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

Meeting Agenda

1. Call to Order/Agenda Review/Announcements
2. 1st Call to the Audience
3. Approval of CTF Meeting Summaries for the May 21, May 23, May 30, June 2013 Meetings
4. Public Input Report, and Reports on Project Presentations & Outreach
5. Opportunity to Ask Questions Regarding Informational Update Memo for Ronstadt Transit Site Redevelopment and the Downtown Links Project
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
7. 2nd Call to the Audience
8. Next Steps/CTF Roundtable
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

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

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

Approved Alignment
(May & Council approved in May)
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 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

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
### 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)

### Lane Configuration Alternative Example Illustrations

- [Illustration of different lane configurations]

### 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

- **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
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 Broadway 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 grassy/brushed 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 hardened 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
  — 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

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
    — 0’ R.O.W. — West of Campbell likely no buildings impacted and east about 5% would likely be impacted (0)
    — 15’-20’ R.O.W. — West of Campbell likely 25% of buildings impacted and east about 10% would likely be impacted (25)
    — 25’-30’ R.O.W. — West of Campbell likely 50% of buildings impacted and east about 20% would likely be impacted (50)
    — 35’-40’ R.O.W. — West of Campbell likely 75% of buildings impacted and east about 35% would likely be impacted (75)
    — 45’-50’ R.O.W. — West of Campbell likely 95% of buildings impacted and east about 45% would likely be impacted (95)
    — 55’-60’ R.O.W. — West of Campbell likely 100% of buildings impacted and east about 60% would likely be impacted (100)

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.
  — TxDOT 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
  — 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 the street
    — A parcel with 85 foot depth can be reused for development.
    — 110’ R.O.W. — West of Campbell Avenue less than 5% of street frontage would be district parking or open space (5)
    — 135’ R.O.W. — West of Campbell about 10% and to the east about 8% of street frontage would be district parking or open space (10 —— > 8)
    — 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 (25 —— > 8)
    — 180’ R.O.W. — West of Campbell about 30% and to the east about 15% of street frontage would be district parking or open space (30 —— > 15)
Updated Linkages between Goals and Performance Measures

Updated Performance Assessment

Updated Performance Assessment

Updated Performance Assessment

Updated Performance Assessment
Preparation for Public Meeting

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

Simplify Design Alternatives

Street Cross Section Elements

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

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”

Simplify Design Alternatives

Lane Configuration and Cross Section Alternative Groups

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

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
CTF Discussion of Performance Measures, Lane Configurations, Street Cross Sections, and Assessments

- Group discussion of items to clarify or refine
- Seeking endorsement of:
  - Performance Measure definitions and methodology
  - Lane Configurations to carry forward
  - Street Section Alternatives to carry forward
  - General concept for public meeting

Detailed Slides for Performance Measures, Lane Configurations, Street Cross Sections, and Assessments

For CTF Discussion

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<td>Accessibility/ Pedestrian Flow</td>
<td>Provide high quality access for vehicles to adjacent development and neighborhood.</td>
<td>Means other than widening the roadway on Broadway.</td>
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<tr>
<td>Traffic Operations</td>
<td>Reduce heat island effect through various design measures, such as shading and high albedo pavement, while also providing shade for pedestrian comfort.</td>
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<td>Transportation Alternatives</td>
<td>Design the improvements to Broadway to help reduce air quality impacts from green house gases, particulates, and of permeable surfaces and paving to extent feasible.</td>
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### 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
  - 6 mixed-flow travel lanes (2 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.)

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 + transit (3 alternatives)

Four Lane

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

Option 4A: 67’ Right-of-Way
Four Lane
Potential R.O.W. Range – 67 to 134 feet

Option 4B: 100’ Right-of-Way

Four Lane + Transit
Potential R.O.W. Range – 89 to 156 feet

Option 4+T A: 118’ Right-of-Way

Six Lane
Potential R.O.W. Range – 89 to 152 feet

Option 6A: 114’ Right-of-Way

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

Option 4C: 112’ Right-of-Way

Four Lane + Transit
Potential R.O.W. Range – 89 to 156 feet

Option 4+T B: 152’ Right-of-Way

Six Lane
Potential R.O.W. Range – 89 to 152 feet

Option 6B: 152’ Right-of-Way
Six Lane
Potential R.O.W. Range – 89 to 152 feet

Option 6B: 152’ Right-of-Way

Six Lane + Transit
Potential R.O.W. Range – 109 to 172 feet

Option 6+T A: 146’ Right-of-Way

Six Lane + Transit
Potential R.O.W. Range – 109 to 172 feet

Option 6+T B: 174’ Right-of-Way

Southern Arizona Transit Advocates Concept

Option 4+T SATA: 80’ Right-of-Way (East of Campbell)

Option 4+T SATA: 70’ Right-of-Way (West of Campbell)

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 porch setbacks
  - 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)

Existing Prototypical West of Campbell

Existing Condition: 90’ Right-of-Way
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

### 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 type street 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-5 Suburban areas in the manual. The combination of street type and context type lead to the guidance for sidewalk width:
  - C-6 with predominantly commercial ground floor – 1.5 ft. edge, 7 ft. furnishings (including landscape), 4 ft. throughway, 2.5 ft. frontage
  - C-6 with predominantly residential ground floor – 1.5 ft. edge, 8 ft. furnishings (including landscape), 6 ft. throughway, 3 to 3.5 ft. frontage
  - C-6 with predominantly commercial ground floor – 1.5 ft. edge, 7 ft. furnishings (including landscape), 4 ft. throughway, 1.5 ft. frontage
  - C-6 with predominantly residential ground floor – 1.5 ft. edge, 8 ft. furnishings (including landscape), 6 ft. throughway, 1 to 1.5 ft. frontage
- Result of guidance in relation to Broadway is for a 0.5 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.

### 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
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).

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).

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 on 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.

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).

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.
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

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

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 cyclist 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 (TE Manual recommendation)
  - 7 ft. width positive (+)
  - 7 to 9 ft. width buffered bike lane positive (+ to ++)
2b. Bike Conflicts with Crossing Vehicles

The frequency of points where vehicles cross the bike lane and the ability of the street design to mitigate those potential conflicts.

- Assume all future options have
  - a base assessment that ranges from one negative to one positive (- to +) for vehicles crossing bike lane to get to curb cuts, because there is uncertainty regarding how quickly an access management policy can reduce the number of the access curb cuts/driveways along Broadway.
  - Have the potential for dedicated right turn lanes, green pavement treatments and other markings to be provided at intersections to enhance safety.
  - Vehicle speeds are assumed to be equal in all cross sections.

- Options that require buses to cross over to bus pull outs are neutral.
- Options with dedicated transit lanes in the middle get a single + for that, still would have local buses pulling into bus pull outs.

2c. Pavement Condition

The smoothness of the street’s pavement initially and over time.

- Smooth pavement is a priority for bicyclist comfort.
- Factors in addition to pavement type include:
  - gutter design
  - type of plants that are in the landscape.
- Pavement type is not dependent on cross section design and therefore cannot be measured at the current level of design.
- Not measurable at current level of design

2d. Bike Facility Improvements

Extent of bike racks, shade, drinking fountains, green pavement (bike boxes, etc.) and other features to serve bicyclists’ needs.

- Factors include percentage of shade; use of bike boxes and other features; number and frequency of bike racks; drinking fountains; and other bicycle-supportive design features.
- All design concepts will utilize bike boxes and green and other special paving markings as allowed by code.
- At current level of design ranking is most affected by presence of trees or shade structures and the width of the sidewalk and buffer area to accommodate bicycle supportive facilities.

2e. Bike Network Connections

Convenience and safety of access to surrounding bike network.

- Factors include: Number, length between, and quality of connections from Broadway to surrounding bicycle network.
- Quality of movement along Broadway to connections is assessed in 2a. Separation of Bikes and Arterial Traffic, 2b. Bike Conflicts with Crossing Traffic.
- Need to know relationship of bicycle crossings to adjacent bicycle network, see Bike Crossings (this cannot be assessed at current level of design).
- Not measurable at current level of design.
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.

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 0 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.
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 prioritisation, 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 prioritisation, 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.

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.

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.
- 4+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.

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

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 sections with current volumes – impacts of bus stops, stopping in through lanes and high number of pad HWY signals (that are not synchronized with other signals) through traffic. Even if two lane situations, increased traffic demand for either growth scenario without adding intersection capacity will result in long travel times and excessive delays.
- 4 lane options w/o exclusive transit lanes – do not provide sufficient 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 HWY signals are provided.
- 4 lane options w/ 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 pullouts and coordinated pedestrian HWY signals.
- 6 lane options w/ 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 at:
  - Average journey travel time
  - Average delay
  - Average congestion
  - Average speed
  - Average speed average speed
  - Average delay average travel time
  - Volume to capacity (V/C) analysis
  - Travel time reliability
- Initial assessment based on assessment of current FMP projections and 30% reduced traffic growth option, with qualitative comparisons based on professional experience and judgment

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
### 4b. Intersection Delay – Overall Intersection Performance

<table>
<thead>
<tr>
<th>Delay for vehicular traffic on Broadway and cross streets at intersections.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Design details that will be developed later in the project will allow assessment using VISSIM.</td>
</tr>
<tr>
<td>• Number of through and turn lanes</td>
</tr>
<tr>
<td>• Length of turn lanes</td>
</tr>
<tr>
<td>• Signal design, including crossing time considerations for pedestrians and bicycles</td>
</tr>
<tr>
<td>• Transit priority treatments</td>
</tr>
<tr>
<td>• Other intersection design features</td>
</tr>
<tr>
<td>• Not measurable at current level of design</td>
</tr>
</tbody>
</table>

### 4c. Intersection Delay – Worst Movement

<table>
<thead>
<tr>
<th>Delay for a single vehicular movement on Broadway or cross streets at intersections.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Design details that will be developed later in the project will allow assessment using VISSIM, see 4b.</td>
</tr>
<tr>
<td>• Not measurable at current level of design</td>
</tr>
</tbody>
</table>

### 4d. Accident Potential

<table>
<thead>
<tr>
<th>Degree to which street design could affect the potential for accidents.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 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:</td>
</tr>
<tr>
<td>• Number of access points to adjacent properties</td>
</tr>
<tr>
<td>• Number of side street access points</td>
</tr>
<tr>
<td>• Lane continuity (4e)</td>
</tr>
<tr>
<td>• Amount of bike lane cross over length.</td>
</tr>
<tr>
<td>• Not measurable at current level of design</td>
</tr>
</tbody>
</table>

### 4e. Lane Continuity

<table>
<thead>
<tr>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Requires more detailed design in order to perform VISSIM analysis</td>
</tr>
<tr>
<td>• Comparisons can be made to similar lane reductions in Tucson to evaluate potential for crashes.</td>
</tr>
<tr>
<td>• Not measurable at current level of design</td>
</tr>
</tbody>
</table>

### 4f. Access Management for Adjacent Properties

<table>
<thead>
<tr>
<th>The reduction of number and size of driveway and street access from Broadway.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Access management can improve traffic flow and traffic safety, reduce conflicts with pedestrians and bicycles, and generally reduce potential for accidents.</td>
</tr>
<tr>
<td>• Needs more detailed design.</td>
</tr>
<tr>
<td>• Not measurable at current level of design</td>
</tr>
</tbody>
</table>

### 5a. Person Trips for Multiple Measures

<table>
<thead>
<tr>
<th>Multi-modal measures allowing evaluations on a per person basis.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• A range of transportation measures can be estimated by person-trips.</td>
</tr>
<tr>
<td>• Performance for different modes is measures using VISSIM analysis and converted to person trips for measures, including:</td>
</tr>
<tr>
<td>• Corridor travel time</td>
</tr>
<tr>
<td>• Average delay</td>
</tr>
<tr>
<td>• Travel time reliability</td>
</tr>
<tr>
<td>• Other measures as appropriate</td>
</tr>
<tr>
<td>• Not measurable at current level of design</td>
</tr>
</tbody>
</table>
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.

6b. Significant Resources
Number of significant 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.

6c. Visual Quality
Ability of the street design to enhance the visual quality along it, including its relationship and impacts to the existing and future visual character of adjacent uses.
- Factors related to street design character:
  - Design of median and streetside landscaping
  - Number and location of placemaking features (including public art, wayfinding, lighting, furniture, etc.)
  - Width of roadside areas for streetscape elements and landscaping
- Factors related to character of adjacent uses:
  - 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
6c. Visual Quality

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

6d. Broadway as a Destination

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
  - 7i. 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 greenhouse 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
- **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
  - 6g. Walkable Community
- **Level of congestion.**
  - Average vehicular speed
  - Average vehicular delay
- **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 Broadway 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 green/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 landscaped 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.

### 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

7e. Health Benefits of Changes in Walking and Biking

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.

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:
  - 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

Economic Vitality
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:

- Estimate of re-use 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. – East 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 (—)

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.

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 know 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 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 know 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 know 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.

9a. Construction Cost

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

9b. Acquisition Cost

9c. Operations and Maintenance Cost

9d. Income for Reuse of Excess City-owned Property
Project Cost

9b. Acquisition Cost: Total cost of purchasing property, relocation costs, and other costs associated with acquisition of property.

- Main design factors are:
  - Cross section width
  - Intersection land area
  - Street alignment

9c. Operations and Maintenance Cost: Total cost of operating and maintaining the improvements.

- Pavement and other roadway and sidewalk maintenance.
- Signal systems operations and maintenance.
- Drainage systems (including water harvesting and green streets) maintenance.
- Landscape maintenance and replacement.
- Maintenance and replacement of other pedestrian, bicycle, and vehicular improvements.
- Transit operations and maintenance are not included.

9d. Income for Reuse of Excess City-owned Property: Estimate of value of income from property that is acquired by the City to provide right of way for the Broadway improvements. In some cases this property will have buildings and/or land that can be sold or leased for other use. This measure estimates the value of that income.

- Factors that have an effect on the estimate of value for lease or land sale of remnant property, include:
  - Amount of remnant land
  - The market potential for and value of the uses that the property can accommodate

- Not able to assess impacts from right of way as alignment and intersection design are not determined.
- Not able to assess potential for reuse of remnant parcels or revitalization of existing parcels as alignment and intersection design are not determined.

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
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.

Certainty


- 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

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

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Possible Schedule Revisions

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Room</th>
<th>Activity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 26, 2015</td>
<td>7:30 AM</td>
<td>8th Floor</td>
<td>kickoff meeting</td>
<td>kickoff meeting for CTF members</td>
</tr>
<tr>
<td>July 26, 2015</td>
<td>8:00 AM</td>
<td>8th Floor</td>
<td>sit-down meeting</td>
<td>sit-down meeting for CTF members</td>
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<tr>
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<td>1:00 PM</td>
<td>8th Floor</td>
<td>activity</td>
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<tr>
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<td>4:00 PM</td>
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Public Meeting Format Slides

- We are here
- Design Concepts
- 3-D Design Concepts
- 1 Design Concept and Alignment
- Major discussion points amongst participants – potential “points of tension”

---

Broadway’s Planning & Design Phase

- We are here
- Design Concepts
- 3-D Design Concepts
- 1 Design Concept and Alignment
- Major discussion points amongst participants – potential “points of tension”

---

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”

---

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
Common Project
1-9 to Broadway Blvd
May 2003
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 near Tucson Amphi School
  - 6th Street Underpass at the Union Pacific Railroad
  - Rail crossing upgrades to establish a “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/9th 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

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
  - 8th drain contract, $6 million
  - 8th Street drainage improvements, $7.8 million
  - St. Mary’s Roadway improvements, $5 million
  - Replacement of ADWR monitoring wells, $200,000
  - 6th Street/9th Avenue signal for two-way traffic, $300,000
  - Miscellaneous (properties acquired, demolitions, staff hours, etc.), $2 million

- Remaining Funds: $52.3 million
  - Replacement of ADWR monitoring wells, $200,000
  - 6th Street/9th Avenue 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, $45.6 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 (UP RR) crossings: Ongoing coordination for proposed bridge structure. TDOT to meet with Federal Rail Administration (FRA) & Stakeholders in August 2012 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 Demolition: 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 required 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.O.D. 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 street 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:
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Sam Credio, TDOT Project Manager (Engineering), sam.credio@tucsonaz.gov

Questions

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