traffic needs at different locations, but merging reduces capacity more than just the lane reduction and can increase the potential for crashes where the merge occurs.**

- Requires more detailed design in order to perform VISSIM analysis
- Comparisons can be made to similar lane reductions in Tucson to evaluate potential for crashes.
- **Not measurable at current level of design**

4f. Access Management for Adjacent Properties

The reduction of number and size of driveway and street access from Broadway.

- Access management can improve traffic flow and traffic safety, reduce conflicts with pedestrians and bicycles, and generally reduce potential for accidents.
- Needs more detailed design.
- **Not measurable at current level of design**

5a. Person Trips for Multiple Measures

Multi-modal measures allowing evaluations on a per person basis.

- A range of transportation measures can be estimated by person-trips.
- Performance for different modes is measures using VISSIM analysis and converted to person trips for measures, including:
 - Corridor travel time
 - Average delay
 - Travel time reliability
 - Other measures as appropriate
- **Not measurable at current level of design**

Sense of Place

- 6a. Historic Resources
- 6b. Significant Resources
- 6c. Visual Quality
- 6d. Broadway as a Destination
- 6e. Gateway to Downtown
- 6f. Conduciveness to Business
- 6g. Walkable Community



6a. Historic Resources

Number of historic structures lost due to direct impact and loss of usefulness resulting from parking, setback, site access and other conditions.

- Based on review of relationship to future ROW to existing ROW and distance between building facades.



LANE CONFIGURATION ALTERNATIVES	STREET CROSS SECTION ALTERNATIVES	6a. Historic Resources
Existing Conditions	Existing Conditions	+++
4 lane without landscaping (82' - 82')	Option 6A (82' r.o.w.)	+++
4 lane with landscaping (84' - 138')	Option 6B (100' r.o.w.)	++
4 lane + transit without landscaping (84' - 138')	Option 6C (112' r.o.w.)	+
4 lane + transit with landsc. and ch. median (100' - 162')	Option 6-T A (118' r.o.w.)	0
4 lane + center running transit with landscaping and two center medians (118' - 160')	Option 6-T B (132' r.o.w.)	---
4 lane without landscaping (82' - 118')	Option 6A (114' r.o.w.)	0
4 lane with landscaping (104' - 142')	Option 6B (132' r.o.w.)	---
4 lane + transit with landsc. and ch. median (130' - 184')	Option 6-T A (148' r.o.w.)	---
4 lane + transit with landsc. and ch. median (130' - 184')	Option 6-T B (172' r.o.w.)	---
4 lane + transit with landscaping and 2 center medians (138' - 184')	Option 6-T 1A (landscaping r.o.w.)	---

LANE CONFIGURATION ALTERNATIVES	STREET CROSS SECTION ALTERNATIVES	6b. Significant Resources
Existing Conditions	Existing Conditions	+++
4 lane without landscaping (82' - 82')	Option 6A (82' r.o.w.)	+++
4 lane with landscaping (84' - 138')	Option 6B (100' r.o.w.)	++
4 lane + transit without landscaping (84' - 138')	Option 6C (112' r.o.w.)	+
4 lane + transit with landsc. and ch. median (100' - 162')	Option 6-T A (118' r.o.w.)	0
4 lane + center running transit with landscaping and two center medians (118' - 160')	Option 6-T B (132' r.o.w.)	---
4 lane without landscaping (82' - 118')	Option 6A (114' r.o.w.)	0
4 lane with landscaping (104' - 142')	Option 6B (132' r.o.w.)	---
4 lane + transit with landsc. and ch. median (130' - 184')	Option 6-T A (148' r.o.w.)	---
4 lane + transit with landsc. and ch. median (130' - 184')	Option 6-T B (172' r.o.w.)	---
4 lane + transit with landscaping and 2 center medians (138' - 184')	Option 6-T 1A (landscaping r.o.w.)	---

LANE CONFIGURATION ALTERNATIVES	STREET CROSS SECTION ALTERNATIVES	6b. Significant Resources
Existing Conditions	Existing Conditions	+++
4 lane without landscaping (82' - 82')	Option 6A (82' r.o.w.)	+++
4 lane with landscaping (84' - 138')	Option 6B (100' r.o.w.)	++
4 lane + transit without landscaping (84' - 138')	Option 6C (112' r.o.w.)	+
4 lane + transit with landsc. and ch. median (100' - 162')	Option 6-T A (118' r.o.w.)	0
4 lane + center running transit with landscaping and two center medians (118' - 160')	Option 6-T B (132' r.o.w.)	---
4 lane without landscaping (82' - 118')	Option 6A (114' r.o.w.)	0
4 lane with landscaping (104' - 142')	Option 6B (132' r.o.w.)	---
4 lane + transit with landsc. and ch. median (130' - 184')	Option 6-T A (148' r.o.w.)	---
4 lane + transit with landsc. and ch. median (130' - 184')	Option 6-T B (172' r.o.w.)	---
4 lane + transit with landscaping and 2 center medians (138' - 184')	Option 6-T 1A (landscaping r.o.w.)	---

LANE CONFIGURATION ALTERNATIVES	STREET CROSS SECTION ALTERNATIVES	6c. Visual Quality
Existing Conditions	Existing Conditions	+++
4 lane without landscaping (82' - 82')	Option 6A (82' r.o.w.)	+++
4 lane with landscaping (84' - 138')	Option 6B (100' r.o.w.)	++
4 lane + transit without landscaping (84' - 138')	Option 6C (112' r.o.w.)	+
4 lane + transit with landsc. and ch. median (100' - 162')	Option 6-T A (118' r.o.w.)	0
4 lane + center running transit with landscaping and two center medians (118' - 160')	Option 6-T B (132' r.o.w.)	---
4 lane without landscaping (82' - 118')	Option 6A (114' r.o.w.)	0
4 lane with landscaping (104' - 142')	Option 6B (132' r.o.w.)	---
4 lane + transit with landsc. and ch. median (130' - 184')	Option 6-T A (148' r.o.w.)	---
4 lane + transit with landsc. and ch. median (130' - 184')	Option 6-T B (172' r.o.w.)	---
4 lane + transit with landscaping and 2 center medians (138' - 184')	Option 6-T 1A (landscaping r.o.w.)	---

6c. Visual Quality

STREET CROSS SECTION ALTERNATIVES	GRADE
Existing Conditions	0.0
Option AA (15'7" x 0.0)	0.0
Option AB (15'0" x 0.0)	0.0
Option AC (15'0" x 0.0)	0.0
Option A17 A (15'0" x 0.0)	0.0
Option A17 B (15'0" x 0.0)	0.0
Option AA (15'0" x 0.0)	0.0
Option AB (15'0" x 0.0)	0.0
Option A17 A (15'0" x 0.0)	0.0
Option A17 B (15'0" x 0.0)	0.0
Option A17 A17A (15'0" x 0.0)	0.0

6d. Broadway as a Destination

Provision of civic space, visual quality, visibility of uses, and multi-modal access that supports Broadway and the uses along it as a destination within the community.

- Factors and/or related measures include:
 - 6c. Visual Quality
 - A balance of all access and mobility measures
 - 7a. Change in Economic Potential
 - 7i. Business Impacts
- Not measurable at current level of design**

6e. Gateway to Downtown

Visual quality, ease of mobility, and similar features that improve connection to downtown. *How does Broadway function as a place, in terms of visual quality, and as a transportation connection to downtown?*

- Combination of 2. Bicycle, 3. Transit, and 4. Vehicular Access and Mobility
- 6c. Visual Quality (at current level of design this is a measure of the visual quality of the street)
- 6g. Walkable Community
- Relationship to adjacent uses is difficult to predict at this point as don't know the future condition of context at current level of design
- Given the importance of future adjacent use to the assessment of this performance measure and the inability to adequately understand the potential for future use, this performance measure cannot be assessed at this time.
- Not measurable at current level of design**

6f. Conduciveness to Business

Attractiveness of buildings along Broadway and the general community character as it relates to businesses.

- Factors and/or related measures include:
 - 6c. Visual Quality is related
 - 6g. Walkable Community
 - 7a. Change in Economic Potential
 - Site access and parking
 - Site revitalization and reuse
 - Other factors to be determined
- Not measurable at current level of design**

6g. Walkable Community

The degree to which street improvements put a mix of land uses within walking distance of a maximum number of residences and workers.

- Factors and related measures include:
 - 1. Pedestrian Access and Mobility
 - 7f. Land Use Mix
 - 8a. Change in Economic Potential
- Given the importance of future adjacent use to the assessment of this performance measure and the inability to adequately understand the potential for future use, this performance measure cannot be assessed at this time.
- Not measurable at current level of design**

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

7a. Greenhouse Gases

Use of design features that can reduce emissions of CO₂, a green house gas that contributes to global warming.

- Reduction of vehicle trips and vehicle miles travelled.
 - 1. Pedestrian Access and Mobility
 - 2. Bicycle Access and Mobility
 - 3. Transit Access and Mobility
 - 6g. Walkable Community
- Level of congestion.
 - Average vehicular speed
 - Average vehicular delay
 - 4b. Intersection Delay – Overall Intersection Performance
- Quality of vehicle fleet, fuel, etc. (cannot be directly influenced by the Broadway project)
- Many of these related performance measures cannot be assessed at the current level of design.
- Not measurable at current level of design



7b. Other Tailpipe Emissions

Use of design features that can reduce particulates and other tailpipe emissions, which can affect public health in areas adjacent to Broadway.

- Reduction of vehicle trips and vehicle miles travelled.
 - 1. Pedestrian Access and Mobility
 - 2. Bicycle Access and Mobility
 - 3. Transit Access and Mobility
 - 6g. Walkable Community
- Level of congestion.
 - Average vehicular speed
 - Average vehicular delay
 - 4b. Intersection Delay – Overall Intersection Performance
- Quality of vehicle fleet, fuel, etc. (cannot be directly influenced by the Broadway project)
- Many of these related performance measures cannot be assessed at the current level of design.
- Not measurable at current level of design

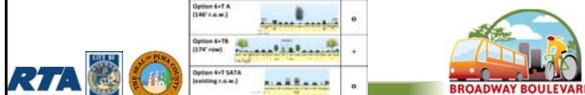
7c. Heat Island

Use of shade and other design features of the improvements to Broadway that can reduce the heat created by the sun shining on Broadways road pavement and sidewalks.

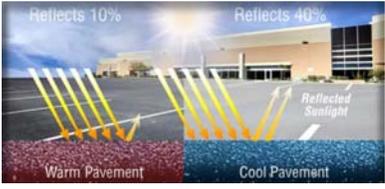
- The solar heat gains to pavement can increase the temperature of the street and surrounding area which can have detrimental environmental and public health effects.
- Factors include:
 - Change in amount of pavement
 - Amount of shaded pavement and other areas that can hold heat
 - Proportion of shaded pavement
 - For this assessment it is assumed that there will be an effort to select construction materials for street and sidewalk pavement, as well as gravel/crushed stone for landscaped areas that are “cooler” and would reduce the heat island effect compared to existing materials used along Broadway
- For initial assessment the following approach has been taken: Assume existing condition is the base “neutral” condition. Slight penalty for more R.O.W. paving with assumption that much of existing area outside of R.O.W. is hardscaped and that new paving could be high albedo (*albedo* is defined as the ability of a surface to reflect solar energy, high albedo does not necessarily correspond to high reflectance of visible light); increased positive assessment for trees and shade structures, and any proportional differences in shade.

7c. Heat Island Effect

STREET CROSS SECTION ALTERNATIVES	ALTERNATIVE	Heat Island
Existing Conditions	0	0
Option AA (25% r.o.w.)	0	+
Option AB (25% r.o.w.)	+	++
Option AC (25% r.o.w.)	++	+++
Option A-T A (25% r.o.w.)	+	++
Option A-T B (25% r.o.w.)	++	+++
Option AA (25% r.o.w.)	+	++
Option AB (25% r.o.w.)	++	+++
Option A-T A (25% r.o.w.)	0	+
Option A-T B (25% r.o.w.)	+	++
Option A-T S&TA (Existing r.o.w.)	0	0



Heat Island Effect




7d. Water Harvesting and Green Streets Stormwater Management

The degree to which the roadway is graded to drain stormwater into landscaped areas where its flow rate can be reduced, its water quality improved, and it can provide irrigation for the plants in the landscaped areas.

- TDOT has recently adopted an Active Practice Guidelines for Green Streets which sets guidance for the design of water harvesting and green stormwater management of streets in Tucson.
- For initial assessment the following approach has been taken: Ratio of landscaped to pavement width.



7d. Water Harvesting

STREET CROSS SECTION ALTERNATIVES	BICYCLE	PUBLIC HEALTH
Existing Conditions	---	---
Option AA (30' r.o.w.)	---	---
Option AB (200' r.o.w.)	---	---
Option AC (332' r.o.w.)	---	---
Option 4-T A (332' r.o.w.)	---	---
Option 4-T B (332' r.o.w.)	---	---
Option 6A (332' r.o.w.)	---	---
Option 6B (332' r.o.w.)	---	---
Option 6-T A (340' r.o.w.)	---	---
Option 6-T B (374' r.o.w.)	---	---
Option 4-T SATEA (existing r.o.w.)	---	---

7e. Health Benefits of Changes in Walking and Biking (renamed and defined Walkability/Bikeability)

The degree to which design elements of the Broadway improvements can support increases in the number and length of walking and biking trips, and walking and biking have a positive impact on public health.

- For initial assessment the following approach has been taken: Combined consideration of 1. Pedestrian and 2. Bicycle Access and Mobility performance measures given that this infrastructure is necessary to support the choice of walking and biking regardless of future land use conditions. In future assessments of more developed designs, this performance measure will be combined with 6g. Walkable Community.

7e. Health Benefits of Changes in Walking and Biking

STREET CROSS SECTION ALTERNATIVES	BICYCLE	PUBLIC HEALTH
Existing Conditions	---	---
Option AA (30' r.o.w.)	---	---
Option AB (200' r.o.w.)	---	---
Option AC (332' r.o.w.)	---	---
Option 4-T A (332' r.o.w.)	---	---
Option 4-T B (332' r.o.w.)	---	---
Option 6A (332' r.o.w.)	---	---
Option 6B (332' r.o.w.)	---	---
Option 4-T A (340' r.o.w.)	---	---
Option 4-T B (374' r.o.w.)	---	---
Option 4-T SATEA (existing r.o.w.)	---	---

7f. Land Use Mix

The degree to which improvements to Broadway enable properties along the street to accommodate mixed use development in the future.

- Mixing of uses can help support transit ridership, walking, and bicycling, as well as reductions in vehicle miles traveled.
- Factors that are under the control of this project include:
 - Number of parcels and size of parcels that can accommodate a mix of land uses in the future, once improvements (i.e., widening) are made to Broadway (the current level of design does not allow for evaluation of the ability of properties that remain after widening to accommodate development).
- Factors that are not within the control of this project include:
 - Extent that existing or possible future zoning allows for viable mixed use development along Broadway
- Related performance measures include:
 - 8a. Change in Economic Potential
 - 8e. Business Impacts
- Not measurable at current level of design

7g. Affordability

Impact of the design of Broadway on the combination of transportation and housing costs and access to jobs are major contributors to a household's ability to afford to live in a location.

- The design of improvements to Broadway could have some impact on transportation costs and access to jobs.
- Related performance measures include:
 - 1. Pedestrian, 2. Bicycle, and 3. Transit Access and Mobility
 - 6g. Walkable Community Design + Architecture
 - 8f. Job Impacts (the current level of design does not allow for the level of assessment of positive and negative impacts to businesses to be evaluated fully in relation to job impacts)
- Several of the related performance measures cannot be assessed at the current level of design.
- Not measurable at current level of design

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

Economic Vitality

- Ability to Evaluate
 - Not at current level of design and planning (cross section width is an indicator, but in some cases remnant parcels may have more economic potential than existing parcels)



Economic Vitality

- Impacts to parking, access, and ultimately buildings all affect viability of existing businesses and development
- Future development potential needs to be assessed
- Real estate and business market potential also needs to be assessed



Economic Vitality

Based on Base Width of Existing Road Right-of-Way, with Existing Operations
 Maximum Potential Capacity Scenario (See Table)

Block	Street to Street	Existing Roadway Width	Existing Lane	Existing Lane	Existing Lane	Option 1A		Option 1B		Option 1C		Option 1D		Option 1E		Option 1F	
						Capacity	Capacity										
Block 1	Street A to Street B	60	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30

Economic Vitality

Block	Street to Street	Existing Roadway Width	Existing Lane	Existing Lane	Existing Lane	Option 1A		Option 1B		Option 1C		Option 1D		Option 1E		Option 1F	
						Capacity	Capacity	Capacity									
Block 1	Street A to Street B	60	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30

Economic Vitality

Based on Base Width of Existing Road Right-of-Way, with Existing Operations
 Maximum Potential Capacity Scenario (See Table)

Block	Street to Street	Existing Roadway Width	Existing Lane	Existing Lane	Existing Lane	Option 1A		Option 1B		Option 1C		Option 1D		Option 1E		Option 1F	
						Capacity	Capacity	Capacity									
Block 1	Street A to Street B	60	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30

Economic Vitality

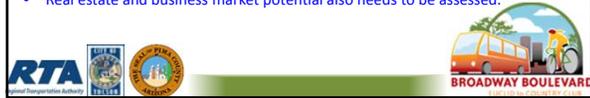
Based on Base Width of Existing Road Right-of-Way, with Existing Operations
 Maximum Potential Capacity Scenario (See Table)

Block	Street to Street	Existing Roadway Width	Existing Lane	Existing Lane	Existing Lane	Option 1A		Option 1B		Option 1C		Option 1D		Option 1E		Option 1F	
						Capacity	Capacity	Capacity									
Block 1	Street A to Street B	60	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30

8a. Change in Economic Potential

Suitability of parcels along Broadway to provide for current commercial or residential use, repurposed, or adaptive reuse, or to provide future mix of commercial and residential uses, and open space.

- Impacts of Broadway improvements to parking, access, and buildings all affect viability of existing businesses and potential for future development.
- While cross section width is an indicator of negative impact on existing businesses, in some cases reuse of remnant parcels may have more economic potential than existing development.
- Not able to fully assess potential for future development and revitalization of existing buildings at current level of design and planning (need alignments and intersection designs to understand full right of way impacts).
- Real estate and business market potential also needs to be assessed.



8a. Change in Economic Potential

Assessment Methodology at current level of design for **Short Term Economic Vitality Potential (up to 5 years after construction of Broadway improvements)**: Based on the following assumptions an estimate of % of street fronting property that would have a building directly impacted (i.e.; economic vitality would rely on reuse of the property) can be roughly estimated:

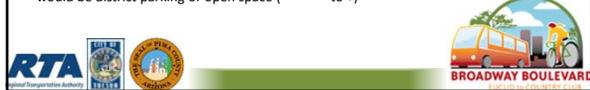
- Reduce potential for acquisition by avoiding land acquisition and/or impact to parking on one side of the street
- 80' R.O.W. – West of Campbell likely no buildings impacted and east about 5% would likely be impacted (O)
- 90-100' R.O.W. – West of Campbell likely 25% of buildings impacted and east about 10% would likely be impacted (O)
- 105-120' R.O.W. – West of Campbell likely 50% of buildings impacted and east about 20% would likely be impacted (—)
- 125-135' R.O.W. – West of Campbell likely 50% of buildings impacted and east about 35% would likely be impacted (— —)
- 140-165' R.O.W. – West of Campbell likely 50% of buildings impacted and east about 45% would likely be impacted (— — —)



8a. Change in Economic Potential

Assessment Methodology at current level of design for **Long Term Economic Vitality Potential (6 or more years after construction of Broadway improvements)**: Based on the following assumptions an estimate of % of street fronting property that would not be developable (i.e.; would be open space or district parking) can be roughly estimated:

- Reduce potential for acquisition by avoiding land acquisition and/or impact to parking on one side of street.
- A parcel with 65 foot depth can be reused for development.
- 130' R.O.W. – West and east of Campbell Avenue less than 5% of street frontage would be district parking or open space (— — to ++)
- 150' R.O.W. – West of Campbell about 10% and to the east about 8% of street frontage would be district parking or open space (— — — to ++)
- 160' R.O.W. – West of Campbell about 25% and to the east about 8% of street frontage would be district parking or open space (— — — — to ++)
- 170' R.O.W. – West of Campbell about 30% and to the east about 15% of street frontage would be district parking or open space (— — — — — to +)



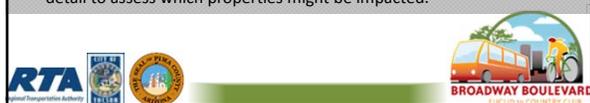
LANE CONFIGURATION ALTERNATIVES		ECONOMIC VI		STREET CROSS SECTION ALTERNATIVES		ECONOMIC VI	
		Blue				Blue	
		Blue				Blue	
Existing Conditions				Existing Conditions			
4 lane without landscaping (30' - 60')				Option 6A (30' x 60')			
4 lane with landscaping (30' - 130')				Option 6B (30' x 60')			
4 lane + transit without landscaping (30' - 130')				Option 6C (30' x 60')			
4 lane + transit with landscaping and on-street medians (30' - 130')				Option 6-D (30' x 60')			
4 lane + center turning transit with landscaping and two center medians (30' - 160')				Option 6A (30' x 60')			
4 lane without landscaping (30' - 130')				Option 6B (30' x 60')			
4 lane with landscaping (30' - 130')				Option 6-C (30' x 60')			
4 lane + transit with landscaping and on-street medians (30' - 130')				Option 6-D (30' x 60')			
4 lane + transit with landscaping and 2 center medians (30' - 160')				Option 6-E (30' x 60')			

8a. Change in Economic Potential

8b. Change in Business Revenue

Comparison of estimate of business revenue today with future conditions considering both potential negative and positive impacts of the improvement project.

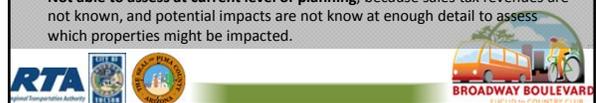
- Estimate potential loss of business activity from impacts of right of way widening on properties on parking, access, and buildings.
- Estimate potential increase in business activity from improved mobility and access along Broadway.
- Estimated potential increase in business activity from new businesses, revitalization, and reuse of properties.
- Not able to assess at current level of planning, because business revenues are not known, and potential impacts are not known at enough detail to assess which properties might be impacted.



8c. Change in Sales Tax Revenue

Comparison of existing sales tax generated by businesses along Broadway with estimate of future sales tax generation considering both potential negative and positive impacts of the improvement project.

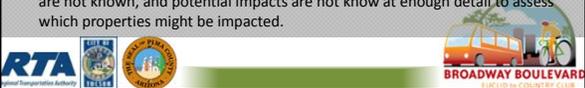
- Estimate potential loss of business activity from impacts of right of way widening on properties on parking, access, and buildings.
- Estimate potential increase in business activity from improved mobility and access along Broadway.
- Estimated potential increase in business activity from new businesses, revitalization, and reuse of properties.
- Estimate of potential change in use from sales tax generating to other commercial or residential activity.
- Not able to assess at current level of planning, because sales tax revenues are not known, and potential impacts are not known at enough detail to assess which properties might be impacted.



8d. Change in Property Tax Revenue

Comparison of existing property tax generated by properties along Broadway with estimate of future property tax generation considering both potential negative and positive impacts of the improvement project.

- Estimate of potential reduction in land area that is taxable, also potential for some increase in taxable property as City sells any remnants of properties that are already owned by the City.
- Estimate of potential land and building value increases do the increased vitality of Broadway, and reinvestment in existing and new buildings and other improvements.
- Not able to assess impacts from right of way as alignment and intersection design are not determined.
- Not able to assess at current level of planning**, because property tax revenues are not known, and potential impacts are not known at enough detail to assess which properties might be impacted.



8e. Business Impacts

The number and size (based on annual revenue) of existing businesses with impacts from the Broadway improvements that would cause the business to relocate; compared with the number and size (based on annual revenue estimate) of future businesses that could occupy new development on remnant parcels.

- Not able to assess at current level of design** because potential impacts are not known at enough detail to assess which properties might be impacted.



8f. Job Impacts

Estimated change in number and income of jobs before and after implementation of the Broadway Project.

- Not able to assess at current level of planning**, because job generation rates are not known, and potential impacts are not known at enough detail to assess which properties might be impacted.



Project Cost

- 9a. Construction Cost
- 9b. Acquisition Cost
- 9c. Operations and Maintenance Cost
- 9d. Income for Reuse of Excess City-owned Property



Project Cost

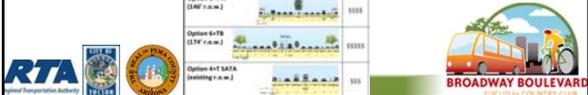
9a. Construction Cost: Total construction cost of planned improvements.

- Main design factors are:
 - Cross section width (including intersection design)
 - Use of local access lanes (increased drainage system and lighting costs)
 - Amount of landscaping
 - Number and complexity of signals
 - Extent and type of lighting, landscape, pedestrian, bicycle, and transit facilities



9a. Construction Cost

Option / Description (See View all Alternatives)	Cost
Existing Conditions	\$0
Option 4A (30' x 0.0m)	\$0
Option 4B (300' x 0.0m)	\$0
Option 4C (333' x 0.0m)	\$0
Option 4-T A (333' x 0.0m)	\$0
Option 4-T B (333' x 0.0m)	\$0
Option 5A (333' x 0.0m)	\$0
Option 5B (333' x 0.0m)	\$0
Option 6-T A (333' x 0.0m)	\$0
Option 6-T B (333' x 0.0m)	\$0
Option 4-T SATA (333' x 0.0m)	\$0



Certainty

10a. Ability to Provide for Changing Transportation Needs:

Performance Measure 3f. Accommodation of Future High Capacity Transit measures the ability of Broadway implementation concepts to provide space for potential future changes in the transit service provided along Broadway. Similarly, bicycle, pedestrian, and vehicular demands and needs could change over time. This performance measure allows for assessment of the ability of the Broadway design concepts to adapt to changing transportation demands over time with the goal of minimizing the need for additional right of way and other capital investment.

- Factors that affect the ability to meet changing transportation needs include:
 - Presence of transit lanes (or width to accommodate future lanes either within medians or through the conversion of a vehicular lane)
 - Width within the buffer and sidewalk areas to accommodate additional pedestrian, bicycle, and transit features.

LANE CONFIGURATION AND TRANSPORTATION	STREET CROSS SECTION ALTERNATIVES	
Existing Conditions	Existing Conditions	---
4 lane without landscaping (32'-8")	Option 4A (32' r.o.w.)	---
4 lane with landscaping (34'-13")	Option 4B (32' r.o.w.)	---
4 lane + transit without landscaping (34'-13")	Option 4C (32' r.o.w.)	---
4 lane + transit with lands, and str. median (33'-0")	Option 4-T A (32' r.o.w.)	---
4 lane + center running transit with landscaping and two center medians (33'-0")	Option 4-T B (32' r.o.w.)	---
4 lane without landscaping (32'-8")	Option 4A (32' r.o.w.)	---
4 lane with landscaping (34'-13")	Option 4B (32' r.o.w.)	---
4 lane + transit with lands, and str. median (33'-0")	Option 4-T A (32' r.o.w.)	---
4 lane + transit with landscaping and 2 center medians (33'-0")	Option 4-T BATA (32' r.o.w.)	---

10a. Ability to Provide for Changing Transportation Needs

Certainty

10b. Risk of Relying on Future Development for Economic Vitality:

Assessment of risk of relying on future revitalization and new development to create positive change in 8. Economic Vitality.

- This is related to the rate at which the city can market and transfer remnant property to private interests that will entitle and develop the properties for new uses, and the timing and risk involved for private interests to develop the properties.
- While there is risk involved in the ability of remnant properties to be redeveloped, there is the potential that future development could provide both more viable and attractive space for new businesses and residents, as well as more commercial space and more homes compared to existing development on the properties that may be impacted by the future street design.
- Factors that affect the risk of future development that can be influenced by the future roadway design, include:
 - The amount of land area for future development
 - The size and configuration of future development sites
 - Access from Broadway to the future development sites
- Not measurable at current level of design

Certainty

10c. Ability of City to Operate and Maintain Improvements: Assessment of relative cost and benefit and ability of city budget to support 9c. Operations and Maintenance Cost.

- Factors that affect the ability of the city to support the operations and maintenance of the future roadway are
 - Operations and maintenance costs
 - Ability of the city to fund the costs
- The current assessment is expressed as a range given the uncertainty of the city to maintain a consistent level of funding and the relative cost of operations and maintenance for the various lane configurations types and the street cross sections

LANE CONFIGURATION AND TRANSPORTATION	STREET CROSS SECTION ALTERNATIVES	
Existing Conditions	Existing Conditions	---
4 lane without landscaping (32'-8")	Option 4A (32' r.o.w.)	---
4 lane with landscaping (34'-13")	Option 4B (32' r.o.w.)	---
4 lane + transit without landscaping (34'-13")	Option 4C (32' r.o.w.)	---
4 lane + transit with lands, and str. median (33'-0")	Option 4-T A (32' r.o.w.)	---
4 lane + center running transit with landscaping and two center medians (33'-0")	Option 4-T B (32' r.o.w.)	---
4 lane without landscaping (32'-8")	Option 4A (32' r.o.w.)	---
4 lane with landscaping (34'-13")	Option 4B (32' r.o.w.)	---
4 lane + transit with lands, and str. median (33'-0")	Option 4-T A (32' r.o.w.)	---
4 lane + transit with landscaping and 2 center medians (33'-0")	Option 4-T BATA (32' r.o.w.)	---

10c. Ability of City to Operate and Maintain Improvements

Call to the Audience

10 Minutes

Please limit comments to 3 minutes

- Called forward in order received
- CTF members cannot discuss matters raised
- CTF cannot take action on matters raised
- CTF members can ask project team to review an item



Next Steps/Roundtable

Jenn Toothaker

- Confirm Next Meeting Date
- Next Meeting Date Agenda

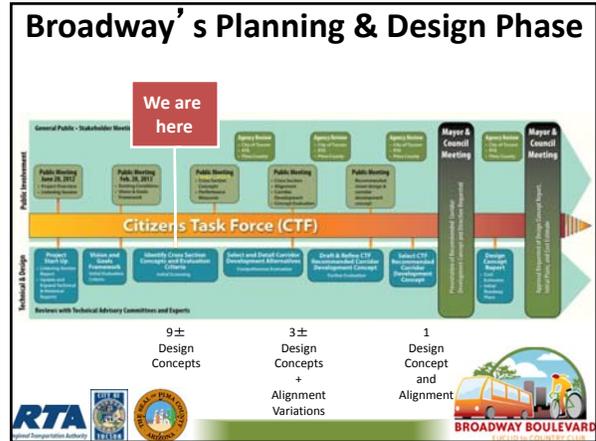



Possible Schedule Revisions

Current Schedule	Meeting Descriptions	Revised Schedule*
July 25, 2013 #17	CTF Meeting #17 (Action Meeting) – Stakeholder Agency Review, and finalize initial cross sections and performance assessment for public review	July 25, 2013 #17
	CTF Meeting (Action Meeting) – Finalize items from July 25 meeting/presentation materials for public review at Public Meeting #18 (need to allow at least 4 weeks for mailings of invitations)	August 22, 2013 #18
June and later	Stakeholder Agency Review #1	August and later
Sept. 5, 2013	Public Meeting #18 – Potential cross sections and performance measure assessment	Sept. 26, 2013 #18
Sept. 30 & Oct. 3, 2013	Charrette #2 – Review input from Public Mtg. #1; identify Street Cross-Section, Alignment, and Corridor Development Options	Oct. 21 to 24, 2013 #19 #20
Oct. – Nov., 2013	No CTF meetings. Technical work completed by project team.	Nov. 2013 – mid-Jan., 2014
PROPOSED DATES – NOT YET APPROVED BY CTF		
Dec. 5, 2013	CTF Meeting (Action Mtg.) – Initial Street Design and Public Participation; direction on refinements	Jan. 29 or 30, 2014
Dec. 2013 – early Jan. 2014	Design refinements and analysis; prepare for Stakeholder Review	Feb. 2014
Jan. – Feb. 2014	Stakeholder and Agency Review #2	Feb. – Mar. 2014
Feb. 27, 2014	CTF Meeting (Action Mtg.) – Finalize design refinements and analysis for public presentation	Mar. 27, 2014 #21
Mar. 20, 2014	Public Meeting #18 – Cross section, alignment, and corridor development concepts; performance evaluation, and preferred design approach	April 24, 2014 #22
April 3, 2014	CTF Meeting (Action Mtg.) – Public Input and Street Design and Corridor Development Concept	May 8, 2014 #23
Apr. 14 & 17, 2014	Charrette #3 – CTF Draft Recommended Street Design and Corridor Development Concept	May 19 & 22, 2014 #24 #25

Public Meeting Format Slides





Preparation for Public Meeting #3

- Public Meeting purpose and desired public input
 - Provide information about process to date
 - Goals and Performance Measures
 - Design alternatives and assessments
 - Next steps for project
 - Desired public input
 - Performance Measure priorities
 - Recommendations for Street Section Alternatives to study further
 - Major discussion points amongst participants – potential “points of tension”




Preparation for Public Meeting #3

Proposed Meeting Agenda

- Welcome & Agenda
- CTF Introductions
- Overview Presentation
- Activity / Small Group Discussions at Tables
- Small Group Report Outs
- CTF Takeaways
- Close





Preparation for Public Meeting #3



Activity / Small Group Table Discussions

- Time ~ 60-90 minutes
- Table leaders/facilitators to help participants
- Primary input obtained during activity in response to specific questions (not yet finalized)
- *Other likely meeting components would include video booth, comment cards, and display boards*



Preparation for Public Meeting #3

- Small Group Exercise Concept
 - Review and discuss goals and Performance Measures
 - Initial identification of key Performance Measures
 - Review and discuss Street Section Elements
 - Pedestrian, bicycle, and transit assessments
 - Review and discussion of Lane Configuration Types and Street Section Alternatives and assessments
 - *Identify 3 alternatives to study further*
 - *Review and validate key Performance Measures*
 - *Identify key discussion points*



Preparation for Public Meeting #3

- Are there any specific ideas about you have about:
 - CTF roles in the event?
 - Format of the event or table activities?
 - Overall content and discussion?



Thank You for Coming – Please Stay in Touch!

Broadway: Euclid to Country Club

Web: www.tucsonaz.gov/broadway

Email: broadway@tucsonaz.gov

Info Line: 520.622.0815

RTA Plan

www.rtamobility.com



Approved Alignment

(Mayor & Council approved in 2008)



Downtown Links Project Update

July 2013



DOWNTOWN LINKS CORRIDOR PROJECT I-10 TO BROADWAY BLVD MAY 2013

downtown **LINKS**



Scope and Schedule

- A 1.3 mile long corridor project linking Broadway Boulevard and I-10 on the north edge of downtown, parallel to the Union Pacific rail line.
- **Scope Elements:**
 - 2 vehicle lanes in each direction with medians and turn lanes
 - On-street bike lanes, sidewalks, and separate multi-use path
 - Major drainage improvements: new Tucson Arroyo culvert
 - 6th Street Underpass at the Union Pacific Railroad
 - Rail crossing upgrades to establish "Quiet Zone" eligibility
 - Links Avenue bridge across 6th Avenue
 - 9th Avenue deck park with public space, landscaping, art
 - Native desert landscaping and passive water harvesting
 - 6th Street/6th Avenue signal upgrade for two-way traffic
 - Development of an optional Urban Overlay District (UOD)
- **To be constructed in phases between 2011 and 2021:**
 - Phase I: 8th Street Drainage Project, *Completed in May 2012*
 - Phase II: St. Mary's Road, I-10 to Church Avenue Project, *Under Construction*
 - Phase III: 6th Street/Links Ave. from Church to Broadway, *In Design*.

Approved Alignment

(Mayor & Council approved in 2008)



Budget

- Downtown Links project is in the 20-year RTA plan approved by voters in 2006. Budget is \$76.1 million.
- **Expenses and Encumbered Funds: \$23.8 million**
 - HDR Inc. design contract, \$6 million
 - 8th Street Drainage Improvements, \$7.8 million
 - St. Mary's Roadway Improvements, \$8 million
 - Miscellaneous (properties acquired, demolitions, staff hours, etc.), \$2 million
- **Remaining Funds: \$52.3 million**
 - Replacement of ADWR monitoring wells, \$200,000
 - 6th Ave/6th Street traffic signal for two-way traffic, \$300,000
 - Property acquisitions and relocations (Real Estate Plan), \$7.7 million
 - Property demolitions and environmental clean-up, \$500,000
 - Phase III construction, \$43.6 million

Phase II: St. Mary's Road, I-10 to Church Ave

- On schedule: To be completed in January 2014
- **Construction Update:**
 - Major underground drainage and utilities almost complete
 - Begin construction of north side of roadway in July 2013, including landscape elements, final grading and paving
 - Lane restrictions in place for the duration of the project
 - Two-way traffic to be maintained except for occasional closures due to construction activities



Phase III: Church Avenue to Broadway Boulevard

- **Design Schedule:** 75% plans, October 2013 and 100% plans, January 2015.
- **Design Update:**
 - **Union Pacific Railroad (UPRR) crossings:** Ongoing coordination for proposed bridge structure. TDOT to meet with Federal Rail Administration (FRA) & Stakeholders in August 2013 to discuss infrastructure needs and "Quiet Zone" requirements.
 - **Drainage Plans:** Remove properties from FEMA floodplain with the completion of Downtown Links improvements and High School Wash (PCFCD)
 - **9th Avenue Deck Park:** Design concept approved by CAC in May 2013. TDOT to include concept in Phase III 75% plans.
 - **Bike and Pedestrian Connectivity:** CAC subcommittee currently working with TDOT staff to identify innovative solutions
 - **Public Art:** Budget, future art concepts and locations to be discussed in September 2013
 - **Building Demolitions:** Stone Transmission building demo to take place mid-July 2013
 - **Property Acquisitions:** RTA Board to approve funding in August 2013. Once approved, Real Estate will begin communications with property owners.

Union Pacific Railroad

Detailed Issues:

- UPRR requested the 6th Street bridge accommodate 4 rail lines and a steel superstructure with a cost of \$8 million
- Downtown property owners and developers want "Quiet Zone" implemented ASAP
- TDOT will issue an official memo to M&C and all stakeholders on QZ process following August 7, 2013 Diagnostic Review
- "Quiet Zone" is not guaranteed; Will depend on crossing improvements and final FRA approval
- Bicycle advocates want at-grade crossings at 9th and 7th Avenues to remain; TDOT currently working on design solutions with CAC.



9th Avenue Deck Park Design Concept

- Deck Park requested by neighborhood residents to provide better connectivity to the Downtown area
- This design element was necessary to gain community support for Downtown Links
- Related Issues:
 - Not part of RTA Scope of Work
 - Funding
 - Ownership and maintenance of facility



Land Use Planning

Current Issues:

- Remaining property acquisitions to begin in September once RTA approves funding
- Downtown Links Urban Overlay District (DLUOD) is being coordinated by City staff with other downtown L.U.P. efforts: Infill Incentive District, Streetcar District
- U of A College of Architecture faculty and students assisting with redevelopment concepts including recent collaborative workshop in D.C. with City staff and design team
- WAMO to provide input on future site planning of Citizen's and Steinfeld warehouses
- Disposal of Sixth Street right-of-way after opening Downtown Links



Upcoming Challenges

- **Union Pacific Railroad:** Approval of at-grade crossing plans, "Quiet Zone" approval, and Sixth Street bridge selection (Steel vs Concrete)
- **Bicycle and Pedestrian crossings:** Develop innovative solutions for routes across railroad tracks and overall connectivity
- **Budget:** \$52.3 million remaining for property acquisitions, demolitions, environmental clean-up, and Phase III corridor construction.
- **Name of New Roadway:** Support from Barraza family to name after their father
- **Schedule:** Property acquisitions and Union Pacific permitting are on the critical path and will dictate the start of construction

Project Team Contact Information:

Tom Fisher, TDOT Project Manager (Planning), tom.fisher@tucsonaz.gov
 Sam Credio, TDOT Project Manager (Engineering), sam.credio@tucsonaz.gov

Questions



DOWNTOWN LINKS CORRIDOR PROJECT
 I-10 TO BROADWAY BLVD
 MAY 2013

For more information please visit or call:
 Project Website - www.downtownlinks.info
 Project Info Line - (520) 622-9000

