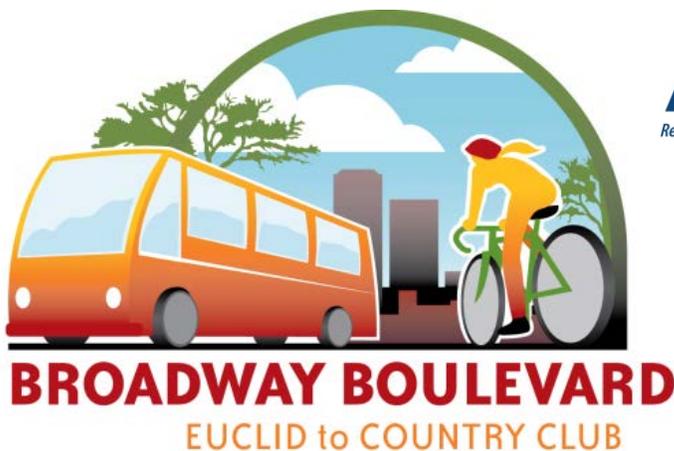


Work in Progress

PART 1 v.2
February 20, 2015

Staff-Recommended 6-Lane Including Transit Refined Alignment Report



Prepared for:

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Tucson Department of Transportation

Project Manager

DRAFT Staff Recommended 6-Lane Including Transit Refined Alignment Report

*** Please Note: This report is a work in progress, additions will be added as they become available, including: An analysis of Technical Advisory Committee comments, public input received to date regarding refinements to the alignment, and an analysis comparing options for the pedestrian environment.**

Overview

The Broadway Boulevard: Euclid to Country Club Project will widen Broadway to a 6-lane arterial roadway, with bike lanes, sidewalks, and landscape, and bus pullouts where appropriate. A staff-recommended 6-Lane Including Transit Refined Alignment map, which the project team and City staff are recommending be adopted as the Broadway roadway project alignment, and a report detailing the refinements made since the last map was issued are being released on February 20, 2015 for public review and comment.

The refinement work recorded in the following pages incorporates the recommendations from the project's 13-member Citizens Task Force (CTF) that has been working diligently with the project team since June 20, 2012, public input compiled through the project, and input from the project's Technical Advisory Committee.



This project is funded by the City of Tucson, Pima County and the Regional Transportation Authority (RTA), and is part of the voter-approved, \$2.1 billion RTA plan that will be implemented through 2026. Details about the plan are available at www.RTAmobility.com.

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The CTF members represent neighborhood and business interests in the area, regional interests, the City of Tucson Planning Commission, Tucson-Pima County Bicycle Advisory Commission, and Commission on Disability Issues. The CTF is an advisory body to the Mayor and Council.

The Technical Advisory Committee is comprised of 40 respected and knowledgeable professionals representing the City of Tucson; the Regional Transportation Authority and Pima Association of Governments; TUSD; University of Arizona (UA) Parking and Transportation Services; UA Planning, Design and Construction; UA College of Architecture, Planning, and Landscape Architecture, in the fields of engineering, planning and design, public safety, transit, and alternative travel modes.



Over the past 29 months, the Broadway Project Team and the CTF have evaluated several roadway designs including alternatives for the following cross sections: 6 travel lanes + 2 dedicated transit lanes (8 lanes total), 6 travel lanes, 4 travel lanes + 2 dedicated transit lanes (6 lanes total), and 4 travel lanes. Throughout this evaluation process an extensive public involvement process occurred that included:

- 34 CTF meetings with 57 Call to the Audience opportunities and 271 specific comments made.

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- 4 large-scale public meetings that have had an average of more than 150 members of the public at each meeting.
 - These meetings have produced several hundred additional public comments that have been evaluated by the project design team.
- More than 239 comments recorded in a running Public Input Report, which logs all public input provided via emails, comment cards, letters, by phone; and, comments received at other general meetings such as, but not limited to, Mayor and Council and RTA Board meetings and forwarded for inclusion in the process.
- Two rounds of Property and Business Owners Meetings with a combined 54# people in attendance.

A formal public comment period on the refined 6-lane alignment map and refinements report will be conducted **starting Friday, February 20 and closing Wednesday, March 11, 2015**. Comments received will be shared with the CTF for their consideration prior to their next meeting on March 19, 2015.

At the March 19, 2015 CTF meeting, both the staff recommended 6-lane Including Transit Alignment map and this report will be presented. The CTF will be asked to support moving the map and report forward to a public informational Open House in April, and then to Mayor and Council in May with CTF and staff recommendations for approval. Accomplishing these key benchmarks by May will enable the project to move forward with ROW acquisition prior to summer, and to meet the anticipated construction schedule.

The staff-recommended 6-lane including transit refined alignment achieves a viable design that balances the design's performance in relation to a broad range of transportation, sustainability, community character measures. These, and other criteria, were defined by the CTF based on public and agency input while also meeting transportation engineering and design standards.

PART 1:

Summary of Refinements to the General Alignment

The table on the next page provides a summary of changes that are reflected in the February 20, 2015 Staff-Recommended 6-Lane Including Transit Alignment. A description of each refinement is provided. Columns are provided to indicate whether the changes were recommended by Citizens Task Force (CTF)/Public Input, and/or the Technical Advisory Committee (TAC).

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Description of Refinement	CTF/ Public	TAC															
General																	
1. The minimum travel lane width has been established as 11' based on an evaluation of tracking and other factors involving large vehicles maneuvering along curved roadways. This was discussed in detail with City transportation personnel in a meeting held December 16, 2014. This widens the two center travel lanes, which were previously 10' wide, increasing the overall roadway width 2'. To avoid impacting the protected side of the roadway, the centerline generally was shifted 1' away from the protected side, widening 2' further into opposite side. Some exceptions to this are noted below, including larger shifts made for other reasons.		■															
1. The refined alignment goes through three (3) fewer structures. <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="border-bottom: 1px solid black;"></th> <th style="border-bottom: 1px solid black; text-align: center;">Oct. 2014</th> <th style="border-bottom: 1px solid black; text-align: center;">Feb. 2015</th> </tr> </thead> <tbody> <tr> <td>Historic District Contributor (Red)</td> <td style="text-align: center;">15</td> <td style="text-align: center;">13</td> </tr> <tr> <td>Potential HD Contributor (Orange)</td> <td style="text-align: center;">12</td> <td style="text-align: center;">11</td> </tr> <tr> <td><u>Non-Contributor (Grey)</u></td> <td style="text-align: center;"><u>13</u></td> <td style="text-align: center;"><u>13</u></td> </tr> <tr> <td></td> <td style="text-align: center;">40</td> <td style="text-align: center;">37</td> </tr> </tbody> </table>		Oct. 2014	Feb. 2015	Historic District Contributor (Red)	15	13	Potential HD Contributor (Orange)	12	11	<u>Non-Contributor (Grey)</u>	<u>13</u>	<u>13</u>		40	37	■	■
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<u>Non-Contributor (Grey)</u>	<u>13</u>	<u>13</u>															
	40	37															
2. The channelized right turn lanes at Euclid and Campbell have been reconfigured to accommodate an AASHTO WB-62 Truck as determined using AutoTURN tracking software. The painted apron area to accommodate large truck turning movements has been changed to a raised area with mountable curbs to discourage other vehicles from using the area and potentially traveling too fast. The raised crosswalks across the turn lane have been moved back from the stop bar enough to accommodate one right turning vehicle beyond the crosswalk. The use of channelized right turn lanes shortens pedestrian crossing time which generally improves performance for other modes as well.		■															
3. The radii of curb returns at street intersections have been changed from 25' to 18' in cases where the turn is made across a bike lane. This results in an effective radius of 25' where the bike lane is 7' wide and 24' in the few cases where a 6' bike lane is provided.	■	■															
4. Driveway return radii have been changed from 18' to 12', again where turning vehicles cross 6' or 7' bike lanes. This gives effective radii to the edge of the travel lane of 18' and 19' respectively.	■	■															
5. The parking and access schemes previously shown have been removed from the drawing. City staff has pointed out that state law precludes the ability to (1) use public funds to benefit specific parcels, or (2) condemn property for other than transportation uses. These or other such solutions can be incorporated however, as part of later the negotiations	■	■															

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Description of Refinement	CTF/ Public	TAC
<p>during the acquisition phase.</p> <p>City staff has clarified that it is more appropriate to remove the drawn in parking. The previous concepts can be a reference for property owners desiring to add the spaces. The concepts can be added to the 'Revitalization Tools' developed for property owners and businesses to consult.</p> <p>Locations where the parking spaces drawn have been removed from the alignment map include:</p> <ul style="list-style-type: none"> • Tyndall to Park Ave, south side • Norris Ave to Olsen Ave, south side • Plumer Ave to Smith Ave, north side • Plumer Ave to Tucson Blvd, south side • Solot Plaza near Tucson Blvd, north side (2545 E – 2635 E) and south side (2530 E – 2616 E) • Treat Ave to Stewart Ave, north side (this one was mentioned by CTF/Public as problematic) 		
<p>6. Driveway access has been added in several locations along the alignment to maintain existing legal site access where feasible from a safety standpoint, potentially reducing the extent of potential full site acquisitions. These additions decrease the extent of cycle track and buffered sidewalk and increase exposure of cyclists and pedestrians to right turning vehicles, and in some cases shifts bus stops away from intersections with pedestrian crossings:</p> <ul style="list-style-type: none"> • 1315 E. Broadway • 1427 E. Broadway • 1628 E. Broadway • 1634 E. Broadway • 2150 E. Broadway • 2227 E. Broadway • City-owned property between 2245 and 2257 E. Broadway • 2343 E. Broadway • 2448 E. Broadway • 2510 E. Broadway • 2525 E. Broadway • 2620 and 2626 E. Broadway added two one-way driveways • 2634 E. Broadway changed one two-way driveway to two one-way driveways 	■	■

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Description of Refinement	CTF/ Public	TAC
<ul style="list-style-type: none"> 2901-2905 E. Broadway 		
Specific		
<p>7. The existing lane configurations and widths on Broadway west of Euclid have been matched. Two projects currently underway are likely to alter this intersection prior to the construction of this project: (1) the <i>Downtown Links/Broadway Intersection Improvement</i>, and (2) the <i>Toole/4th Avenue/Congress Safety Improvement</i> project which envisions a two-way cycle track extending out of downtown to Euclid. Coordination with those projects will be maintained through the design of Broadway.</p>		■
<p>8. The existing 12' lane widths of Broadway at Euclid have been held through the reverse curves approaching Park. They are transitioned to the project lane widths through the tangent sections west of Park as shown. The inflection points for lane striping and outer curbs are shown on the drawing. The centerline has been shifted northward to create suitable tangent (straight) sections over which to make this transition. The bus stops at Park complicate these geometrics, particularly on the westbound side.</p>		■
<p>9. The 8' curbing strip on the south side between Park and Tyndall has <u>not</u> been eliminated as requested by Gene Caywood and Colby Henley.</p>	■	■
<p>10. After discussion of this point with City personnel, the consensus was reached that impacts to one side instead of both sides of the street would be prudent in this section. The reduction in impact to the City-owned parcel on the north side would not be substantial enough to offset the marginalization of properties on the south side that would result.</p>		■
<p>11. The HAWK at Park will be designed as a Bike HAWK to improve bicycle access across Broadway</p>		■
<p>12. Note the centerline curves between Warren and Campbell Avenues have been established such that the radius curvature of the innermost curb is 1400'. This radius curvature is consistent throughout the project.</p>		■
<p>13. Santa Rita to Mountain -- The centerline has been shifted 1' south to preserve the buffer/sidewalk combination across the front of the Azteca building. This has resulted in a slight narrowing of the sidewalk and the</p>	■	■

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Description of Refinement	CTF/ Public	TAC
landscape buffer on that side; while the buffer is wide enough for shrubs and similar lower landscaping the combined sidewalk and buffer width is not wide enough for street trees.		
<p>14. Mountain to Highland –</p> <ul style="list-style-type: none"> • The right turn bays at Highland have been eliminated. • The bus pullouts have been changed to bus stops, reducing impacts to Miles ELC and to north side properties. Potential congestion related to buses stopping in the traffic lane is more of a concern at major intersections. Bus pullouts have been located at eastbound Euclid, Campbell and Country Club accordingly. • The reduction in impact to the adjacent properties on the north side that could be achieved by replacing the 16' landscape/sidewalk buffer with a 10' sidewalk only will be investigated prior to the next task force meeting. 	■	■
<p>15. Highland to Vine –</p> <ul style="list-style-type: none"> • To reduce impact to north side, the centerline has been shifted 6' south. • The 16' landscape/sidewalk area on the south side has been changed to a 12' sidewalk only in front of Miles School (due to higher pedestrian activity). This is similar to the existing condition in this location and will not allow for street trees within the right of way, relying on trees within Miles School to provide shade. The possibility of providing an 8' sidewalk with 4' landscape buffer (for low plantings) can be explored in the next phase of design. • The pedestrian realm on the north side has been changed to a 10' sidewalk. The possibility of providing a 6' sidewalk with 4' landscape buffer (for low plantings, not trees) can be explored in the next phase of design. <p>These actions avoid direct impact to one historic contributor (1421 E). They also increase the nominal depth of remnant properties 11' midblock (from 106' to 117' based on east PL of 1421 E).</p>	■	■
<p>16. Vine to Cherry -- The centerline has been shifted 6' south to lessen the impact to parcels on the north side. This does not avoid direct impact to any structures but does increase the nominal depth of the remnant properties about 5' (based on the east property line of 1523 E changing from 94.7' to 99.7').</p> <p>An additional 6' of depth could be achieved by replacing the 8' landscape/8' sidewalk with a 10' sidewalk (possibly 6' sidewalk with 4' low</p>	■	■

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Description of Refinement	CTF/ Public	TAC
landscaping buffer) eliminating the potential for street trees. This also reduces the center median width between Cherry and Martin somewhat.		
17. Campbell Intersection -- Shifted the centerline 1' south through Campbell intersection to protect the north side and avoid increased encroachment into the church. The Carl's Junior drive-through remains functional as before, and the Starbucks drive-through is also maintained	■	■
18. The bus pullouts at Euclid, Campbell, and Country Club have been lengthened to 115' to be able to accommodate local and express buses concurrently.	■	■
19. Tucson Blvd. – The bus pullouts previously included here have been changed to bus stops. Potential congestion related to buses stopping in the traffic lane is more of a concern at major intersections.		■
20. Plumer Ave – <ul style="list-style-type: none"> • The eastbound bus stop is moved from the southwest corner at Plumer/Broadway to the southeast corner. • A signalized intersection has been added. A traffic warrant analysis will be needed once Kino/22nd is fully operational again to verify that the traffic counts support the intersection being built. 		■
21. Moved the HAWK at Treat to the west side of the intersection to avoid parking and access impacts to 2807 E and 2813 E. This HAWK will also be designed as a Bike HAWK to improve bicycle access across Broadway.	■	■
22. Approaching Country Club Road from the west, the centerline has been shifted 4' south to keep a consistent typical section definition. This does not in itself alter the Broadway striping or curbs. Due to the sensitivity of the adjacent property between Eastbourne and Country Club, the bike lane is narrowed to 6' to accommodate the 11' middle lane without having to move the curbs outward		
23. More compact bus pullout configurations have been used at Country Club. The configuration of the pullout is the same but bike bypasses are not provided which shortens the overall length and reduces the right-of-way width needed. Pedestrian access is through the platform which has been widened to 10' to allow 5' clear of the bus shelter. The westbound bus pullout is relocated from the northwest corner to the northeast corner of the intersection. This avoids an access conflict of Chase Bank's driveway crossing the bus pullout taper and cycle track bypass. It also allows two-way (24' wide) access to remain through the bank's front parking/access area while maintaining angled parking on north side. There is a transit benefit from this revision as well. Country Club is a	■	■

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Description of Refinement	CTF/ Public	TAC
transfer area and placing the westbound bus pullout on the east side of the intersection allows riders who transfer between the northbound Country Club and westbound Broadway routes to not cross either street.		
24. On the southwest corner of Country Club, potential impact to the office building at 3130 E is avoided by keeping improvements within the existing right-of-way and moving them east. It is necessary to narrow the sidewalk to 7' for a short distance to accomplish that.		■