

8. Introduction to Initial Analysis of Design Approaches and Tools to Help Mitigate Property Impacts & Acquisitions

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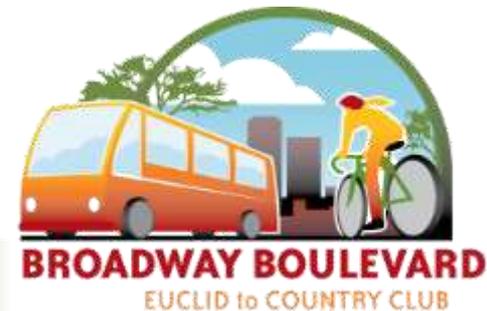
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Parking and Access Study

Broadway Corridor Study, Euclid to Country Club Road

Minimizing Acquisitions Resulting
from Lost Parking and Access

Submitted to
City of Tucson Department of Transportation

by
HDR Engineering

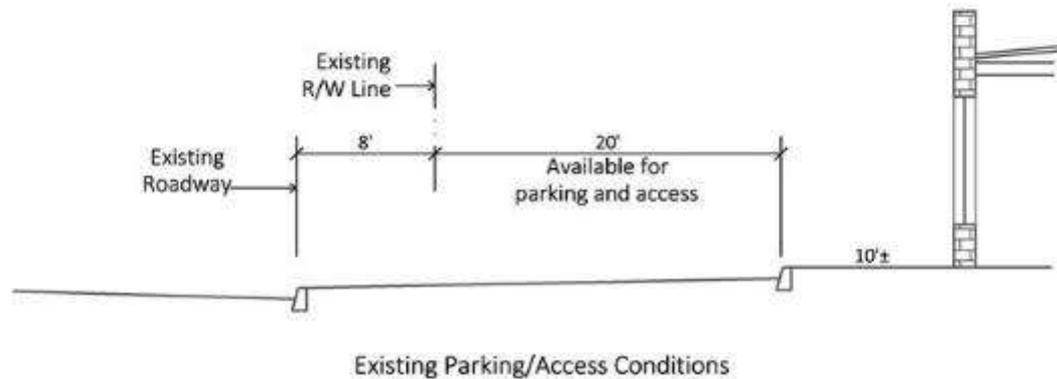
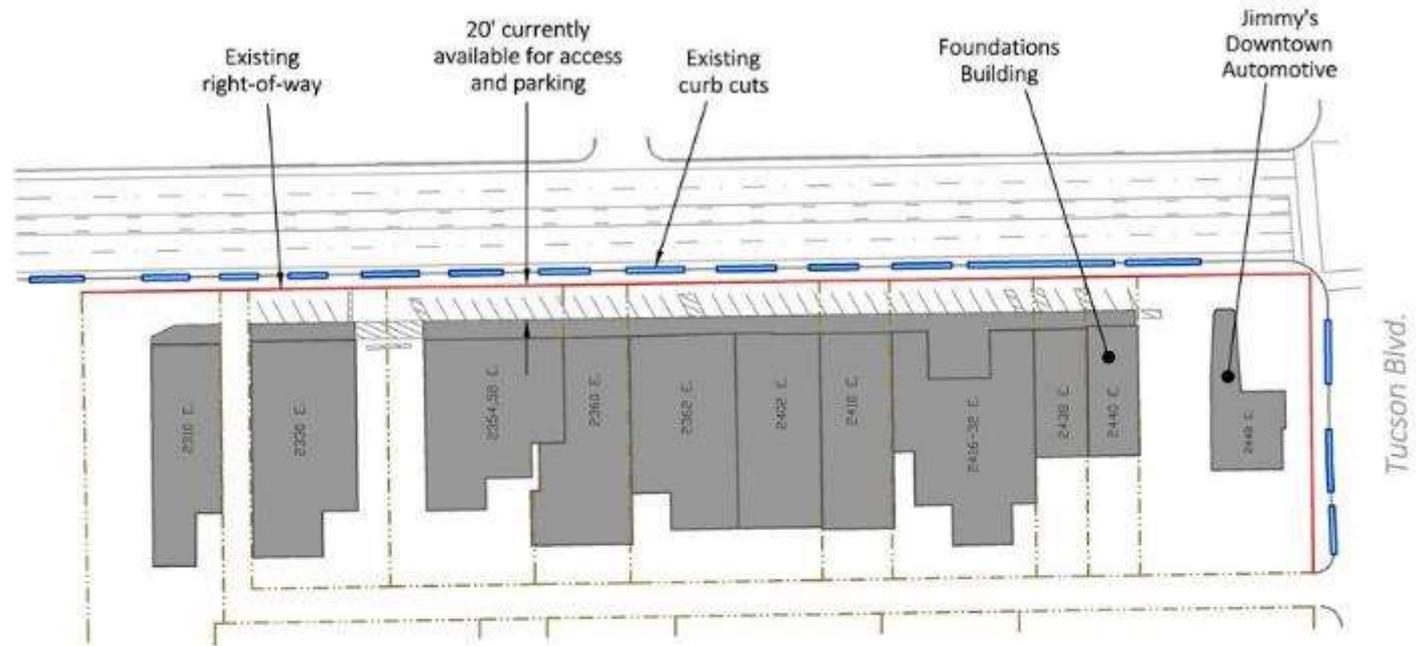
February 6, 2014

Draft - 2/6/14

Purpose of Study

- Identify parking and access Impacts that could lead to full acquisition
- Identify plausible approaches for limiting these impacts
 - Maintain legal/physical access to existing parking
 - “Low Risk” offset
 - “Moderate Risk” offset
 - Provide offsite replacement parking (public or private)
 - Reduce parking requirements
- Examples along Broadway illustrating the issues and solution approaches
- Establish design approach for alignments

Example 1 -- Strip Commercial Development with Front Parking



60° angled parking requires 20' of parking depth, 16' for access and maneuvering – a total of 36'

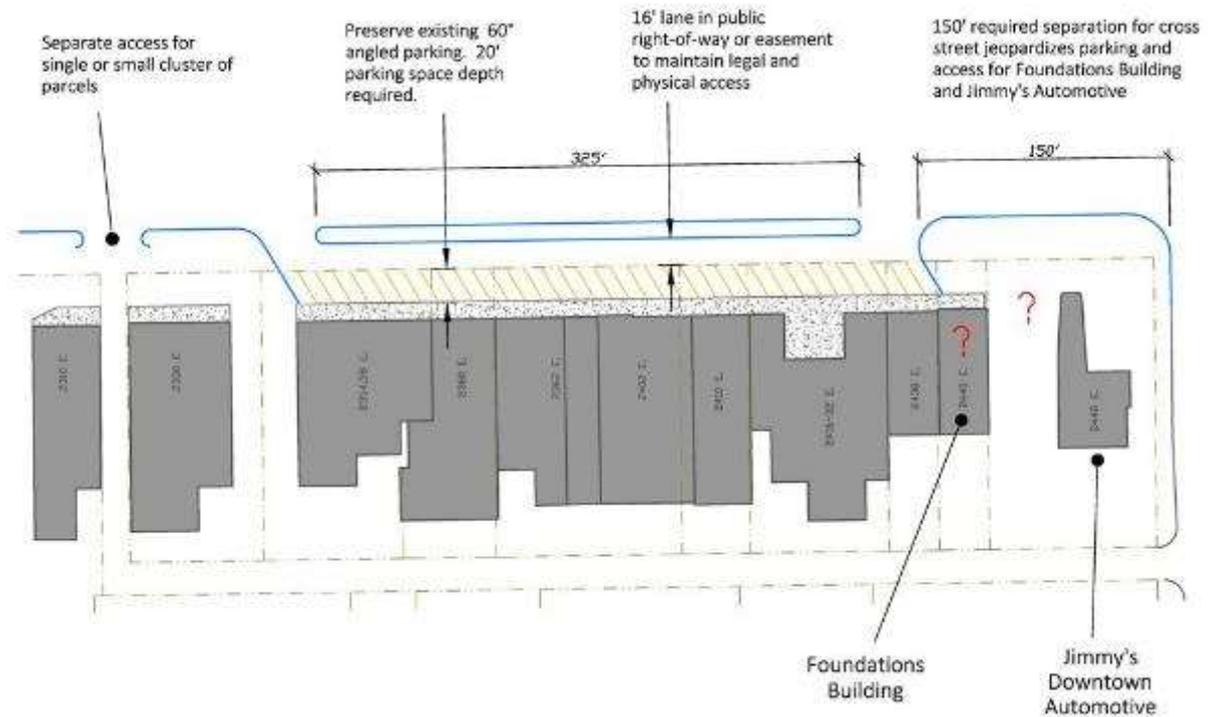
Example 1 -- Strip Commercial Development with Front Parking



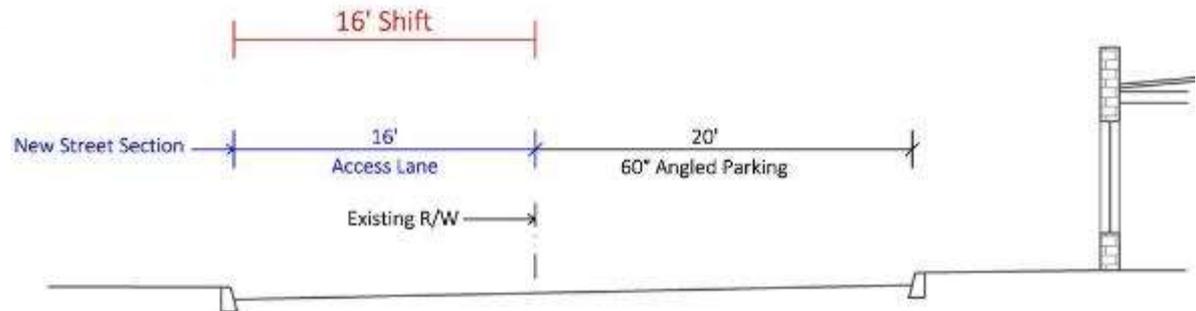
Access Management Guidelines

- The City of Tucson's "Access Management Guidelines" (Ordinance 9823 revised December 2011):
 - Driveways limited to two per 300' of frontage
 - Driveways at least 80' apart
 - No driveway closer than 150' from an arterial or collector intersection
 - No direct residential lot access from arterials
 - Promotes cross-access agreements for new development with multiple lots
 - A local access lane can used for multiple parcels have direct access to a collector or arterial roadway.
- *How flexible are these? What sort of flexibility would be helpful?*

One plausible approach -- access lane entirely in existing right-of-way – requires 16' shift to north

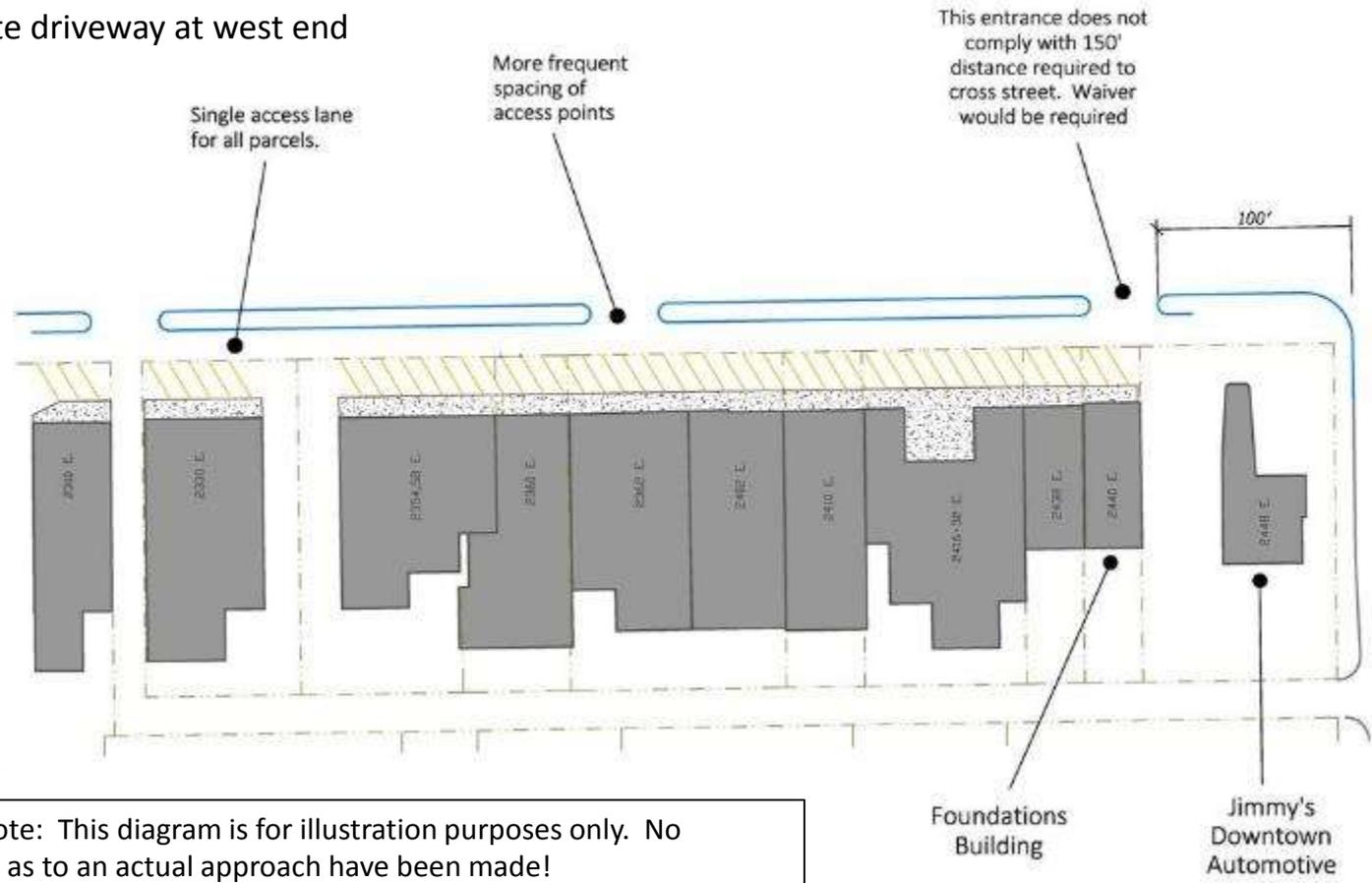


Please Note: This diagram is for illustration purposes only. No decisions as to an actual approach have been made!

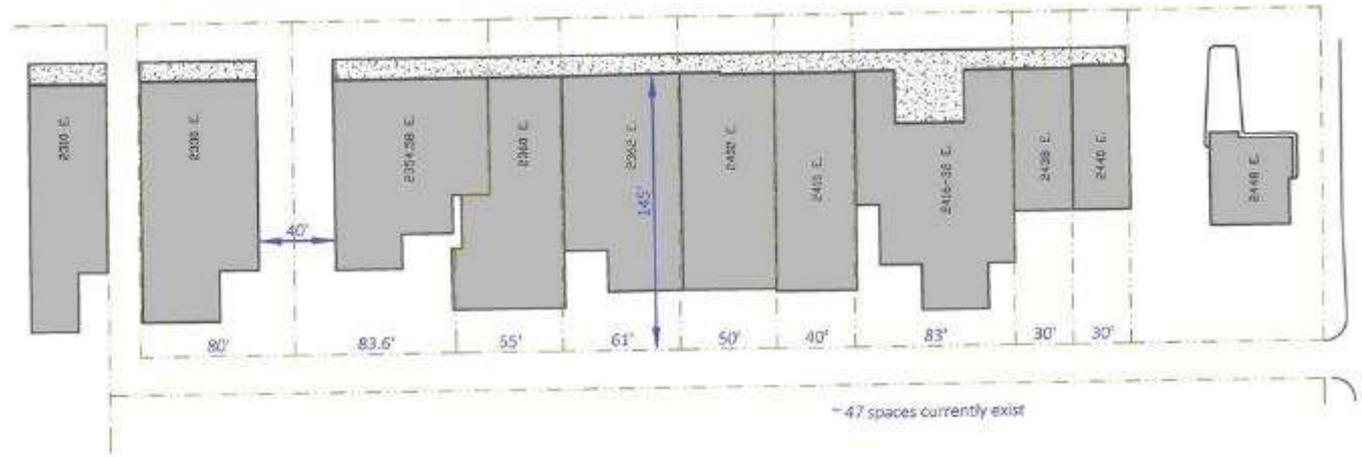


Alternate Access Approach

- 1. Reduce 150' requirement
- 2. Replace separate driveway at west end

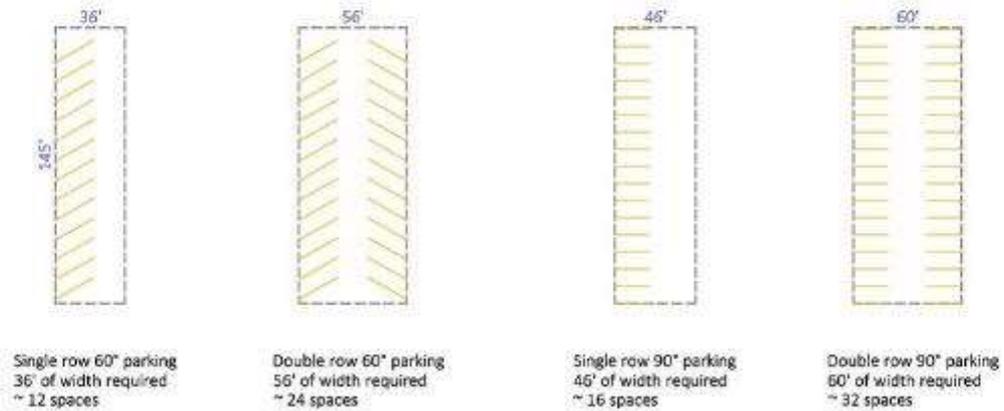


Eliminate Front Parking?

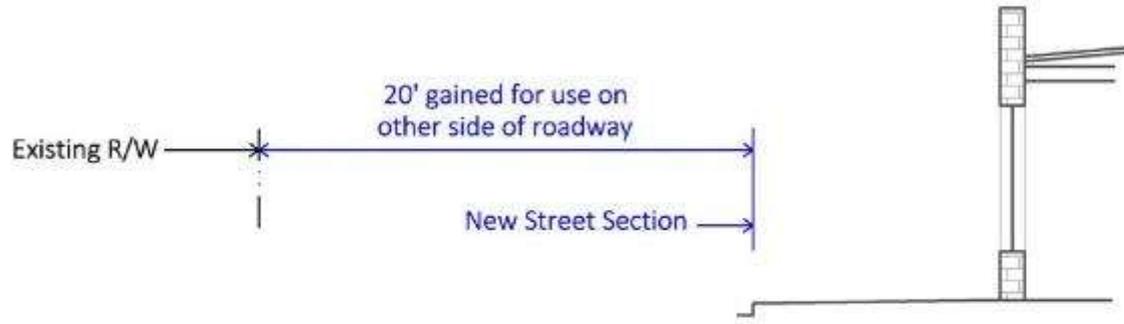


Total width needed to replace 47 spaces --
 112' for 60° Parking
 106' for 90° Parking
 At least two parcels would be needed.

Fig 3 in report.



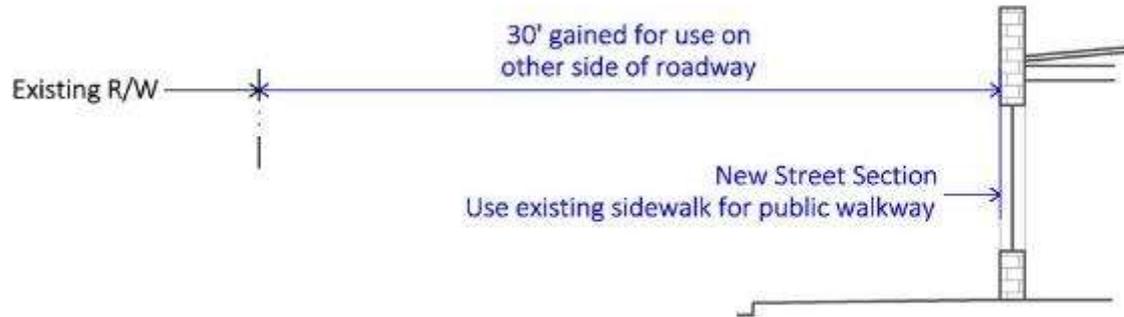
Potential Benefit of Eliminating Front Parking



Replace Existing Front Parking with Offsite Parking
Existing sidewalk remains private

Potential gains to other side
20' without incorporating private sidewalks
30' if private sidewalks are incorporated

This is from edge of street section, not from existing right-of-way



Replace Existing Front Parking with Offsite Parking
Incorporate existing sidewalk in street section

Rear Parking?

Owners would have to be motivated

Could lead to redevelopment



Please Note: This diagram is for illustration purposes only. No decisions as to an actual approach have been made!

Colors reflect common ownership

Example 2 – Two Concepts

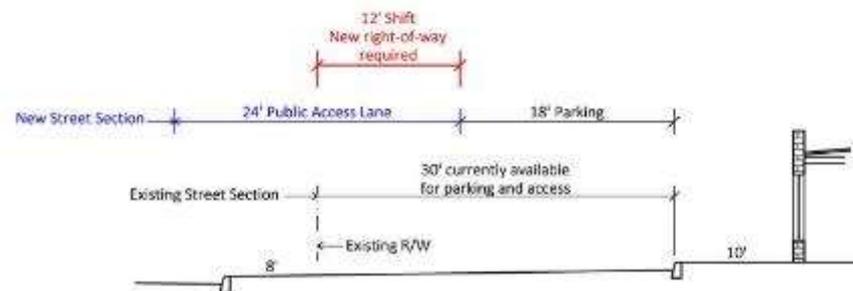
Combining private and public right-of-way for access lane reduces shift from 24' to 12'

Using existing City-owned property for offsite parking

These considered moderate risk since property owners would have to agree



Please Note: This diagram is for illustration purposes only. No decisions as to an actual approach have been made!



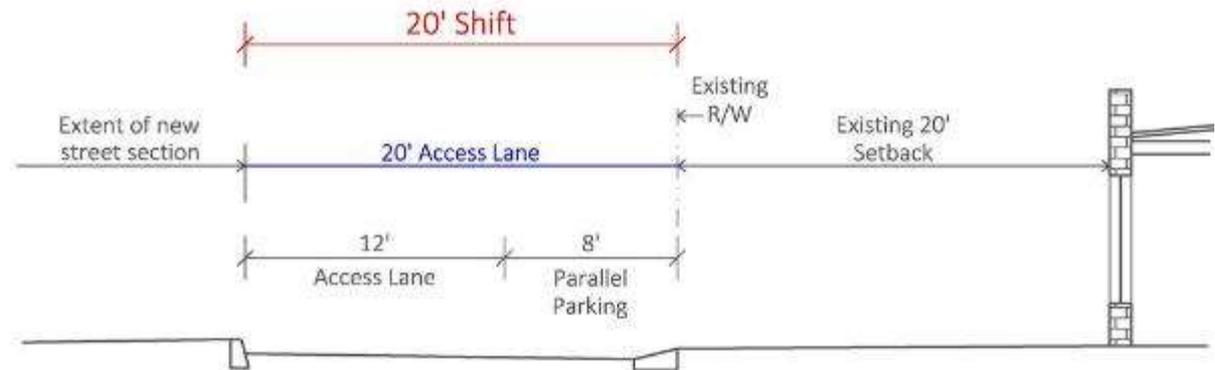
Example 3. Commercial /Residential uses with and without alley access

Maintaining Viability

1. Can residential convert to commercial with only alley access?
2. Can residential remain with only Broadway access?

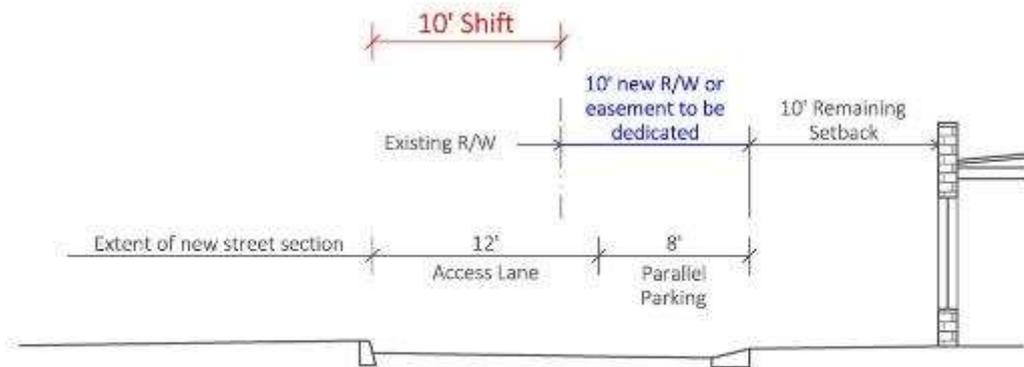
An access lane can solve these issues but involves a 20' shift

Low Risk of unintended acquisition



Option 1. Provides access and additional parallel parking with no acquisition required from parcels. Parallel parking would be eliminated if 20' fire lane is required.

Reducing the shift to 10' by combining private property and public right-of-way



Option 2. Provides same access and parking but shifted 10' into existing parcel. Would require additional easement or right-of-way to be acquired. Could be considered if an additional 10' would be significantly beneficial to other side of the roadway.

Application of These Results

Formulation of street configuration alternatives --

- o “*Low Risk*” offset lines
- o “*Moderate Risk*” offset lines

This approach best deals with uncertainties inherent in anticipating acquisition needs

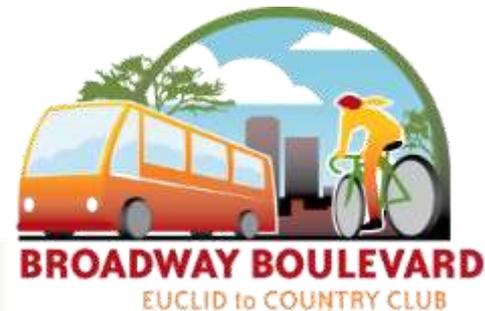
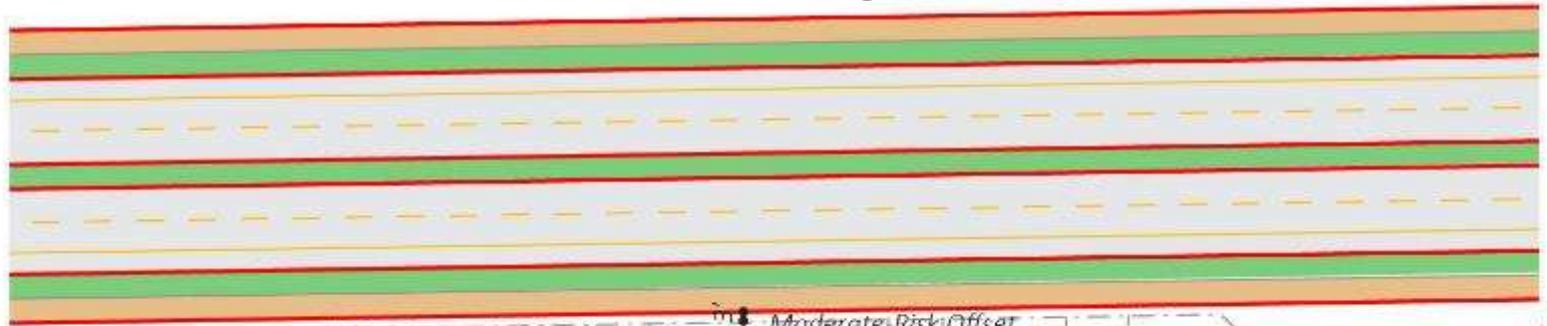
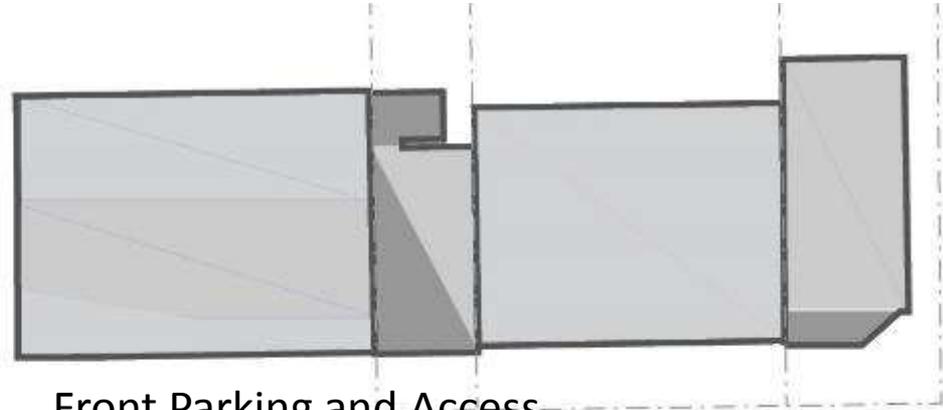
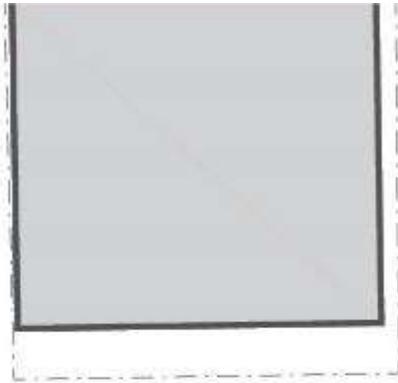


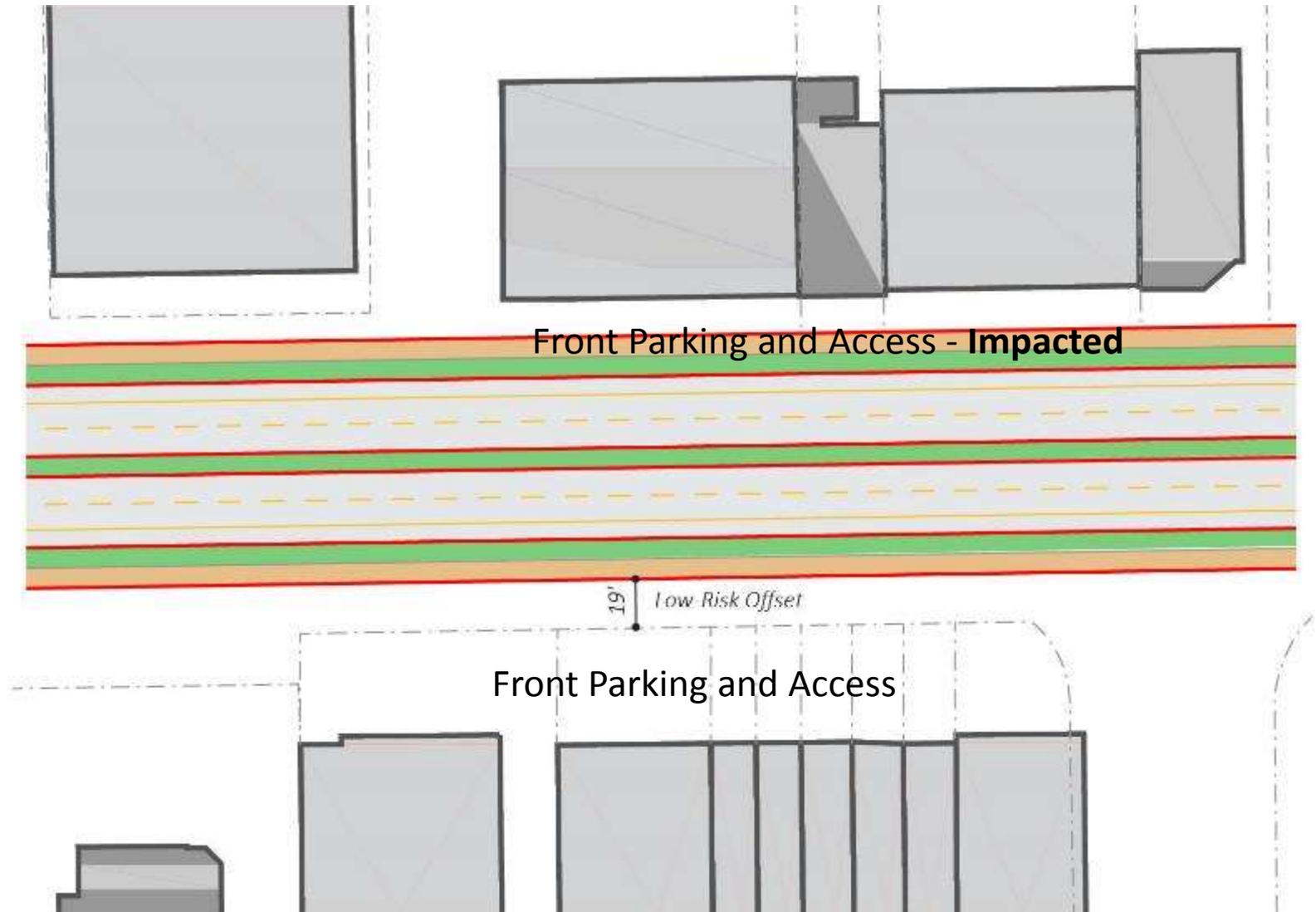
Diagram of Moderate Risk Offset



Moderate Risk Offset
Front Parking and Access



Diagram of Low Risk Offset



Sidewalk-Only Improvement Study

Broadway Corridor Study, Euclid to Country Club Road

The Sidewalk-Only Option

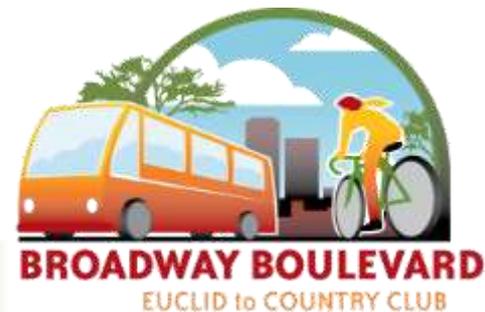
An Evaluation of the Impacts Associated with Constructing an ADA-Compliant Sidewalk System Without Widening the Existing Roadway.

Submitted to
City of Tucson Department of Transportation

by
HDR Engineering

February 6, 2014

Draft - 2/6/14



Sidewalk-Only Option

- Examines the acquisition impacts of constructing only a sidewalk system. Primary features are
 - Construct ADA-compliant sidewalk system
 - Hold existing curb lines (no widening of roadway)

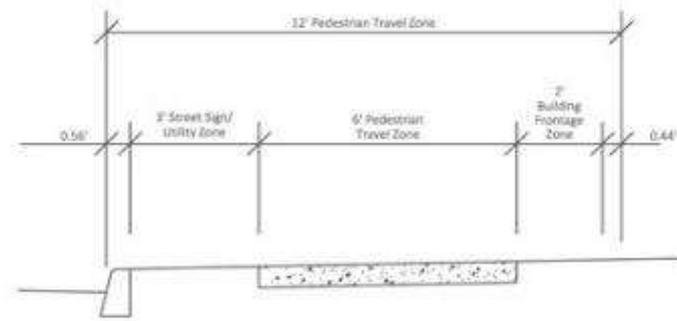
Sidewalk and Driveway Crossing Widths

Sidewalk Zone

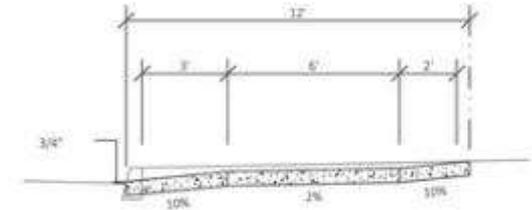
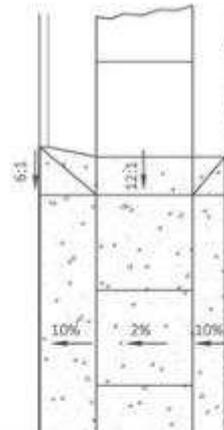
- Pedestrian Travel Zone - 6' minimum
 - Building Frontage Zone - 2' minimum
 - Street Sign/Utility Zone - 3' minimum
- 12' minimum from *face* of curb

Sidewalk Slopes (controls driveways)

- Max Longitudinal slope - 12:1 for short distances
 - Max cross slope -- 2%
 - Max driveway slope -- 10%
- 12' minimum driveway length as well

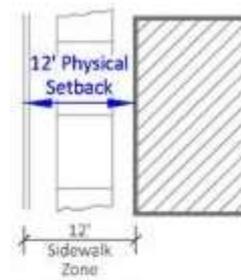


Minimum Sidewalk Zone per ADA and City Requirements

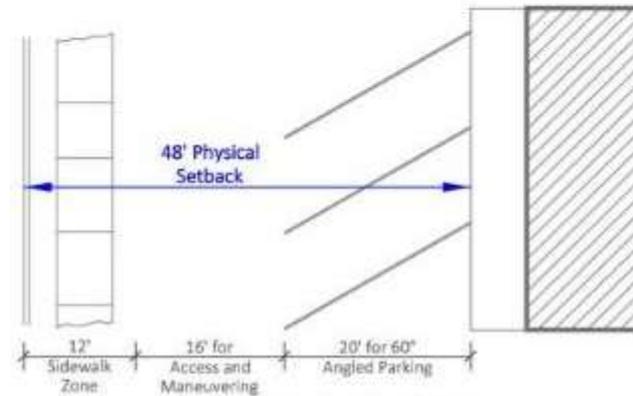


Minimum Driveway Crossing per ADA

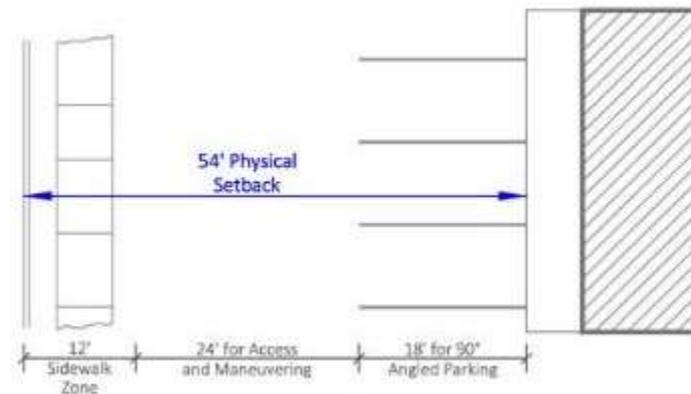
Three Cases of Physical Setback



Case 1: No Front Parking



Case 2: 60° Angled Front Parking



Case 3: 90° Angled Front Parking

Figure 2.
Three Cases of Physical Setbacks

Appendix -- Calculation and Tabulation of Results

PROBABLE IMPACT OF SIDEWALK CONSTRUCTION ON EXISTING STRUCTURES
 Broadway Corridor Study
 January 10, 2016 - mg

Width of Sidewalk Zone: 12'
 Acquisition Cost Factor: 1.5

NORTH SIDE

Address	Hstc Stat	Curb to Blg/ Sidewalk	Curb to Is R/W	Sidewalk Zone Width	Front Parking	Parking/ Access Width	Side Parking Lost?	Width of Sidewalk Zone: 12'						
								Physical Setback Needed	Physical Setback Avail	Full Acq?	Hstc Status	2014 FCV \$1,000s	Acq Cost \$1,000s	Addl R/W Width

1. Park to Fremont

North Side		Sidewalk Zone Width: 12'											
1001 E	--	29.6'	5.0'	12'	--	--	--	12'	29.6'	No	--	--	7.0'
1099 E	--	61.4'	5.0'	12'	--	--	--	12'	61.4'	No	--	--	7.0'

2. Fremont to Santa Rita

North Side		Sidewalk Zone Width: 12'											
1101 E	--	21.0'	5.0'	12'	--	--	--	12'	21.0'	No	--	--	7.0'
(Parking)	--	30.0'	30.0'	12'	--	--	--	12'	30.0'	No	--	--	--

3. Santa Rita to Mountain

North Side		Sidewalk Zone Width: 12'											
1203 E	2	31.9'	22.1'	12'	--	--	--	12'	31.9'	No	--	--	--
1215 E	2	55.7'	5.0'	12'	--	--	--	12'	55.7'	No	--	--	7.0'
1223 E	1	57.6'	5.0'	12'	--	--	Yes	12'	57.6'	No	--	--	--

4. Mountain to Highland

North Side		Sidewalk Zone Width: 12'											
1303 E	1	39.2'	15.9'	12'	--	--	--	12'	39.2'	No	--	--	--
1309 E	2	43.4'	33.0'	12'	--	--	--	12'	43.4'	No	--	--	--
1315 E	--	39.8'	22.5'	12'	--	--	--	12'	39.8'	No	--	--	--
1327 E	--	38.5'	30.9'	12'	--	--	--	12'	38.5'	No	--	--	1.1'
1331 E	1	38.1'	9.8'	12'	--	--	--	12'	38.1'	No	--	--	2.2'
1339 E	1	43.3'	8.6'	12'	--	--	--	12'	43.3'	No	--	--	3.4'
1449 E	1	32.7'	5.0'	12'	--	--	--	12'	32.7'	No	--	--	7.0'

5. Highland to Vine

North Side		Sidewalk Zone Width: 12'											
1401 E	--	42.4'	30.0'	12'	--	--	--	12'	42.4'	No	--	--	--
1409 E	2	44.3'	17.2'	12'	--	--	--	12'	44.3'	No	--	--	--
1415 E	--	52.0'	7.0'	12'	--	--	--	12'	52.0'	No	--	--	5.0'
1423 E	1	41.4'	31.1'	12'	90°	42'	--	54'	41.4'	Yes	1	80.3	120.5
1427 E	--	78.1'	31.5'	12'	--	--	--	12'	78.1'	No	--	--	--
1433 E	1	36.5'	31.9'	12'	90°	42'	--	54'	36.5'	Yes	1	178.5	267.8
1443 E	--	40.7'	11.5'	12'	60°	30'	--	12'	40.7'	No	--	--	--

6. Vine to Cherry

North Side		Sidewalk Zone Width: 12'											
1501 E	2	29.6'	15.3'	12'	90°	42'	--	54'	29.6'	Yes	2	371.3	557.0
1515 E	1	34.5'	5.0'	12'	90°	42'	--	54'	34.5'	Yes	1	141.5	213.3
1521 E	1	45.6'	25.5'	12'	90°	42'	--	54'	45.6'	Yes	1	41.5	62.3
1523 E	2	32.3'	27.5'	12'	--	--	--	12'	32.3'	No	--	--	--
1535 E	--	30.7'	26.1'	12'	--	--	--	12'	30.7'	No	--	--	--

SOUTH SIDE

Address	Hstc Stat	Curb to Blg/ Sidewalk	Curb to Is R/W	Sidewalk Zone Width	Front Parking	Parking/ Access Width	Side Parking Lost?	Width of Sidewalk Zone: 12'						
								Physical Setback Needed	Physical Setback Avail	Full Acq?	Hstc Status	2014 FCV \$1,000s	Acq Cost \$1,000s	Addl R/W Width

South Side		Sidewalk Zone Width: 12'											
1010 E	2	15.2'	5.0'	12'	--	--	Yes	12'	15.2'	Yes	2	655.1	982.7
1028 E	2	24.7'	5.0'	12'	--	--	--	12'	24.7'	No	--	--	7.0'
1034 E	--	5.1'	5.0'	12'	--	--	--	12'	5.1'	Yes	--	34.6	143.9
1040 E	--	38.8'	5.0'	12'	--	--	--	12'	38.8'	No	--	--	7.0'
1046 E	2	25.5'	5.0'	12'	--	--	--	12'	25.5'	No	--	--	7.0'

South Side		Sidewalk Zone Width: 12'											
1100 E	2	48.4'	5.0'	12'	90°	42'	--	54'	48.4'	Yes	2	245.0	367.5
1120 E	2	21.1'	21.2'	12'	--	--	--	12'	21.1'	No	--	--	--
1124 E	2	21.6'	5.0'	12'	--	--	--	12'	21.6'	No	--	--	7.0'
1128 E	2	31.9'	19.9'	12'	90°	42'	--	54'	31.9'	Yes	2	89.5	104.1
1148 E	2	25.7'	19.2'	12'	--	--	--	12'	25.7'	No	--	--	--

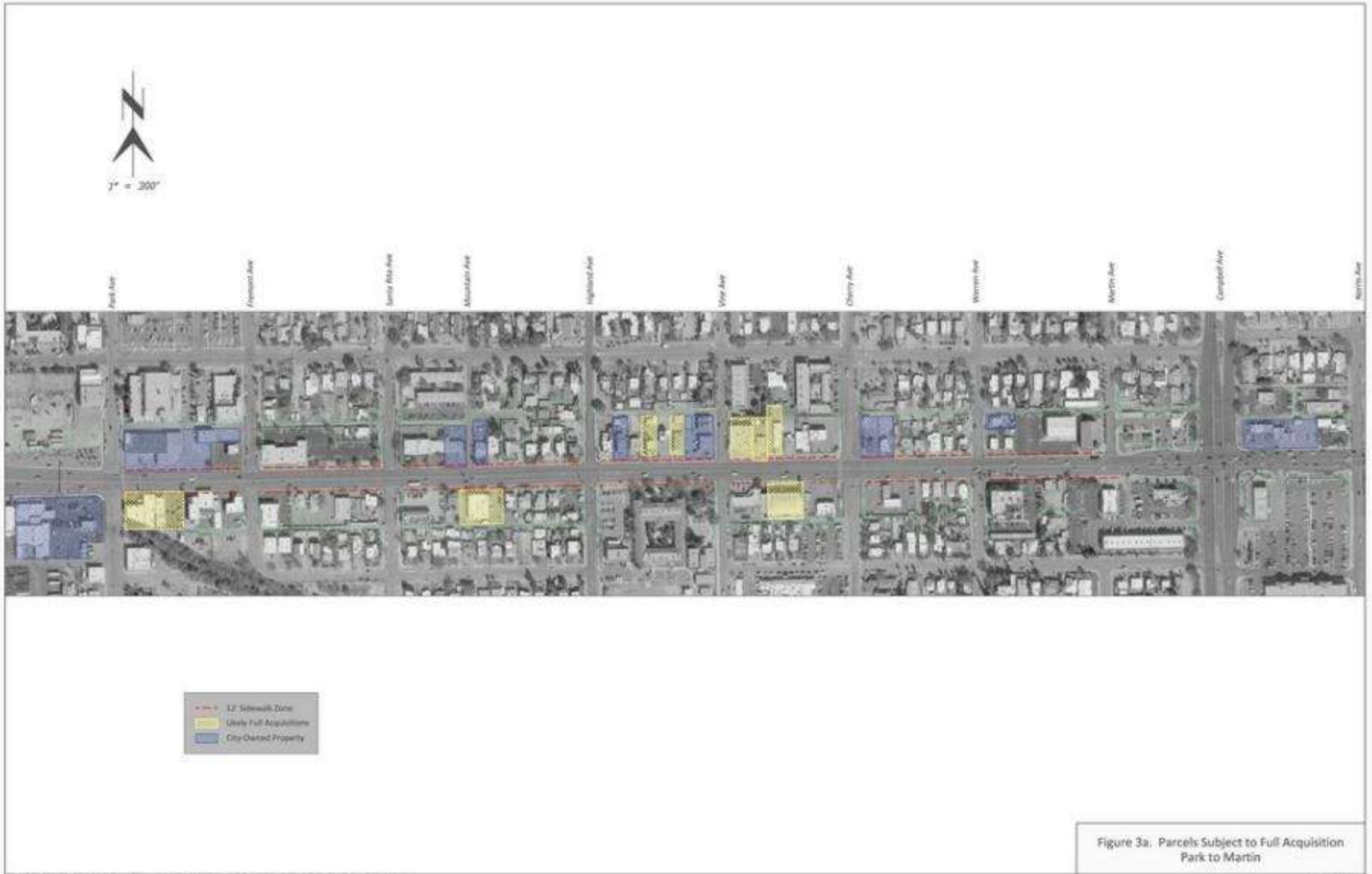
South Side		Sidewalk Zone Width: 12'											
1202 E	4	89.5'	17.8'	12'	--	--	--	12'	89.5'	No	--	--	--
1222 E	--	26.0'	16.6'	12'	--	--	--	12'	26.0'	No	--	--	--
1230 E	2	32.6'	16.5'	12'	--	--	Yes	12'	32.6'	Yes	2	446.8	669.5

South Side		Sidewalk Zone Width: 12'											
1316 E	--	39.0'	17.6'	12'	--	--	--	12'	39.0'	No	--	--	--
1324 E	2	35.1'	18.1'	12'	--	--	--	12'	35.1'	No	--	--	--
1328-32 E	2	35.6'	18.6'	12'	--	--	--	12'	35.6'	No	--	--	--
1340 E	2	36.3'	19.0'	12'	--	--	--	12'	36.3'	No	--	--	--
1350 E	--	106.7'	19.6'	12'	--	--	--	12'	106.7'	No	--	--	--

South Side		Sidewalk Zone Width: 12'											
1400 E	1	67.4'	12.0'	12'	--	--	--	12'	67.4'	No	--	--	--

South Side		Sidewalk Zone Width: 12'											
1502 E	--	34.1'	11.3'	12'	--	--	--	12'	34.1'	No	--	--	0.7'
1518 E	--	47.1'	11.3'	12'	90°	42'	--	54'	47.1'	Yes	--	188.0	252.0
1530 E	2	46.1'	12.5'	12'	90°	42'	--	54'	46.1'	Yes	2	430.0	630.0
1540 E	--	82.6'	10.3'	12'	--	--	--	12'	82.6'	No	--	--	1.8'

Anticipated Acquisitions – West of Campbell



Anticipated Acquisitions – East of Campbell

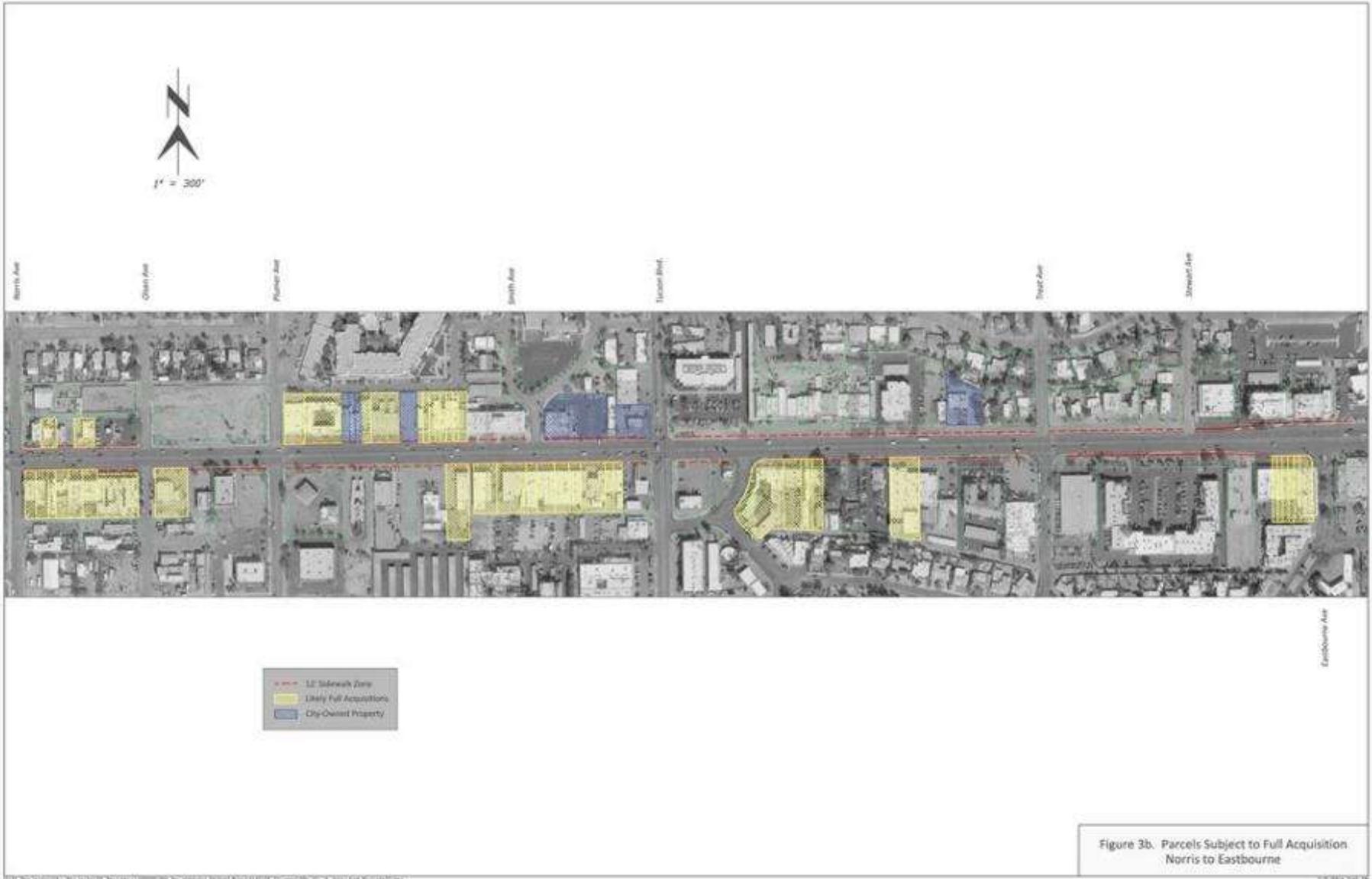


Table 2. Summary of Results

Width of sidewalk zone:	12'	9'	20'
Full Acquisitions			
North Side:	20	20	27
South Side:	37	32	42
Total:	57	52	69
Change:	--	-8.8%	21.1%
Partial Acquisitions			
North Side:	26	24	22
South Side:	21	20	29
Total:	47	44	51
Change:	--	-6.4%	8.5%

Historic Impacts

<u>Historic Full Acquisitions</u>						
Width of sidewalk zone:				12'	9'	20'
Current Contributors (North):				4	4	4
Current Contributors (South):				--	--	--
Eligible Contributors (North):				13	13	15
Eligible Contributors (South):				30	25	34
Future Individually Eligible (North):				--	--	1
Future Individually Eligible (South):				--	--	--
Total:				47	42	54
Change:				--	-10.6%	14.9%

Cost Comparison

Cost of Full Acquisitions (\$Millions) *

Width of sidewalk zone:	12'	9'	20'
North Side:	\$5.3	\$6.3	\$8.0
South Side:	\$15.2	\$13.5	\$16.5
Total:	\$20.6	\$19.8	\$24.5
Change:	--	-3.8%	19.1%

*Acquisition costs are estimated based on publically available assessor data for the purpose of this analysis only.

- For 12' range of acquisition cost likely to be between \$17 and \$24 million
- Likely in the next 5 to 25 years that maintenance of Broadway would trigger the need to implement sidewalks



Main Gate District Massing

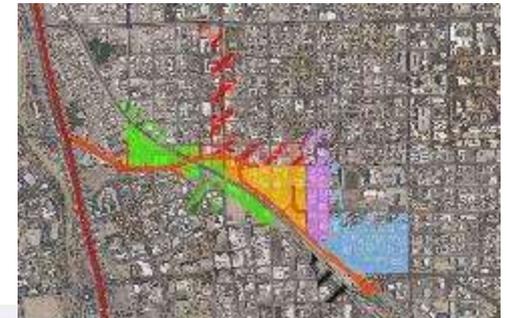
North & Mass Transition

Land Massing Allowance and Height Limit is based on:

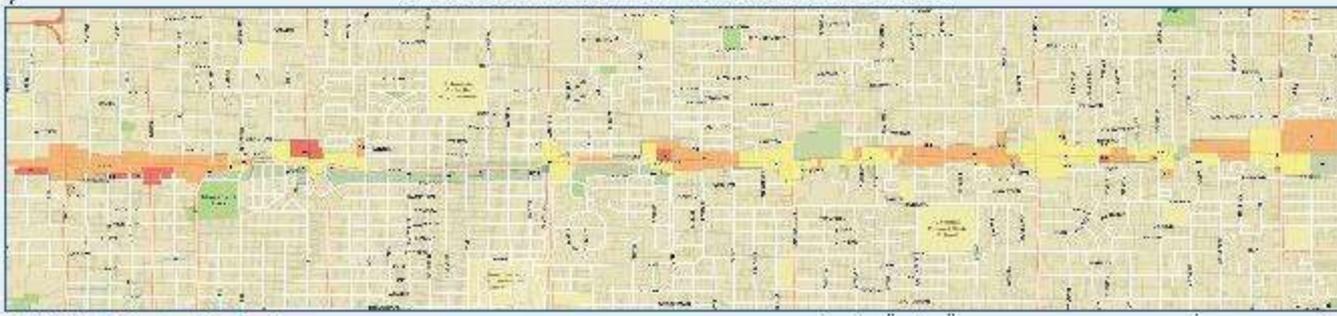
- 1. The City of Tucson Zoning Ordinance
- 2. Maximum allowed height of 175 feet and a 50:50 Massing Ratio
- 3. Maximum allowed height of 175 feet
- 4. Maximum allowed height of 175 feet
- 5. Maximum allowed height of 175 feet
- 6. Maximum allowed height of 175 feet



Basics of the Tucson Urban Overlay District (UOD)



Grant Road Project Max Building Heights per City of Tucson Zoning

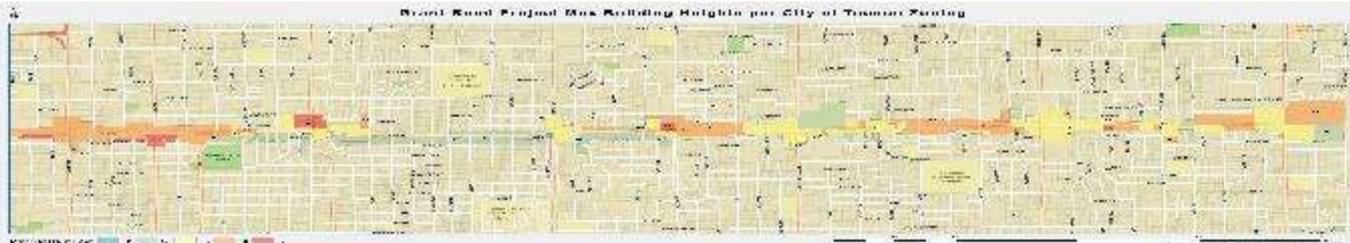


City of Tucson Zoning Ordinance

City of Tucson Zoning Ordinance

Urban Overlay District (UOD) Basics

- UOD is initiated by Mayor and Council;
- May require a land use plan amendment first;
- Property owners may request amendments after adoption;
- Modeled on Planned Area Development Zone;
- Creates a zoning option but does not remove underlying zone unless activated.



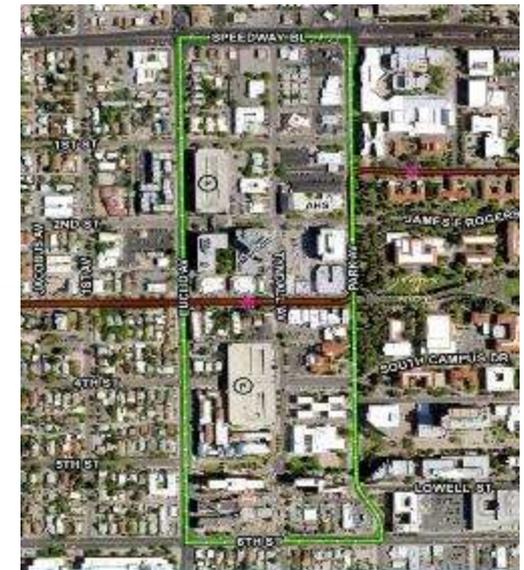
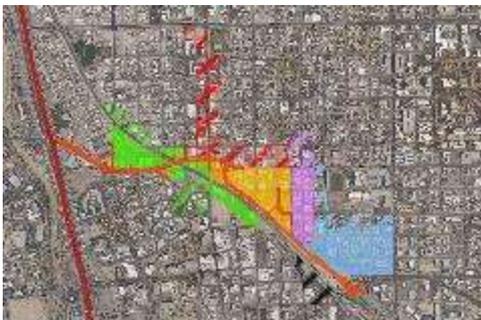
Urban Overlay (UOD) Basics

- May allow uses other than underlying zone's;
- May allow development standards flexibility for parking, landscaping, loading, alley access etc.;
- May allow re-use of historic residential structures;
- Requires a specific development document;
- Can accommodate form-based district, hybrid, or general flexible standards available;
- Usually implies an overall urban design vision.

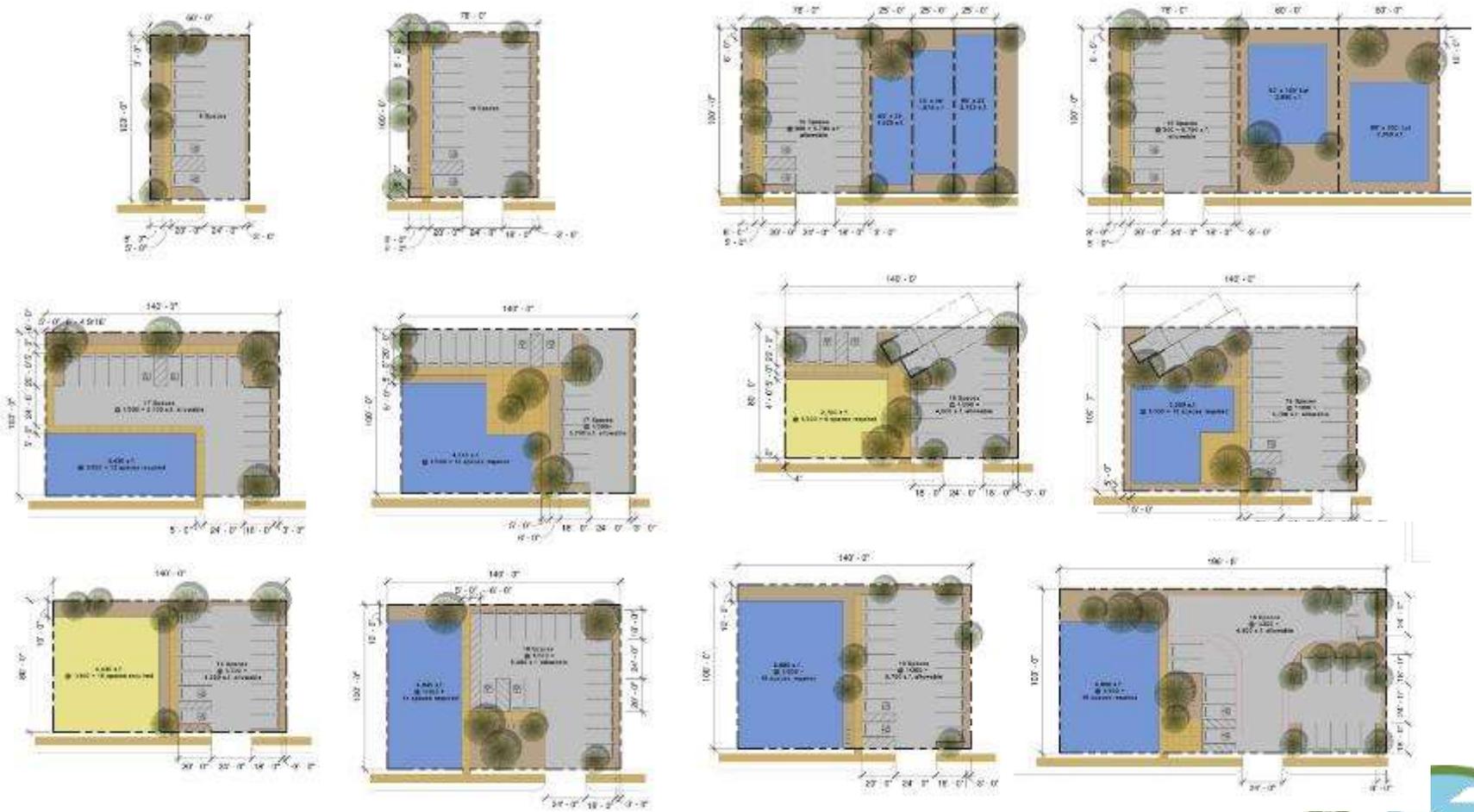


Current State of Urban Overlay Districts in Tucson

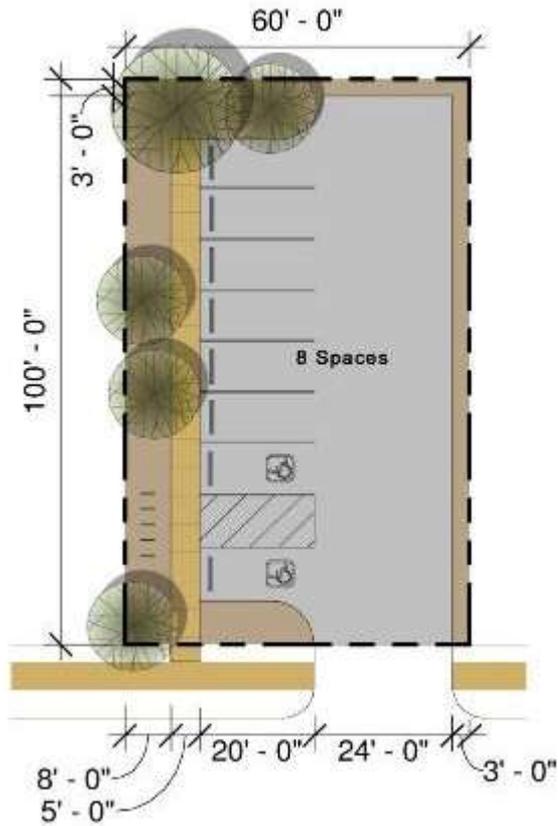
- Main Gate District adopted 2012
- Downtown Links initiated 2012 but on hold
- Grant Road initiated 2012 but on hold



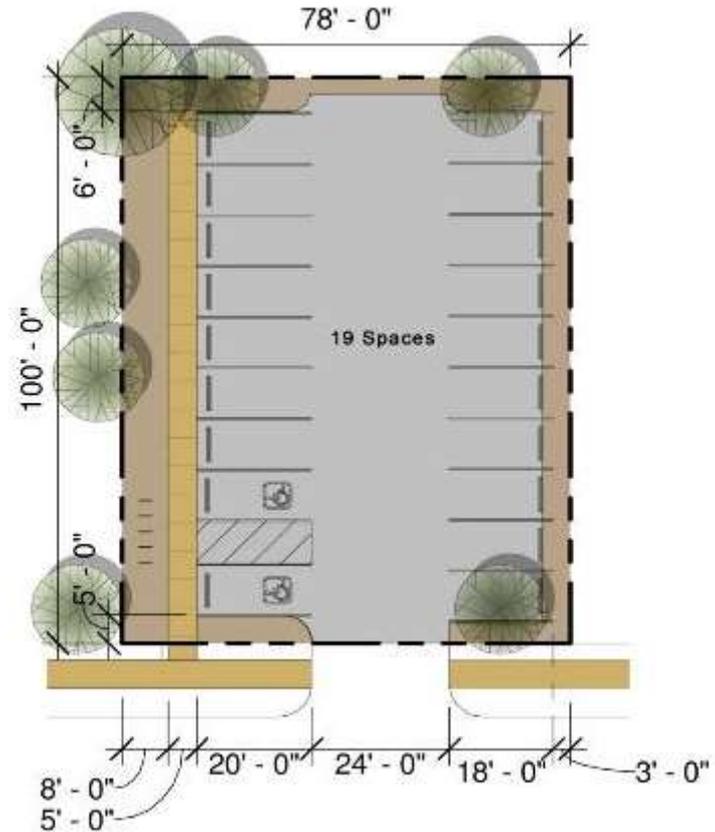
Development diagrams



Parking layout diagrams

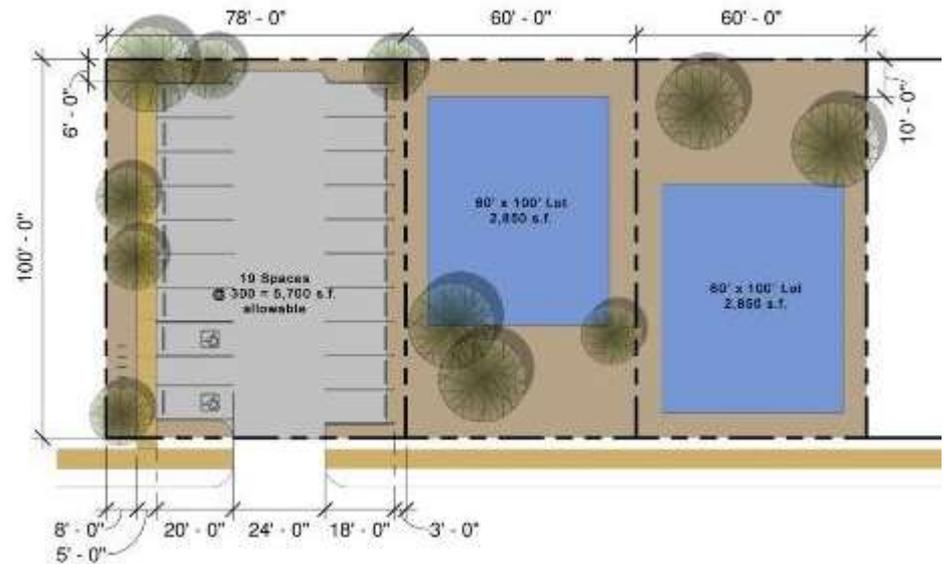
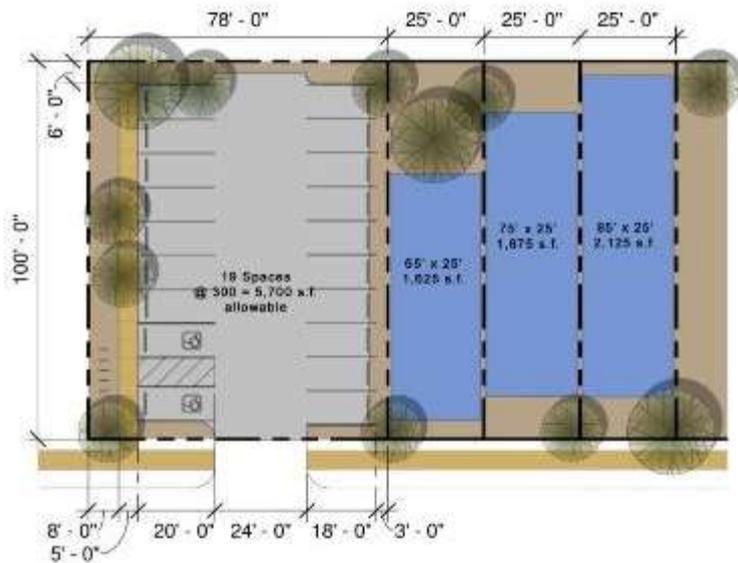


Single loaded

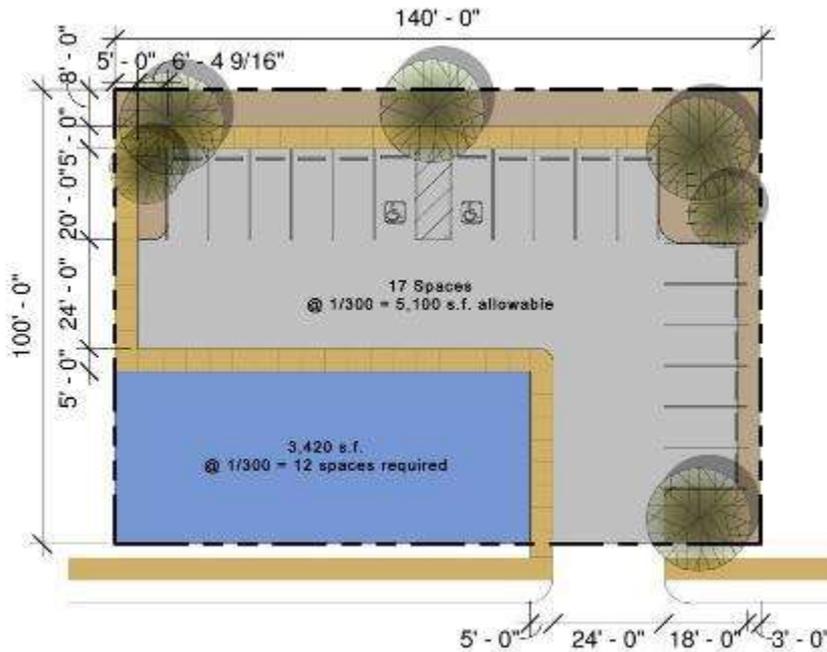


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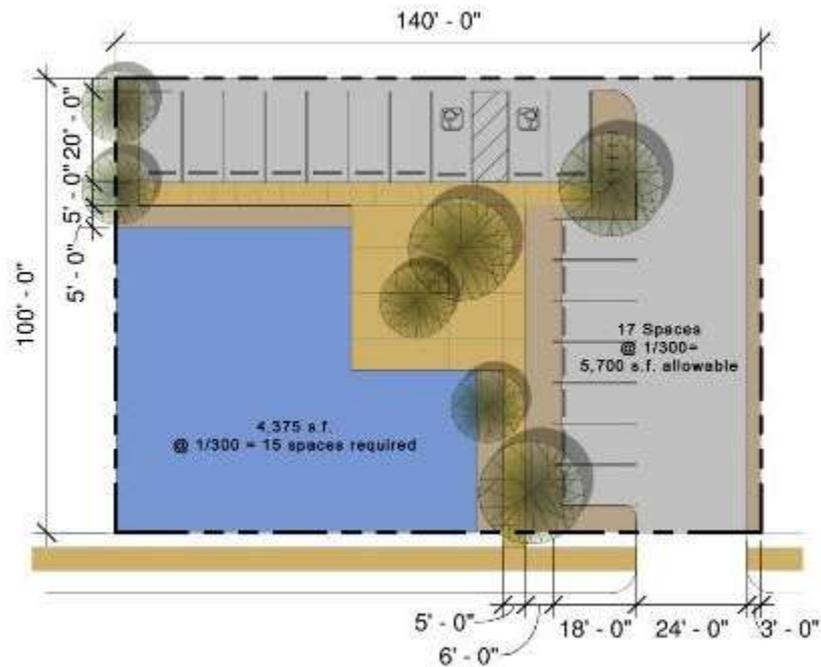
100' deep Lot layout diagrams



100' deep x 140' Lot layout diagrams



No alley access

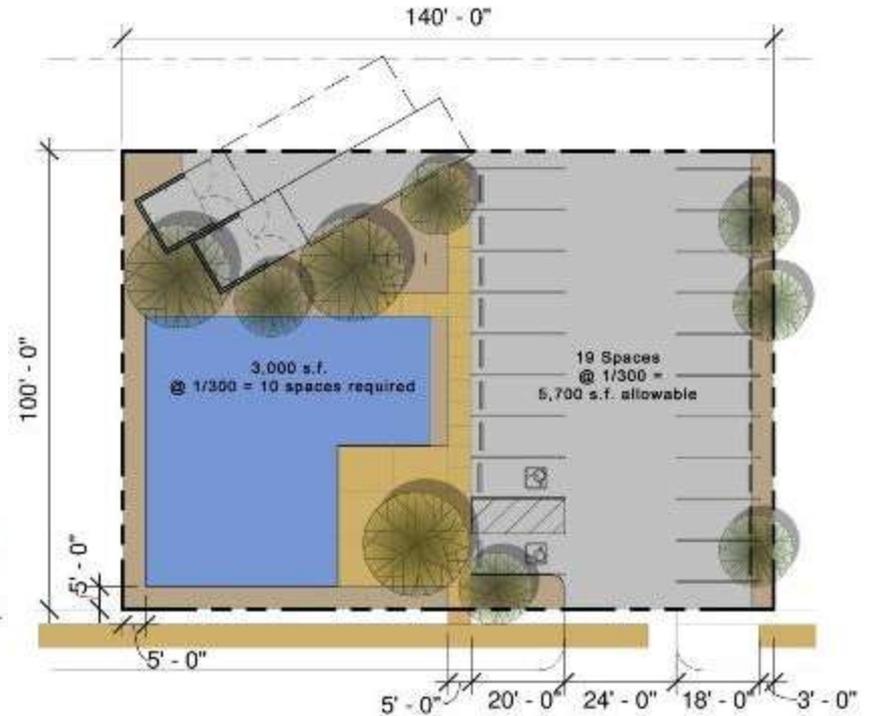


Alley access

Alley access layout diagrams

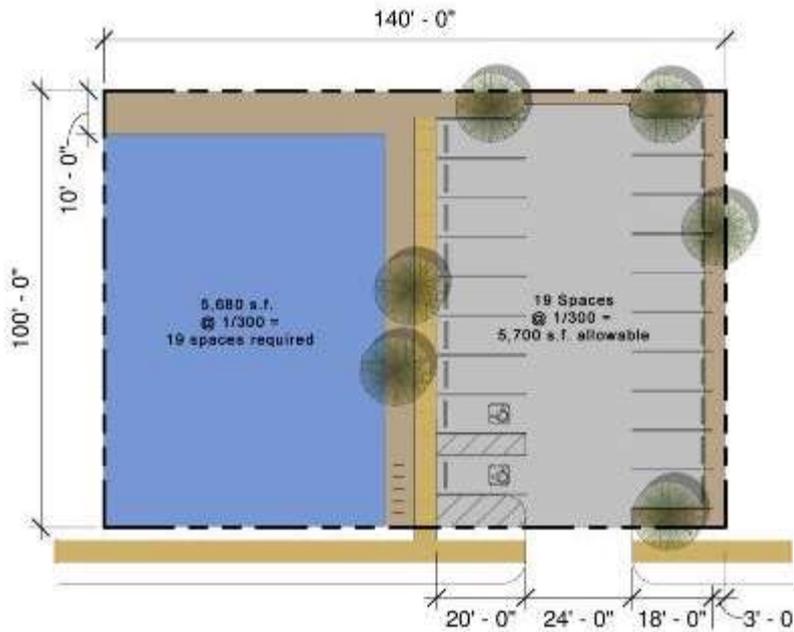


80' deep Lot

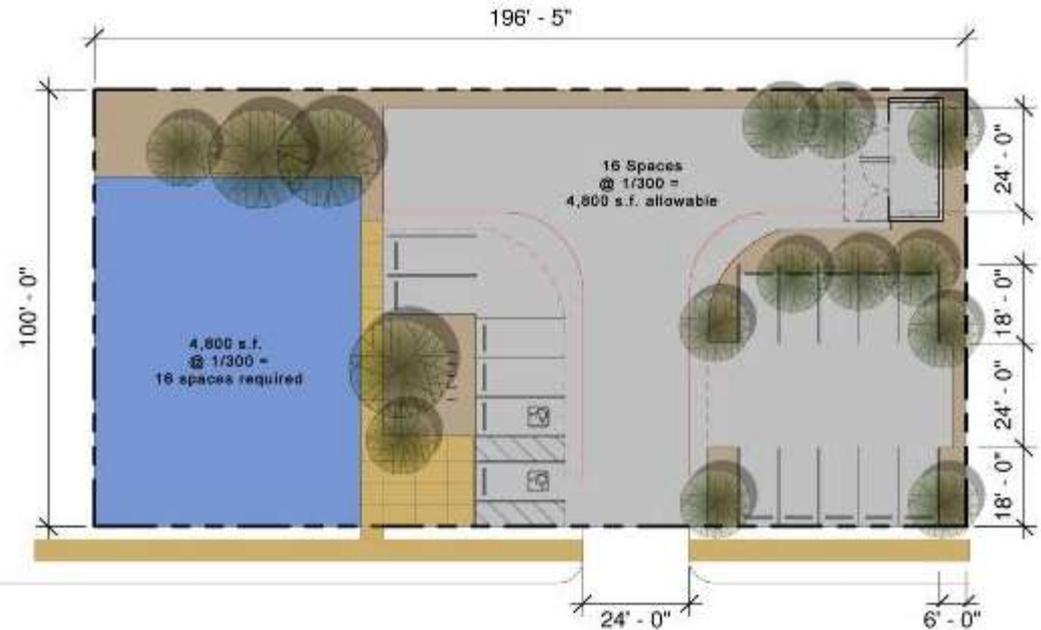


100' deep Lot

Trash enclosure layout diagrams



No onsite trash



With trash vehicle turn around