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. Distribute/Approve CTF Meeting Summary 8/22/2013  
4. Approve the September 26, 2013 Public Meeting Report for public distribution  
6. Staff/CTF Discussion (including presentations as determined in 10/21 meeting discussions): Cross Section Alternatives refinements and/or selection, suggested alignment options, performance assessment methodologies, & schedule (Potential direction on any of the above)  
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
Distribute / Approve Meeting

Summary:
August 22, 2013 Meeting

Nanci Beizer
Approve the September 26, 2013 Public Meeting Report for public distribution

Jenn Toothaker Burdick
Project Manager, Tucson Department of Transportation

Broadway Task Force
Public Input Report
(updated spreadsheet for 8/17/2013-10/22/2013)

Jenn Toothaker Burdick
Project Manager, Tucson Department of Transportation

Broadway Task Force
Staff/CTF Discussion & Presentations
Cross Section Alternatives and/or selection, suggested alignment options, performance assessment methodologies, and schedule

Jenn Toothaker Burdick
Project Manager, Tucson Department of Transportation

Design Team Members
Objectives for Charrette #2

• Review public input from workshop
  – Understand themes and variety in public input
  – Understand tradeoffs across diverse goals to resolve in next phase of design

• Discuss potential design alternatives, performance measures, and street design and assessment methods

• Identify initial CTF recommendations for design alternatives to take out for stakeholder agency review and initial design and assessment
Tonight’s Agenda
Street Concepts Design and Assessment Methods

• Street Concepts
  – 4 Lanes
  – 4+T Lanes
  – 6 Lanes
  – 6+T Lanes
• Street Design Elements

• ‘Functionality’ & Performance Objectives
• Methods for Measuring Performance
• Key Issue Areas and Policies
• Design Methods
• Schedule
  – Design and Analysis Steps
  – Meetings
# Street Types

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<th>LANE</th>
<th>MEDIAN?</th>
<th>LANE</th>
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**4 Lanes**

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**4+T Lanes**

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**6 Lanes**

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**6+T Lanes**
### Input on Street Section Alternatives

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<th>Top Cross Sections Identified for Further Study</th>
<th>Selections by Table</th>
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<td>A</td>
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<td>Street Cross Section Alternative</td>
<td>% of Total Selections</td>
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<tr>
<td>4+T SATA – existing width</td>
<td>17%</td>
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<tr>
<td>4A – 98’ width</td>
<td>26%</td>
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<tr>
<td>4B – 114’ width</td>
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<td>4+TB – 152’ width</td>
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<td>6B – 152’ width</td>
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<tr>
<td>6+TA – 146’ width</td>
<td>2%</td>
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<tr>
<td>6+TB – 154’ width</td>
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</table>

- **Only 4 Lane Alternatives**
- **4 and Larger Selections**
- **Only 4+T and 6 Lane Selections**
Street Design Elements

• Use efficient widths to minimize impact while providing for:
  – Safety
  – Cost
  – Achieving desired goals

• Key areas to explore balance of function and width:
  – Bicycle facilities
  – Sidewalks
  – Landscape/Shade

• Mixed Flow Lanes
• Transit Lanes
• Bicycle Facilities
• Sidewalks
• Landscape/Shade Types
• Medians
Street Types and Range of Width

- 4 Lanes
- 70 to 134 foot R.O.W.
Street Types and Range of Width

- 6+T Lanes
- 106 to 184 foot R.O.W.
# ‘Functionality’ & Performance Objectives

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<th>Rank</th>
<th>Measure</th>
<th>Pct.</th>
<th>RTA CART/TMC &amp; County Emphasis</th>
<th>Planning Team’s Current Interpretation</th>
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<td>(related to cost)</td>
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<td>11%</td>
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<td>6</td>
<td>Traffic Movement</td>
<td>9%</td>
<td>✔</td>
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<td>8</td>
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<td>9</td>
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<td>Compiled Performance Measures for Public Workshop</td>
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<td>1b. Separation from Vehicular Traffic</td>
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<td>1d. Walkable Network/Neighborhood Connections</td>
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<td>1e. Pedestrian Crossings</td>
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<td>1f. Vehicle/Pedestrian Conflicts at Driveways</td>
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<td>1g. Universal Design</td>
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<td>1h. Walkable Destinations</td>
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### Workshop Performance Measures

#### Historic and Significant Buildings
- 6a. Historic Resources
- 6b. Significant Resources

#### Economic Potential
- 8a. Change in Economic Potential

#### Visual Quality
- 6c. Visual Quality

#### Bicycling Environment
- 2a. Separation of Bikes and Arterial Traffic
- 2f. Bicycle Corridor Travel Time
- 2b. Bike Conflicts with Crossing Vehicles
- 2c. Pavement Condition
- 2d. Bike Facility Improvements
- 2e. Bicycle Network Connections
- 2g. Bike Crossings

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

#### Health Benefits of Walking and Biking
- 7e. Health Benefits of Changes in Walking and Biking

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

#### Accommodation of High Capacity Transit
- 3f. Accommodation of Future High Capacity Transit

#### Ability of City to Maintain
- 10c. Ability of City to Operate and Maintain Improvements

#### Construction and Acquisition Cost
- 9a. Construction Cost
- 9b. Acquisition Cost

#### Transit Travel Time
- 3a. Distance to Transit Stops
- 3b. Transit Stop Facilities
- 3c. Transit Corridor Travel Time
- 3d. Schedule Adherence
- 3e. Frequency and Hours of Service
- 3f. Riders per Vehicle

#### Transit Travel Time
- 5a. Person Trips for Multiple Measures

### Recommended Performance Assessments for Initial Design Concepts

- 6d. Broadway as a Destination
- 6f. Conduciveness to Business
- 6g. Walkable Community
- 7b. Other Tailpipe Emissions
- 7c. Heat Island
- 7d. Water Harvesting
- 7f. Land Use Mix
- 7g. Affordability
- 8b. Change in Business Revenue
- 8c. Change in Sales Tax Revenue
- 8d. Change in Property Tax Revenue
- 8e. Business Impacts
- 8f. Job Impacts
- 9c. Operations and Maintenance Cost
- 9d. Income for Reuse of Excess City-owned Property
- 10a. Ability to Provide for Changing Transportation Needs
- 10b. Risk of Relying on Future Development for Economic Vitality
Methods of Measuring Performance

• Some examples—
  – Historic and Significant Buildings
  – Economic Potential
  – Construction Cost
  – Acquisition Cost
  – Transportation Analysis
    • Traffic Movement
    • Transit Corridor Travel Time & Riders Per Vehicle
    • Bicycle Travel Time
Methods of Measuring Performance

- Historic and Significant Buildings—
  - Future right of way alignment results in building demolition *(reporting: # or % of buildings)*
  - Future right of way alignment impacts parking and access
    - Potential impact to use and site viability may result in building demolition *(reporting: # or % of buildings)*
Methods of Measuring Performance

• Economic Potential—
  – Assessment of potential for full acquisition
  – Example reuse design studies for single and multiple properties
  – Initiate preparation of Economic Development Framework

  – Estimate of economic potential based on existing development that is maintained and potential for reuse (reporting – short and long terms – – – to ++++)
Methods of Measuring Performance

• Construction Cost—
  – Cost estimate based on cost evaluation of design concepts (reporting: estimated $ values)
Methods of Measuring Performance

• Acquisition Costs—
  – Potential partial acquisition purchase costs
  – Potential full acquisition costs, including:
    • Relocation,
    • Purchase of property, and
    • Demolition

  – Reporting: estimated $ values
Methods of Measuring Performance

• Transportation Analysis
  – Traffic Movement
  – Transit Corridor Travel Time & Riders Per Vehicle
  – Bicycle Travel Time
Methods of Measuring Performance

• Traffic Operations
  – VISSIM: a traffic simulation modeling tool
  – Used to evaluate multi-modal performance:
    • travel time (auto, transit, bicycle, pedestrian)
    • vehicle delay → level of service
    • queue length
    • speed

• Traffic Safety
  – Highway Safety Manual
    • Used to assess the effect of roadway features on crashes
Methods of Measuring Performance

• VISSIM does not project traffic demand or distribute demand to the network
• Uses demand(s) generated from a regional traffic model (PAG) to simulate and evaluate traffic and multi-modal conditions
• Two traffic demand scenarios
  – PAG 2040 model projections
  – Reduced PAG 2040 model projections (70% of projected growth)
Methods of Measuring Performance

• VISSIM will allow us to:
  – Compare traffic operations and performance measures for 4, 4+T, 6, and 6+T cross sections
  – Test the effects of
    • increased bus ridership (increased bus frequency, stops, dwell times) with reduced auto traffic
    • higher pedestrian activity (roadway crossings)
  – Evaluate alternative intersection configurations
Key Issue Areas and Policy Studies

Property Impacts & Economic Vitality

• South / North Impact Risks
  – Risk of partial impacts becoming full acquisitions
  – Potential for partial impacts (and risks on both sides)

• Parking: On-Street and Off-Street
  – Redesign of parking
  – District parking
  – Use of walkways for public sidewalks
  – Easements
  – Flexibility with existing policies
    • Number of spaces
    • Alley access
  – Risk of increasing acquisition costs

• Potential for reuse
  – Existing zoning
  – Potential flexibility or revisions
  – Estimates of use and capacity
  – Estimates of value and economic potential

• Definition of Economic Framework

Street Design & Transportation

• Intersection Type
  – Standard
  – Indirect Left Turn

• Transit Options
  – Existing Local and Limited Service
  – Rapid bus
  – BRT: fully dedicated or hybrid
  – Street car
  – Light rail

• Efficiency of Streetscape Improvements
  – Shade
  – Pedestrian buffer
  – Visual quality
  – Landscape vs. construction
  – Construction and maintenance costs
  – Trees overhanging bicycle facilities

• Universal Design Treatments

• Potential for Traffic to Redistribute
Multi-Agency Technical Advisory Team formed
Advises/troubleshoots issues with the Broadway project consultants; includes agency decision-makers and internal staff

**COT** – Albert Elias, Nicole Gavin, Daryl Cole, Carlos de Leon, Andy McGovern, Hector Martinez, Donovan Durband, Ann Chanecka, Gary Wittwer, Jonathan Mabry, Damian Fellows, Jim Mazzocco

**Pima County** – Rick Ellis; David Longoria

**PAG/RTA** – Jim DeGrood, Jeremy Papuga; Britton Dornquast
Design Concept Development

4 Lane examples

• Base Cross Section
  – Combination of 4A (98’) & 4B (114’) based on public input
Design Concept Development

4 Lane examples

- West of Campbell
  - Partial or no acquisitions
  - Negotiations could result in full acquisitions
Design Concept Development

4 Lane examples

- East of Campbell – minimize impacts to one side
  - LEFT: Existing R.O.W. dedicated to adjacent property and cross access easement could result in full acquisitions
  - RIGHT: All parking removed – likely full acquisition and increased potential for building demolition
Design Concept Development

4 Lane examples

• East of Campbell – impacts on two sides
  – LEFT: Reconfigure parking to diagonal (parking reduced) and need for cross access easement could result in full acquisition
  – RIGHT: Reconfigure parking to parallel (parking reduced) and need for cross access easement could result in full acquisition
Design Concept Development

4 Lane examples

• At Campbell Intersection: standard configuration not Indirect Left Turn
  – Double left turn lanes with pedestrian refuge medians
  – Single right turn lane with transition of cycle track to bike lane
  – RIGHT: partial acquisition
  – LEFT: city owned or significant partial impact with potential full acquisition
Design and Analysis Recommended Approach

• Initial Design Concepts – full intersection design and alignment drawings, and assessment of selected performance measures for:
  – 4 Lane
  – 6+T Lane

• Initial Multi-modal Travel Time and Traffic Capacity/Performance Assessment – schematic intersection, transit (lanes, pullouts, stops/stations locations), pedestrian crossings, and basic alignment designs, PAG model run, and VISSIM model run for:
  – 4 Lane
  – 4+T Lane
  – 6 Lane
  – 6+T Lane
Design and Analysis Approach

• December CTF Meeting:
  – Economic Development Framework Presentation/Discussion
  – Parking and Access Issues Presentation/Discussion
  – Report on any feedback from Stakeholder Agencies on CTF recommended design concept development alternatives, methodology, and schedule
  – Confirm design and assessment progress
  – Plan for Early 2014 CTF Charrette
Design and Analysis Approach

• Early 2014 CTF Design Charrette:
  – Review and discuss
    • Initial Design Concepts – full intersection design and alignment drawings and initial performance measures assessments for:
      – 4 Lane
      – 6+T Lane
    • Initial Multi-modal Travel Time and Traffic Capacity/Performance Assessment
      – 4 Lane
      – 4+T Lane
      – 6 Lane
      – 6+T Lane
Design and Analysis Approach

• Early 2014 CTF Design Charrette:
  – Define initial concepts for refinement of design options potentially including:
    • Varying number of lanes and provision of dedicated transit along the length of the street
    • Intersection types and number/type of lanes
    • Parking district and access easements
    • Refinements to remnant property reuse concepts, including integration of historic and significant structures
# Remaining Project Schedule to Mayor and Council Hearing

<table>
<thead>
<tr>
<th>Meeting Descriptions</th>
<th>Potential Revised Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Charrette #3</strong> – CTF Draft Recommended Street Design and Corridor Development Concept; presentation on Universal Design</td>
<td>Late-January, 2014 #22 and #23</td>
</tr>
<tr>
<td>No CTF meetings. Technical work completed by project team to prepare and assess initial Street Design Concepts</td>
<td>Feb. and Early March 2014</td>
</tr>
<tr>
<td><strong>CTF Meeting (Action Mtg.)</strong> – Street Design Concepts direction on refinements</td>
<td>Mid-March, 2014 #24</td>
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<tr>
<td>Design refinements and analysis; prepare for Stakeholder Review</td>
<td>March and April 2014</td>
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<tr>
<td><strong>Stakeholder Agency Review</strong></td>
<td>Late-April 2014 #3</td>
</tr>
<tr>
<td><strong>CTF Meeting (Action Mtg.)</strong> – Finalize design refinements and analysis for public presentation</td>
<td>Early May, 2014 #25</td>
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<tr>
<td>Public Meeting #4 – Cross section, alignment, and corridor development concepts; performance evaluation; and preferred design approach.</td>
<td>Mid-May 2014</td>
</tr>
<tr>
<td><strong>CTF Meeting (Action Mtg.)</strong> – Public Input and Street Design and Corridor Development Concept</td>
<td>June 5, 2014 #26</td>
</tr>
<tr>
<td><strong>Charrette #4</strong> – CTF Draft Recommended Street Design and Corridor Development Concept; presentation on Universal Design</td>
<td>Mid-June, 2014 #27 and #28</td>
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<tr>
<td>No CTF meetings. Technical work to detail and evaluate draft recommended concept</td>
<td>July and August 2014</td>
</tr>
<tr>
<td><strong>CTF Meeting (Action Mtg.)</strong> – CTF Draft Recommended Street Design and Corridor Development Concept Evaluation</td>
<td>Late August, 2014 #29</td>
</tr>
<tr>
<td><strong>Stakeholder Agency Review</strong></td>
<td>September 2014 #4</td>
</tr>
<tr>
<td><strong>CTF Meeting (Action Mtg.)</strong> – Finalize CTF Draft Recommended Street Design and Corridor Development Concept Evaluation for public presentation</td>
<td>Early Oct., 2014 #30</td>
</tr>
<tr>
<td><strong>Public Meeting #5</strong> – Draft Recommended Street Design and Corridor Development Concept Evaluation</td>
<td>Late Oct. 2014</td>
</tr>
<tr>
<td><strong>Charrette #5</strong> – Determine CTF Recommended Design Concept</td>
<td>Nov. 2014 #31 and #32</td>
</tr>
<tr>
<td><strong>CTF Meeting (Action Mtg.)</strong> – Finalize CTF Recommended Broadway Design Concept</td>
<td>Early Dec. 2014</td>
</tr>
<tr>
<td><strong>Mayor and Council Hearing</strong> – Action on CTF Recommended Broadway Design Concept</td>
<td>Late Dec. 2014 or Early Jan 2015</td>
</tr>
</tbody>
</table>
CTF Decision Points

• Alternatives for future study
• Performance measure selections
• December 5 or 12, 2013 CTF Meeting
• Early 2014 CTF Design Charrette
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

• Next CTF Meeting: **Thursday, 12/5 or 12/2013**
  5:30-8:30 p.m., Child & Family Resources

• Proposed Agenda
  - Welcome/Agenda Review
  - Call to the Audience
  - Economic Development Framework Presentation/Discussion
  - Parking and Easement Issues Presentation/Discussion
  - Report on any feedback from Stakeholder Agencies on CTF recommended design concept development alternatives, methodology, and schedule
  - Call to the Audience (2nd)
  - Next Steps/Roundtable
Thank You for Coming – Please Stay in Touch!

Broadway: Euclid to Country Club
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RTA Plan
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